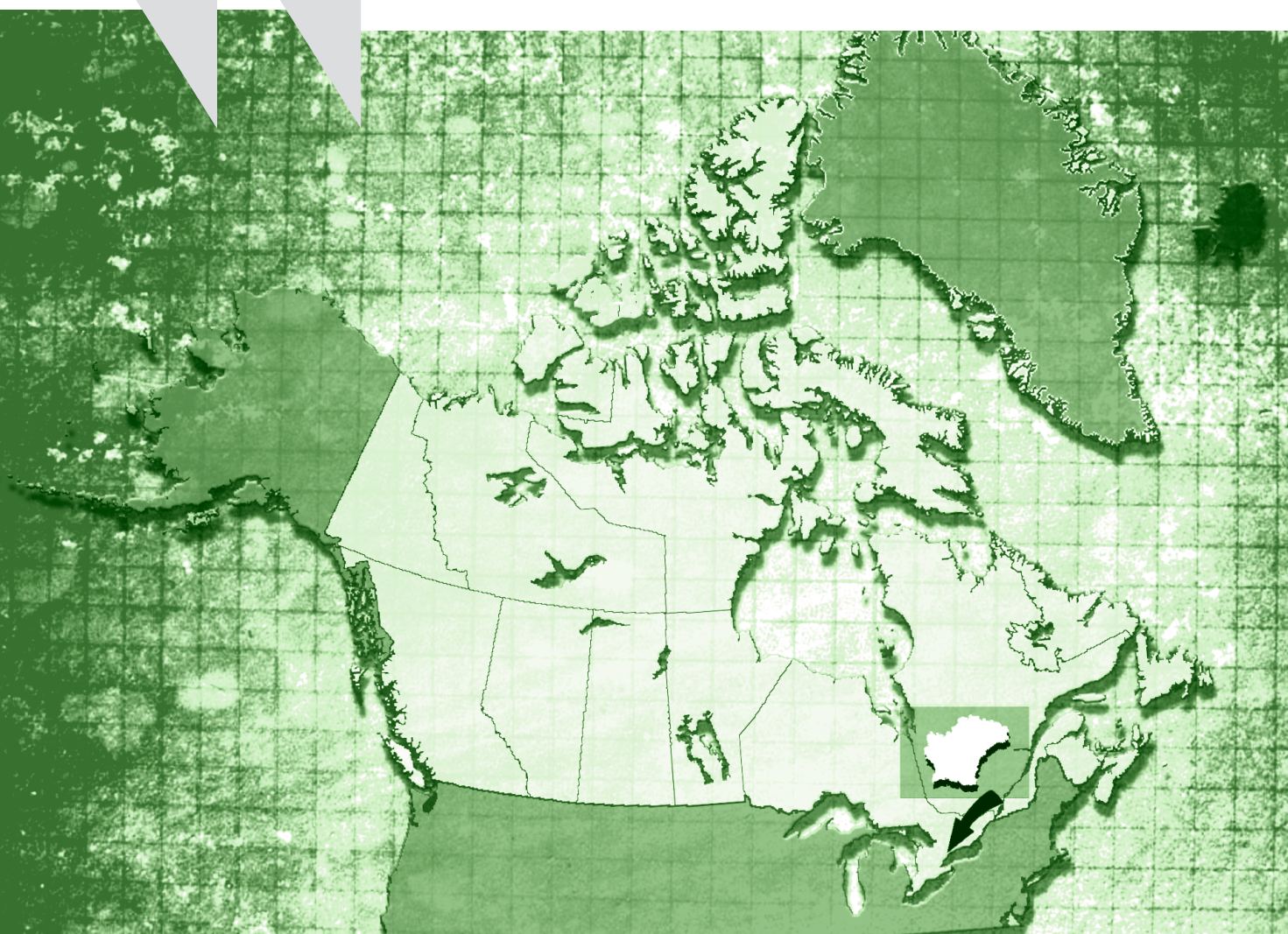




OECD Territorial Reviews **TORONTO, CANADA**



OECD Territorial Reviews Toronto, Canada 2009



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ISBN 978-92-64-07940-3 (print)
ISBN 978-92-64-07941-0 (PDF)
DOI 10.1787/9789264079410-en

Series: OECD Territorial Reviews
ISSN 1990-0767 (print)
ISSN 1990-0759 (online)

Corrigenda to OECD publications may be found on line at: www.oecd.org/publishing/corrigenda.

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Foreword

Across the OECD, globalisation is increasingly testing the ability of regional economies to adapt and exploit their competitive edge, even as it offers new opportunities for regional development. This is leading public authorities to rethink their strategies. Moreover, as a result of decentralisation, central governments are no longer the sole provider of development policies. New co-operation between different levels of government is now required in order to improve public service delivery. The objective of pursuing regional competitiveness and governance is particularly relevant in metropolitan regions. Although they produce the bulk of national wealth, metropolitan areas often the focus of unemployment and economic distress and do not always exploit opportunities for growth. Effective policies to enhance their competitiveness need to address a functional region as a whole and thus call for metropolitan governance. In 1999, responding to a need to study and disseminate innovative territorial development strategies and governance in a more systematic way, the OECD created the Territorial Development Policy Committee (TDPC) and its Working Party on Urban Areas (WPUA) as a unique forum for international exchange and debate. The TDPC has developed a number of activities, including a series of specific case studies on metropolitan regions. These studies, following a standard methodology and a common conceptual framework, allow countries to share their experiences, and are intended to help formulate and diffuse horizontal policy recommendations.

Acknowledgements

This Review was elaborated by the Directorate of Public Governance and Territorial Development (GOV) of the OECD, with the support and co-operation of the City of Toronto, the Province of Ontario, and the Government of Canada.

The OECD Secretariat would like to thank the Mayor of Toronto, David Miller, as well as city, provincial and federal officials, including Rosanna Scotti, Christine Raissis, Phil Abrahams, Tobias Novogrodsky, Randy McLean, Michael Jacek, Anna Pace, Hilda Logan, Peter Vidicus, Alan Meisner, Susan Brown, Sue Corke and Michael Williams from the City of Toronto; Bob Séguin, Dana Richardson, Maurice Bitran, Rob Glaister, Chris Thompson, Andrew Posluns, Janet Gates, Catherine Tramsek, Aleksandra Wiacek, Stellina Volpe, Weifang Dong, Steve Harlow, John Bullen, Parastoo Hassaszadeh from the Province of Ontario; and Yazmine Laroche, John Forster, Guillaume Côté, Nicola Bill, Alexia Touralias, Karl van Kessel and Lee Weiler of the Government of Canada; as well as the numerous other individuals and organisations that provided valuable inputs and contributions.

Special thanks are given to Adam Ostry, Infrastructure Canada and Chair OECD Working Party on Territorial Policies in Urban Areas for his key role in arranging the commissioning of this Review and for his sustained commitment throughout the Review process.

A team of international peer reviewers participated in the Review process:

- United States: Mark Drabenstott, founding director of RUPRI Center for Regional Competitiveness, University of Missouri-Columbia
- Japan: Yoshinobu Fukasawa, Director for Planning, National and Regional Planning Bureau, Ministry of Land, Infrastructure, Transport and Tourism
- Italy: Marco Magrassi, Urban Policy Coordinator in the Ministry for Economic Development

The Review similarly benefited from the insight of international experts: Professor Gianmarco Ottaviano (Professor of Economics, University of Bologna) and Professor Kent Portney (Professor of Political Science, Tufts University, United States).

The OECD Territorial Review of Toronto belongs to a series of OECD Territorial Reviews produced by the OECD Division of Regional Competitiveness and Governance, directed by Mario Pezzini, Deputy Director of the Directorate of Public Governance and Territorial Development.

This Review was coordinated and drafted by Olaf Merk, Administrator, under the supervision of Lamia Kamal-Chaoui, Head of Urban Development Programme. Individual contributions were provided by Michael G. Donovan, Kazuko Ishigaki and Javier Sanchez-Reaza. Statistical support was provided by Daniel Sanchez Serra. Valuable comments were provided by Karen Maguire. Sophia Katsira prepared the Review for publication.

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Executive summary

Toronto's competitiveness is important for the whole of Canada. With more than 5 million inhabitants, Toronto is Canada's largest urban centre, and one of its chief economic powerhouses. The Toronto region is widely estimated to generate almost a fifth of Canada's GDP and 45% of Ontario's GDP, and is home to 40% of the nation's business headquarters. The Toronto region is also Canada's main immigration node, with an intake of around 40% of all the immigrants to Canada during 2001-2006. The region hosts a number of clusters with national and world-wide relevance, including in finance, automobile production and life sciences, as well as other prosperous and dynamic sectors in entertainment and communication technologies. As such, the Toronto region creates economic spillovers that benefit other parts of the Province and the country through inter-provincial trade, labour market mobility and business links.

Toronto region's economy has had mixed success in recent years. Between 1995-2005, the region's GDP per capita and GDP growth rates fell below the Canadian average. Internationally its GDP ranks around the mean, with lower annual economic growth in 1995-2005 (1.5%) than the average for OECD metropolitan regions (2%). Underlying the region's modest economic performance is lagging labour productivity, with annual labour productivity growth in 1995-2005 (0.8%) at less than half the average growth rate for OECD metropolitan regions (1.8%). The Toronto region's robust labour market has long contributed to cost advantages in a number of sectors and buoyed demand for housing and other consumption-related activities (e.g. services, commerce and retail). However, the recent decline in the area's manufacturing jobs (2.5% annually over 2002-2006) has illustrated the structural difficulties of some of its traditional industries. Ontario's automobile and electronics industries now face global competition and the downsides of strong integration with US markets.

There is a need for a sustainable competitiveness agenda for the Toronto region. To boost the region's economic performance, this agenda should focus attention and resources on three priorities: innovation, cultural diversity and infrastructure. In addition, this agenda should apply a green lens to policies and prioritise development of green industries. A region-wide sustainable competitiveness agenda could build on valuable initiatives by the City of Toronto, the Province of Ontario, the Government of Canada and regional stakeholders. The formulation and implementation of this agenda would require some changes in current governance practices and frameworks.

Innovation outcomes in the Toronto region could be improved. The Toronto region has several renowned educational and research institutions, yet its score is mixed on innovation output indicators, such as patents, citations, high-tech employment and high-tech entrepreneurship. Federal and provincial governments stimulate basic and applied research, business R&D, venture capital and the diffusion of technology through a variety of programmes. Productivity could further benefit from greater collaboration between industry and institutions of higher education, and policies could focus on strengthening

the formation of networks of SMEs and universities. Despite initiatives to map economic sectors in the Toronto region, relatively little is known about firm inter-linkages. More knowledge could be gathered and disseminated, so that public interventions could focus on areas where inter-linkages might potentially increase innovation. Governments could build on and expand laudable initiatives like the MaRS Discovery District in downtown Toronto, where technological start-ups in life sciences are assisted with work space and services, allowing for inter-linkages between sectors.

Policies could nurture the Toronto region's cultural diversity to create economic opportunities. The Toronto region has been highly successful in attracting and integrating immigrants: its population has the largest proportion of immigrant residents (46%) of all OECD metropolitan regions. In addition, the immigrants to the Toronto region score high on a variety of integration indicators. Unfortunately many immigrants face challenges gaining employment in their given profession and their skills are sometimes under-utilised as a result. The 2006 unemployment rate among very recent immigrants of core working age (25 to 54 years) was 11%, compared to 4% for Canadian-born Torontonians. In order to increase the labour market integration of immigrants, a range of current initiatives in the Toronto region, such as bridging programmes and internships, could be used more widely. More could also be done to advance the applications for credential recognition of prospective immigrants before they arrive in Canada. Within the field of credential assessment, the federal government and the provinces should continue development of a pan-Canadian framework for foreign qualification recognition. In order to increase the affordable housing mix in the Toronto region, needed in part to accommodate the inflow of immigrants, regional agreements could be made on the share of affordable housing to be included in new developments. Another approach to making the most of cultural diversity in the Toronto region would be to leverage immigrants' external networks to foster more diverse trade relations.

Transportation challenges need to be tackled. The Toronto region's transit services and transportation networks have not kept up with population growth and are poorly integrated. The transit infrastructure in the Toronto region is less well developed than in several OECD metropolitan regions. Although public transit shares in the modal split in the Toronto region are among the highest in North America (23% in 2006), 71% of the region's population is dependent on the automobile. High car-usage rates have led to traffic congestion, with annual costs for commuters in 2006 estimated at around CAD 3.3 billion per year and the annual economic costs at CAD 2.7 billion for the Greater Toronto and Hamilton Area. In order to reduce congestion, financial incentives for reducing car use (such as congestion charges, high-occupancy toll (HOT) lanes, local fuel taxes and parking taxes), could be considered. Regional co-ordination of transportation has been increased by the creation in 2006 of the regional transportation agency Metrolinx and its 25 year regional transportation plan, released in 2008. In order to strengthen the co-ordinating role of Metrolinx, access to additional revenue sources could be considered. Despite substantial additional transport investment since 2006, Canada appears to spend less on transport than a variety of European countries. Transportation services and infrastructure are financed by federal, provincial and local governments, but federal spending on transportation in Canada (combined with spending on economic affairs) as a share of total government spending was the smallest compared to other OECD countries in 2005. Across the OECD member states, infrastructure has been found to be not only a necessary condition for growth but, together with human capital and innovation, a determinant of growth. The state of Toronto region's infrastructure could therefore significantly strain its capacity to compete with other OECD metropolitan regions. Local governments in the Toronto region

are highly dependent on the property tax for their funding, whereas experience of other OECD metropolitan centres indicates that a broader mix of revenue sources is needed to support adequate investment in infrastructure. The federal government could consider providing additional predictability for municipal governments by addressing the need for longer-term infrastructure funding commitments. As recent federal and provincial programmes reach maturity and investments start to materialise, it will be important for governments to evaluate whether infrastructure needs are being met, and to what extent they contribute to the competitiveness of the Toronto region and the country as a whole.

A green overlay to the Toronto region's competitiveness agenda should be applied.

There are a number of green plans and programmes applicable to the Toronto region. Public actors in the Toronto region could use their commitment to sustainability as an economic opportunity by applying a green overlay to a region-wide competitiveness agenda. Initiatives such as the City of Toronto's Mayor's Tower Renewal project, which links social and environmental sustainability, could be further rolled out, for example by greening affordable housing and expanding skill-development and (re)training programs focused on green jobs and industries. A sustainable competitiveness agenda could stimulate SMEs with measures intended to encourage the development of alternative technologies and energy sources, so that the use of carbon-based, non-renewable energy can be phased out in industrial production and processes, transportation, and heating and cooling activities. To stimulate compact development, changes in the Toronto region's fiscal architecture are needed.

Strategic planning at the level of the region could be intensified. The Province of Ontario, commendably, has strengthened regional co-ordination for public transportation and land use, but co-ordination could be strengthened with regards to economic development, social integration and environmental sustainability. The Province could consider facilitating greater inter-sectoral co-ordination within the Toronto region. Such co-ordination would be likely to entail cross-departmental arrangements within the provincial administration, co-ordination among provincial ministries to support economic development and incentive mechanisms to stimulate co-operation between local governments. Existing networks of municipalities and non-governmental stakeholders could be strengthened and built on. These arrangements could be developed as part of a provincial urban policy agenda, which would start with the Toronto region and which could be extended to cover other urban centres within Ontario. The creation of a Federal Economic Development Agency for Southern Ontario, announced in August 2009, could provide a valuable platform for federal involvement in fostering a sustainable competitiveness agenda for the Toronto region. The new agency would therefore be in a good position to partner with the Province and municipalities in the Toronto region to develop and implement a coherent tri-partite sustainable competitiveness agenda. This would identify commonly-defined policy goals and co-ordinate programme design and investments. Part of such an engagement could be an expansion of datasets which would have to include such key economic indicators as GDP and export data at the metropolitan level.

Assessment and recommendations

A key economic powerhouse...

With more than 5 million inhabitants, Toronto is Canada's largest urban centre, and one of its chief economic powerhouses. Based on its share of the Province's economic activity, the Toronto region is widely estimated to generate almost a fifth of Canada's GDP (*i.e.* 17%, higher than the average for OECD metropolitan regions) and 45% of Ontario's GDP. It is also home to 40% of the nation's business headquarters. The region creates spillovers that benefit other parts of the Province and the country through inter-provincial trade, labour market mobility and business links. As a polycentric urbanised area with multiple levels of local government, the Toronto region, defined as Toronto Census Metropolitan Area by Statistics Canada, includes the City of Toronto and several large outer urban centres such as the cities of Mississauga, Brampton, and Vaughan, and the Town of Markham. The region is embedded in a larger entity, commonly known as the Greater Golden Horseshoe, which has around 8 million inhabitants, and consists of a variety of urban nodes, including Hamilton, Oshawa, Niagara Falls, St. Catharines, Kitchener-Waterloo, Guelph, Barrie and Peterborough, as well as rural communities. The Toronto region welcomed about 40% of all immigrants to Canada each year during 2001-2006, helping it sustain one of the highest rates of population growth (2% per year since 1990) among the 78 largest OECD metropolitan regions. Thanks to its strategic geographical location, only a 24-hour drive from 40% of the US population, firms from the Toronto region (and the Greater Golden Horseshoe) have successfully penetrated US markets, boosting exports and integration with the American automobile industry. Toronto's growth in recent decades has not come at the expense of quality of life: the City of Toronto retains its reputation as a good place in which to live, as evidenced by a variety of urban attractiveness rankings.

...fuelled by sustained immigration...

A constant flow of immigration to the Toronto region since the end of the second world war has contributed to its success, shaped its economic and spatial development, and made it one of the most ethnically diverse urban centres in the world. Of all OECD metropolitan regions, Toronto's population has the largest proportion of immigrant residents (46%). Thanks to steady inflows of young immigrants, the proportion of the region's population that is of working age (72%) is higher than most other OECD metropolitan regions. The Toronto region's robust labour market has long contributed to cost advantages in a number of sectors and buoyed demand for housing and other consumption-related activities (*e.g.* services, commerce and retail). Moreover, unlike immigrants in many other large cities in the world, most immigrants in the Toronto region are skilled. The Toronto region's well-educated workforce has contributed to the development of a number of world-class clusters in finance, automobile production and life sciences, as well as other prosperous and dynamic sectors in entertainment and communication technologies.

...with mixed economic performance.

Despite these assets, the Toronto region has had mixed success in recent years. Between 1995-2005, the region's GDP per capita and GDP growth rates fell below the Canadian average. Meanwhile, the economies of cities like Calgary and Edmonton boomed, strongly connected to the robustness of the oil and gas sector. Internationally, the Toronto region scores around the mean in terms of regional GDP (47th out of 74 metropolitan regions) and experienced somewhat lower annual economic growth in 1995-2005 (1.5%) than the average for OECD metropolitan regions (2%), although some caution is warranted due to the lack of GDP data at the metropolitan level in Canada. Labour productivity increased at only 0.8% per year over the same period; that is, at less than half the rate of the OECD metro-regions on average (1.8% annually). In 2005, the Toronto region ranked 58th out of 70th on this indicator, lower than most US metropolitan regions and also lower than European cities with a comparable income level, like Hamburg, although caution is warranted with respect to productivity as data on average hours worked in metropolitan regions are not available, which complicates international comparison. Lagging productivity growth has not been limited to the Toronto region: Canada as a whole did poorly in this respect and showed an increasing productivity gap compared to the United States and such European countries as the United Kingdom.

Challenges related to economic development...

The Toronto region's current economic development model is being challenged. Several external forces can explain its sluggish economic growth and productivity since the beginning of the 2000s. Population growth boosted demand in construction, sales and retail, professional and financial services. The Toronto region has as a result continued to absorb many of the newcomers, with the creation of around 50 000 jobs every year. However, the recent decline in the area's manufacturing jobs (2.5% annually over 2002-2006) has also illustrated the structural difficulties of some of its traditional industries. Ontario's automobile and electronics industries now face competition from economies where labour costs are lower, such as China, India and Mexico, a competition that has been intensified by the appreciation of the Canadian dollar and price increases in commodities used in the production process. Finally, the traditional dependency of the region's export-oriented manufacturing sector on US markets has left it vulnerable to the current economic downturn in the United States, which has especially hurt the automobile industry. The export-oriented manufacturing sector's vulnerability has been particularly marked during the current global crisis. These pressures are likely to intensify as producers in countries where labour costs are lower try to move up the value chain.

...demography...

Meanwhile, the Toronto region is facing significant demographic challenges. The population of Canada – and the Toronto region – is ageing, and the endogenous birth rate is low. Toronto's ability to continue to attract and integrate immigrants is critically important if the region is to sustain a globally competitive labour force and the competitive position both of the region and of Canada. The quality of the region's labour force will determine the region's capacity to compete nationally and globally.

...and environmental sustainability...

Global debates about climate change and environmental sustainability have raised concerns in many metropolitan regions in the OECD about greenhouse gas (GHG) emissions, energy use and environmental sustainability. Unstable oil prices in the 2000s have also revived interest in energy efficiency and alternative energy sources. Comparative environmental indicators for metropolitan regions are limited, but existing data suggest that the Toronto region is not always among the best-performing regions, despite having a broad set of sustainability plans and initiatives in place. Population growth has resulted in sprawl throughout the Greater Golden Horseshoe.

...call for a sustainable competitiveness agenda for the Toronto region.

There is a need for a region-wide sustainable competitiveness agenda that would build on valuable initiatives such as the City of Toronto's *Agenda for Prosperity*, the Government of Ontario's *Innovation Agenda*, the Government of Canada's recent announcement to establish a Federal Economic Development Agency for Southern Ontario and the action plan of the Greater Toronto Economic Summit, entitled *Choosing Our Future*. To boost the region's economic performance, this sustainable competitiveness agenda should highlight the importance of innovation and sustainability by focusing attention and resources on three priorities:

1. enhancing productivity and innovation,
2. leveraging cultural diversity to maximise productivity and innovation,
3. improving sustainable transportation infrastructure.

These three priorities are inter-related. Whether productivity can be increased will depend on whether the region can sustain its specialisation in high value-added industries by boosting innovation. The Toronto region has a number of important assets, including its culturally diverse and skilled labour force, but these could be better deployed to cultivate innovative firms and industries. Toronto's competitiveness is also constrained by the region's infrastructure, which, notwithstanding significant recent investments by all orders of government, has suffered from sustained periods of underinvestment and has not kept pace with the region's rapid growth, as illustrated by indicators such as railway capacity. A greater portion of residents and businesses are now located in the Toronto region's suburbs, and the resulting sprawl and congestion hamper productivity, generate pollution and raise the cost of delivering public transit and other services. Moreover, economic development and environmental sustainability often reinforce each other. Beneficial environmental conditions could enhance the Toronto region's quality of life and its attractiveness to highly qualified people. Meanwhile, environmental technologies have the potential to create and attract high value-added employment, and innovation in non-carbon-based (or renewable) energy sources could lead to the growth of new globally competitive clusters. The economic crisis provides the region with a window of opportunity to transform its economy by focusing on high value-added, innovative and sustainable activities. Therefore, in addition to developing specific environmentally friendly policies, a region-wide economic development agenda should target a fourth objective:

4. applying a green lens to existing policy instruments and developing green industries.

Addressing the main elements of a sustainable competitiveness agenda

(i) Enhancing productivity and innovation

A diverse set of evolving economic sectors...

Productivity in several economic sectors in the Toronto region might be improved by focusing on more high value-added activities in the value chain. Internal structural factors reshaped the region's sectoral specialisation between 2001-2006. Its manufacturing sector specialisation in the metallurgical, machinery, printing, plastics and furniture industries has been waning since 2001, and some high value-added industries, such as aerospace, have also become relatively less dominant. The shift from manufacturing towards tertiary activities has to some extent favoured activities associated with housing development (e.g. retail, services associated with construction), which may explain the Toronto region's mixed performance in both economic growth and productivity. However, there are some indications that the region is fine-tuning its competitive advantage within the manufacturing sector. In the tertiary sector, the Toronto region is also further specialising in services that can yield high productivity gains (e.g. finance, health, professional services). It still ranks as the Canadian city with the largest share of headquarter functions, which are generally associated with high value-added activities, since headquarter functions tend to be connected to high-level services such as advertising, accounting and head-hunting. A relatively large share of its workforce is employed in creative industries such as design and interactive digital media content, which provide the potential for cross-sectoral synergies. The success of certain advanced services sectors also depends on the region's capacity to attract and retain talent, a factor that is often closely correlated with an appealing, healthy urban environment.

...with mixed innovation outcomes...

Boosting innovation would create more value-added functions and thus increase productivity. Due to data limitations and the multi-faceted nature of innovation, measuring innovation activity is a challenging task, particularly at the metropolitan level. However, there are several indications that the Toronto region's innovation performance could be improved. It has several renowned educational and research institutions, yet its score is mixed on innovation output indicators, such as patents, citations, high-tech employment and high-tech entrepreneurship. Human capital (education) levels in the Toronto region are reasonable (33% of the population have university degrees), although some indicators for technology-based innovation in the Toronto region are lower than those in other North American regions, such as Los Angeles and Boston. Productivity could further benefit from greater collaboration between industry and institutions of higher education: indicators for university-industry collaboration via joint papers declined by almost half in 1999-2004.

...suggests that policy should focus on SMEs...

Government policies have stimulated innovation through different tax reforms and programmes, but could focus more on the formation of networks between SMEs and academic institutions. For instance, the federal and provincial government have initiated fiscal reform, including reductions in business tax rates and a provincial announcement

in 2009 harmonising the provincial sales tax with the federal general sales tax. In addition to support of basic and applied research, federal and provincial governments stimulate business R&D, venture capital and the diffusion of technology through a variety of programmes such as the federal tax credit programme for *Scientific Research and Experimental Development* (SR&ED), the provincial *Next Generation Jobs Fund*, Ontario Centres of Excellence, the *Ontario Venture Capital Fund*, the *Ontario Emerging Technologies Fund*, and *MaRs Innovation*, which functions as one of the Centres of Excellence for Commercialisation and Research. The government of Ontario's *Innovation Agenda* commendably applies a broad and holistic definition of innovation, which includes human capital development issues as an inherent part of the innovation process, in line with OECD and EU approaches to innovation. Although thorough programme evaluations of innovation programmes are often difficult to conduct and do not exist in several cases, those that have been undertaken have mainly been positive. Challenges for SMEs are being addressed by a number of government initiatives, such as the government of Canada's *Industrial Research Assistance Programme* (IRAP), federal and provincial tax credits, Small Business Enterprise Centres around Ontario, and targeted City of Toronto programmes such as incubators in fashion and food. Innovation policies could focus on strengthening the formation of networks of SMEs and universities, harnessing bottom-up initiatives and creating conditions for these initiatives to succeed. These should be guided by empirical evidence about what works and study of existing best practices, such as the *MaRS Discovery District* in downtown Toronto, where technological start-ups in life sciences are assisted with work space and services, allowing for inter-linkages between sectors.

...cluster development...

Phasing out of tax credits should be considered for sectors that benefit from subsidies and tax credits, as should the redevelopment of cluster policy strategies where they might be needed. Both the provincial and federal government have sector-specific programmes, consisting of loans, grants and tax credits. In addition, the City of Toronto has put considerable effort into stimulating key economic sectors through incubators, grants, strategic visions, network organisations, innovative tax incentives and the 2008 *Community Improvement Plan* tool. Other municipal governments in the Toronto region, such as Mississauga and Durham, have targeted key sectors as part of their business support programmes. Finally, there are regional initiatives, such as the Toronto Financial Services Alliance, which aim to increase the competitiveness of specific sectors. There is overlap among the clusters supported by the different governments; and programmes for the automobile, film and publishing industries effectively subsidise these sectors rather than stimulate cluster building. Many car-producing countries, including Canada, have intensified their support for the automobile sector during the global economic downturn; the Canadian support provides possibilities for the car industry in the Greater Golden Horseshoe to strengthen high value-added activities comparable to the initiatives that car industries around Gothenburg (Sweden) undertook around 2004 to refine their competitive edge. The Province of Ontario decided in its 2009 budget to phase out the tax credits for manufacturing industries, but has meanwhile increased tax credits for audiovisual productions.

...and inter-firm synergies.

To promote synergies that encourage innovation, governments could take a more active role in stimulating sectoral inter-linkages. Inter-linkages between firms play an essential role in incremental innovation in metropolitan regions. Despite initiatives to map economic sectors in the Toronto region, relatively little is known about firm inter-linkages. More knowledge could be gathered and disseminated, so that public interventions could focus on areas where inter-linkages might potentially increase innovation. Governments could build on and expand developments and laudable initiatives like the *MaRS Discovery District*.

(ii) Leveraging cultural diversity to maximise productivity and innovation

Cultural diversity is a unique asset for the Toronto region...

Ethno-cultural diversity, one of the Toronto region's most unique assets, could be leveraged more effectively to strengthen the area's economic competitiveness. In comparison to urban centres with a homogeneous workforce, a city region with a diverse, culturally heterogeneous workforce has more potential to be innovative and creative, develop international trade relations, provide cultural amenities, and sustain a cosmopolitan character that enhances the quality of urban life. Maximising the potential of the immigrant population takes on an added importance in light of the ageing population and low endogenous birth rate in Canada and the Toronto region.

...with high potential benefits from maximising immigrants' skills.

While the Toronto region manages to attract a large share of highly skilled immigrants, many face challenges gaining employment in their given profession, and their skills are sometimes underutilised as a result. This experience is not unique to the Toronto region; it is a significant challenge for many governments in the OECD. In Canada as a whole, the gap between the employment rates of the highly educated Canadian-born population and the highly educated foreign-born population is 6.5%, which reflects trends in the Toronto region. Although this gap is not remarkably high in comparison to the average for OECD countries, it is larger than the gap in OECD countries such as the United States and Australia that, like Canada, have successfully attracted highly educated foreigners. Within the Toronto region, the 2006 unemployment rate among very recent immigrants of core working age (25 to 54 years) was 11%, compared to 4% for Canadian-born Torontonians; the unemployment rate for very recent immigrants was 18.1% in Montréal and 9.6% in Vancouver. In the regions of Toronto, Montréal and Vancouver combined, 30.9% of immigrants are mismatched in their current employment, insofar as they are employed in a job that does not correspond to their skills and qualifications. This mismatch rate is far lower for the Canadian-born population (10%). Having successfully attracted a huge number of well-educated immigrants, the Toronto region must to a greater degree than it does now nurture and seize the potential of its diverse population to improve its labour productivity and economic competitiveness. To do so, it will need to address challenges such as (i) helping highly skilled immigrants obtain jobs commensurate

with their education and experience, (ii) addressing a lack of affordable housing and (iii) “internationalising” the business acumen and networks of immigrant entrepreneurs.

Promising labour market integration programmes could be rolled out...

A first step toward making better use of the Toronto region’s cultural diversity is to reduce the barriers highly skilled immigrants face in securing employment at a level commensurate with their experience and expertise. A range of promising policies, which should be rolled out and disseminated more widely, could put immigrants’ skills to better use. The principal policy interventions in the Toronto region have aimed at improving language skills, increasing the recognition of foreign credentials and providing “bridging” programmes to provide newcomers with fast and effective training that address gaps in skills, education and work experience and help them to obtain licensure and employment in their field. Despite the recent implementation of these programmes and a lack of systematic evaluation, there are indications that several bridging programmes and internships have had positive results, including high job-placement rates. Participation rates in these programmes are relatively modest, however, since many started only recently. Now that these approaches have been tested, bridging and internship programmes could be used more widely. Opportunities exist at all levels of government for further evaluation of settlement and integration programmes. These evaluations could lead to dissemination of best practices for programme changes and new initiatives.

...and used prior to immigrants’ arrival.

More could also be done to advance the applications for credential recognition of prospective immigrants before they arrive in Canada. The credentialing process could be started while a prospective immigrant is still overseas, an approach being taken by Professional Engineers Ontario (PEO) that could usefully be implemented by other professional organisations. Within the field of credential assessment, the federal government and the provinces should continue development of a pan-Canadian framework for foreign qualification recognition. This work will help expedite newcomers to obtain employment corresponding to their qualifications.

Social integration could be further promoted...

A second step for making better use of cultural diversity relates to social integration and housing. Immigrants to the Toronto region score high on a variety of integration indicators, such as feelings of belonging, voting behaviour, citizenship rates, inter-ethnic friendships and marriages, and involvement in their local community. Several public agencies and non-governmental organisations provide a wide variety of settlement services for immigrants to the Toronto region, many of which are exemplary. Yet in the past decade, the concentration of immigrants in certain residential areas has increased. This residential concentration is not always connected with neighbourhood poverty, and in many cases reflects a choice rather than a constraint, but it underlines the importance of having a transport infrastructure in place that can provide quick access from residential areas to employment opportunities across the region.

...through a regional approach to affordable housing.

Affordable housing is becoming a challenge which needs to be tackled at the regional level. Demand for rental housing will continue to grow in the Toronto region thanks to a consistent flow of immigrants, who generally start their housing tenure with rental housing. The construction of rental housing units over the last decade has been limited and mostly focused on high-income groups. Although there is a considerable vacancy rate of rental homes in the City of Toronto, these vacant homes are not sufficient to accommodate the expected population growth. Moreover, the long waiting lists for social housing and other indicators suggest that housing affordability is becoming an issue. While federal housing policy focuses on homeownership, other programmes are in place to support rental housing and housing affordability, such as the *Rent-Geared-to-Income* programme (federal), the *Rental Opportunity for Ontario Families* (provincial) and *Housing Opportunities Toronto* (City of Toronto). These policies could be supported by a regional approach to affordable rental housing. In order to increase the affordable housing mix in the Toronto region, agreements could be made within the whole region on the share of affordable housing to be included in new developments, as city-regions in the Netherlands have done. The Province might consider sanctioning municipalities failing to meet affordable housing targets, as happens with municipalities in France.

Immigrants' external networks could be used to diversify trade relations.

A third approach to making the most of cultural diversity in the Toronto region would be to leverage immigrants' external networks to foster more diverse trade relations. Due to its geographical position (close to the US border and within one hour's flight of 60% of the population of North America) and other factors, Ontario's exports go mainly to the United States, and represent more than 80% of Ontario's export value. Entrepreneurs in the Toronto region are generally not engaged in transnational businesses that could create export opportunities to the migrant's country of origin. Only a small share of the immigrants to Canada is attracted for their entrepreneurial skills and market conditions play a large role in shaping export opportunities. However, efforts to use the immigrant population to diversify exports from the Toronto region could provide an additional source of economic growth. Export development policies might make more use of immigrants' expertise and networks, building on recent trade missions by the Province and the City of Toronto to countries such as China. In order to stimulate exports by immigrant entrepreneurs, targeted support for the design of export strategies of small and medium enterprises, many of which are run by immigrant entrepreneurs, could be considered. A pro-active internationalisation strategy, such as that pursued by the City of Madrid, could perhaps borrow from the tri-level arrangements set up and funded by the governments of Canada, Québec and Montréal in the 1990s to pursue such a strategy in the Montréal region (*Montréal International*), and could expand market share in foreign markets, partly by using cultural diversity to diversify trade relations. Such a co-ordinated strategy could include a pro-active marketing and branding component, and might be managed either by a purpose-built tri-level institution (as in Montréal), or through greater co-ordination of existing responsibility centres within each order of government, as well as through partnerships with *Invest Toronto* and existing region-wide organisations such as the Greater Toronto Marketing Alliance.

(iii) Improving sustainable transportation infrastructure

Loose and lagging regional transport networks...

Due to population increases as well as underinvestment and limited regional co-ordination in the past, the Toronto region's transit services and transportation networks are poorly integrated and less well developed than in several OECD metropolitan regions. Although public transit shares in the modal split in the Toronto region are among the highest in North America (23% in 2006), 71% of the region's population is dependent on the automobile. Transit is widely used in the downtown core of the City of Toronto, but this is not the case in other parts of the Toronto region. Sprawl complicates the provision of public transit, although important transit services and networks have been set up by the Province, regional transit organisations, the City of Toronto and other local governments, such as York Region, Brampton, Caledon and Mississauga. The efforts of regional municipalities to increase transit shares are expressed in their per capita municipal spending on transit, which in several cases comes close to the expenditures of the City: e.g. CAD 112 per capita by York Region in 2007, compared to CAD 155 per capita by the City of Toronto. Overall, however, the transit infrastructure in the Toronto region, as measured by imperfect but internationally available indicators such as railway capacity, is relatively limited in comparison to European metropolitan regions and even several US metropolitan regions, such as New York, Los Angeles and San Francisco. The region's railway capacity, for example, is 19 metres per square kilometre, which is considerably lower than European polycentric regions such as Randstad-Holland (96 m/km²), the Flemish Diamond (124 m/km²) and Rhine-Ruhr-area (207 m/km²). Although Toronto's Pearson International Airport is one of the largest airports on the North American continent, there is no high-speed rail connection between the airport and the City, as is the case in many OECD metropolitan regions. Efforts are under way, however, to make this connection, and on January 21, 2009, the Province of Ontario announced that Metrolinx is leading a project to expand GO Rail services on the Georgetown South corridor and build a rail link to Pearson International Airport from downtown Toronto.

...and traffic congestion straining its competitiveness...

High car-usage rates have led to traffic congestion, with annual costs for commuters in 2006 estimated at around CAD 3.3 billion per year and the annual economic costs at CAD 2.7 billion for the Greater Toronto and Hamilton Area – a direct hit on productivity, especially in certain economic sectors dependent on rapid delivery (e.g. retail, logistics and food). Air pollution due to traffic has been estimated by the City of Toronto's Medical Officer of Health to cause 440 premature deaths per year in the city alone. All these indicators influence the relationship between Toronto's competitive position and the quality and quantity of its strategic public transportation infrastructure. Across the OECD member states, infrastructure has been found to be not merely a necessary condition for growth but, together with human capital and innovation, a determinant of growth. The state of the Toronto region's infrastructure could therefore significantly strain its capacity to compete with other OECD metropolitan regions.

... have been addressed by increased regional co-ordination...

In order to improve the provision of sustainable infrastructure, important and laudable steps towards regional co-ordination of transportation and land use have been made since the mid-2000s. A regional transportation plan was developed in 2008 by Metrolinx, the regional transportation agency for the Greater Toronto and Hamilton Area (GTHA) that the Province of Ontario established in 2006. The plan aims to increase the modal share of public transit to 33% by 2031 and to 20% for cycling and walking. Provincial infrastructure investment committed since 2007 will form the foundation investment for the Regional Transportation Plan. In concert with the co-ordination of regional transportation, the Province of Ontario has intensified co-ordination of regional land use. This has taken the form of two provincial initiatives: the *Greenbelt Act* (enacted in 2005) and accompanying *Greenbelt Plan* to protect countryside, natural features and farm land; and the *Places to Grow Act* and accompanying *Growth Plan for the Greater Golden Horseshoe* (2006). This *Growth Plan* is intended to direct population growth towards built-up areas, including 25 specified urban growth centres within the Greater Golden Horseshoe, and to protect a green belt around the urban area from further development. It also directs more compact, mixed-use, transit-oriented development in new suburban communities.

...that could be expanded...

Regional co-ordination could however be strengthened further in order to improve the provision of public transport. The public transit system in the Greater Toronto and Hamilton Area (GTHA) is currently comprised of 11 separately governed local transit agencies and one regional transit provider (Metrolinx), each with its own separate fare structure and system for paying fares. In order to harmonise fare payment methods throughout the region, the Ontario Ministry of Transportation launched a regional fare-card technology pilot project, *Presto*, in 2007. The programme, which will eventually include an automatic billing system, will be introduced gradually in 2009 and fully implemented in 2011. Implementation of this initiative will bring Toronto's regional fare card system in line with sophisticated systems such as Tokyo's *Pasmo* card, but efforts will be required in the short term to implement the harmonisation of transport tariffs, which have been in place in several OECD metropolitan regions for a number of years (e.g. in Frankfurt since 1995). A more integrated regional approach to marketing and travellers' information, for which Metrolinx could set standards, would help to create seamless regional public transit. Land-use and transit planning might also have to be further integrated in order to stimulate public transit. This could, for example, take the form of planning requirements that new development (specifically large office development) must take place within a certain distance from public transit lines. In addition, eligibility for certain public funding programmes could be made conditional on municipal land-use and transportation plans that favour transit.

...and complemented with wider revenue sources for Metrolinx.

Introduction of additional revenue sources for Metrolinx could be considered. Transit authorities in many OECD metropolitan regions utilise a variety of revenue sources that facilitate their co-ordinating role. Metrolinx was almost entirely funded by provincial subsidies, until the merger with GO Transit in 2009 added fare revenues to its budget.

In order to strengthen the regional co-ordination role of Metrolinx, access to additional revenue sources could be considered. Metrolinx is required by 2013 to come up with an *Investment Strategy* to fund the balance of the *Regional Transportation Plan*; as part of the reflections leading up to this investment strategy, various additional revenue sources could be considered. Regional transportation bodies in other metropolitan regions in the OECD have various revenue sources in addition to transit fares and government subsidies. Tax income represents in some instances (e.g. Boston and Atlanta) more than 60% of regional transportation agency income, and can consist of revenues from congestion charges (London), a transport tax levied on employers in metropolitan regions (Paris, Lyon), a surcharge on sales taxes (several US metropolitan regions) and fuel taxes (Montréal), a mortgage-recording tax that charges every mortgage that is recorded (New York) or value capture taxes (Japan). Other revenue sources of metropolitan transit authorities include revenues from advertisement, rents, taxi licenses and parking.

Congestion could be addressed by fiscal incentives...

In order to reduce congestion, fiscal incentives for reducing car use (such as congestion charges, high-occupancy toll (HOT) lanes, local fuel taxes and parking taxes), could be considered. Car users are currently not charged for the costs of congestion, air pollution and their use of the road network, except on Highway 407, where a toll for use of the highway is levied. As a result, many people have an incentive to use a car rather than public transit. A congestion charge has proven to be an effective tool for reducing traffic congestion in a variety of metropolitan regions. Congestion in the Toronto region is not limited to downtown Toronto, and it would be difficult to cordon part of the City centre, so the cordon-based models used in London, Stockholm and Milan would be less appropriate than Singapore's. In this model, not only the city centre but major roads in the wider metropolitan region are subject to charges that vary according to peak hours. Such a congestion charge in the Toronto region could cover the major highways (the 400 series) and other major arterial roads, and HOT lanes could also be introduced. Other options worth considering include a local fuel tax and parking taxes. The new *City of Toronto Act* permits the City to levy a tax on parking spaces, based on a fixed charge per square metre or adjusted according to area or zone. The City recently considered and declined to pursue this option, but it could be reconsidered on a regional basis, given its effectiveness in discouraging car use.

...and public transit in low-density areas.

Flexible transit solutions, such as rapid bus transit, could be expanded in low-density areas, since they would provide the most cost-effective public transit. There are concerns about whether provincial land use targets are ambitious enough to sustain fixed higher-order transit links. Trip volumes in and out of several of the urban growth centres outside the City of Toronto, with densities of below 100 people and jobs per hectare, are not generally considered to be sufficient to justify higher-order transit. For this reason, the regional transportation plan expands the existing express bus service along Highway 407, across Halton, Peel, York and Durham, with priority measures, such as bus bypass shoulders. Despite the intensification targets in the *Growth Plan for the Greater Golden Horseshoe*, it is unlikely that densities in these regional municipalities will increase enough by 2015 to make more fixed links, such as light rail, cost-effective. For these areas, expansion of rapid bus transit, which includes right-of-way lanes and several other technological advances,

could provide a solution. This has proved effective in several metropolitan regions, including Curitiba (Brazil), Bogotá, Brisbane and Sydney.

Transport investment has increased...

Additional transport investment since 2006 provides a constructive step towards more extensive and predictable infrastructure funding in the Toronto region. Although government spending on transport is difficult to compare internationally, Canada appears to spend less on transport (around EUR 510 per capita in 2006) than a variety of European countries for which data are available, such as Sweden (EUR 850 per capita) and Italy (EUR 725 per capita). Transportation services and infrastructure are financed by federal, provincial and local governments, but federal spending on transportation in Canada (combined with spending on economic affairs) as a share of total government spending was the smallest compared to other OECD countries in 2005. Additional spending since 2006 has raised per capita spending up to around EUR 570 per capita in 2008, bringing Canada's transportation spending in line with the average per capita expenditure across European countries. Since beneficial national spillovers from urban infrastructure, including on national competitiveness, justify central government funding in many OECD countries, these transportation investments could have a positive impact on productivity in Canada. That said, it is still too early to understand their impact on productivity and competitiveness, since many of the projects are not yet completed. It will thus be important to evaluate their impact over time against regional and national competitiveness outcomes to assess the need for greater and more varied types of investment in this area.

...but the need for predictable sources of infrastructure finance remains.

Infrastructure grants are an essential element of funding mechanisms. The federal Gas Tax Fund was made permanent in the federal 2008 budget, and the federal *Building Canada Fund* provides transfers with a commendably long time-line (2007-2014); the Province of Ontario also provides long-term financial support for transit through programmes like the *Dedicated Gas Tax Funds for Public Transportation Programme*, the *Ontario Bus Replacement Programme* and commitments associated with its *Move Ontario 2020* funds. The *Provincial Gas Tax* programme provides 2 cents per litre of provincial gas tax revenues to municipalities as a source of long-term, sustainable funding dedicated to public transit. The federal government could consider providing additional predictability for municipal governments by addressing the need for longer-term transportation infrastructure funding commitments. A mix of budget transfers and project-based contributions supports the goal of enhancing a region's competitive position through addressing its infrastructure needs. The federal government's fiscal stimulus package in its 2009 budget, the Province's *Budget 2009* and *Move Ontario 2020* funds and other recent investment programmes help to address these needs. As these and similar programmes reach maturity and investments start to materialise, it will be important for governments to evaluate whether infrastructure needs are being met, and to what extent they contribute to the competitiveness of the Toronto region and the country as a whole.

(iv) Applying a green lens to existing policies

A variety of green plans and programmes...

There are a number of green plans and programmes, including climate change initiatives, applicable to the Toronto region, such as *Change Is in the Air* (City of Toronto), the *2007-2010 Strategic Plan, Protect and Enhance Our Natural Environment* (Halton Region), *Greening Strategy* (York Region), *Go Green* (Ontario) and the provincial *Green Energy and Green Economy Act*. Through the different plans, the Province of Ontario and the City of Toronto and municipalities in the region have committed themselves to targets for reducing greenhouse gas, building on and surpassing the Kyoto targets. Through the *Green Energy and Green Economy Act 2009*, the Province has committed to facilitating the development of new sources of clean energy, phasing out reliance on coal-fired generation, and meeting ambitious climate change targets. Underlying these initiatives is a range of action plans with policy measures that cover the fields of energy efficiency (renewable energy sources, district and deep-lake cooling), pollution remediation (pesticide bye-laws), green buildings, water conservation, public transit and brownfield development. The pending introduction of a cap and trade system in Ontario will bolster the Province's efforts to reduce GHG emissions. The City of Toronto has made significant progress in the past two years on adaptation policies, and global risk analyses of natural disaster hot spots indicate that the Toronto region might be less vulnerable to natural risks than many other metropolitan regions in the OECD. However, adaptation needs to be given higher attention across the region. The impact that climate change is expected to have on the region include increased fatalities due to heat and air pollution, and damage to infrastructure resulting from extreme weather events.

...could be used to apply a green overlay to the Toronto region's competitiveness agenda.

Public actors in the Toronto region could use their commitment to sustainability as an economic opportunity by applying a green overlay to a region-wide competitiveness agenda. Ontario's *Green Energy and Green Economy Act* provides a useful basis for provincial co-ordination on this, given that it makes use of the strengths of the economic sectors in the Toronto region's various urban nodes. The *Green Economic Development Strategy* of the City of Toronto includes projects such as the *Environmental Research and Commercialisation Initiative* and the "eco-business zone" around the international airport in the *Partners in Project Green* programme. This green economic strategy provides a valuable means of upgrading the Toronto region's economy by developing new green economic sectors and by greening existing sectors, and could be expanded. Such an effort could concentrate on the region's proven economic sectors, such as automobiles, to foster high value-added production using innovative technologies, such as developing alternative energy sources for cars and public transport vehicles (e.g. fuel cells or electric motors). Initiatives such as the City of Toronto's *Mayor's Tower Renewal* project, which links social and environmental sustainability, could be further rolled out, for example by greening affordable housing and expanding skill-development and (re)training programmes focused on green jobs and industries. A sustainable competitiveness agenda could stimulate SMEs with measures intended to encourage the development of alternative technologies and energy sources, so that the use of carbon-based, non-renewable energy can be phased out in industrial production and processes, transportation, and heating and cooling activities.

Implementing a sustainable competitiveness agenda for the Toronto region

Implementation of this agenda would require enhancements in governance.

The formulation and implementation of a region-wide economic development agenda for the Toronto region would require some changes in current governance practices and frameworks. More co-ordination of programme design and implementation, both within a single order of government and vertically between orders of government, is needed to achieve a series of commonly defined policy objectives based on a common understanding of the policy challenges, as well as on a commonly defined agenda. The Toronto region does not have a single unified regional government, and effective co-ordination mechanisms are called for. For example, the Greater Toronto Area consists of several local governments: the City of Toronto, 24 lower-tier municipalities and four upper-tier “Regional Municipalities” (which cover the same geographical area as the 24 lower-tier municipalities). Because responsibility for economic development, immigrant settlement and integration, infrastructure and environment is shared across levels of government, co-ordination is necessary both between local governments in the region and between local governments and the provincial and federal governments. After a period of sometimes strained relations between the Province of Ontario and the City of Toronto in the mid-1990s, intergovernmental relations have now become more functional. The City of Toronto and other local governments have concluded policy agreements with the Province and federal government, the Province has intensified its co-ordination mechanisms in transit and land use for the region, and a considerable number of the unfunded mandates of municipalities will be rolled back over the coming years. Three main governance challenges remain unresolved. They include:

1. inadequate local fiscal architecture and lack of predictable, adequate government funding to finance infrastructure and to promote more sustainable urban development;
2. the lack of specific co-ordination mechanisms for economic development and environmental policies within the Toronto region; and
3. the lack of inter-sectoral bodies or mechanisms that could ensure the integrated and cross-sectoral approach needed to formulate and implement a robust, region-wide sustainable competitiveness agenda.

(i) Developing an efficient and environmentally friendly fiscal architecture

Fiscal disincentives for compact development...

Existing urban finance mechanisms do not stimulate compact urban development throughout the region. Lower land and development costs favour suburban development, and in most cases, developers have more incentive to engage in greenfield development than in brownfield development. Although the cost of sprawl can to some extent be mitigated using development fees, these fees do not currently offset the full costs of sprawl and are typically calculated as municipality-wide average charges rather than location-specific charges. While the City of Toronto has recently implemented a modest Personal Vehicle Tax on car ownership by its residents, it does not apply outside the City; other vehicle-related charges common in other OECD metropolitan regions, such as charges on road use and parking taxes, are not applied.

...and dependence on property taxes...

Local governments in the Toronto region are highly dependent on property taxes, and would benefit from access to revenue sources whose growth potential is tied to the economy. Local governments have the responsibility for a large variety of programmes, but little influence over additional revenue sources. In 2008, the property tax brought in about 41% of the total revenues of the City of Toronto and 56% of those of the regional municipalities in the Greater Toronto Area, a very high percentage among sub-national governments in OECD countries. Property taxes are in general stable, local and highly reliable revenue sources, but they are only indirectly affected by the economic growth that results from municipal infrastructure spending through increased residential, commercial and industrial development. In order to finance infrastructure, local governments in the Toronto region could benefit from additional access to a wider variety of revenue sources. The experience of other OECD metropolitan centres indicates that a broad mix of revenue sources is needed to support adequate investment in infrastructure. These might include an increased share of the local property tax base or fuel tax base, road pricing revenues, or a share of income or sales tax revenues, in addition to the current shares of federal and provincial gas tax revenues.

...require re-design of the municipal fiscal architecture...

To stimulate compact development, changes in the Toronto region's fiscal architecture are needed. Several elements in the current fiscal design could be better aligned to land use goals. Municipalities could more widely implement neighbourhood-specific rather than municipal-wide development charges and exempt high-density projects from such charges. The Province of Ontario could consider amending the *Development Charges Act* to broaden the categories of costs that can be covered and loosen regulations on cost estimations based on historical trends. Redesign of the property tax could be considered in order to further stimulate compact development.

...including harmonisation of property tax rates for business...

Higher property tax rates on businesses in the City of Toronto may be a factor in the disproportionate levels of business development outside the City boundaries, which in turn may contribute to sprawl. To remove this incentive, property tax ratios for businesses (vs. residential rates) in the City of Toronto are being reduced to levels more in line with those in surrounding suburban regions. This arrangement will be fully implemented for smaller businesses by 2013, and will be complete for the rest of the business community by 2017. Provincially set business education property tax rates in the City of Toronto are higher than in the surrounding municipalities. The Province of Ontario has implemented a business education tax (BET) reduction plan, which will reduce high BET rates, such as those in the City of Toronto, to a maximum of 1.52% by 2014. In addition, all eligible new construction will immediately be subject to the 1.52% maximum rate. These measures will equalise provincial education tax rates for manufacturing enterprises across the GTA and reduce (although not entirely eliminate) differences in commercial (office, distribution and retail) property tax rates, thereby helping to stimulate new investment and establish a level playing field for businesses that are deciding where to relocate. Both the City and the Province could consider accelerating the harmonisation of property tax rates as well

as the reduction of property tax rates on businesses. Provincial tax reforms, announced in 2009, which include reduction of marginal tax rates on investment and harmonisation of the provincial sales tax with the federal General Sales Tax (GST), will make the Toronto region more attractive to business.

...and resolution of a provincial-municipal fiscal imbalance.

Since 2008, several initiatives have been undertaken to lessen the fiscal imbalance between the Province of Ontario and its municipalities, but further steps could be implemented. In the 1990s, federal reductions in intergovernmental transfers led to provincial cutbacks in certain services and transfers known as “down-loading”, which confronted municipal governments with costs for various social services. The process of down-loading has been partly reversed through the *Provincial Municipal Fiscal and Service Delivery Review*, providing greater flexibility for municipalities to address other priorities, but due to long transition periods and the worsened economic conditions, the effects of fiscal imbalance will continue to have an impact on the budget of municipalities in the Toronto region until at least 2018. These social services expenses could crowd out expenditures needed for improvements in infrastructure, limiting beneficial provincial and national spillovers. A quicker up-loading of social service costs might thus be considered. In order to avoid down-loading practices in the future, clear institutional rules could be agreed upon and enshrined in the *Municipal Act* and *City of Toronto Act*. The Province of Ontario has proposed to convert the provincial Retail Sales Tax (RST) by July 2010 into a federally administered single sales tax using a value-added tax structure. The current RST applies to many purchases made by businesses in the course of providing goods and services for sale. As a result, a “hidden RST” is embedded in the price of goods and services and passed on to consumers. The proposed harmonised sales tax would use a value-added tax structure, meaning that most businesses would be reimbursed for the tax they pay on most of their inputs. The experience of other Canadian provinces that have undertaken sales tax harmonisation has been that the majority of the savings are passed through to consumers in the first year. Exported goods would also generally be free of an embedded sales tax, making Ontario exports more competitive.

(ii) Extending co-ordination mechanisms at the regional scale

Co-ordination mechanisms for transit and land use are in place...

The Province, commendably, has strengthened regional co-ordination for public transportation and land use. Metrolinx, the regional transport agency created by the Province, has developed an integrated multi-modal transportation plan and is responsible for co-ordinating the more cost-efficient procurement of transit buses, and related equipment and services, for all Ontario municipalities wishing to participate. Regional co-ordination of regional transport has gone hand-in-hand with increased co-ordination of land use, through the provincial *Growth Plan for the Greater Golden Horseshoe* (2006). Metrolinx is required to conform to the *Growth Plan for the Greater Golden Horseshoe* in the implementation of its *Regional Transportation Plan* (RTP). To further co-ordinate transportation and land use planning, Ontario’s *Metrolinx Act, 2006*, allows the Ontario Minister of Transportation to issue *Transportation Planning Policy Statements* (TPPS) that

conform to the above-mentioned Growth Plan and conform with the RTP. The Act also requires single and upper-tier municipalities in the Greater Toronto and Hamilton Area, and any designated municipalities, to develop *Transportation Master Plans* consistent with the TPPS. To encourage a high public transit share of trips taken, it is critical that concentrations of employment and other population centres be located to the fullest extent possible in locations well served by both local and regional transit.

...but could be further developed for economic development, social integration and environmental sustainability.

Regional co-ordination could be strengthened with regards to economic development, social integration and environmental sustainability. Several challenges are associated with the lack of co-ordination: competition for investment among local governments within the region, lack of an economic strategy for the whole region, fewer housing opportunities and integration services for immigrants in several suburban municipalities, and environmental challenges that cross jurisdictional boundaries. The increased regional co-ordination in public transit and land use planning by the Province of Ontario since the mid-2000s could be further extended towards economic policies such as cluster development, so that agglomeration can yield more benefits. Co-ordination of social integration policies might have to be intensified between municipalities in the Toronto region. Whereas the City of Toronto has invested in affordable housing that serves newcomers, this has not always been the case with other local governments in the region. A co-ordination and funding mechanism with regards to immigration issues has been created with the Canada-Ontario Immigration Agreement (COIA), signed in 2005 by the federal and provincial governments. The agreement commits the federal government to spend an additional CAD 920 million, over five years, on settlement and integration programmes for immigrants in the Province. The COIA is unique in that municipalities are provided a role in discussing immigration issues, with a specific sub-agreement between the federal and provincial governments and the City of Toronto. With regards to environmental sustainability, a regional sustainability agenda, rather than a collection of plans by separate local governments in the region, could increase policy coherence and generate economies of scale. In this respect, the provincial government could lead the development of a regional approach through its provincial climate change secretariat or another provincial organisation.

(iii) Creating cross-sectoral regional co-ordination

Inter-sectoral co-ordination could be taken up by the Province...

The Province could consider facilitating greater inter-sectoral co-ordination within the region. This could bring benefits, as the location of economic activity near public transit networks could increase public transit ridership, and accessibility could foster the formation of clusters. The amalgamation process of the 1990s in Ontario has left little appetite for local government mergers. Although new institutional organisations have been proposed for the Toronto region, their creation would entail many practical difficulties. Inter-sectoral policy alignment is more likely to be achieved when existing institutions find new ways to work effectively together. The Province of Ontario, for example, might build and expand on its

initiatives, such as the *Growth Plan* and the *Regional Transportation Plan* of Metrolinx, to co-ordinate land use and transport and to link actors and policies in the areas of economic development and sustainability with those of transport and land use. Such co-ordination would be likely to entail cross-departmental arrangements within the provincial administration, co-ordination among provincial ministries to support economic development and incentive mechanisms to stimulate co-operation between local governments. Existing networks of municipalities and non-governmental stakeholders could be strengthened and built on. These arrangements could be developed as part of a provincial urban policy agenda, which would start with the Toronto region and could be extended to cover other urban centres within Ontario. As part of such a policy, clear, measurable targets could be set, which would provide extended datasets and indicators that could be useful in assessing progress in the implementation of a sustainable competitiveness agenda for the Toronto region.

...and supported by the federal government via the Federal Economic Development Agency for Southern Ontario...

Although municipal affairs fall under the authority of the provinces in Canada, the federal government can play a key role in fostering a sustainable competitiveness agenda for the country's largest urban centre. In August 2009, the Prime Minister of Canada announced the establishment of the Federal Economic Development Agency for Southern Ontario, as promised in the Government of Canada's 2009 Budget. This agency could provide a valuable platform for reaching such an objective. Southern Ontario was, until the Prime Minister's announcement, the only region in Canada without a regional development agency (Canada's far Northern Territories have benefited for decades from the Northern Development programme in the federal department of Indian and Northern Affairs and, as of August 2009, benefit from a new federal regional development agency of their own). This region now has an institutional tool with a mandate to address, among other things, the economic challenges facing small and medium-sized enterprises, workers, and families in the region. The new agency could develop and help finance an approach to cluster development that builds on the specific attributes and strengths of the Toronto region and then tailor its new programming accordingly, much as Canada Economic Development-Québec, the federal regional economic development agency in Québec, has done for the metropolitan region of Montréal. Just as CED-Q develops and implements differentiated agendas for the Montréal region and for the other regions in Québec, so too can the Ontario regional development agency develop differentiated strategies that build on the specific strengths and assets of each region in Southern Ontario, including the Toronto region. In the Toronto region, special attention could be devoted to those SME activities that focus on developing and commercialising new, innovative and more-efficient technologies (including non-carbon-based renewable energy sources for both industrial processes and for transportation, heating and cooling) in the key industrial sectors, including the auto sector, transportation, information and communications technologies, media content, biotechnologies, and biopharmaceuticals.

...federal investment programmes...

The federal government also has a wide range of infrastructure programmes, some managed in partnership with provincial governments, as well as specific agreements aimed at supporting green municipal projects. Two examples are the federal government's *Green Municipal Fund*, managed on its behalf by the Federation of Canadian Municipalities, or

its *Green Infrastructure Fund*, announced in Budget 2009 as part of the federal Economic Action Plan, aimed at large-scale green infrastructure projects. These infrastructure programmes potentially represent key strategic investments for the Toronto region, given the national spillover effects from investment in urban infrastructure across the OECD and the relative importance of the Toronto region to Canada's competitive position. Indeed, in addition to its responsibility to support the region's SMEs to become more innovative and efficient and expand their export capacity, the Federal Economic Development Agency for Southern Ontario is also likely to be charged with managing the federal government's Building Canada infrastructure investment envelope for the region. (The other federal regional development agencies already manage the regional share of key federal infrastructure investments in their respective regions). The new agency would therefore be in a good position to partner with the Province and municipalities in the Toronto region to develop and implement a coherent tri-partite sustainable competitiveness agenda. This would identify commonly defined policy goals and co-ordinate programme design and investments both for infrastructure and for SME innovation and expansion among the three orders of government. While less comprehensive than what is being suggested here, such contractual arrangements as those that have been implemented in Vancouver, Edmonton, Winnipeg and, more recently Regina, can present useful precedents. They offer examples of the kind of arrangements most conducive to the successful pursuit of a commonly defined sustainable competitiveness agenda.

...and in partnership with other actors.

Such multi-sectoral vertical governance arrangements make institutional collaboration possible through a negotiated planning process among different levels of governments, which can improve efficiency in programme planning and delivery. They also provide for the occasional participation of other related government and non-governmental actors who can help to implement this sustainable competitiveness agenda. For instance, given the demographic challenges in the region, the need to map available skills to jobs and match training capacity to the needs of SMEs is crucial. Ongoing co-ordination is needed between those charged with developing and implementing a sustainable, innovation-driven competitiveness agenda and those involved in education and training potential workers, including foreign students. Recognising foreign credentials and offering mentoring and apprenticeship opportunities are critical if SMEs in the region are to make the most of the region's labour force, including immigrants. This could maximise innovation capacity and commercialise products and services at home and in international markets. These contractual arrangements can also allow for a structured round of negotiations to define clear objectives; for a precise timetable and robust instruments for monitoring and assessing results; and for reporting to the public on progress in achieving the agenda's policy outcomes. Part of such an engagement could be an expansion of datasets, which would have to include such key economic indicators as GDP and export data at the metropolitan level.

Chapter 1

Toronto: facing challenges, grasping opportunities

Over recent decades, the Toronto region has experienced one of the highest rates of population growth among OECD metropolitan regions, making it one of the economic engines of Canada. With more than 5 million inhabitants, the region generates almost a fifth of the GDP of Canada as a whole, and concentrates 40% of the nation's business headquarters. This accelerated expansion has not come at the expense of quality of life: Toronto retains its reputation as a good place in which to live. With the implementation of the Canada-US Free Trade agreement in 1989, and thanks to its strategic geographical location only a 24-hour drive from 40% of the US population, Toronto firms have successfully penetrated US markets, boosting its exports and integrating into the North American automobile production system. Toronto's diversified regional economy, which includes a number of globally competitive clusters in finance, automobile and life sciences, as well as other prosperous and dynamic sectors in entertainment and communication technologies, has benefitted from a well-educated workforce constantly refreshed by new immigrants. While the government of Canada has set in place a pro-active immigration policy, it is the Toronto region that welcomed 40.4% of the immigrants who arrived in the country from 2001-2006. Unlike immigrants in many other large cities in the world, most newcomers to the Toronto region are highly skilled.

There are nevertheless emerging challenges to Toronto's successful regional economic development model. While it was once a leader in North America in terms of job creation, the recent decline in its manufacturing jobs has highlighted the structural difficulties of some of its traditional industries. Its automobile and electronics industries now face competition from lower-cost labour markets in China, India and Mexico, exacerbated by the relative strength of the Canadian dollar. These pressures are likely to intensify as producers in lower-cost countries try to move up the value chain. Meanwhile, its dependence on knowledge-based industries makes the Toronto region vulnerable to competition from other metropolitan regions, including from within Canada.

Toronto's modest regional economic performance in recent years was partly sustained by a boom in the housing sector and by historically low interest rates. Boosted by population growth, the construction, retail and logistics sectors have expanded. This activity has helped the Toronto region to absorb many of its newcomers in the labour market, even while maintaining high labour participation rates. Yet productivity in many sectors has lagged, and the rate of innovation has remained relatively mixed in international comparisons, as will be dealt with in sections below.

Given these challenges, the Toronto region is now at a crossroads. Whether productivity can be increased will depend on whether the region can sustain its specialisation in high-value-added industries by boosting innovation. The Toronto region has a number of important advantages, including its culturally diverse and skilled labour force, but these

need to be better leveraged to create innovative firms and industries. Toronto's productivity is also constrained by the region's infrastructure, which has suffered from decades of under-investment and has not kept pace with the region's rapid population growth. An increasing number of residents and businesses are now concentrated in Toronto's suburban communities, leading to sprawl and congestion that hinder productivity, generate pollution and raise the cost of delivering public transit and other services. This chapter focuses on the main socio-economic trends in the Toronto region from an international comparative perspective, and analyses the three main challenges associated with its economy, namely: lagging productivity, untapped cultural diversity and unsustainable and inadequate infrastructure. Policy responses and governance frameworks to implement these policies are discussed in Chapters 2 and 3.

1.1. Main demographic, social and economic trends

1.1.1. A growing and sprawling region

The Toronto region is home to a large share of the population of Canada, a country notable for its strong concentration of population in urban areas. Canada's land surface is one of the largest in the world, but its population, at 31.6 million in the 2006 Census, is relatively small.¹ As a consequence, it is not densely populated, although its population is geographically concentrated: 61% of its population lives in 10% of its area, a relatively high percentage by comparison with other OECD countries. Only Australia and Iceland have higher rates of geographical concentration (OECD, 2007). A very high proportion, 53% in 2003, using OECD typology,² lives in its urban regions, which is considerably higher than the OECD average of 46%. Using the typology adopted by Statistics Canada, an even higher figure, 80% of the population, is classified as living in urban areas in 2006. This trend has been reinforced by the fact that recent immigration to Canada has principally been an urban phenomenon: of the immigrants who arrived in Canada between 2001 and 2006, 97% live in an urban area, compared with 78% of the Canadian-born population. Within this urban context, and depending on the definition, Toronto's regional population can be estimated from 5.1 million to 5.5 million, that is, between 16.2% and 17.6% of the total population and between 42% and 45.7% of the population of the province of Ontario (Table 1.1). The Toronto region is the largest urban centre in the country, with almost 50% more inhabitants than Montréal and 2.5 times more than Vancouver, Canada's two other major urban centres.

Table 1.1. Definitions of Toronto (2006)

	Population	Share of national population	Share of provincial population
City of Toronto	2 503 281	7.9%	20.6%
Toronto Region	5 113 149	16.2%	42.0%
Greater Toronto Area (GTA)	5 555 912	17.6%	45.7%
Greater Golden Horseshoe	8 102 163	25.6%	66.6%

Note: These population figures are from 2006 Census data. The Census under-count was approximately 5% in 2001 and was estimated to be at least as high in 2006.

Source: Statistics Canada, Census of Population (2006).

In this report, several units of analysis are used to define Toronto (Table 1.1):

- **The City of Toronto**, with 2.5 million inhabitants in 2006, was created through the amalgamation of six local municipalities and one metropolitan level government in 1998.
- **The Toronto region** included 5.1 million inhabitants in 2006, following the OECD methodology³ for defining metro-regions and taking into account available longitudinal datasets. This definition corresponds to the Census Metropolitan Area (CMA) defined by Statistics Canada. This definition includes the municipalities that have a high degree of functional integration with the City of Toronto as measured by commuting flows. It comprises the City of Toronto and extends into four surrounding regional municipalities, including 24 lower-tier municipalities, 23 of which are located within the Toronto CMA boundaries. These municipalities include several large outer-urban centres, such as the cities of Mississauga, Brampton and Vaughan and the Town of Markham.⁴ The term “Toronto” in this Review refers to the Toronto region, corresponding to the Toronto Census Metropolitan Area, unless indicated otherwise.⁵ This terminology should not be confused with the Municipality of Metropolitan (“Metro”) Toronto, the upper-tier municipal government, which existed from 1954 to 1997 and covered the same territory as the current City of Toronto. The Toronto Region Research Alliance has collected data for an area which it describes as Toronto Region, but which uses a different definition and which includes around 7 million inhabitants. When this definition is used in the sections below, it is indicated as “Toronto (TRRA definition)”.
- **The Greater Toronto Area (GTA)**, with 5.5 million inhabitants, is based on political boundaries that include the City of Toronto and four adjacent regional municipalities, Halton, Peel, York and Durham.⁶

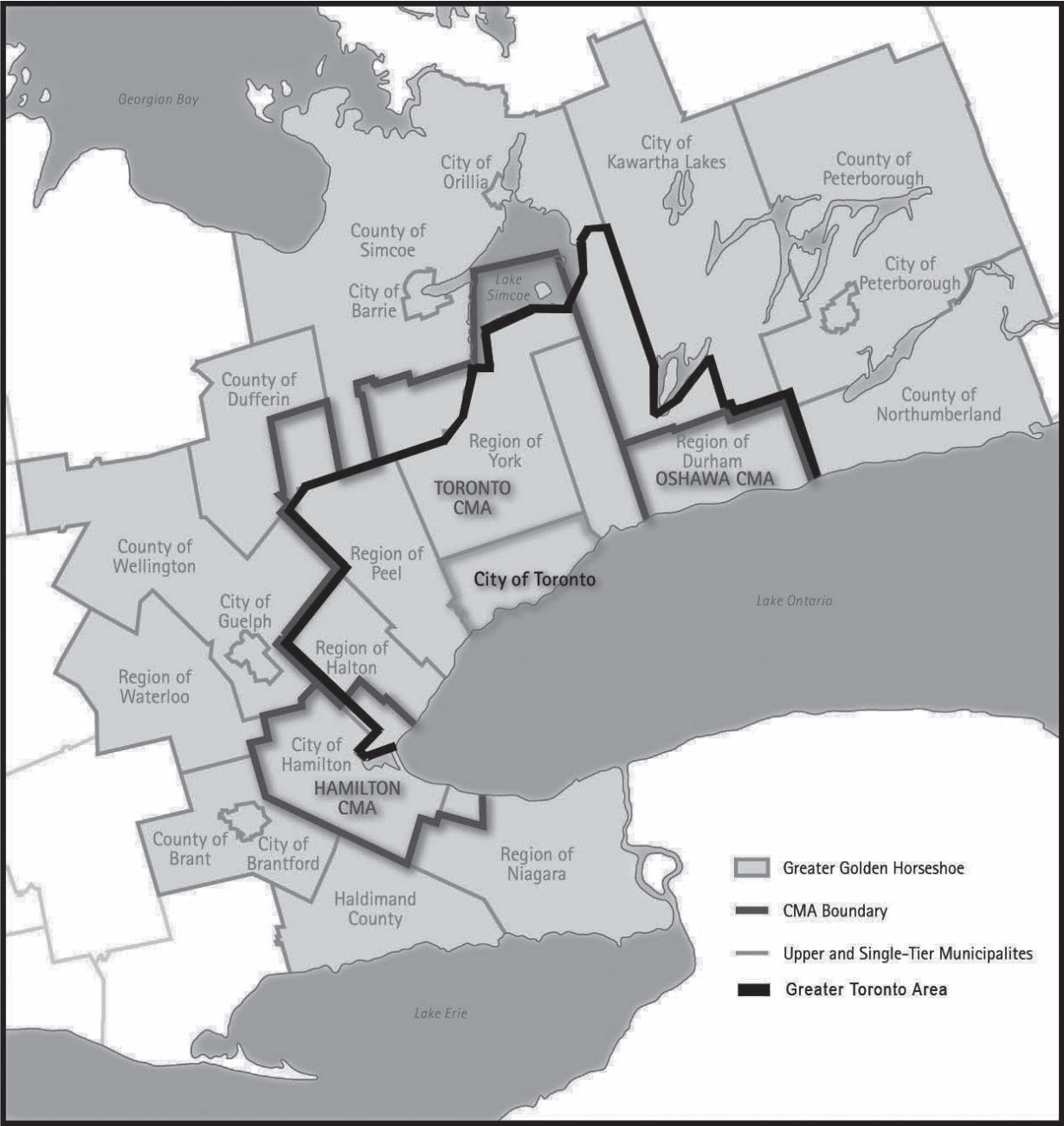
An even more extended area relevant to Toronto is the *Greater Golden Horseshoe*. This area, with 8.1 million inhabitants in 2006, covers the territory from Niagara Falls to the east of Toronto and north as far as Georgian Bay, including Kitchener-Waterloo, Barrie and Peterborough. The Golden Horseshoe has been used as a geographical distinction since the 1950s, but was first used in policy documents in the 2004 *Growth Plan for the Greater Golden Horseshoe: Discussion Paper* of the province of Ontario, because it presents a connected area of industrial activity (Figure 1.1). Its population represented 25.6% of the national population and 66.6% of the provincial population in 2006.

Between 1990 and 2005, the Toronto region’s population grew by more than 2% per year, one of the fastest growth rates among OECD metropolitan regions (Figure 1.2). Only Auckland, Dublin, Vancouver, Turkey’s major cities, and a few US metropolitan regions grew faster during this period. Most of this growth was experienced in the Toronto region as a whole, rather than in the City of Toronto itself, where population is growing less rapidly. The greatest part of this population growth is the result of immigration, for which the Toronto region is the main hub in Canada. From 2001 to 2006, the regions of Toronto, Montréal and Vancouver attracted a total of 68.9% of new immigrants to the country; the Toronto region’s share of the total number of recent immigrants was about 40.4% over the same period.⁷ Within the North American context, the Toronto region and Vancouver have the highest percentage of foreign-born inhabitants. They thus reap the benefits of a youthful population, of whom in the Toronto region approximately 70% are of working age (15-64 years). Within the OECD, this figure is exceeded only by Seoul, Busan, Prague, Vancouver, Dublin, Madrid, Warsaw, Ankara and Seattle. As a result, the Toronto region has one of the lowest elderly dependency rates among OECD metropolitan regions.

Approximately 15.8% of its population is older than 65 years old. Among metropolitan regions with similar income levels, only Dublin, Auckland, Dallas, Houston, Atlanta and Washington DC have lower elderly dependency ratios than the Toronto region.⁸

Population growth has been accompanied by urban sprawl. The Toronto region has a moderately high population density by North American standards, but is less dense than many Asian metropolitan regions, such as Tokyo and Seoul, and than several European metropolitan regions, such as London, Paris, Madrid and Rome.⁹ Municipalities within the

Figure 1.1. Map of Greater Toronto Area and Greater Golden Horseshoe

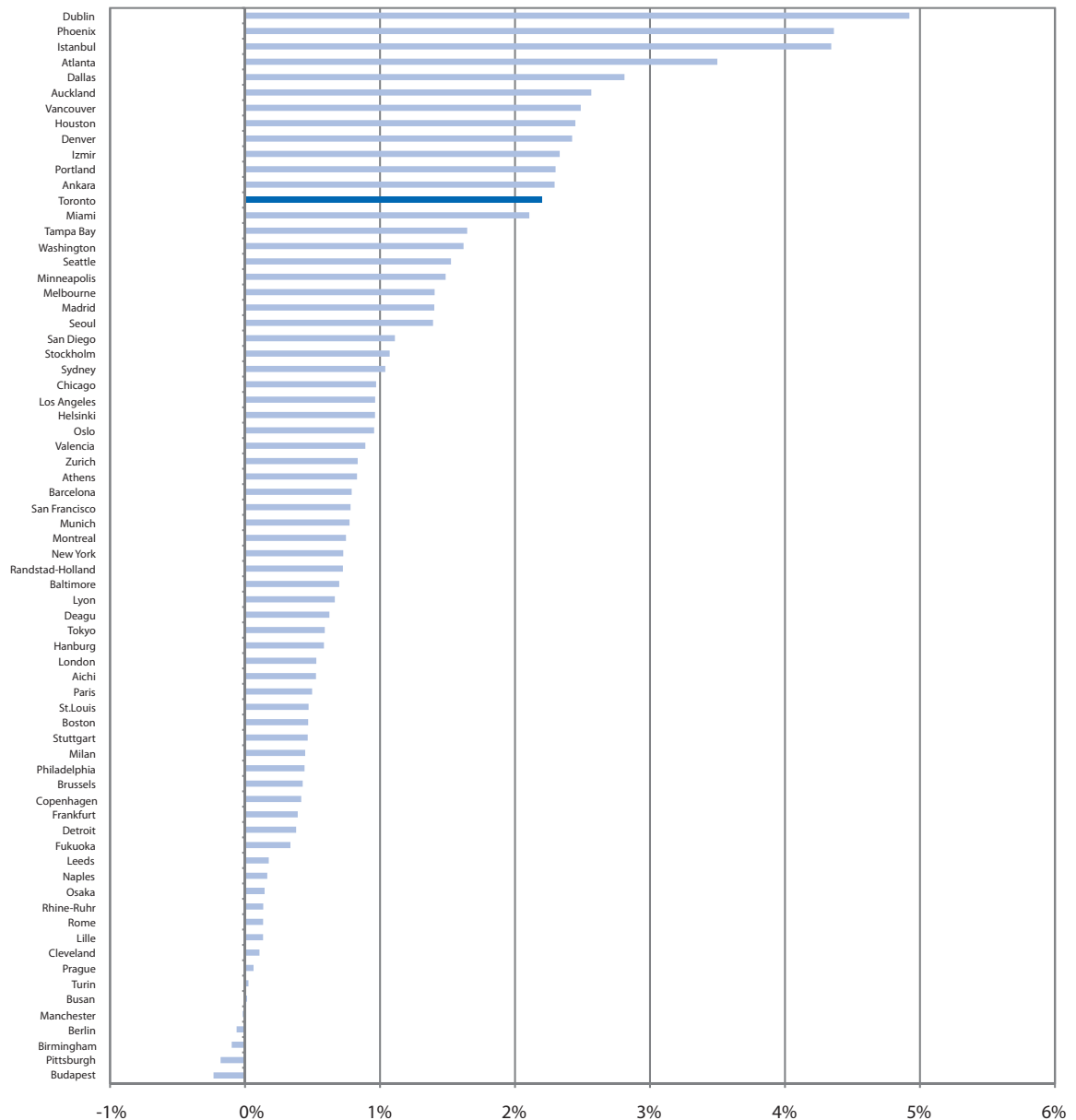


Source: Map provided by the City of Toronto.

Toronto region with the highest population density in 2001 were main economic nodes, such as the City of Toronto (with 42.7 people per hectare in the existing built-up area), Mississauga (23.9) and Markham (21.1) (Hess *et al.*, 2007). Employment and offices have increasingly become decentralised in various new urban nodes surrounding downtown Toronto. This sprawling development has brought congestion, resulting in economic and productivity losses as well as environmental and social costs and higher pressure on infrastructure development and the delivery of public services.

Steady immigration flows to the Toronto region have lent it a unique and distinctive feature: its unparalleled cultural and ethnic diversity. Of all OECD metropolitan regions, the

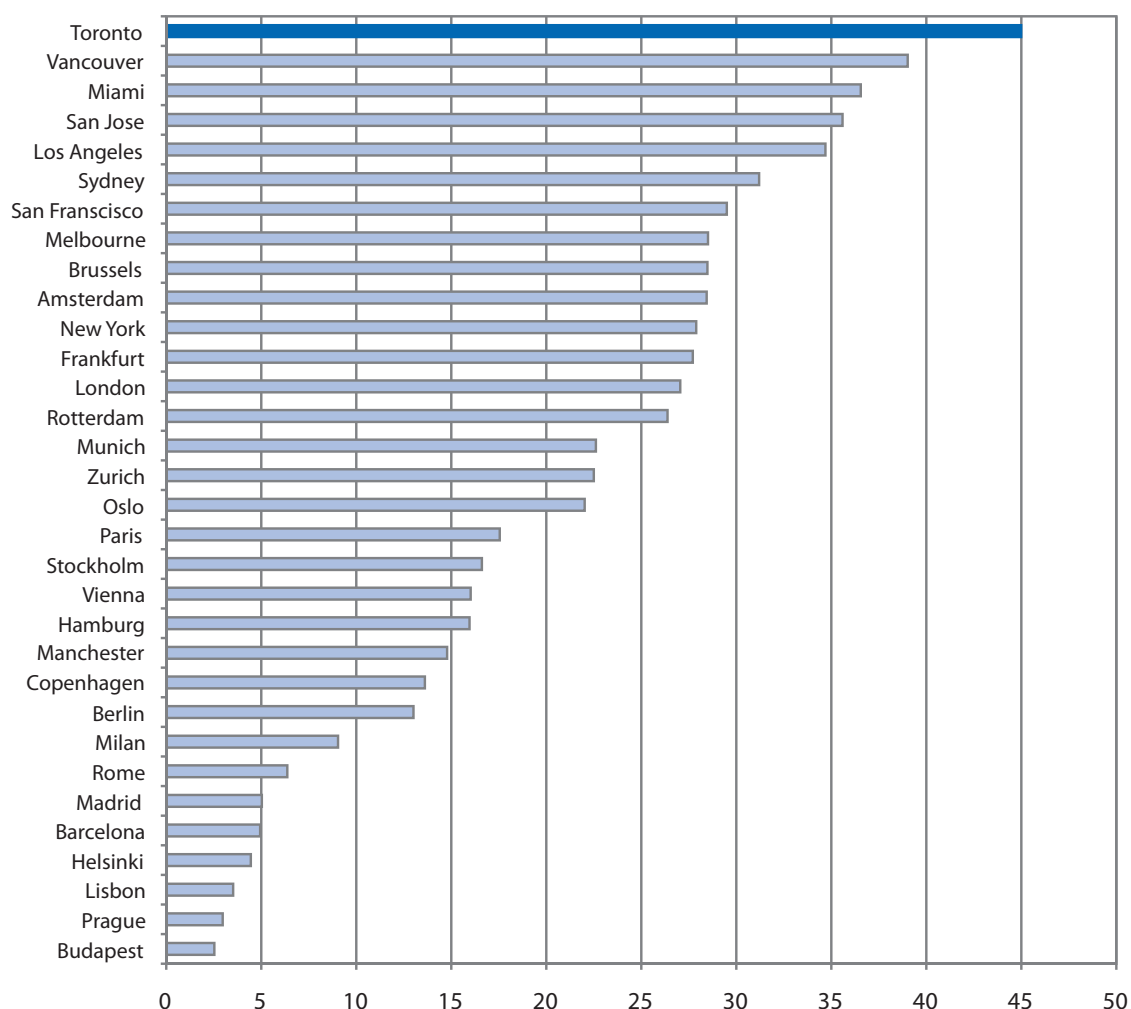
Figure 1.2. Average annual population growth in OECD metropolitan regions (1990-2005)



Source: OECD Metropolitan Database.

Toronto region has the largest proportion of foreign-born residents (46%) as a share of total population, which could be considered a close albeit imperfect proxy of cultural diversity (Figure 1.3).¹⁰ This is considerably more than other so-called global cities that are often considered the world's main multicultural cities, such as New York (28% foreign-born) and London (27%). The Toronto region also has an unusually diverse composition of different ethnicities: the four largest foreign-born population groups constitute only 15% of the total foreign-born population. By comparison, the four largest foreign-born population groups in London and New York make up 25% of their respective foreign-born populations (based on data from www.gstudynet.org). In other metropolitan regions in the OECD known for the size of their foreign-born population, this percentage can be 60% (Marseille) or even

Figure 1.3. Share of foreign-born population in metropolitan regions in the OECD



Source: Data from GW Centre for the Study of Globalization (www.gstudynet.org).

Note: Data refer to Metropolitan Statistical Areas for US cities, Census Metropolitan Areas for Canadian cities and to municipal boundaries for the other cities. Data are from 1998 (Brussels), 1999 (Paris), 2000 (Helsinki, Rome, Milan, Zurich), 2001 (Budapest, Prague, Manchester, Vienna, Stockholm, London, Frankfurt, Melbourne, Sydney), 2002 (Lisbon, Barcelona, Madrid, Hamburg), 2003 (Berlin, Munich), 2004 (Oslo), 2005 (Rotterdam, New York, Amsterdam, Los Angeles, San Jose, Miami) and 2006 (Copenhagen, Montréal, Vancouver, Toronto). The share of foreign-born population given for Toronto refers to the rate of immigrant population in the Toronto CMA.

70% (Birmingham). The six largest groups of foreign descent come from three different continents (excluding North America).

Immigration trends display several characteristics:

- The increase in the share of non-Western immigrants in Toronto's regional population has brought new challenges for integration. Before 1961, more than 90% of immigrants were of European origin, and less than 5% came from Asia. Since then, while the share of Europeans has been steadily falling, the share of newcomers arriving from countries in Asia has been increasing. From 1991 to 2006, roughly 15% of immigrants came from Europe and more than 65% from Asia. To a lesser extent, other regions of origin have also become more prevalent, with Central and South America and the Caribbean as well as Africa each at around 5%. The top five source countries from 2001-2006 were China, India, the Philippines, Pakistan and Sri Lanka. Leaving English aside, Chinese languages are now the most frequently spoken in the Toronto region, followed by Punjabi. Among recent newcomers to the City of Toronto, about 1 out of 10 report that they speak neither English nor French (Statistics Canada, 2006 Population Census). These new characteristics imply increasing challenges for public and private authorities within the field of labour market integration of immigrants.
- The Toronto region is the main gateway into Canada for immigrants, in which almost half of all immigrants to Canada settle. This sustained population increase has important implications for housing, land use and accessibility. Toronto's status as an immigrant city cannot be taken for granted. Skilled immigrants are internationally mobile and, as such, are more likely to pursue better economic opportunities elsewhere if their expectations are not met in Canada. Much of the internal migration of recent immigrants from the Toronto region remains within Southern Ontario. While the Toronto region may lose some new arrivals within one year of their arrival, they tend to settle in neighbouring CMAs, such as Hamilton, Oshawa and Kitchener-Waterloo (Newbold, 2007). The impact of population increases due to immigration in Canada is principally experienced in the Toronto region. Land use planning to accommodate population and demand for public services and infrastructure in the Toronto region are directly influenced by the settlement patterns of immigrants.
- Immigrants are not exclusively concentrated in the City of Toronto, but are spread across the different urban nodes within the Greater Golden Horseshoe, with consequences for region-wide alignment of policies and services for immigrants. Several urban nodes, such as Ajax, Pickering, Mississauga and Oakville, have immigrant arrival rates similar to and in some cases higher than those for the City of Toronto (Newbold and DeLuca, 2007). This multi-nodal structure of immigrant settlement means that services provided to immigrants in these nodes must be responsive to local circumstances, but at the same time aligned with the policies of other actors in the region.

As will be discussed later, although immigrants are quite well integrated into the labour market and society, their potential for contributing to the Toronto region's economy remains under-utilised.

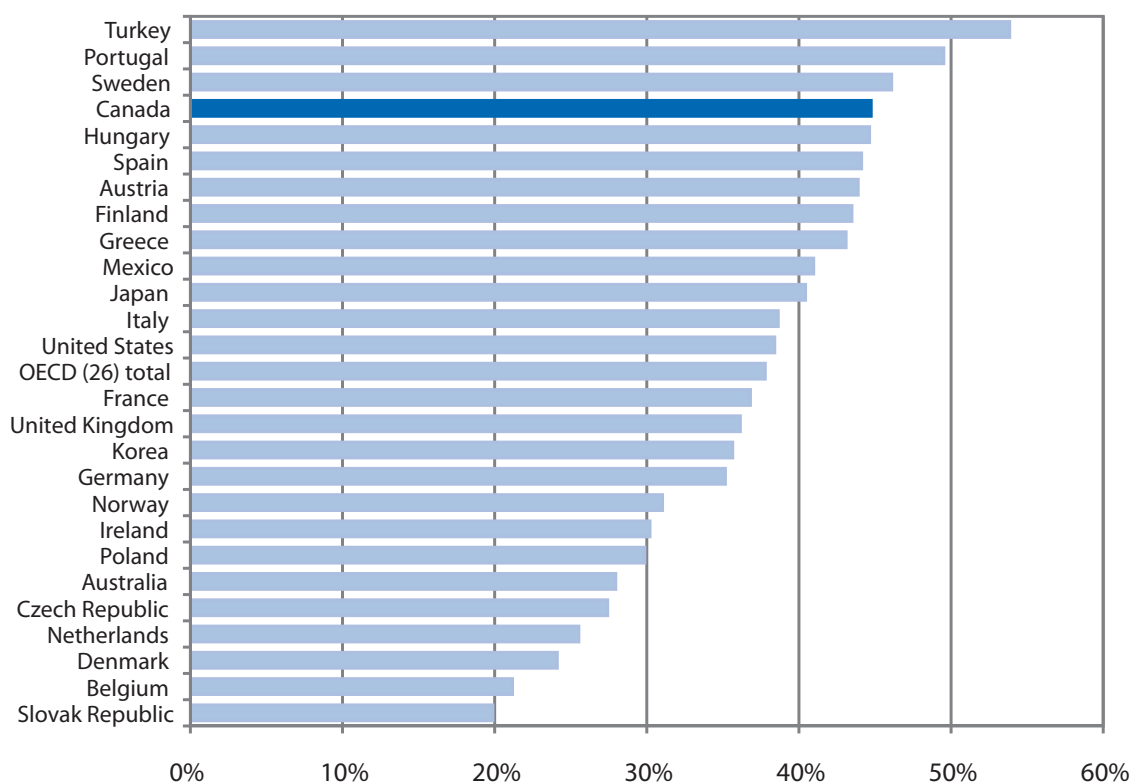
1.1.2. Mixed economic performance

The Toronto region is the main economic agglomeration in one of the most economically concentrated countries in the OECD. Canada concentrates almost half of its production in only 10% of its regions, a proportion exceeded only by Turkey, Portugal and Sweden (Figure 1.4). Almost one out of every five dollars in Canada originates in Toronto region, and nearly half of Ontario's production is located in the CMA. A number of metropolitan regions in smaller countries tend to produce a larger share of national GDP, but in many of those cases, Randstad in the Netherlands, Copenhagen, or Athens, for example, they represent the sole metropolitan region in their country (Figure 1.5).

Toronto's regional economy creates positive economic spillovers for the wider Ontario economy. Although there is not an abundance of evidence concerning the importance of the role of Toronto or the main urban centres in Canada to the national economy, some indications can be drawn from the existing studies. Lefebvre and Brender (2006) found that economic growth in the nine largest Canadian metropolitan regions generated an even faster rate of economic growth in other communities within their province or region over 1987-2004, leading to intra-provincial economic convergence, but not to convergence of the main metropolitan regions themselves. One of the mechanisms through which these spillovers operate is via the labour market. Commuting patterns link the Toronto region, an area covering 16% of the population, with 21 additional CMA and Census Agglomerations

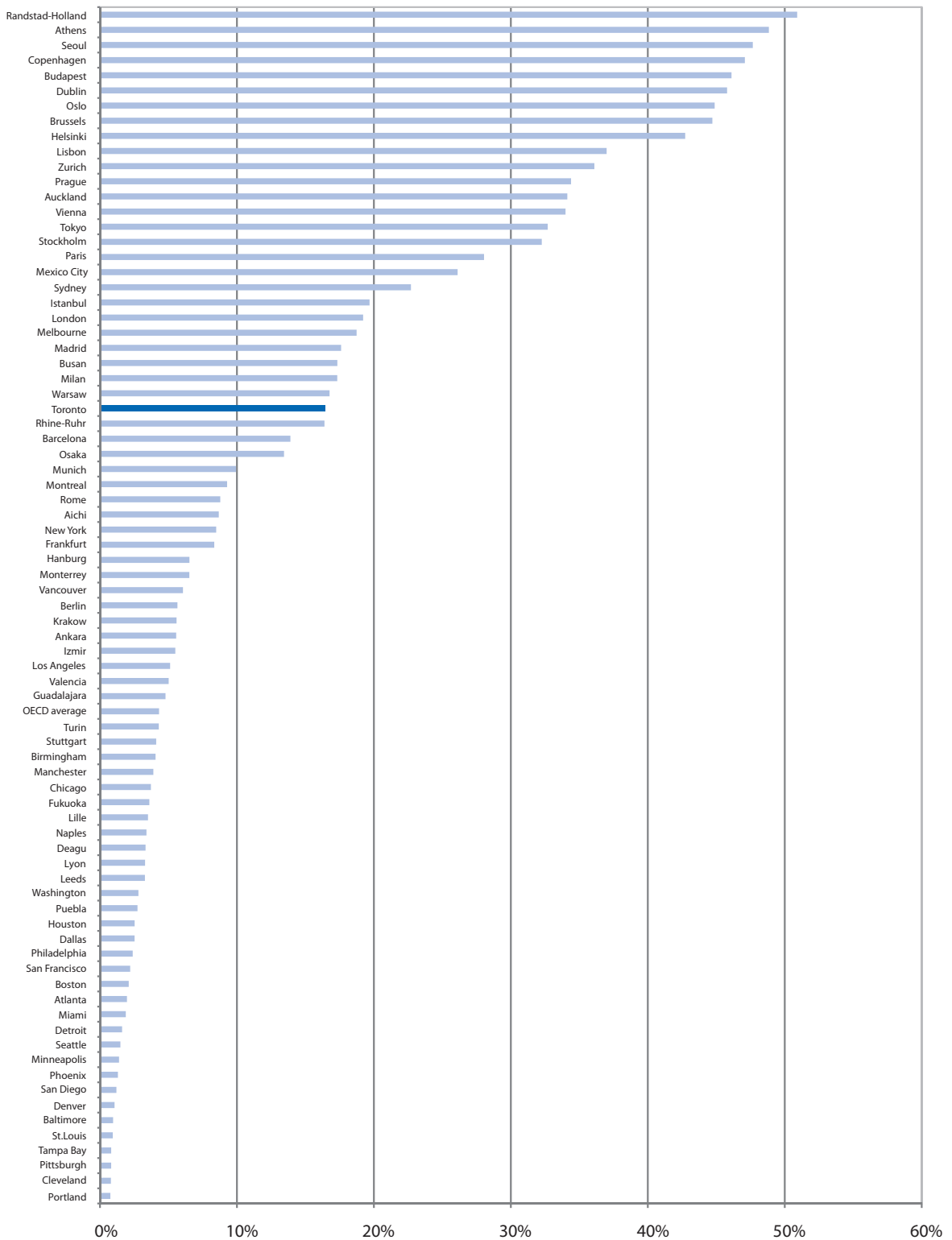
Figure 1.4. **Economic concentration in OECD countries**

Proportion of national GDP concentrated in 10% of the regions



Source: OECD (2007a).

Figure 1.5. Metropolitan GDP as share of national economy (2007)



Source: OECD Metropolitan Database.

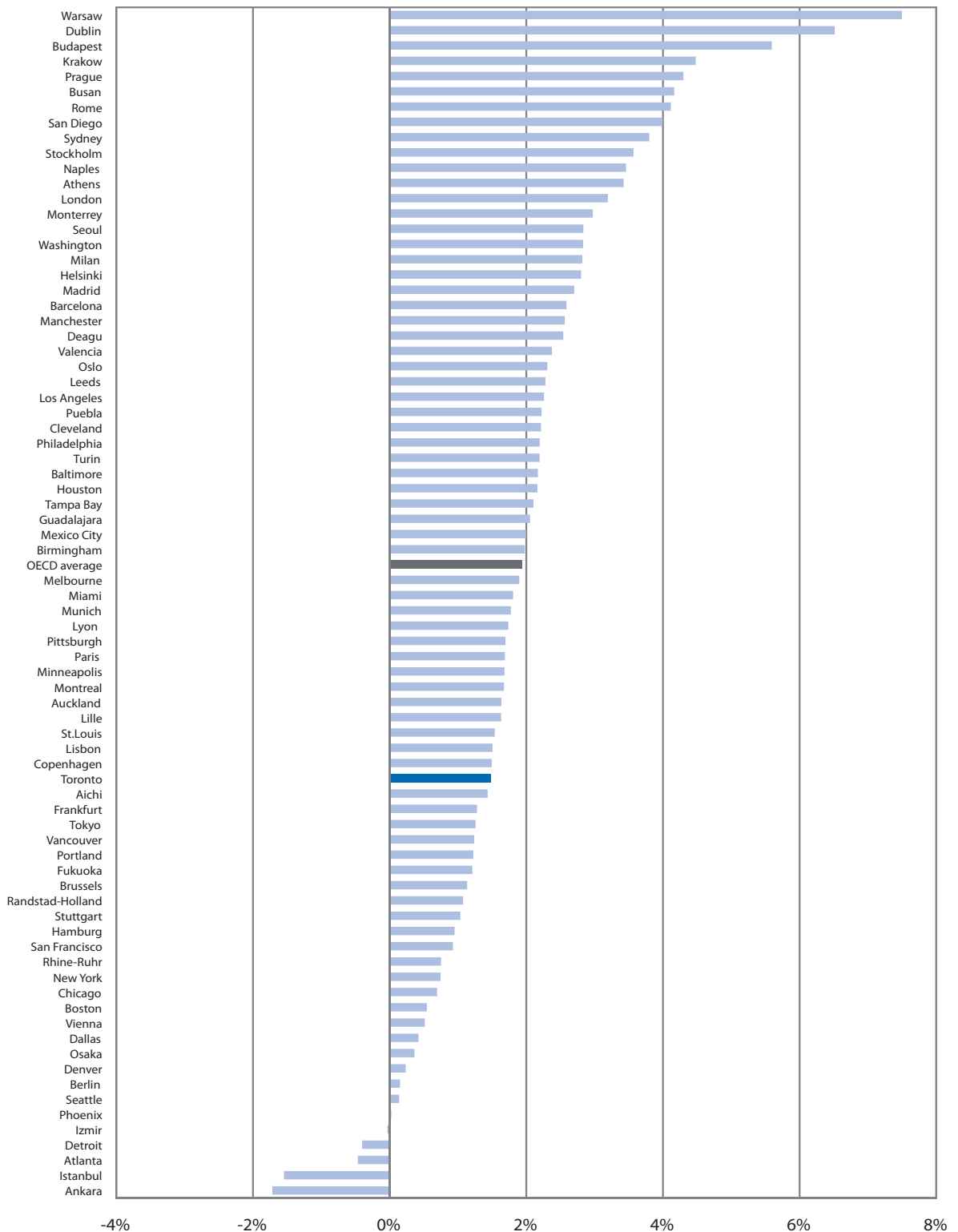
(CAs) representing 29% of the Canadian population (Ali *et al.*, 2008). Metropolitan regions also have regional spillovers related to population growth: urban centres in Canada with more than 500 000 inhabitants are found to be engines of population growth. Urban centres and rural towns benefitted from their proximity to major urban centres over 1981-2001, which probably correlates with commuting and business linkages (Partridge *et al.*, 2007). Finally, there might be regional productivity spillovers: a 10% increase in plants in science-based industries within 200 kilometres of an urban centre implied a productivity increase of approximately 2% (Baldwin *et al.*, 2008b).

The lack of sub-provincial data in Canada makes it difficult to compare Toronto's regional economic performance with that of other metropolitan regions in the OECD. Statistics Canada collects regional GDP data at the provincial level, but not at the Census Metropolitan Area level. Estimations of Toronto's regional GDP are made by the Conference Board of Canada, using data on the province of Ontario, and allocating GDP to the different CMAs according to their employment share in the different industries in the province. This method takes the different sector composition in the Toronto region into account, but assumes productivity in each sector to be similar across the whole province. As such, it may underestimate Toronto's GDP, as there is convincing empirical evidence for agglomeration effects in many OECD countries, resulting in higher productivity in metropolitan regions. There could thus be a downward bias for Toronto and other Canadian metropolitan regions when compared with other metropolitan regions in the OECD for which more accurate measurement of regional GDP and productivity exist. Caution is warranted when comparing productivity rates of OECD metropolitan region, as data on average hours worked in metropolitan regions are not available (and national averages have to be used instead). International comparison of Toronto's economic performance thus requires considerable prudence.

That being said, Toronto's economic performance yields a mixed picture, both within the domestic and the international context. Within Canada, other urban areas are outpacing the Toronto region in terms of economic growth. Calgary and Edmonton are growing faster, albeit partly as a result of their recent boom in oil production and the increase in oil prices. In fact, Toronto's per capita GDP in 2005 (USD 29 715) was slightly lower than the national average (USD 30 630), but national figures could be biased by the performance of the oil sector. On the international scale, economic growth in Toronto has been slightly lower than average among OECD metropolitan regions, mainly due to lagging labour productivity over 1995-2005 (Figure 1.6). Toronto's GDP per capita in 2005 was USD 29 715, thus ranking 47th among 74 metropolitan regions in the OECD metropolitan database, *i.e.* below many OECD metropolitan regions, including San Francisco, Boston, Paris and Milan. Its ranking in terms of labour productivity is even lower (58th out of 70) (Figure 1.7). An example of a metropolitan region that has the same regional GDP per capita but is almost one-third more productive than Toronto is Hamburg. Over 1995-2005, Toronto showed an annual output growth rate of 1.5%, while OECD metropolitan regions grew on average by almost 2% annually. Although this represents only half a percentage point below the OECD average for metropolitan regions, if this differential in economic growth is sustained for another decade, the current income gap between Toronto and the average of other OECD metropolitan regions will almost double in size. Moreover, labour productivity in Toronto has expanded at only 0.8% per year; that is, at less than half the speed of the OECD metro-regions for the same period (1.8% annually) (Figure 1.8).

Slow economic growth and a sluggish rate of productivity growth could be linked to the lack of capital investment. It has already been noted that Canada as a whole has invested heavily in the growing labour force. Such capital formation may have helped accommodate new workers, whilst not necessarily increasing the capital-labour ratio, and thus labour

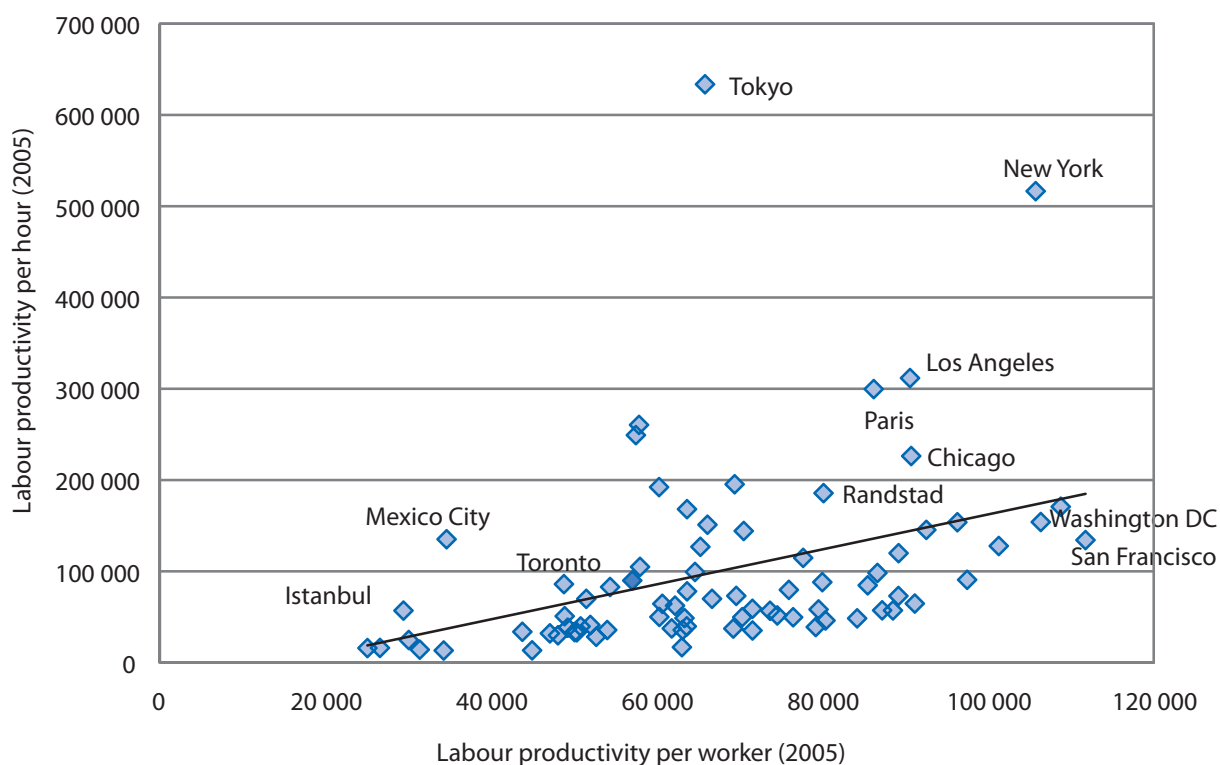
Figure 1.6. Economic growth among OECD metropolitan regions (1995-2005)
Average annual growth rates for per capita GDP values (1995-2005)



Source: OECD Metropolitan Database.

Figure 1.7. **Labour productivity in OECD metropolitan regions (2005)**

GDP per worker (labour productivity per worker) and GDP per worker corrected for hours worked (labour productivity per hour) in USD 2005

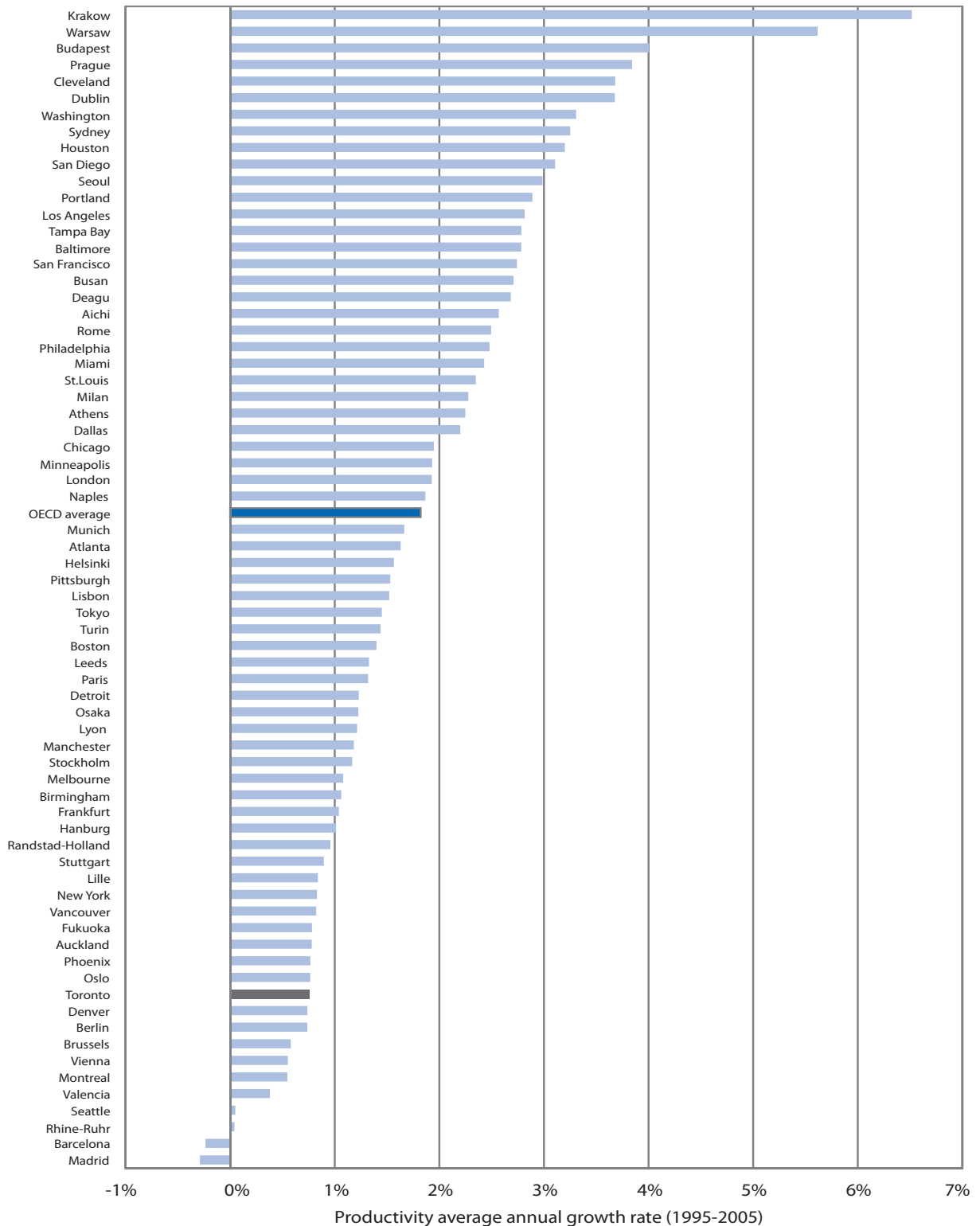


Source: OECD Metropolitan Database.

productivity may be lagging behind simply as a consequence of lack of investment in the past. Canadian businesses tended to invest less in capital per employee than their G7 counterparts between 1995-2009, although investment performance estimates for 2009 and 2010 show considerable improvements (Busby and Robson, 2009). It is possible that the influx of immigrants may have influenced the relative prices of capital and labour. New workers may have slowed down wage increases, while the recent exchange-rate appreciation may have increased the cost of new technologies, hence influencing firms' decision to use labour instead of capital. As the *OECD Economic Survey of Canada* (2008) pointed out, the composition of capital investments may have also influenced productivity, given that firms in Canada display a widening gap in information and communication technology (ICT) utilisation compared to the United States, which affects efficiency, particularly in the services sector.¹¹ Poor productivity growth in recent years was not limited to Toronto; Canada as a whole did poorly in this respect and showed an increasing productivity gap with respect to the United States and some European countries, such as the United Kingdom. While productivity in Canada as a whole grew above the OECD average in the period from 1995 to 2000, it has since weakened, with annual growth of 1% in 2001-2006, compared to an OECD average of 1.8% (OECD, 2008d).

Toronto might also be affected by the boom in natural resource production and export in Western Canada. Productivity gaps with the United States and other countries have been a concern in Canada since the 1990s, but the gap widened between 2001 and 2006. With

Figure 1.8. Labour productivity growth in OECD metropolitan regions
Average annual growth rates in labour productivity (1995-2005)



Source: OECD Metropolitan Database.

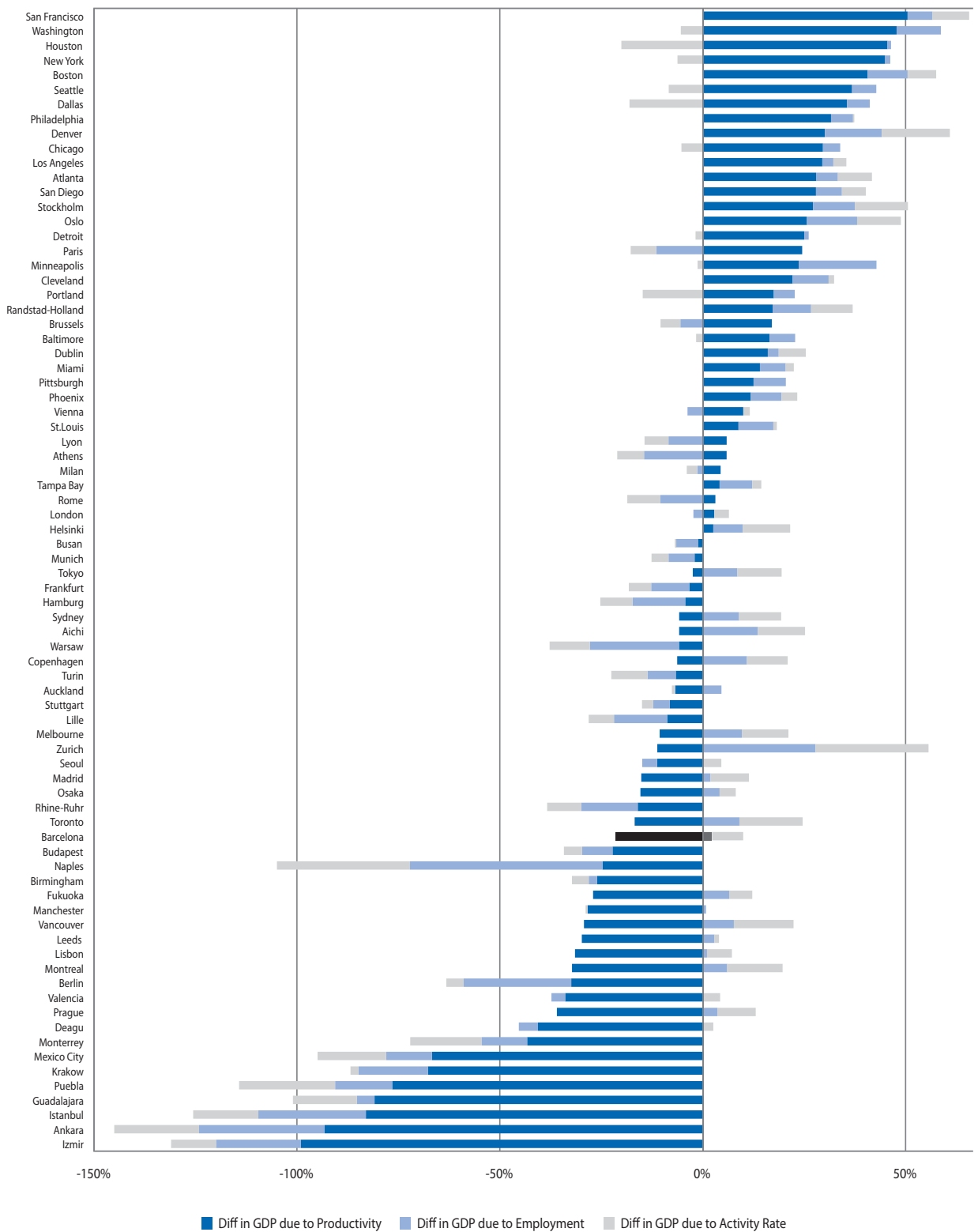
the improvement of the trade balance in Canada chiefly linked to oil prices, the country has experienced an influx of revenues from natural-resources activities that have increased wage differentials between oil production and manufacturing. Improved wages in Alberta have drawn workers to manufacturing in other provinces at a time when the inflow of cash from the oil sector has pushed up the value of the currency, making manufacturing less competitive internationally as a consequence. This crowding out of manufacturing by natural resources (“Dutch disease”), together with the appreciation of the Canadian dollar and increased global competition, might explain the decline in manufacturing employment in the Toronto region. It could also explain the higher costs of capital formation, leading to even slower productivity gains.

The need for faster labour productivity growth may be more important than ever. Canada at large is facing a productivity gap with respect to the United States, at a moment where there are already signs of an ageing population, despite large inflows of immigrants (OECD Economic Surveys, Canada 2008). Metropolitan regions in Canada are facing similar problems. In Toronto, sluggish labour productivity gains were compensated for by a healthy rate of activity and employment (Figure 1.9). Although elderly dependency rates are still below the OECD metro-regional average (Figure 1.10), Toronto has started to see a positive increase in this dependency rate (Figure 1.11). The 55-to-64 population cohort represents more than 10% of the CMA population. Even if migration continues to fuel Toronto’s labour market, elderly dependency is likely to become a pressing issue in the next decade. If productivity gains fail to materialise, future economic expansion of Toronto could be compromised.

Much of Toronto’s modest economic growth can be attributed to favourable conditions in the labour market. Thanks to the constant influx of immigrants, who are generally quite young, Toronto’s working population share (52%) is among the largest in the OECD, lower only than that in Zurich, Minneapolis and Washington DC (Figure 1.12). Moreover, Toronto has had a strong showing in job creation in recent years. Between 2002-2006, the Toronto region created more than 50 000 jobs every year; an average annual increase of 2%. Between 1995-2005, Toronto managed to reduce its unemployment rate by 1.64%, but it remains slightly above average among OECD metropolitan regions (Figure 1.13). In 2005, the unemployment rate in Toronto (6.97%) was very close to the average (6.8%) for OECD metro regions (Figure 1.14). Within the Toronto region, unemployment remains higher in the City than in the rest of the region, and since 1990 has been consistently higher than in Canada as a whole.

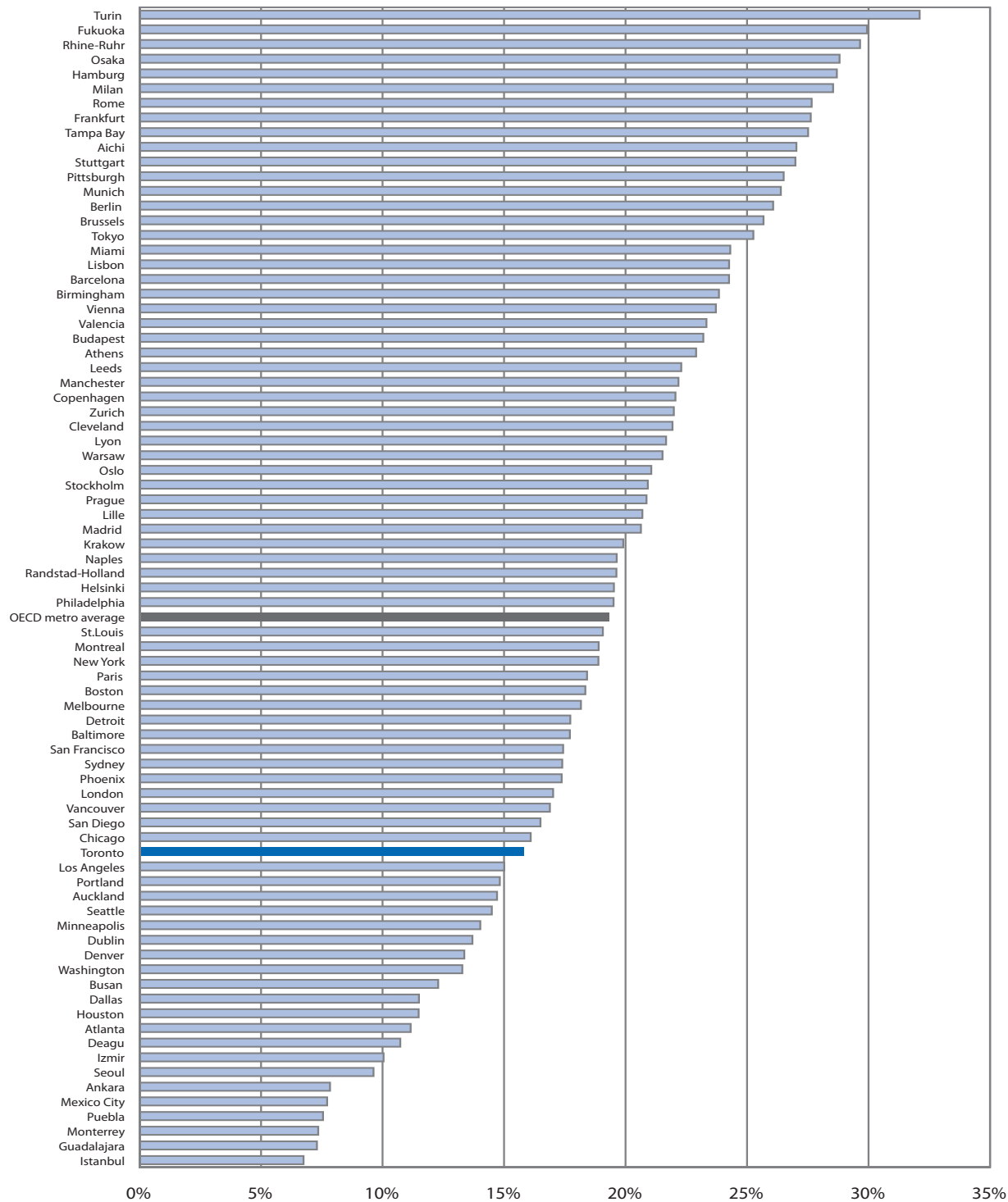
Although among Canadian metropolitan regions the Toronto region has the largest share of population with a university degree, human capital formation remains an area of opportunity available to boost the region’s productivity and innovation. Among OECD countries, Canada has one of the highest shares of population with university degrees, yet Toronto ranks average among a selection of OECD metropolitan regions (22nd out of 48) in terms of the overall share of its population with a higher-education degree. This might be explained by the fact that regional differences in higher-education attainment in Canada are relatively smaller than in many other OECD countries. As a result, many American and also some Japanese and European metropolitan regions score higher on higher-education attainment than the Toronto region (Figure 1.15). While Toronto competes in many sectors with North American cities, such as Chicago, it lags behind many of the other cities in terms of skills. The population of the Toronto region, however, has favourable rates of higher-education attainment compared with the Canadian average. This higher-education attainment rate has increased considerably since 1990, especially in the City of Toronto, where the increase has been around 10 percentage points for the younger age cohorts.

Figure 1.9. Factors behind economic growth in OECD metropolitan regions (2005)
Decomposition of economic growth



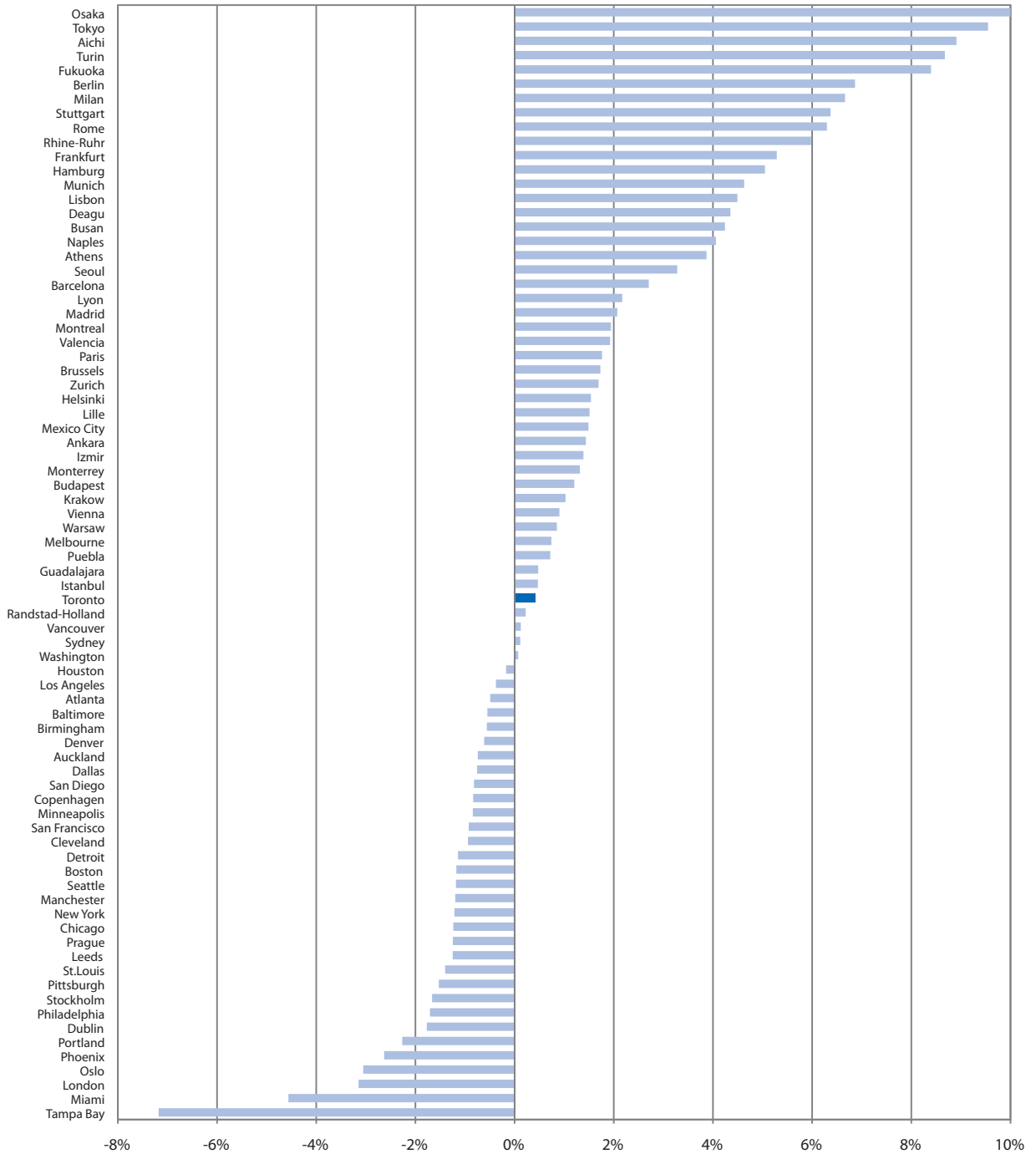
Source: OECD Metropolitan Database.

Figure 1.10. **Elderly dependency rate in OECD metropolitan regions (2005)**
Population of 65 years and older as a share of the population between 15 and 64 years old



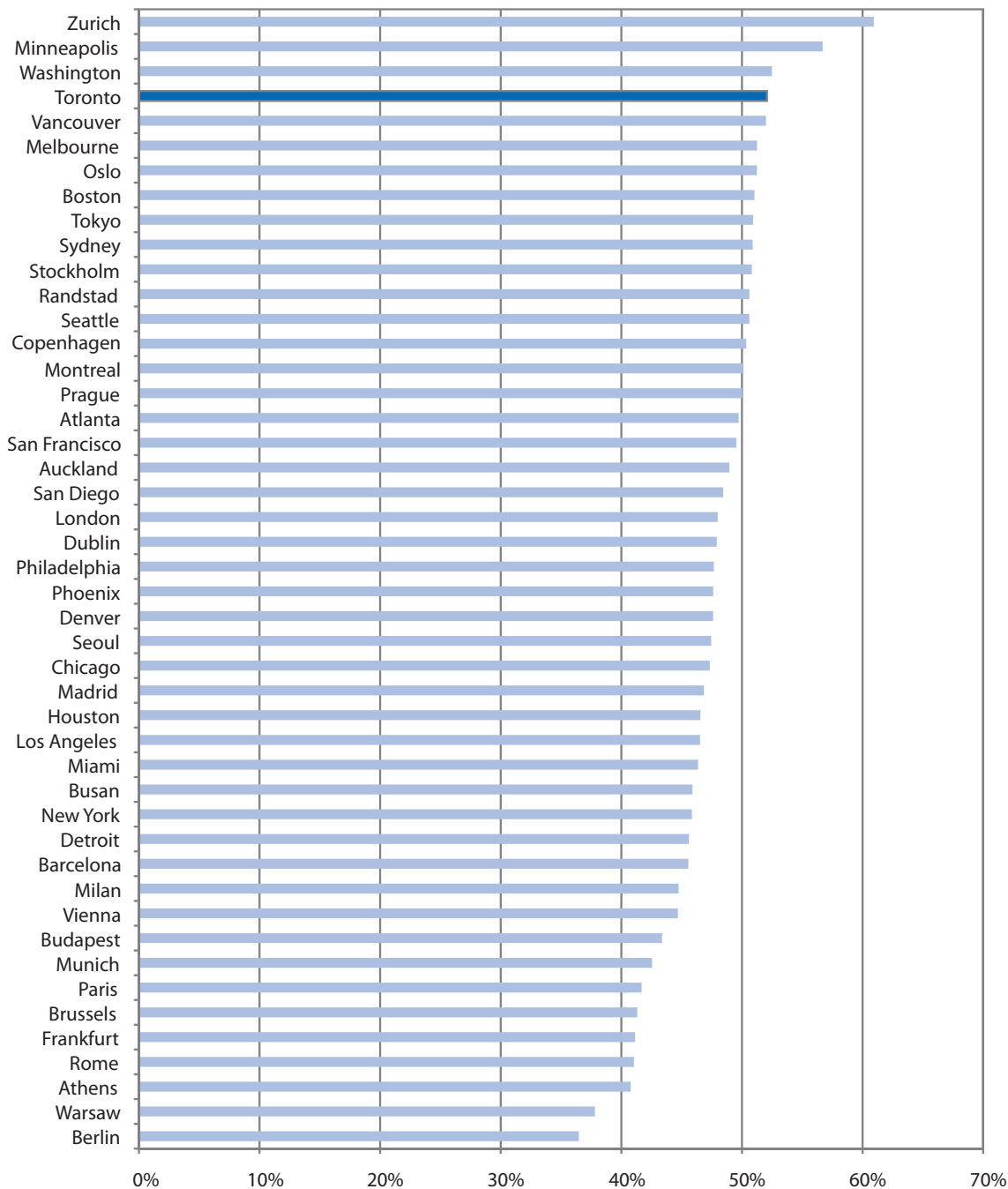
Source: OECD Metropolitan Database.

Figure 1.11. Ageing in OECD metropolitan regions
Change in elderly population rates (1995-2005)



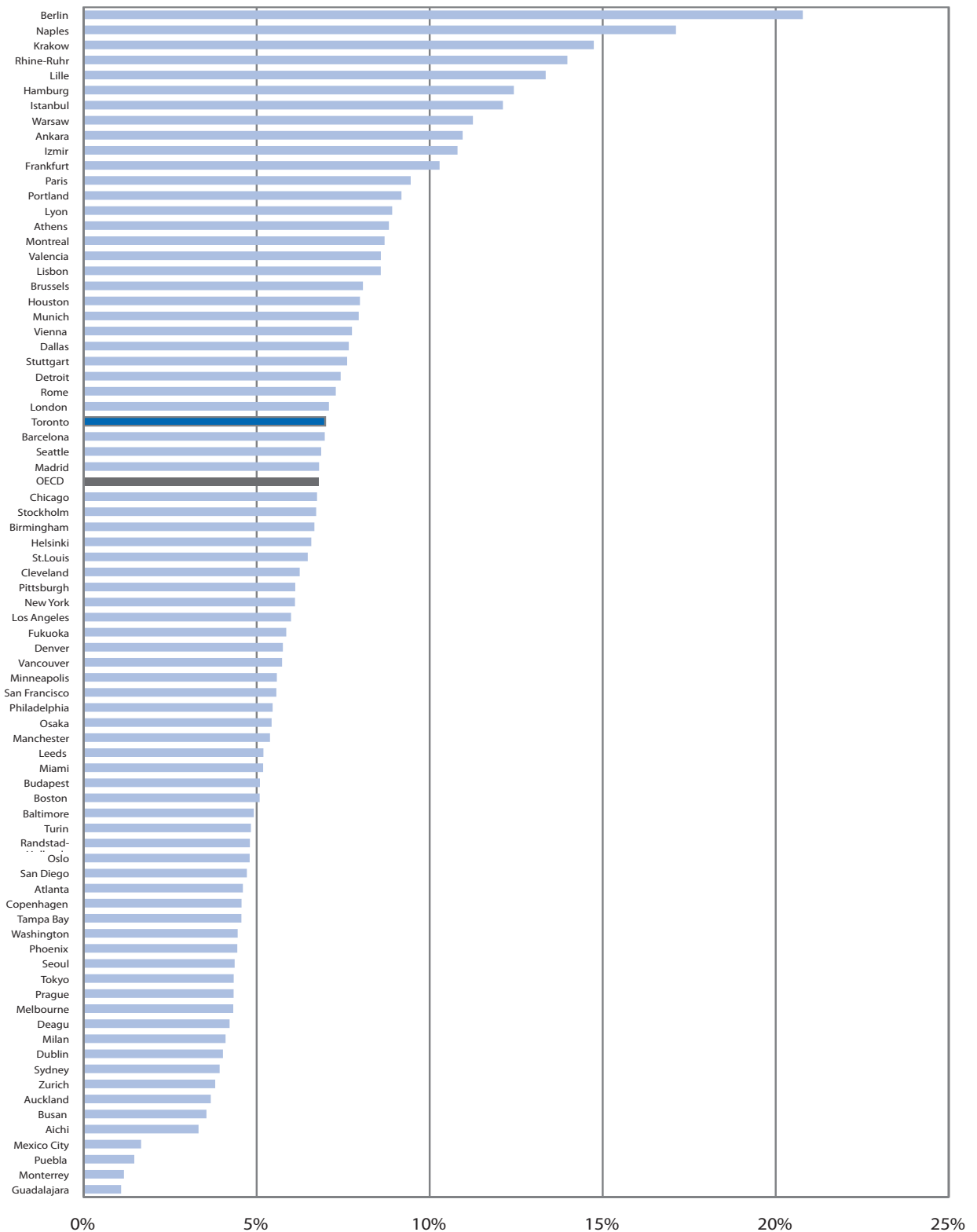
Source: OECD Metropolitan Database.

Figure 1.12. Share of the total working population in OECD metropolitan regions (2005)



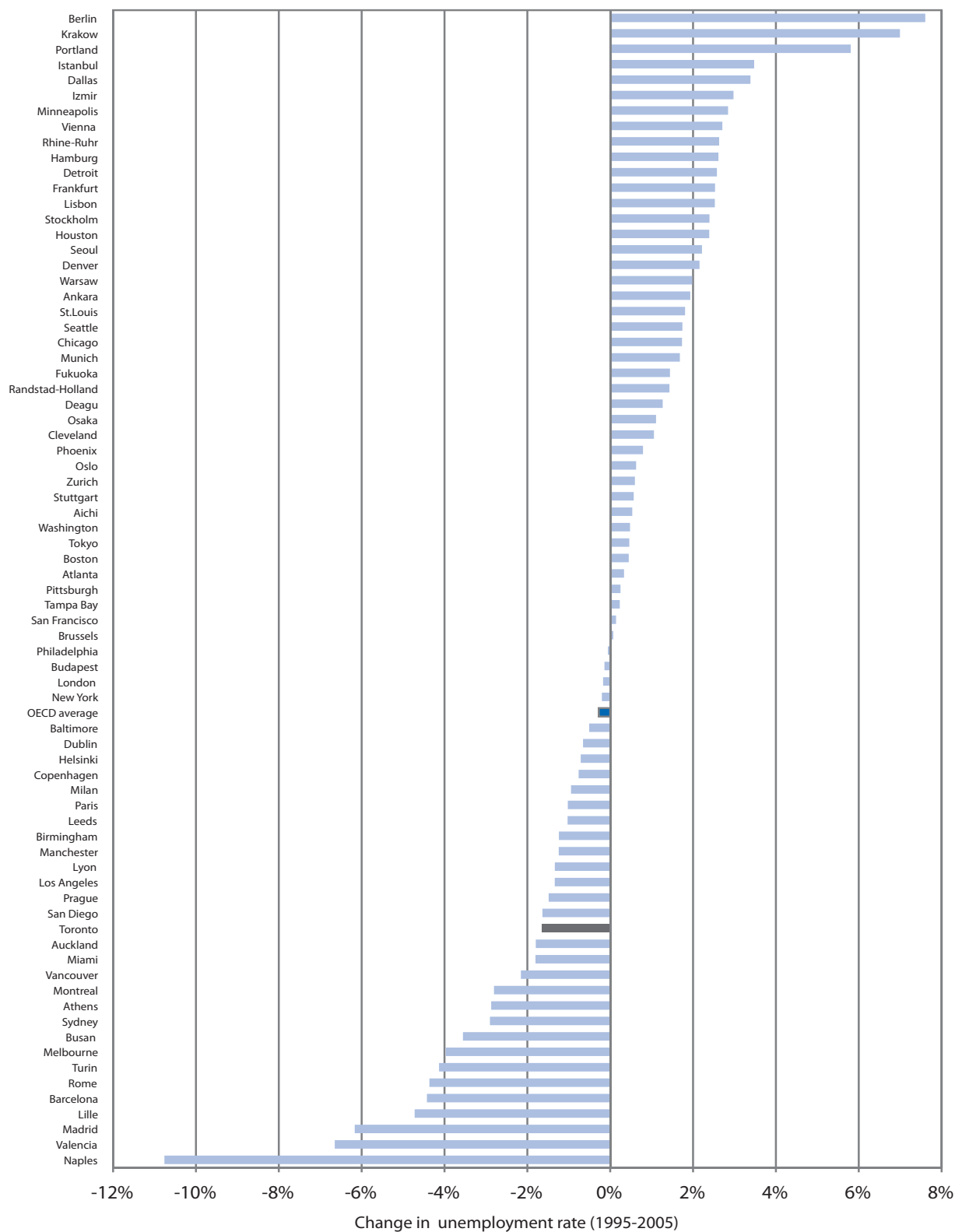
Source: Based on data from OECD Metropolitan Database.

Figure 1.13. Unemployment rates in OECD metropolitan regions (2005)

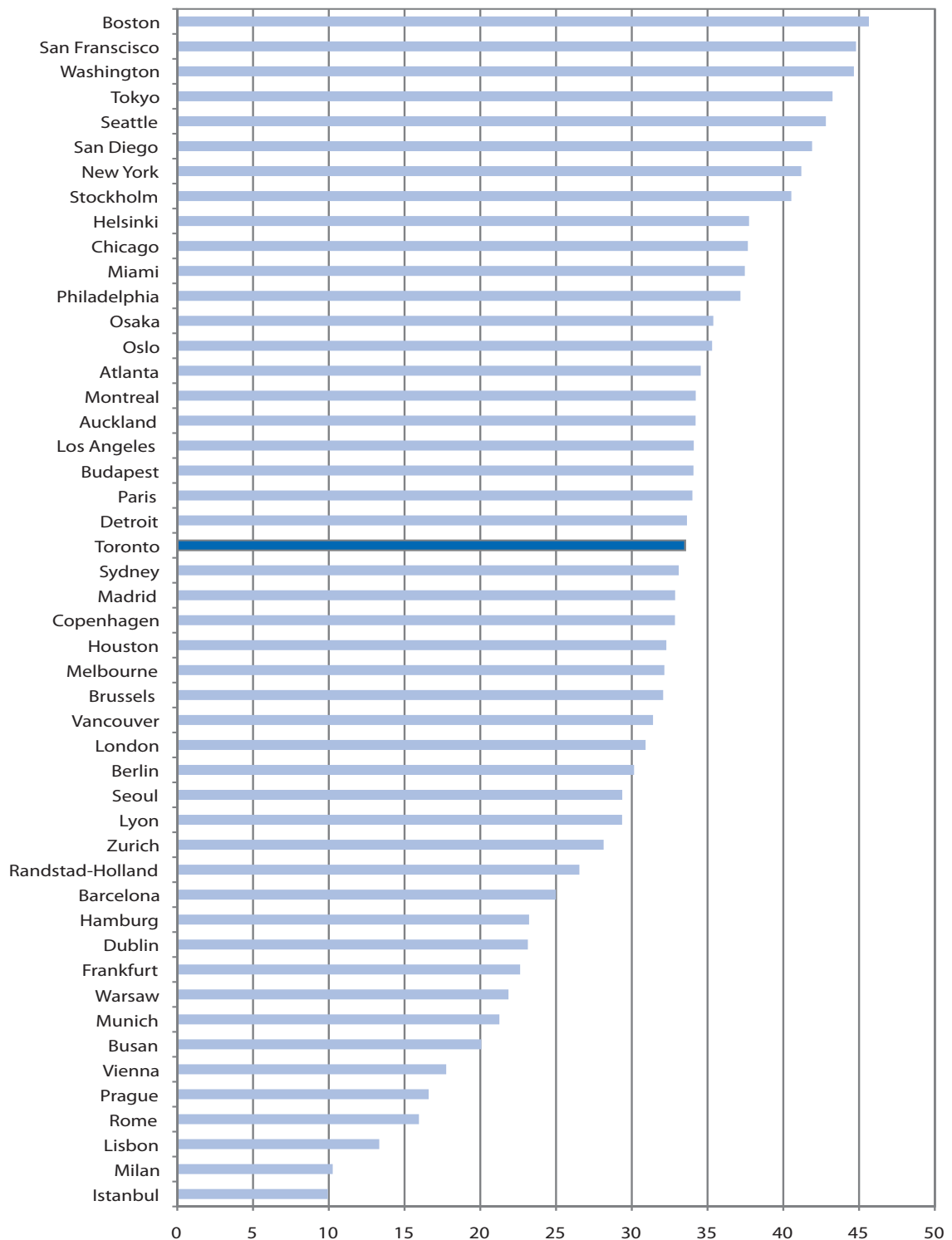


Source: OECD Metropolitan Database, based on OECD Regional Database (OECD, 2009c) using data from Eurostat and national statistical offices.

Figure 1.14. Change in unemployment rates in OECD metropolitan regions



Source: OECD Metropolitan Database.

Figure 1.15. **Higher-education attainment in metropolitan regions in the OECD (2004)**

Note: Higher-education attainment is defined here as the possession of a degree at least International Standard Classification of Education (ISCED)-Level 5 and 6. ISCED-level 5 refers to the first stage of tertiary education (short, medium or long duration), ISCED-level 6 refers to the second stage of tertiary education (leading up to an advanced research qualification).

Source: OECD Regional Database.

1.2. Main challenges and opportunities

Several exogenous factors can explain the sluggish economic growth and productivity in the Toronto region since the beginning of the 2000s. Much of the region's recent modest economic growth has been sustained by a boom in the housing market in a context of low interest rates and rising demand. This spurred demand in construction, sales and retail, and professional and financial services. Other traditional sectors, especially in the manufacturing industry, which still represent a large share of Toronto's economic base (20% of the regional GDP) have endured fierce competition from countries where labour is cheaper, such as China, India and Mexico, leading to a 10% decline in employment since 2002. In recent years, the low costs on which many of these sectors' comparative advantages were based has also been undermined by the appreciation of the Canadian dollar, whilst these same industries have had to deal with an increase in the price of commodities, especially from imported oil and gas, which are an important part of their production process. Finally, the high dependency of the region's export-oriented manufacturing sector on US markets has made it particularly vulnerable to the US cyclical downturn.

Mixed scores for Toronto on economic and productivity growth are also associated with internal factors linked with changes in its sectoral specialisation and its business environment; the capacity of its labour force to offer the necessary skills to foster innovation and entrepreneurship; and the infrastructure that supports business development and a pooled labour market. Three main concerns stand out in particular, namely:

1. *Lagging productivity.* Although Toronto has a diverse set of economic specialisations, it has lagged behind in productivity in many sectors. Underlying this problem are concerns about the value added of the sectoral mix, agglomeration economies in Toronto, productivity within Toronto's sectoral mix and the outcomes of innovative activities in Toronto.
2. *Untapped cultural diversity.* One of Toronto's assets in comparison with many other metropolitan regions in the OECD is its cultural diversity and the consistent influx of highly skilled immigrants. In order to leverage cultural diversity for economic competitiveness, better use could be made of immigrants' skills and potential contributions to innovation.
3. *Unsustainable and inadequate infrastructure.* Population growth in the area has had a large impact on infrastructure, land use and congestion, with consequences for air quality and sustainability. Ongoing sprawl has complicated the provision of public transit and the co-ordination of land use and transportation planning.

1.2.1. Lagging productivity

There are four ways in which productivity in Toronto can be explained and addressed:

- a. *Sectoral mix:* Is Toronto specialised in the economic sectors that generate the highest value added? Due to globalisation and several of the exogenous factors referred to above, several sectors face global competition in areas where cost advantages are sometimes the determining factor and some sectors have relocated abroad. Technological development continuously changes the value added of some sectors relative to others. Metropolitan regions across the OECD have economic specialisations in different sectors; and these differences in sectoral mix explain part of the productivity differences. The analysis of changes in Toronto's sectoral specialisation between 2001-2006 – discussed below – highlights internal structural factors influencing Toronto's economic model.

- b. *Organisation of the productive sector*: Are spatial economic patterns facilitating productivity? Spatial clustering can have a positive impact on productivity, as it stimulates knowledge spillovers. These effects appear to differ between sectors and can be more or less important depending on the geographical proximity of the firms concerned.
- c. *Productivity within sectors*: Are firms in Toronto productive in these different sectors? The question here is whether firms in Toronto perform activities within the value chains of sectors that create high value added. These could for example be high-order functions performed in head offices and globally linked regional head offices; the very presence of these might be important, but so might the question of whether the conditions are in place to continue to attract them. The extent of exports could also be considered an indicator of productive operations on an international scale.
- d. *Creating value added by innovation*: Are firms becoming more productive because they invent and innovate? Innovation is closely linked with the regional innovation system as a whole, which is influenced not only by the firms themselves, but also by higher education and research institutions. In order to create value added for business, commercialisation of research and development is particularly important.

A. Value added of sectoral mix

Toronto's sectoral industrial mix entails a strong manufacturing share as compared with many other OECD metropolitan regions. In 2006, the manufacturing sector represented 20% of the region's GDP, the largest employment share, yielding higher value added per worker than most other economic sectors. In contrast, other major metropolitan regions, for example New York, London, Paris, Madrid or Chicago, are, like Toronto, specialised in financial services, and less specialised in manufacturing (Table 1.2). Employment growth in manufacturing between 1996-2006, however, was slower than any other sector in Toronto, and declined between 2002-2006, whereas most other sectors, especially construction and finance and insurance, witnessed employment growth over this period (Table 1.3). Manufacturing employment decline was associated with the appreciation of the Canadian dollar, a rise in commodity prices and increasing global competition, especially from China (TD Economics, 2007).

Table 1.2. **Main economic sectors in Toronto**

	Employment share 2006	Share in regional GDP 2006	Value added per worker (CAD)	Average annual employment growth rate 1996-2006	Average annual employment growth rate 2002-2006
Wholesale/retail	16.1%	14.0%	64 200	3.5%	3.7%
Manufacturing	15.9%	20.1%	93 800	0.8%	-2.5%
Health	8.0%	4.1%	38 100	2.4%	3.1%
Finance, insurance, real estate	7.9%	25.8%	99 500	3.5%	6.1%
Other professional services	6.6%	4.5%	51 400	2.6%	1.0%
Education	6.2%	3.6%	42 900	3.2%	5.5%
Construction	6.0%	4.7%	57 300	6.0%	6.4%
Transport	5.1%	9.5%	59 300	1.8%	2.2%
Accommodation and food	4.9%	1.6%	23 600	1.6%	-0.5%

Source: Based on data from Conference Board of Canada.

Table 1.3. **Economic specialisations of selected metropolitan regions in the OECD (2005)**

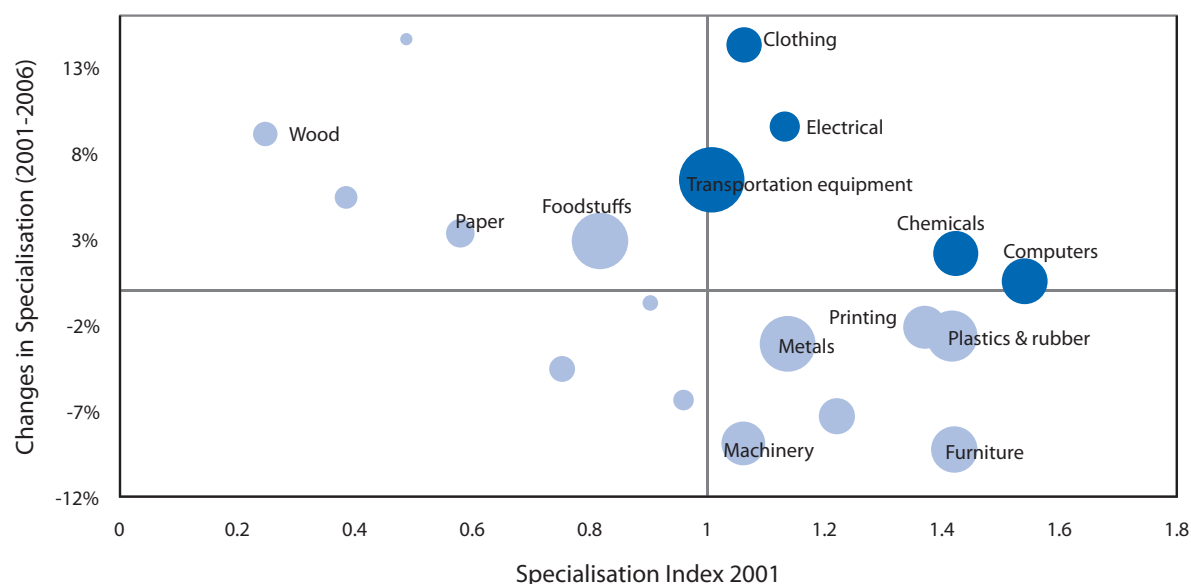
	Manufacturing	Utilities	Wholesale and retail	Hotels and restaurants	Transport, information and culture	Financial services	Health	Education
Toronto	1.38	0.74	1.05	0.71	1.31	1.61	0.68	0.72
New York	0.55	0.88	0.92	0.68	1.18	1.81	1.11	1.43
Chicago	1.03	1.04	0.96	0.86	0.98	1.15	0.87	1.08
Los Angeles	1.04	0.57	0.92	0.84	1.13	0.93	0.74	1.23
Paris	0.65	1.09	0.95	1.26	1.30	1.79	0.85	0.85
Madrid	0.67	1.14	0.96	0.88	1.40	1.52	0.98	0.98
London	0.48	0.42	0.85	1.04	1.29	1.95	0.76	0.78

Note: Scores equal to 1.0 indicate that the employment share in that sector is similar to the national average. Scores higher than 1.0 represent a higher share of regional employment in this sector than the national average, indicating specialisation. Scores lower than 1.0 represent a lower share of regional employment in this sector than the national average, indicating limited specialisation in this sector.

Source: Based on data from the OECD Regional Database

Figure 1.16. **Sectoral dynamics in Toronto (2001-2006)**

Change in specialisation by 3-digit sector



1. Specialisation is measured as the quotient of employment in the sector in Toronto in relation to employment in the sector in Canada, corrected for total employment shares in Toronto. A score of 1 means that a sector in Toronto has an employment share similar to one that would have been expected on the basis of its working population (that is, not specialised); a higher score indicates a sector in which Toronto is specialised; a lower score indicates under-specialisation.

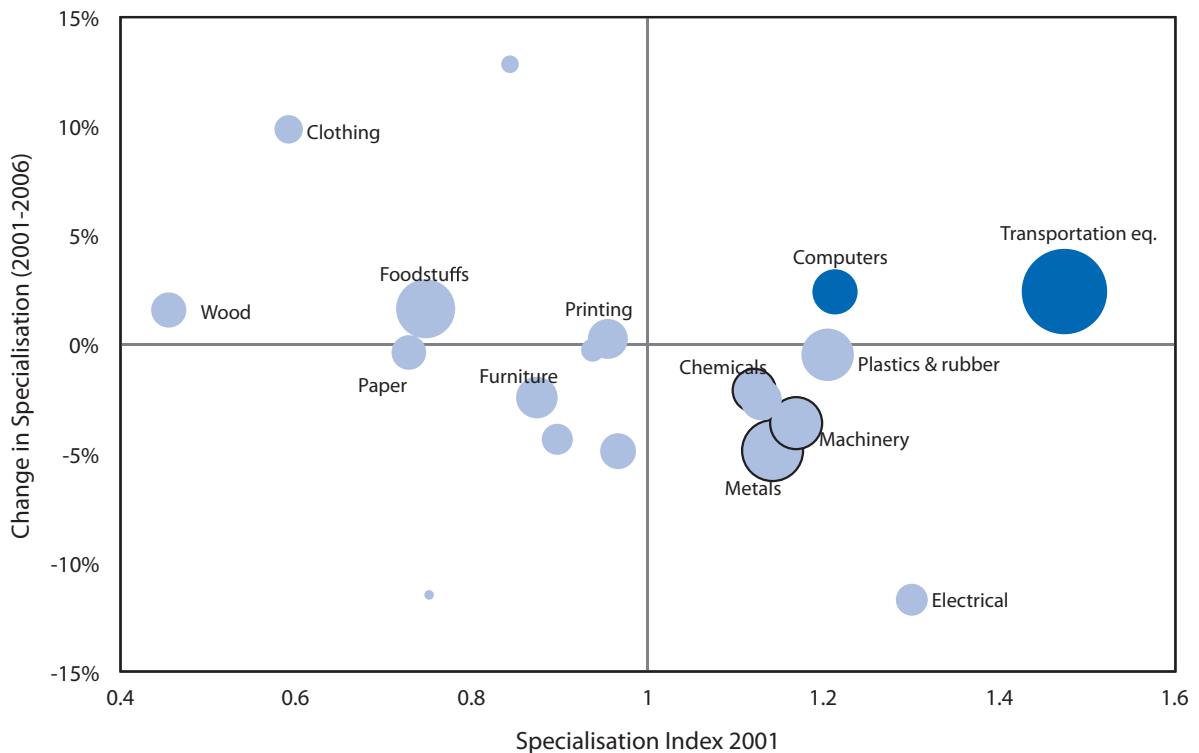
2. Bubble size denotes sector size in terms of employment.

Source: Own calculations based on data from Statistics Canada.

Although Toronto is specialised in a number of manufacturing subsectors, activities with high employment values are facing challenges. The largest manufacturing subsectors are transport equipment, foodstuffs, metal industries, the chemical industry, machinery, furniture and information technology (IT). Although some of these industries are well represented in the region, for the most part they have either lost specialisation or the city still lacks specialisation in that industry. Traditional industries in the region have lost ground to other competitors in Canada. Toronto is still specialised in metal industries, machinery, printing, plastics and furniture, but the relevance of these industries is waning (Figure 1.16). Although foodstuffs represent a growing industry as far as employment is concerned, Toronto is not yet specialised in it. Toronto's CMA has nevertheless been successful at further specialisation in IT, the chemical industry and to a lesser extent, transport equipment.

The dynamics of specialisation in manufacturing in Ontario reflect for the most part those in Toronto, but interesting changes are taking place in the region that could have benefits for Toronto and complications for the rest of the province. While the Toronto region has a growing specialisation in typically labour-intensive activities such as clothing and electric industries, Ontario is losing jobs in these specific industries (Figure 1.17). It could be the case that the industry has retained the higher value-added parts of the value chain,

Figure 1.17. **Sectoral dynamics in Ontario**
Change in specialisation (2001-2006)



1. Specialisation is measured as the quotient of employment in the sector in Toronto in relation to employment in the sector in Canada, corrected for total employment shares in Toronto. A score of 1 means that a sector in Toronto has an employment share similar to what would have been expected on the basis of its working population (that is, not specialised); a higher score indicates a sector in which Toronto is specialised; a lower score indicates under-specialisation.

2. Bubble size denotes sector size in terms of employment.

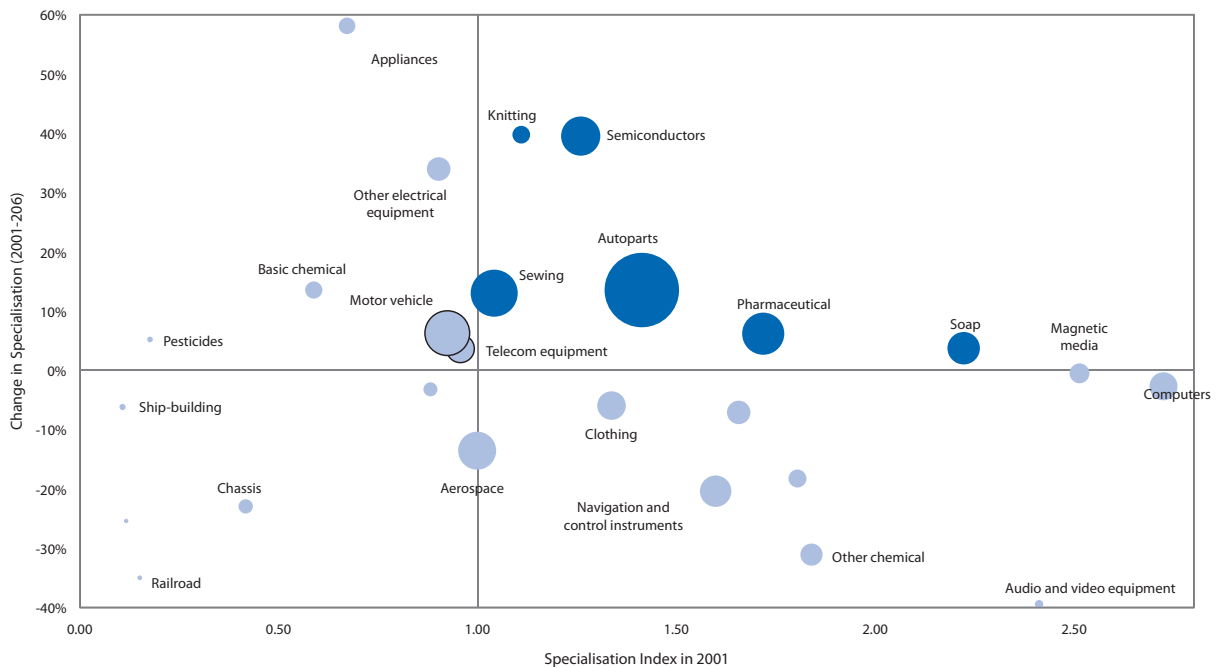
Source: Own calculations based on data from Statistics Canada.

such as design and engineering, locating them in Toronto, while the more labour-intensive processes outside the CMA have been lost to other regions in the world. Although this is difficult to assess from the available data, policy makers might be interested in addressing this trend not only for these industries, but more broadly for manufacturing. Focus could usefully be addressed to processes that entail high value added, typically those related to design and engineering. These are areas in which Toronto may have a particular comparative advantage given its capabilities (*e.g.* a skilled labour force and a high number of colleges and universities). It also has potential to further leverage its unique cultural diversity to design and create products with wide appeal to global markets. Recent data from the Council of Canadian Academies (2009) suggests that Canada has a stronger concentration of capital as well as an improvement in labour composition than does the United States. Moving to greater value-added production would require even greater investments in capital stock. This, however, would not deal with the underlying problem of low multifactor productivity (*i.e.* the efficient use of labour and capital). It should also be noted that the period between January 2002 and November 2007 was particularly unusual, in that the Canadian dollar's value against the US dollar appreciated by 76%.

The dynamics of location seem to be even more puzzling at a finer level of analysis, with some industries growing in Toronto at the expense of specialisation in Ontario as a whole, and vice versa. Taking into account industries at the four-digit level also reveals that Toronto drives specialisation in Ontario in a number of activities, such as pharmaceutical,

Figure 1.18. **Dynamics of location in Toronto (four-digit industry)**

Change in specialisation (2001-2006)



1. Specialisation is measured as the quotient of employment in the sector in Toronto in relation to employment in the sector in Canada, corrected for total employment shares in Toronto. A score of 1.0 means that a sector in Toronto has an employment share similar to what would have been expected on the basis of its working population (that is, not specialised); a higher score indicates a sector in which Toronto is specialised; a lower score indicates under-specialisation.

2. Bubble size denotes sector size in terms of employment.

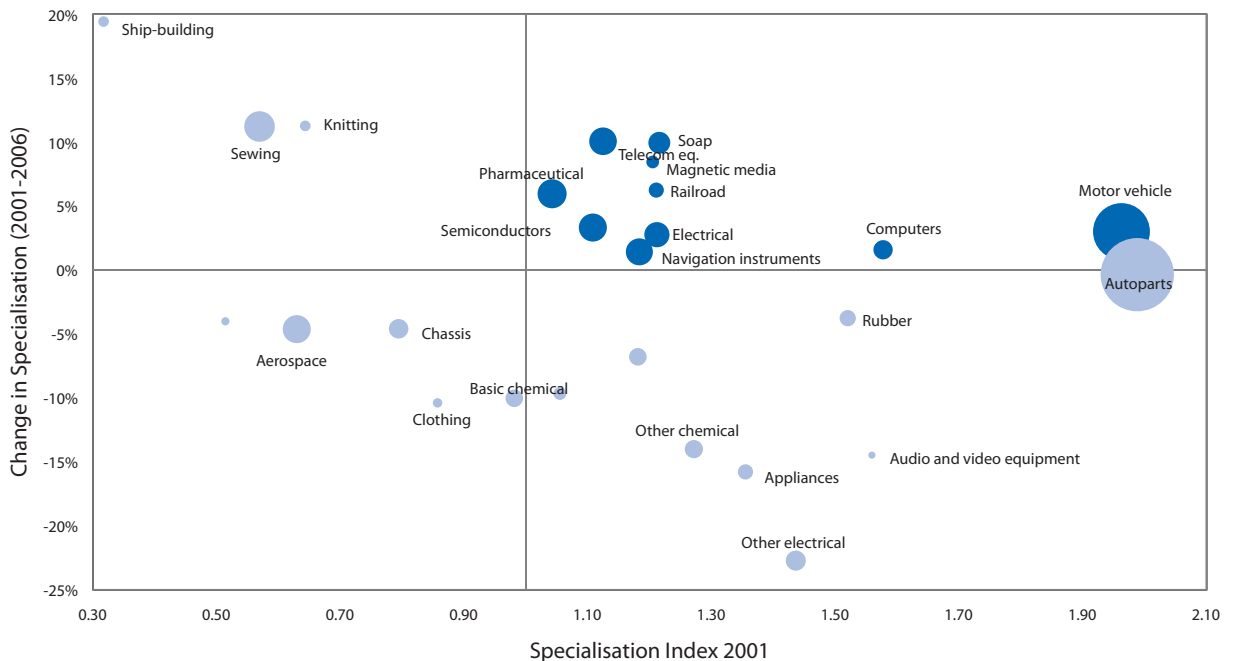
Source: Own calculations based on data from Statistics Canada.

telecom equipment, magnetic media, semiconductors and soap production, where an increase in specialisation has been matched by a corresponding increase in Ontario as a whole. However, in some instances, Toronto has experienced an increase in specialisation, with a corresponding decrease in Ontario as a whole. The prime example of this trend is auto parts, an industry that represents the largest employment share in manufacturing at both the CMA and provincial levels; Toronto's gains in specialisation in auto parts have been matched by a decrease in Ontario's (Figures 1.18 and 1.19). A similar trend is found in chemical industries, basic chemical and appliances. In contrast, some other changes have been in the other direction, with Ontario as a whole gaining specialisation seemingly at Toronto's expense. More precisely, these include activities such as computer production, navigation and control instruments, and railroad rolling stock manufacturing, as well as shipbuilding.

The relative decline of specialisation in manufacturing over 2001-2006 has been accompanied by an increase in specialisation in commerce (wholesale/retail) and services (health, professional, accommodation/food, transport and financial). The share of employment in commerce is actually larger than in other sectors, while some activities in services such as construction have grown rapidly (6% annually between 1996 and 2006). Typical of large urban centres, the core of Toronto has been specialising in services, most notably in financial services, whilst the wider metropolitan region has specialised in manufacturing.

Figure 1.19. Location dynamics in Ontario (four-digit)

Change in specialisation (2001-2006)



1. Specialisation is measured as the quotient of employment in the sector in Toronto in relation to employment in the sector in Canada, corrected for total employment shares in Toronto. A score of 1 means that a sector in Toronto has a similar employment share as would have been expected on the basis of its working population (that is: not specialised); a higher score indicates a sector in which Toronto is specialised; a lower score indicates under-specialisation.

2. Bubble size denotes sector size in terms of employment.

Source: Own calculations based on data from Statistics Canada.

The overall analysis of Toronto's changes in specialisation highlights important structural changes. On the one hand, the sectoral shift from traditional manufacturing sectors towards construction and tertiary activities has to a certain extent shifted towards low value-added activities linked to housing-related activities (e.g. retail, construction, services). On the other hand, there might be some indications that Toronto is also fine-tuning its competitive advantage within the manufacturing sector, with an increase in specialisation in some specific segments, such as auto parts, an industry that represents the largest employment share in manufacturing, as well as in chemical industries and appliances.

B. Organisation of the productive sector

Several specialisations of Toronto's economy tend to be organised around a number of clusters, based on either spatial characteristics, inter-firm linkages or both. Considering geographical specialisation indexes and sector size, four main industry clusters can be identified: i) financial services; ii) automotive industry; iii) life sciences and biotechnology; and iv) creative industries.

i) Financial services. This sector was responsible for 25.8% of regional GDP and 7.9% of regional employment in 2006. Toronto is the financial capital of Canada. Canada's five largest banks and 80% of the foreign banks in Canada are headquartered in Toronto, as well as five Canadian pension plans and Canada's top insurers, which are responsible for 90% of the national industry's assets. Toronto's financial services sector is the third-largest in North America after New York and Chicago, directly employing 230 000 people as of May 2008, according to Invest Ontario. Toronto is also home to the Toronto Stock Exchange, the third-largest stock exchange in North America and seventh-largest in the world based on market capitalization. The financial services sector in Toronto is spatially concentrated in the central business district of the city of Toronto (downtown Toronto). The innovativeness of Canadian mutual fund companies has been found to favour geographical clustering: location within the industry cluster in Toronto enhances innovation (Bell, 2005).

ii) Automotive industry. The automotive industry has played a historic role as a major economic driver in Toronto. Although it only represents 3% of regional GDP (and 2.3% of employment), it generates value added for suppliers in the metals, machinery and equipment sectors (together 4% of regional GDP). The sector forms part of global supply chains, most prominently with supply chains of the US car industry. The three major North American auto manufacturers (General Motors, Ford and Chrysler) operate six assembly plants in the region. Automotive clusters in the Greater Golden Horseshoe are spatially concentrated in St. Catharines and Oshawa. Regional automotive companies have traditionally employed close to 50 000 workers. The Greater Golden Horseshoe hosts the second-largest automotive cluster in North America after Detroit. Toronto's position in the automotive sector is not unchallenged. Mexico's integration into the North American production system (for automotive parts), the rise of new centres of automotive production in the Southern United States (for final assembly and parts), the eroding market shares of the Big 3 American automakers and the rapidly increasing flow of automotive parts from China to North America have begun to erode the advantage of Canadian producers. Most design work in the automotive sector is concentrated near leading firms' headquarters; none of these are located in Canada. Canadian firms are suppliers, not assemblers, most of them small and not technologically advanced (Sturgeon *et al.*, 2009).

iii) Life sciences and biotechnology. Toronto can be considered a centre for human health, with firms engaged in a diverse array of life sciences, including biotechnology, pharmaceuticals, medical equipment and assistive technologies, and contract research.

The health sector represents 4.1% of regional GDP and 8% of regional employment, and the pharmaceuticals 0.6% for both regional GDP and employment. Toronto accommodates the largest cluster of biomedical and biotechnology companies in the country (over 40% of national market share), and is North America's fourth-largest medical community, home to more than half of Canada's pharmaceutical companies, as well as 80% of generic drug manufacturers. Toronto has been the site of a series of major medical breakthroughs (insulin, cardiac pacemaker, artificial kidney) and has strengths in a number of specialisations within the life sciences, including the pharmaceutical sector and the manufacture of medicine, medical instruments and equipment and supplies. In comparison with Montréal, Toronto has fewer pharmaceutical firms involved in drug discovery, and more generic drug producers. Toronto is comprised of a mix of innovative and not so innovative biotechnology firms, with the innovative firms tending to cluster together, and less innovative firms tending to be more isolated (Aharonson *et al.*, 2008).

iv) *Creative industries.* Toronto is central to Canada's cultural economy. Several dominant sectors, such as film, design, publishing and sound recording, represent 0.7% of regional GDP and 1.9% of regional employment. Between 1999-2004, total firms in creative industries in Toronto increased by more than 50% and employment in the sector by 29%. Toronto's film and television cluster ranks third in North America. The last decade has witnessed an increase of outsourcing and offshoring of production from Hollywood, and Toronto is now considered one of the major "runaway" production sites for Hollywood. Toronto's indigenous film production does not perform particularly well. Toronto's share of box office on the home market for English-speaking films was approximately 2.5% between 2000-2005, against 25% to 30% of home market share for successful European film clusters. Despite its strong linkages with Hollywood firms, there are only limited knowledge spillovers from this interaction. Hollywood does not outsource or offshore high-priority film projects, but mostly spin offs, second- or third-tier films. Even for these films, a large part of the activities in the value chain are retained in Hollywood (Vang and Chaminade, 2007).

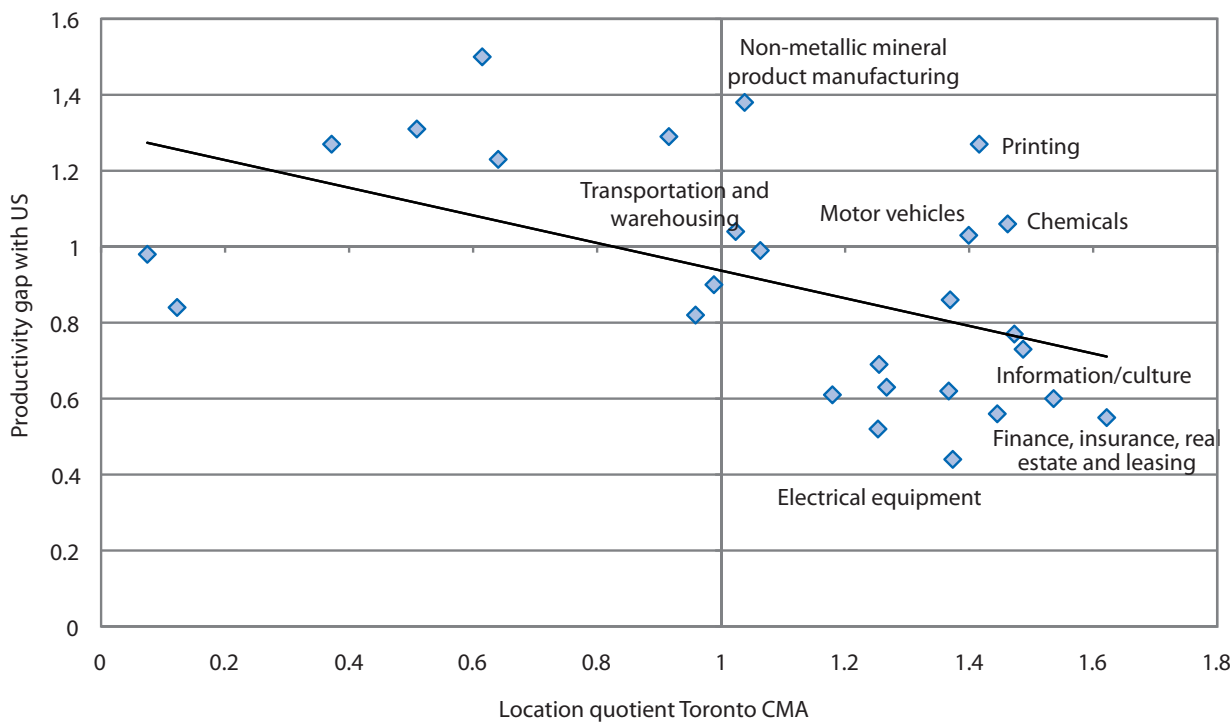
C. Value added within sectors

Productivity of sectors in Toronto is difficult to measure due to data limitations, but the comparison with average US productivity gives an indication of their competitiveness in the US markets. Although these data should be interpreted with caution, they remain relevant when considering the closeness to US markets and the dominant position of the United States in the export portfolio of firms in the province of Ontario. Taking these limitations into account, different sectors in Toronto lag behind the productivity of similar sectors in the United States.

In several of the economic sectors in which Toronto is highly specialised, Canadian productivity falls below that of the US equivalent (Figure 1.20). Moreover, Toronto's economic specialisations, such as manufacturing, computers and electronics, accounted for a large part of the productivity decline over the last decade. The largest declines in Canadian productivity over 1997-2004 occurred in the goods-producing industries. Manufacturing accounted for 42% of the post-2000 deceleration, and within the manufacturing sector, the computer and electronics industry was responsible for about one-third of the decline in manufacturing productivity growth (Rao *et al.*, 2005).

Lagging productivity might be connected to lower value-added activities in which firms in Toronto are specialised, such as the car industry and the film industry. Toronto's position in the automotive sector, for example, is challenged by Mexico and China, which can offer lower costs. Although Toronto has a strong local design sector, which could

Figure 1.20. **Productivity gap and economic specialisations of Toronto (2001 Census)**



Source: Based on data from Statistics Canada and Rao, S. *et al.* (2004).

attract high-value-added activities of the car industry, the application of Canadian design in the car industry is limited.¹² Most design work in the automotive sector worldwide is concentrated near lead firm headquarters; in the case of the Toronto car industry, these are located in the United States and Japan (Sturgeon *et al.*, 2009). A similar concentration on lower value-added activities in Toronto can be observed in the film business. Many of the activities in the value chain, such as pre-production, are kept in Hollywood, and outsourcing is drawn to Toronto because of lower production costs, not because it has any specialised competences that are hard to find in Los Angeles (Vang and Chaminade, 2007).

Lagging productivity might also be explained by the relatively low creative job content in many high-value-added sectors in Toronto. Ontario has a relatively high share of industries that by their nature have high creative content, such as financial services, education and knowledge creation, and information technology. These industries have, however, been found to operate with less creative content than in peer US states; that is, they have relatively fewer professions that require the highest levels of analytical and social intelligence skills (Martin and Florida, 2009).¹³

Toronto, however, also has several assets it could use to improve firms' productivity within their sectors. These competitive assets, in addition to low crime, high life expectancy, stable political and social environments, include: head office functions, global high-order functions, an attractive business environment for firms and an advantageous exports position.

Head office functions

Toronto continues to be the Canadian leader with regards to head offices. These are relevant for metropolitan economies because they tend to generate employment in service sectors connected to these head offices and which benefit from proximity to them, such as consulting, accountancy and advertising firms. Head offices also bring innovative and high-value-added jobs that help boost productivity growth. In 2007, the Toronto Region was the location for 871 head offices, representing 63% of all head offices in Ontario, and by far the largest number in Canada (the second Canadian city was Montréal, with 487 head offices). Head office employment in Toronto represented 56 700 jobs. Between 1999-2007, there was an increase in both the number of head offices (5.4%) and head office employment (14.1%) in Toronto. These increases are smaller than those in Calgary and Edmonton, which witnessed head office employment growth of 64.6% and 33.7% respectively over this period albeit at much lower levels. This was more favourable than developments in Montréal and Vancouver, where head office employment decreased during this period.

High-order functions in global services

A considerable number of academic papers have been devoted to determining which cities have attracted high-order global functions in different service industries (*e.g.* Taylor and Derudder, 2003; Taylor, 2004). Although these analyses do not assess urban competitiveness, the global position of a city has economic relevance: global cities concentrate activities in places where the highest value added is generated and which can easily attract highly skilled foreign workers. Underlying this research is the notion that globalisation and economic restructuring have led to specialisation of economic functions, and that certain cities have managed to dominate global economic activity in certain sectors. A classic example is the finance sector, in which London, New York and Tokyo have become the prime global cities (Sassen, 1991). There are different methodologies used to rank global cities, including for instance the mapping of the largest global firms for advanced services and their regional offices in different cities around the world. Although these different approaches involve methodological weaknesses and data limitations, they can provide a broad picture of how a city positions itself among the so-called group of global cities for some specific functions. Using this approach, several trends can be highlighted for Toronto:

- Toronto has been found to rank 15th in the world among well-connected global service firms. Sectors in which Toronto is particularly well connected globally are accounting and advertising (Table 1.4).
- It ranks highly for executive placement firms: in North America, it takes second place (with Chicago) behind New York, and worldwide, only London, Sydney, Paris and Amsterdam have a higher concentration of global head-hunting firms (Faulconbridge *et al.*, 2008).
- Despite its high rate of specialisation in the financial sector, Toronto is not one of the 20 most globally connected cities in finance, according to the GaWC Database.¹⁴ This database contains counts of headquarters and other functions in selected global services firms in different sectors, in order to obtain a measure of global inter-linkedness and hierarchies between cities in different industries (Taylor and Derudder, 2003; Taylor, 2004). Other studies, however, come to other conclusions. The Global Financial Centres Index (GFCI), published bi-annually by the City of London since March 2007, has consistently ranked Toronto among the top 15 global financial centres. In its most recent index, Toronto was in 11th

position. This index, however, is based on a different methodology, using several external indexes and answers to questionnaires sent out to people working in the financial sector.

A favourable environment for attracting high-value-added businesses

Toronto enjoys favourable business environment conditions, despite barriers to competition in professional services and business taxes that could discourage investment. Canada is ranked highly on the Ease of Doing Business ranking of the World Bank (at seventh in the world), indicating that it has relatively few cumbersome regulations and obstacles to entrepreneurship. On other rankings as well, Canada rates as friendly to businesses. It takes a relatively limited time to get permits to start businesses, it has limited restrictions on trade, and it has a low score on corruption indexes (World Bank 2008, Transparency International, 2009). At the same time, it has regulatory barriers to competition in four professional services, legal, accounting, engineering and architecture, that are higher than in many other OECD countries. These regulations are usually provincial, limiting inter-provincial trade in services. Moreover, Canada had one of the highest marginal effective tax rates on investment in the OECD in 2005. This differential is being lowered through corporate tax-cutting commitments made by a succession of federal governments, but these tax rates will still remain 10 percentage points above the OECD average in 2010. In addition, provincial taxation policy discourages investment by taxing debt and shareholders' equity and by sales taxes that are generally

Table 1.4. **Ranking of presence of global services firms in OECD cities**

Rank	Total	Accounting	Advertising	Finance	Law
1	New York	London	London	London	New York
2	London	Düsseldorf	New York	New York	Washington, DC
3	Paris	New York	Brussels	Hong Kong	London
4	Hong Kong	Paris	Madrid	Singapore	Los Angeles
5	Tokyo	Tokyo	Sydney	Tokyo	Paris
6	Los Angeles	Toronto	Toronto	Frankfurt	San Francisco
7	Singapore	Chicago	Milan	Paris	Hong Kong
8	Frankfurt	Milan	Paris	Zurich	Brussels
9	Milan	Sydney	Los Angeles	Sydney	Moscow
10	Sydney	Washington, DC	Singapore	Madrid	Tokyo
11	Brussels	Atlanta	Stockholm	Milan	Chicago
12	San Francisco	Brussels	Amsterdam	Taipei	Warsaw
13	Washington, DC	Frankfurt	Copenhagen	Mexico City	Frankfurt
14	Madrid	San Francisco	Istanbul	Seoul	Singapore
15	Toronto	Amsterdam	Düsseldorf	Sao Paulo	Miami
16	Zurich	Dallas	Melbourne	Buenos Aires	Milan
17	Moscow	Hamburg	Prague	Jakarta	Bangkok
18	Mexico City	Hong Kong	Sao Paulo	Kuala Lumpur	Budapest
19	Chicago	Johannesburg	Zurich	Los Angeles	Dallas
20	Sao Paulo	Los Angeles	Barcelona	Moscow	Prague

Note: The unit of analysis is a city as defined by its municipal boundaries. The methodology is based on a count of headquarters and other functions in selected global services firms in these different sectors.

Source: GaWC Database and Taylor, P. (2006).

not refunded on capital goods purchased by firms, leading to a marginal effective tax rate for business in Ontario in 2007 that was the highest of all Canadian provinces (OECD, 2008; OECD, 2006). A provincial tax reform to be implemented in 2010 (see Chapter 2) has been designed to address these fiscal issues.

In addition, costs of operating in Toronto, including office rents, are relatively low. An international survey by KPMG on business costs in cities worldwide rated Toronto in the moderate bracket: around 5 percentage points lower than Chicago, still lower than New York City and Paris, and around a fifth lower than in London and Frankfurt. St. Louis and Sydney offered comparable business costs. Within Canada, Vancouver had higher business costs than Toronto, and Montréal somewhat lower costs (KPMG, 2008). Moreover, costs of office space are limited in Toronto; not only from an international perspective, but also when compared nationally. The average office rent in the most expensive area of Toronto (its central business district) is around EUR 163 per square metre per year, which is considerably lower than almost all major cities in the world, including New York, Chicago, London and Paris. Similar rents on the American continent are available only in Atlanta and Monterrey, and equivalent rents cannot be found in major European cities. Within Canada, Calgary, Vancouver and Ottawa have higher office rents, and only Montréal offers office space with lower average rents (Cushman and Wakefield, 2009). Although concerns have been raised that not enough office space within the city of Toronto was developed in the early 2000s (Canadian Urban Institute, 2005), this has not translated into tighter conditions and higher prices on the Toronto office market, which raises doubts as to its pertinence.

Relatively modest international airline connectivity might, however, compromise the city's attractiveness to global service industries. Good external accessibility by air is an important criterion for the location of globally oriented service industries, as it permits swift and frequent access to many destinations. Some hub airports, as in Amsterdam and Atlanta, for example, provide interconnections for transit passengers and a dense network of frequent flights to many destinations, which would be impossible to sustain by relying solely on home markets. Toronto's Lester B. Pearson International Airport cannot be considered one of the most important flight hubs for international passengers (Derudder *et al.*, 2007). It was ranked only 29th in the world in 2006 in terms of passenger traffic, with a relatively low share of hub passengers and relatively under-developed interconnectivity compared to Chicago, Los Angeles, San Francisco and New York.¹⁵ Toronto's position in airline connectivity fell in the 1990s, and there are indications that this decline continued in the last decade, while other North American airports, such as New York, Miami and Los Angeles, gained in importance (Matsumoto, 2007).

An export position dominated by proximity to the US

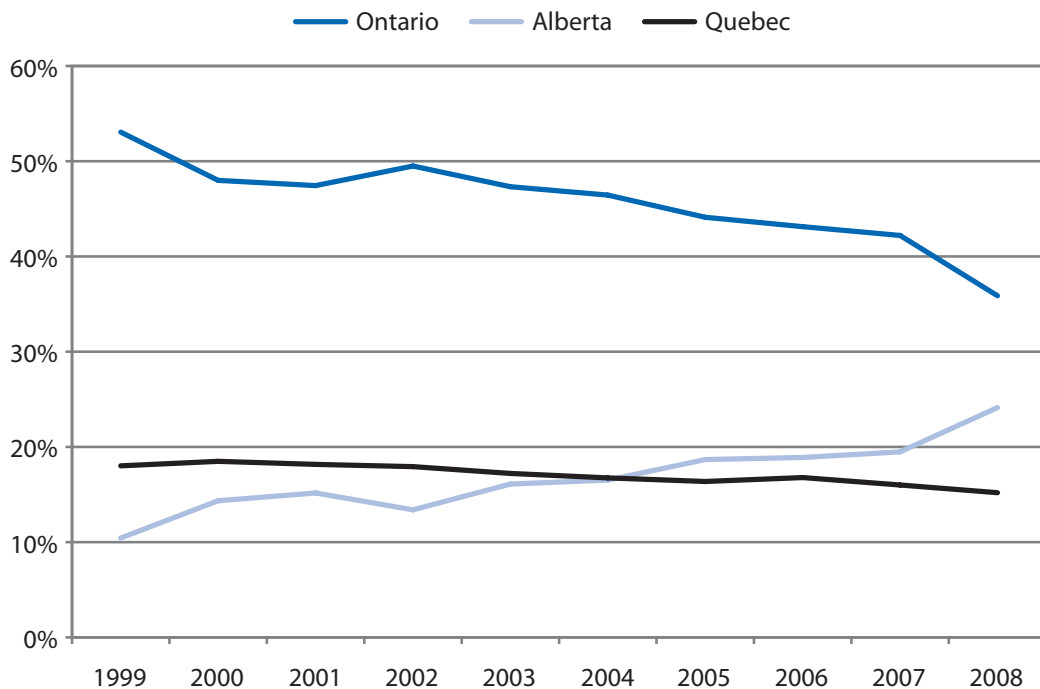
There are no data on exports at the regional or local level, but existing data at the provincial level can provide some indication of the exporting position of the Toronto region. They are, however, likely to understate Toronto's export position, which may be relatively larger than Ontario's given its geographic proximity to the United States. Several trends can be highlighted:

- The export position of the province of Ontario within Canada has become less dominant in the last decade. The domestic export rate of Canada was 28.4% of GDP in 2008; this is average among OECD countries. Canada exported USD 456 billion in 2008, making it the tenth-largest exporter in the world. The province of Ontario had a slightly lower domestic export rate, namely 27.8% in 2008, and contributed a share of the Canadian exports (35.9%) that corresponds to its share of the

national economy (36.7% in 2008). Representatives of export firms have indicated that official data undercount exports in services, which are especially relevant to areas with service-oriented economies such as Toronto. The province of Ontario provided a large share of the exports in three of the five main exporting items of Canada, namely motor vehicles, machinery and electronic machinery (Figure 1.21). This share has decreased over the last ten years, from 53% in 1999 to 36% in 2008, especially in machinery. At the same time, the share of the second-largest exporting province, Alberta, has increased from 10% to 24%, largely due to the impact of oil price developments on export performance of Alberta's oil and gas sector (Table 1.5).

- Exports from Ontario are highly oriented towards the United States. About 82% of its total domestic exports in 2008 went to the United States and 5% to the United Kingdom; other exporting destinations were Norway and Mexico. Exports to China were at 1% of total exports. The dominance of the United States as an export destination is similar for other provinces in Canada, although the US share of Ontario's exports is higher than the average in Canada (78%). This strong orientation towards the United States can be explained by geographical proximity, combined with economic specialisation patterns: it has been shown that especially in the automobile sector, the cross-border linkages between Canada and the United States are so large that the border between the two economies has virtually disappeared, although heightened security resulting from the 9/11 attacks has re-instated border stringency (François and Baughman, 2007).¹⁶ Cross-border movements of goods form an important part of total exports of Ontario; if re-exports were included, Ontario's export rate would be 32.1% rather than 27.8% in 2008 (Industry Canada Trade Data Online Database 2009). A main consequence

Figure 1.21. **Shares of domestic Canadian exports by three leading provinces (1999-2008)**



Source: Trade Data Online, Industry Canada.

of this high dependency on the US market is the linkage of Ontario to business cycles in the United States. Ontario has long benefitted from economic growth in the United States, but has suffered since 2008 from the economic downturn there. The automobile industry, for instance, has been particularly affected by the global economic crisis that started in 2008, which strongly affected the United States. Ontario's exports have gradually become more diverse: domestic export shares to the United States declined from 93.5% in 1999 to 81.7% in 2008, and export shares to Asia (excluding the Middle East) increased from 1.5% in 1999 to 3.6% in 2008. However, export levels to countries other than the United States still remain small. The majority of exports are in manufacturing and raw materials, rather than in services: the top 25 export items from Ontario are all manufactured products or raw materials, although some service firms have indicated that their export levels are not reflected in official statistics. The integration of Ontario firms in global supply chains is low, as can be observed from its low share of re-exports other than with the United States. This reflects the tendency for Canadian exports in general (Lemaire and Cai, 2006; Goldfarb and Chu, 2008).

Table 1.5. **Main Canadian export sectors and provincial shares**

	Share of Canadian exports	Main exporting province	Share of province in national export
Mineral fuels and oils	21%	Alberta	60%
Motor vehicles and parts	15%	Ontario	94%
Machinery	8%	Ontario	61%
Electronic machinery/equipment	5%	Ontario	67%
Wood	3%	British Columbia	51%

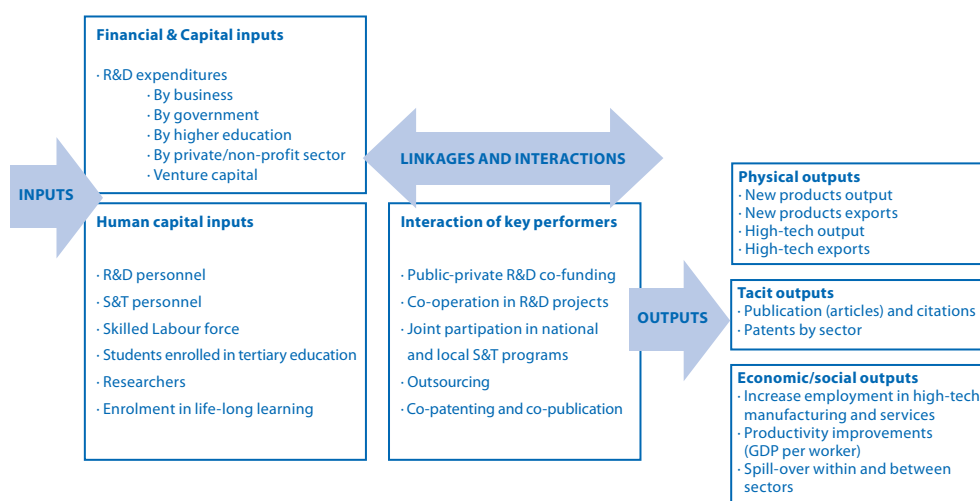
Source: Foreign Affairs and International Trade Canada (2007), (2008).

D. Adding value added through innovation

Innovation is central to productivity, but measuring innovation activity, notably at the metropolitan level, is a challenging task, due to data limitations and the multi-faceted nature of innovation. Data on several traditional innovation indicators is available at the provincial level in Canada, as is the case in most OECD countries, but it is not consistently collected at the metropolitan level (Figure 1.22). The Toronto Region Research Alliance has made a laudable effort to collect data for an area designated as the “Toronto Region” (an area of about 7 million inhabitants, larger than the definition for Toronto region in this Review, but smaller than the Greater Golden Horseshoe), which gives an indication of the state of innovation in Toronto.¹⁷ The traditional innovation indicators are limited and therefore do not capture the multi-faceted character of innovation: patent data, for example, may not always pick up innovative activity.¹⁸ “Hidden” innovation, which does not show up in indicators such as R&D expenditures and patents, can partly be revealed by innovation survey data at company level regarding whether, why, how and with whom companies innovate. Such data do not appear to exist separately for firms in the Toronto region.

Scores of the Toronto region have been mixed on several of the innovation output indicators, including: (i) patents; (ii) publications and citations; (iii) high-tech employment and (iv) high-tech entrepreneurship.

Figure 1.22. Traditional innovation indicators

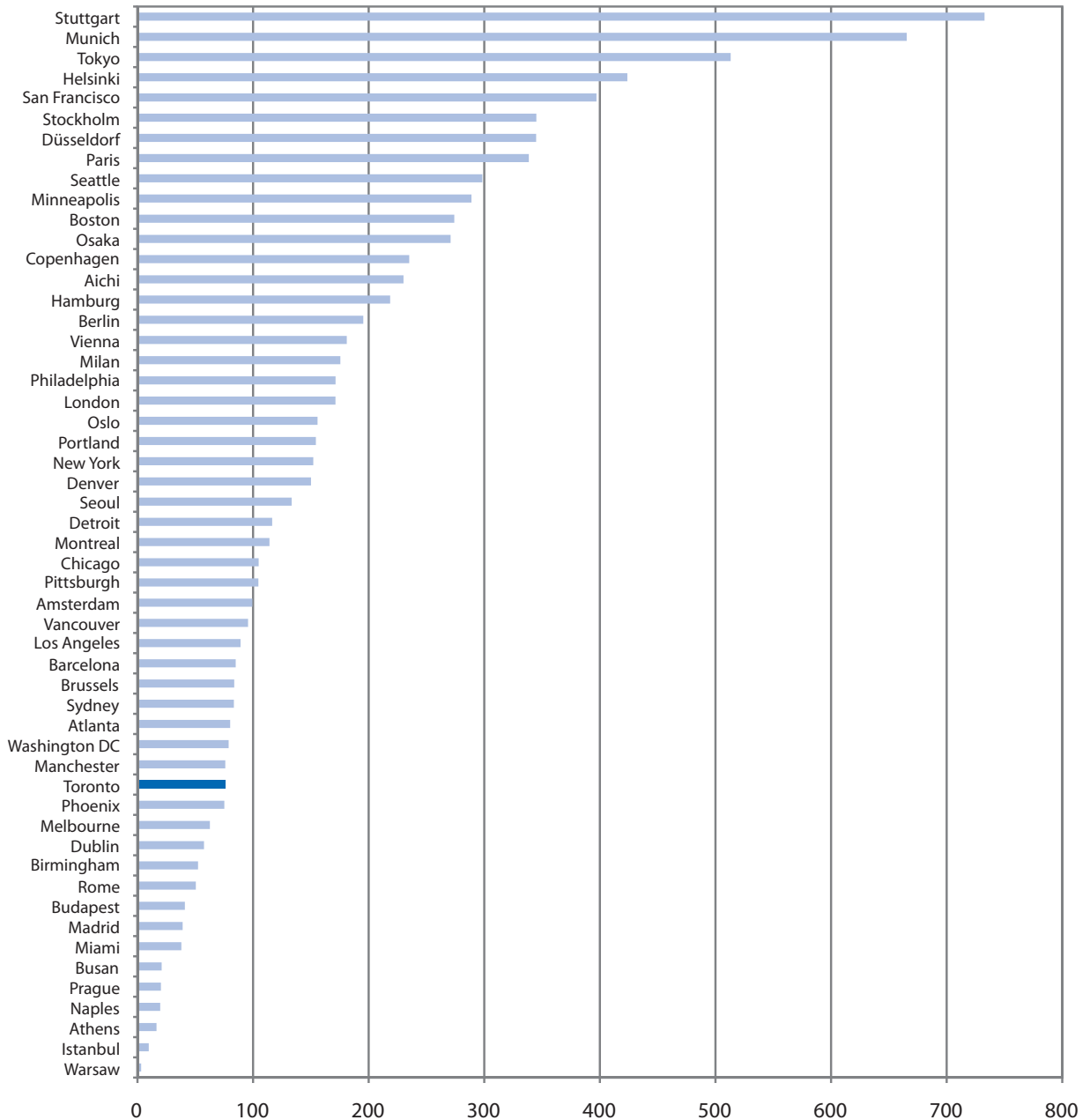


Source: OECD (2008e).

- Patents.** The City of Toronto was not highly ranked in 2005 with regards to patent applications, as compared to several Japanese and American cities, and some in Europe, such as Paris and London (Figure 1.23). The two regions of York and Peel registered more patents per inhabitant than in the City of Toronto, which suggests that the number of patent applications per million inhabitants for the Toronto region overall might be higher. The City of Toronto is not amongst the cities with high patent applications in ICT and biotechnology (Figure 1.24).¹⁹ The University of Toronto was not in the top 20 of universities worldwide with highest patent applications in 2007, according to the World Intellectual Property Organisation (WIPO, 2008); it was fourth among Canadian universities, but 53 universities in the United States produced more patent applications in 2007 (AUTM, 2008).²⁰ The situation in the Toronto region reflects that of Canada, where the number of patents is under the OECD and EU25 averages. These indicators should be interpreted with caution, as the regional context in Toronto might differ from those in other regions: the relatively low ranking of the Toronto region might be explained by the fact that the hospital sector (which is strong in Toronto) is excluded in most of these rankings, and because private universities from the United States are included (which have a stronger market-oriented mandate). Moreover, it should be noted that the strength of the life science cluster in the Toronto region is, according to some observers, not adequately captured using traditional indicators such as patents and patent citations, firm spin-offs, and levels of venture capital and R&D investments. The less research-intensive generic pharmaceutical sector in the Toronto region and its combination of technologies and competencies from different economic sectors has led to high levels of innovation within the broader biomedical sphere that are not captured by these indicators (Gertler and Vinodrai, 2009).
- Publications and citations.** The number of scientific publications in Toronto (TRRA definition) was around 180 per 100 000 inhabitants in 2006, performance that is reasonably good by comparison with other North American regions; this figure is one-quarter of the average output of publications in Silicon Valley. The number of

publications from Toronto (TRRA definition) represents one-third of all publications generated in Canada. The impact of these publications from Toronto (TRRA definition), as measured by citations, was relatively low as compared to other North American metropolitan regions.²¹ A large share of these publications were produced at the University of Toronto, which had the second-largest output of publications among North American universities in the period running from 2003-2007, after Harvard University, and occupied the sixth position with regards to citations.²²

Figure 1.23. **Patent applications per million inhabitants in cities in the OECD (2005)**



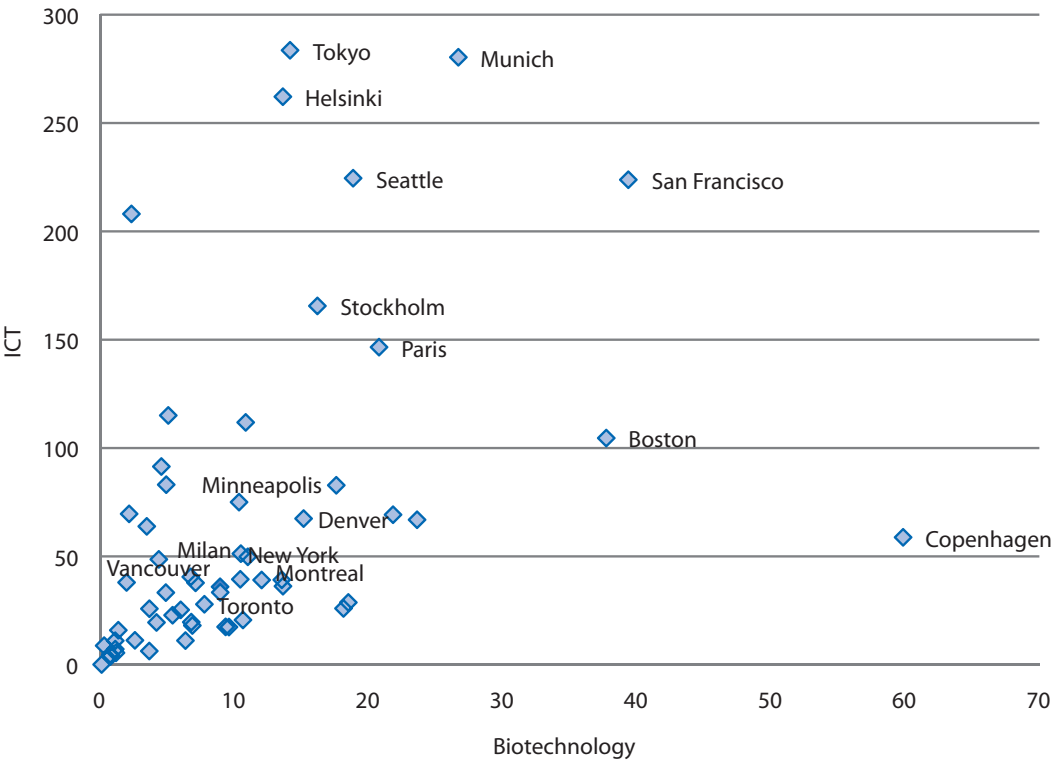
Note: Territorial units are defined at the TL3-level. In the case of Canada, this represents city boundaries.

Source: OECD Science and Technology Database.

According to the QS World University Rankings 2008, the University of Toronto is tied for first (with Caltech, MIT, Harvard, Princeton and several other universities) for citations per faculty. According to 2008 Academic Ranking of World Universities data, the University of Toronto ranks third in the world for “Total number of articles indexed in the Science Citation Index”, but 37th on highly cited researchers and 30th on citations in Nature and Science. University of Toronto researchers have between 1980-2008 consistently won more awards from prestigious international bodies than any other Canadian university (University of Toronto, 2009).

- *High-tech employment.* The Toronto region had the seventh-largest concentration of science and engineering employment among North American metropolitan regions in 2000-2001 and the 30th-largest share of science and engineering employment in relation to its total population, with only Boston, San Francisco and Washington DC scoring higher on both indicators (Beckstead and Brown, 2006). The Toronto Region counted on average 14 of the 500 fastest-growing technology firms in North America between 2001-2007, comparing favourably with the Research Triangle, Illinois and Michigan. World-leading regions in this indicator, such as Silicon Valley and Massachusetts, had respectively four and two times more of these firms relative to the Toronto region (Deloitte and Touche). A 2009 report from the Milken Institute ranked Toronto 15th out of 50 North American metropolitan regions in terms of high-tech industrial performance. The Toronto region was noted for its strengths in value-added industries such as: information services; medical and diagnostic labs; motion

Figure 1.24. Patent applications in ICT and biotechnology in OECD cities (2005)



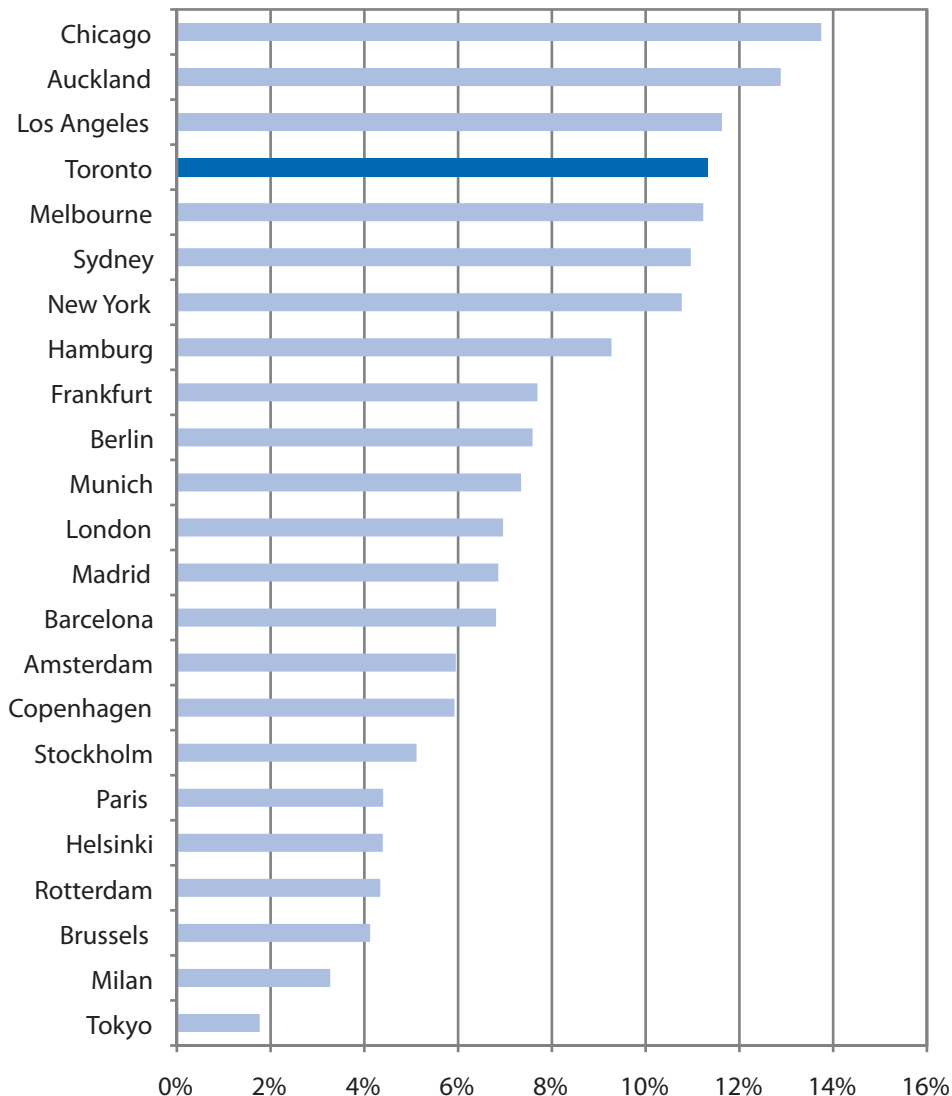
Note: Territorial units are defined at the TL3-level. In the case of Canada, this represents city boundaries. Patents applications per million inhabitants.

Source: OECD Science and Technology Database.

picture and video industries; computer systems designs; and pharmaceuticals. The Toronto region is ranked tenth in North America by the size of its high-tech labour sector (DeVol *et al.*, 2009).²³

- *High-tech entrepreneurship.* Among a selection of OECD metropolitan regions, the Toronto region has one of the highest shares of early-stage entrepreneurs in technology sectors and shows a high degree of early-stage entrepreneurial activity oriented toward new product markets. The Toronto region is one of the metropolitan regions in the OECD with the highest rates of entrepreneurship (Figure 1.25). Right behind

Figure 1.25. **Entrepreneurship rates in selected OECD metropolitan regions (2001-2006)**



Note: These data show early-stage entrepreneurial activity rates from metropolitan regions for which sufficient data were available. These areas include suburbs and reflect labour market areas. Early-stage entrepreneurial activity is defined as nascent entrepreneurship (involved in setting up a business), and the rate of owner-managers of a new business (i.e. businesses that have existed for up to 3.5 years). The unit of analysis is the metropolitan region.

Source: Bosma, N. *et al.* (2008).

Chicago, Auckland and Los Angeles, it is far more entrepreneurial than most other metropolitan regions in the OECD, and is perceived by its population as a highly favourable place to start a business, according to surveys (Acs *et al.*, 2008).

Innovation is facilitated by human capital levels in the Toronto region that are reasonably strong. As was mentioned before, the Toronto region has 33% higher education attainment as compared to the average of 30.8% for 48 OECD metropolitan regions in 2004. However, some forms of human capital that typically drive technology-based innovation are relatively lower in the Toronto region than in other North American urban centres. In terms of engineering degrees, for example, approximately 55 new degrees per 100 000 inhabitants were awarded in 2007 in Toronto (TRRA definition), which was relatively low in comparison with several North American regions, such as the Research Triangle in North Carolina, Silicon Valley, Massachusetts and Michigan. Toronto (TRRA definition) is however doing well from a Canadian perspective: around 4.5% of the labour force in Toronto (TRRA definition) had a university background in engineering in 2001, well above the Canadian average (2.9%) and also above the average in Ontario (3.6%) (TRRA, 2008).

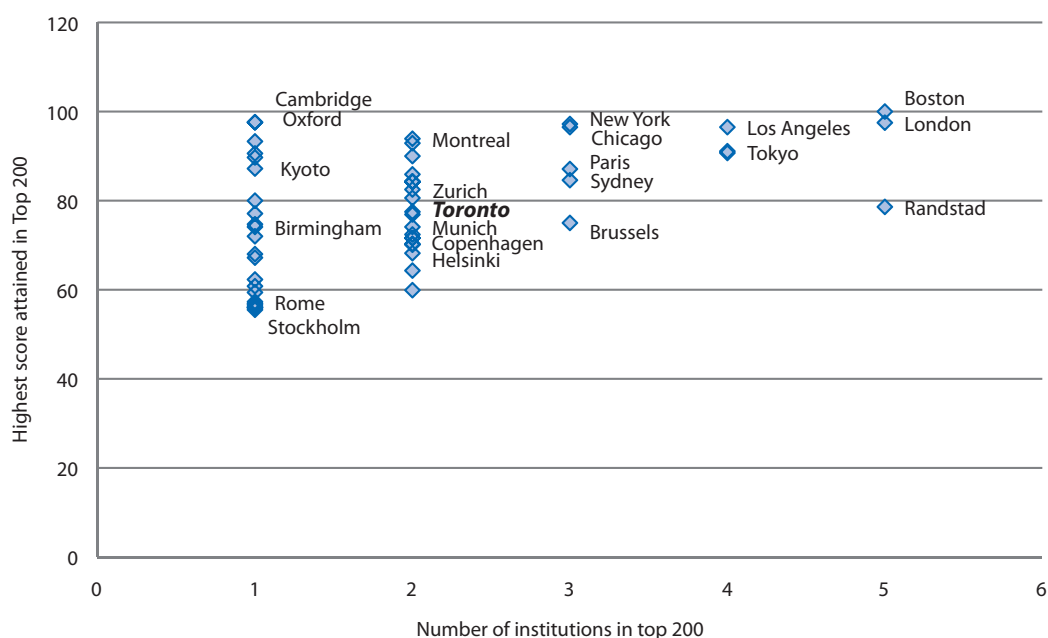
Innovation in the Toronto region is also enabled by the presence of several high-ranking universities with what appear to be strong specialisations in technology, natural science, arts and humanities and business education. Five universities among the higher education institutes in the Greater Golden Horseshoe area figure in international university rankings, two of which are in the Toronto region (Table 1.6).²⁴ These two are the University of Toronto and York University. A selection of metropolitan regions in the world (in particular Boston, London, Randstad, Los Angeles and Tokyo) scores higher than Toronto in having more than two higher education institutes in the Times Higher Education Supplement ranking, although these findings have to be interpreted with caution, as some universities that are not represented in the rankings could be strong in certain specialisations (Figure 1.26).²⁵ The University of Toronto has strong specialisations in technology, natural sciences and arts and humanities, in which it ranks among the best 15 universities in the world and as the premier Canadian university (THES, 2007), although some caution is warranted, as rankings are not always able to capture specialisations relevant to innovation capacity.²⁶ In addition, Toronto has a strong set of business education institutions, including the Schulich School of Business at York University and the Rotman School of Management at the University of Toronto.²⁷ The Greater Toronto Area has in total 332 centres of excellence and research institutes. The majority of these are associated with the University of Toronto and other universities and colleges in the region, including the University of Ontario Institute for Technology, established in 2003. Advanced research collaborations take place in the Canadian Institute for Advanced Research, the Ontario Centres of Excellence, the MaRS Discovery District and several other institutions.

Table 1.6. **Higher education institutes in the Greater Golden Horseshoe in international rankings**

Universities/rankings	Shanghai	THES	ENSM	Taipei	Wuhan
University of Toronto	23	45	84	12	11
McMaster University	87	108		89	95
University of Waterloo	151	112		274	226
University of Guelph	203			314	283
York University	402		205	326	

Source: Shanghai (2008), THES (2007), ENSM (2007), Taipei (2007), Wuhan (2007).

Figure 1.26. Number of high-quality universities in OECD metropolitan regions (2007)



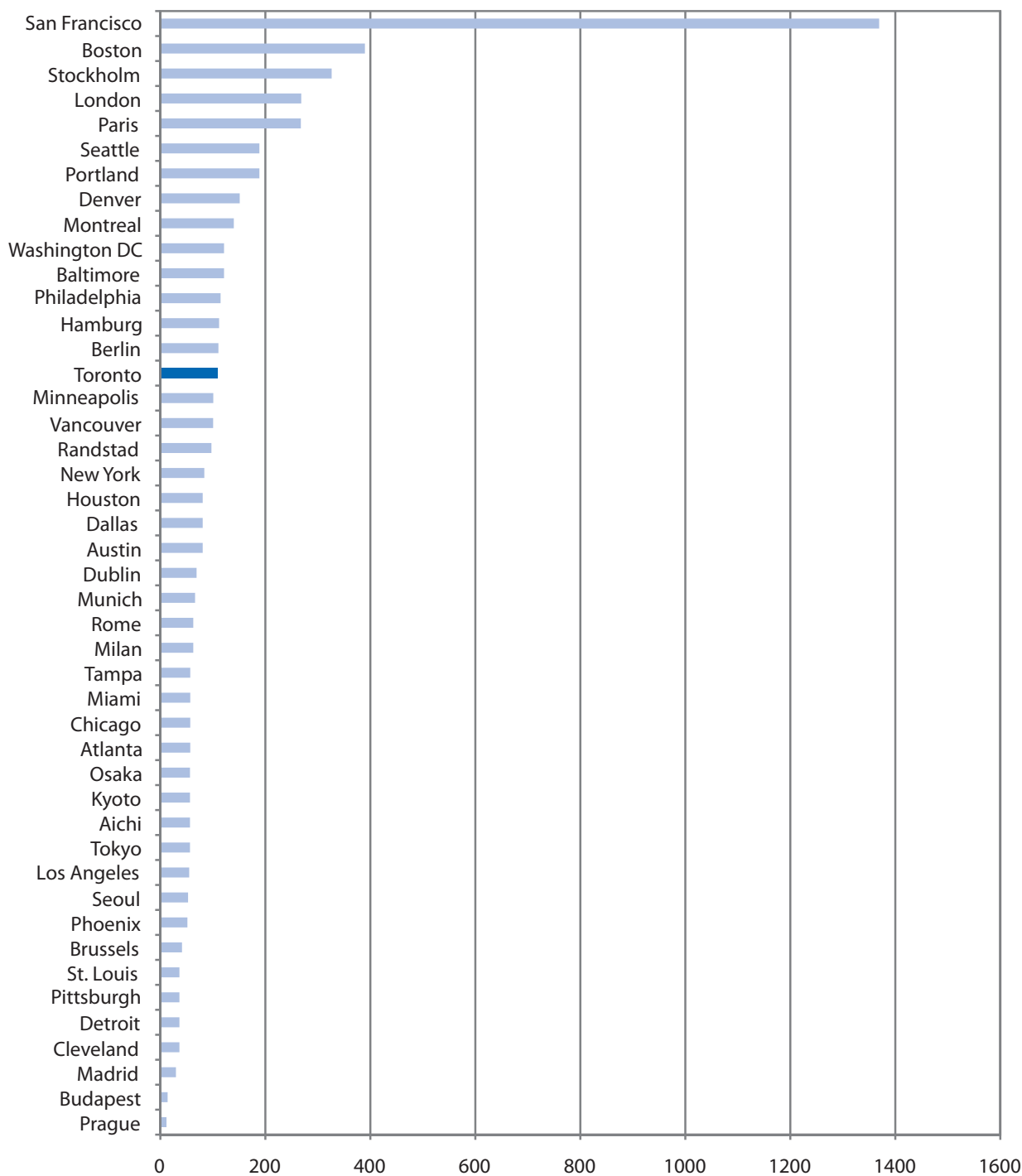
Note: A score of 100 is the highest that a university can receive, indicating excellent quality. The units of analysis are metropolitan regions as defined in the OECD Metropolitan Database.

Source: Based on data from THES (2007).

Box 1.1. Worldwide rankings of universities

There are several worldwide rankings for universities. The Academic Ranking of World Universities by the Shanghai Jiao Tong University analyses 3 500 universities and ranks 500 universities, evaluating quality of education, size, research output, impact and prestige. Citations in natural sciences journals and number of Nobel Prize-winners and Field medalists (in mathematics) weigh relatively heavily in this index. The Times Higher Education Supplement ranking of 200 universities worldwide gives relative weight to academic reputation as reviewed by 1 000 academic peer reviewers; proxies for scientific output (citations); and quality of education (student/staff ratio). The Professional Ranking of World Universities by the École Nationale Supérieure des Mines de Paris evaluates the performance of each university by looking at the labour market perspectives of its alumni. Its main criterion is the number of CEOs of Fortune Global 500 firms who studied at each university. The Performance Ranking of Scientific Papers for World Universities by the Higher Education Evaluation and Accreditation Council of Taiwan evaluates publications of scientific papers. It uses three criteria: research productivity, research impact and research excellence, using bibliometric methods to analyse the performance of the top 500 universities in the world. The Research Centre for Chinese Science Evaluation of Wuhan University ranks universities based on essential science indicators, taking into account publication counts and citation frequency in more than 11 000 journals around the world in 22 research fields.

Figure 1.27. Private equity in selected OECD metropolitan regions (USD per capita)



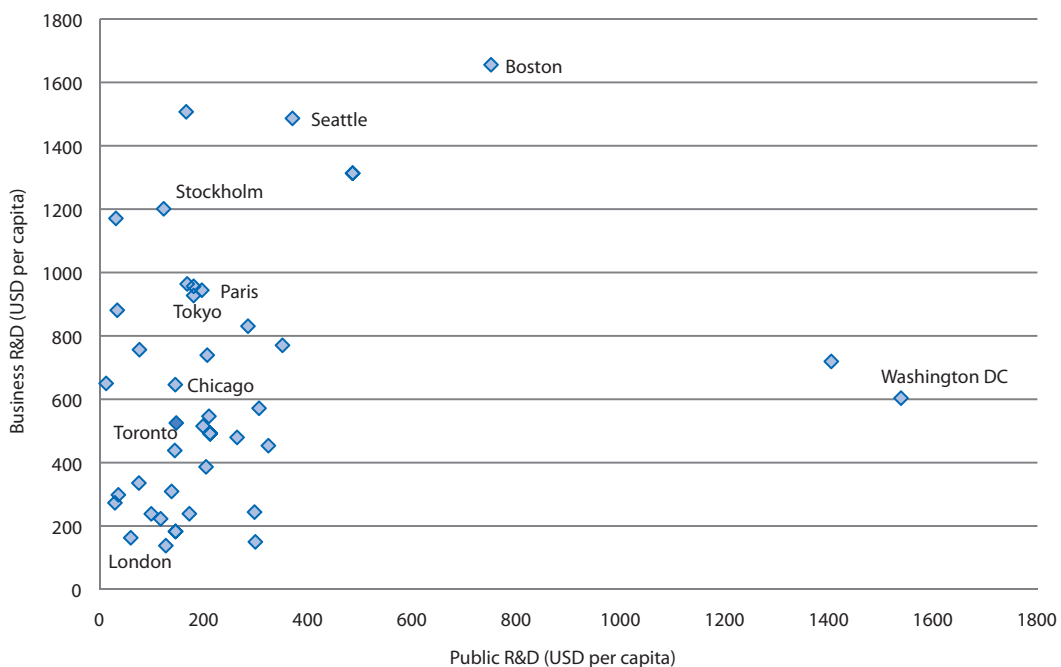
Note: Year and methodology not provided in the source. Provincial Canadian data for Ontario, Quebec and British Columbia are taken as a proxy for those in Toronto, Montréal and Vancouver.

Source: Huggins, R. *et al.* (2008).

One possible explanation for mixed innovation outcomes in Toronto is R&D spending in Ontario. The relationship between innovation outcomes such as patent applications and R&D spending in general is not linear. The level of both public and private R&D spending in Ontario is no more than average, and lags behind several of the leading metropolitan regions in the OECD (Figure 1.28). Gross domestic R&D expenditures in Ontario are larger than the Canadian average: they accounted for CAD 1 008 per capita in 2006 and 2.27% of Ontario's GDP; the per capita number represented the highest number among Canadian provinces, the GDP share the second-highest after Quebec. Within Canada, Ontario is the province where the largest share of R&D expenditure comes from business and the smallest from federal research funding (Statistics Canada, 2009). Federal research funding in the areas of health and natural sciences in Toronto (TRRA definition) is relatively low in comparison with several North American regions, in particular with the Research Triangle, Massachusetts and Silicon Valley, where federal funding is seven to 25 times higher.

Innovation outcomes might also be connected to private finance for innovation in the Toronto region, which is not abundant in comparison with other regions in the OECD. In order to finance innovations, firms can make use of the private capital market in the form of private equity. Estimations of average private equity per capita in the Toronto region range from CAD 38 per capita, to CAD 89 and USD 110.²⁸ Although this is higher than many other metropolitan regions in the OECD, it does not come near to the average private equity capital that is available in metropolitan regions like San Francisco – by far the leading metropolitan region (USD 1 370), Boston (USD 390) and Stockholm (USD 325) (Figure 1.27). Montréal is also doing better in attracting private equity, despite Toronto's leading national position in the financial sector. Venture capital investments in the Toronto region were around USD 260 million in 2005, which is fairly limited in comparison with

Figure 1.28. **Public and business R&D in selected metropolitan regions**



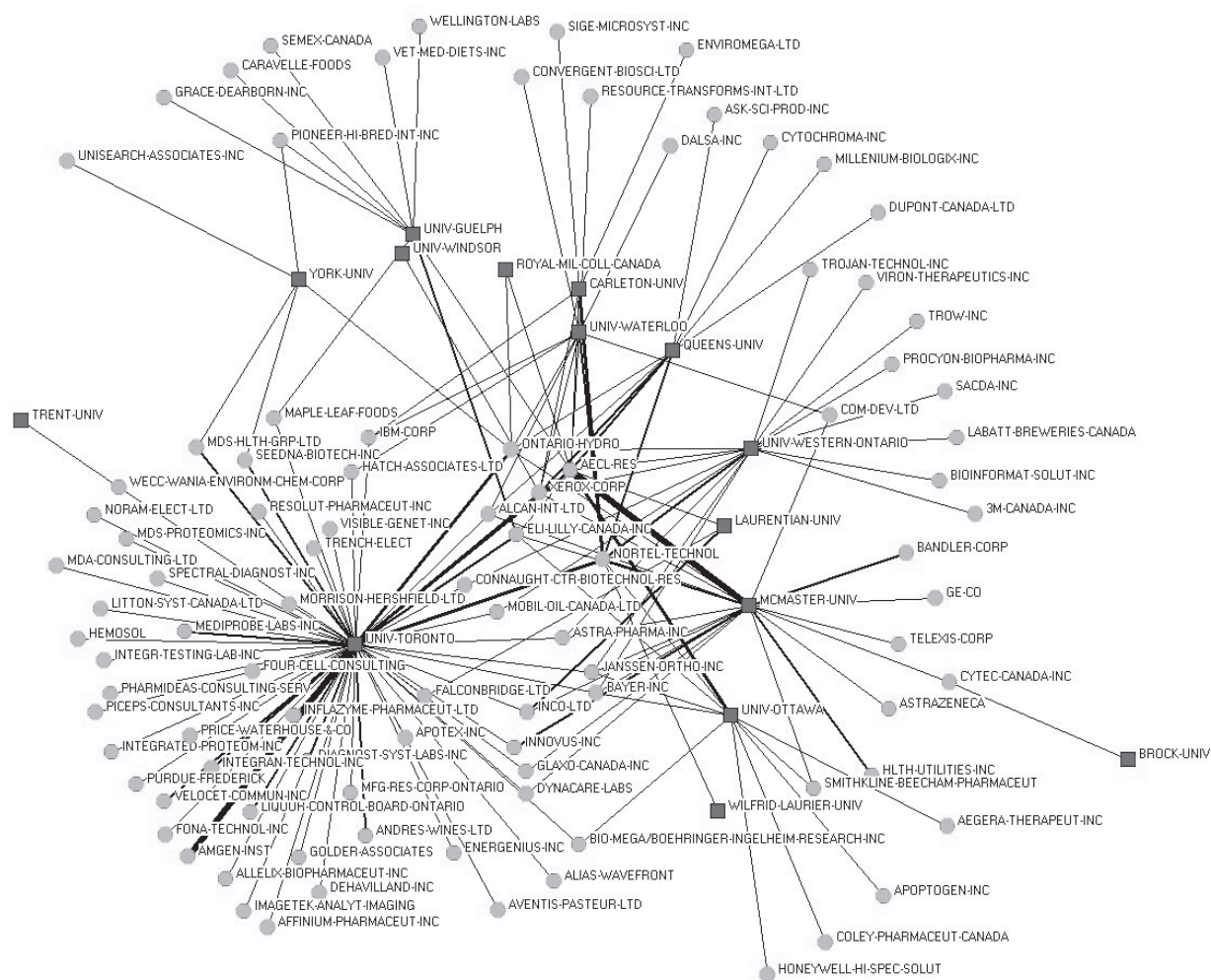
Note: Year and methodology not provided in the source. Provincial Canadian data for Ontario, Quebec and British Columbia are taken as a proxy for those in Toronto, Montréal and Vancouver.

Source: Huggins, R. *et al.* (2008).

other metropolitan regions in North America. Venture capital in the Toronto region is mainly invested in software (32% of total investment in 2005), telecommunications (14%) and biotechnology (10%). Metropolitan regions such as Massachusetts tend to direct more of their venture capital into biotechnology and medical equipment (WCKI, 2008).

Productivity could further benefit from collaboration between higher education institutions and industries, but rates of collaboration are declining. Around 160 collaborations between universities and firms in Ontario were reported in 2004, which can take the form of co-operation in research, possibly followed by joint publications and patents. Much of the collaboration in Ontario is centred at the University of Toronto (Figure 1.29). A more detailed indication of the collaboration between universities and industries comes from papers written in Ontario universities co-authored with industries in Ontario and Canada. Of the 10 600 papers produced by Ontario universities, 1.5% were co-written with Ontario industries and 2.1% with Canadian industries. This collaboration is not exclusively regional: of the papers co-written by Ontario industries, around 36% were with Ontario universities in 2004, the rest with universities located elsewhere. University-industry cooperation between 1999-2004 shows a decline: the number of university-industry collaboration and joint papers

Figure 1.29. Links between higher education institutes and industry in Ontario



Source: Province of Ontario.

almost halved over this period (SCI Database). Although the University of Toronto had the highest number of start-ups in 2007 among Canadian universities, its licensing income ranked fifth. The income of licenses of the University of Toronto is limited in comparison to US universities, several of which have licensing incomes 50 times as high as those of the University of Toronto.²⁹ The University of Toronto scores relatively high on the number of new spin-off companies and new disclosures (University of Toronto, 2009). Based on data for Canada, doubts have been raised as to the outcomes of university-industry collaboration: Canada performs well in terms of firms with new-to-market product innovations, but the share of turnover due to these products is among the lowest in the OECD area (OECD, 2008d). Inter-linkages between firms play an essential role in incremental innovation in metropolitan regions. Despite initiatives to map economic sectors in the Toronto region, relatively little is known about firm inter-linkages.

1.2.2. Leveraging cultural diversity

Impact on urban competitiveness

The link between cultural diversity and the competitiveness of urban economies is subject to lively debate. Two vehicles by which diversity may influence performance have been identified. On the one hand, diversity may encourage the consideration of new ideas, and change the way in which productive processes are carried out, enhancing productivity at the workplace. On the other hand, diversity may come at a price, as cultural differences often imply language differences that can become communication barriers that increase disputes or conflicts at work. Recent research suggests that cultural diversity may, overall, have a positive impact on urban economies (Box 1.2).

The Toronto region is the most culturally diverse urban centre in Canada. Although Canada is one of the OECD countries that has a high immigrant population, cultural diversity varies widely across cities in Canada. According to the Hachman Index of Cultural Diversity (HICD), Toronto is the most culturally diverse urban centre in Canada, with a score of almost four times the average for Canadian cities (Figure 1.30).³⁰ Moreover, a number of cities that rank high for diversity are also located in the Golden Horseshoe region (e.g. Hamilton or Oshawa). Large cities usually present higher values of diversity, but not always, as in the case of Quebec City, which presents below-average values of diversity. Contrastingly, relatively small urban centres can also be very culturally diverse, as in the case of Guelph (Ontario), Regina (Saskatchewan) or Kelowna (British Columbia) (Figure 1.31).

In the case of Canada, cultural diversity is associated with higher earnings. Diversity could be related to better economic performance in cities, perhaps leading to productivity gains or innovation (Figure 1.32). Although the Toronto region might be taking advantage of its diversity, a number of cities in Canada, such as Ottawa and Oshawa, have higher earnings yet lower levels of diversity. Economic growth in the Toronto region is lower than in many urban areas in Canada, despite the diversity in the metropolitan region (Figure 1.33). High earnings in other urban centres, such as Calgary, might be more related to the composition of its industry (high-paying jobs in the oil and gas sector) rather than cultural diversity. The presence of well-performing sectors and their strong growth could attract immigrants and hence increase cultural diversity; in such a case, it is not cultural diversity that exerts a positive impact on economic growth. A clear causal link between diversity and performance cannot be established without running an econometric model and without reliable GDP figures at the sub-provincial level in Canada.³¹

Box 1.2. Cultural diversity and urban economic performance

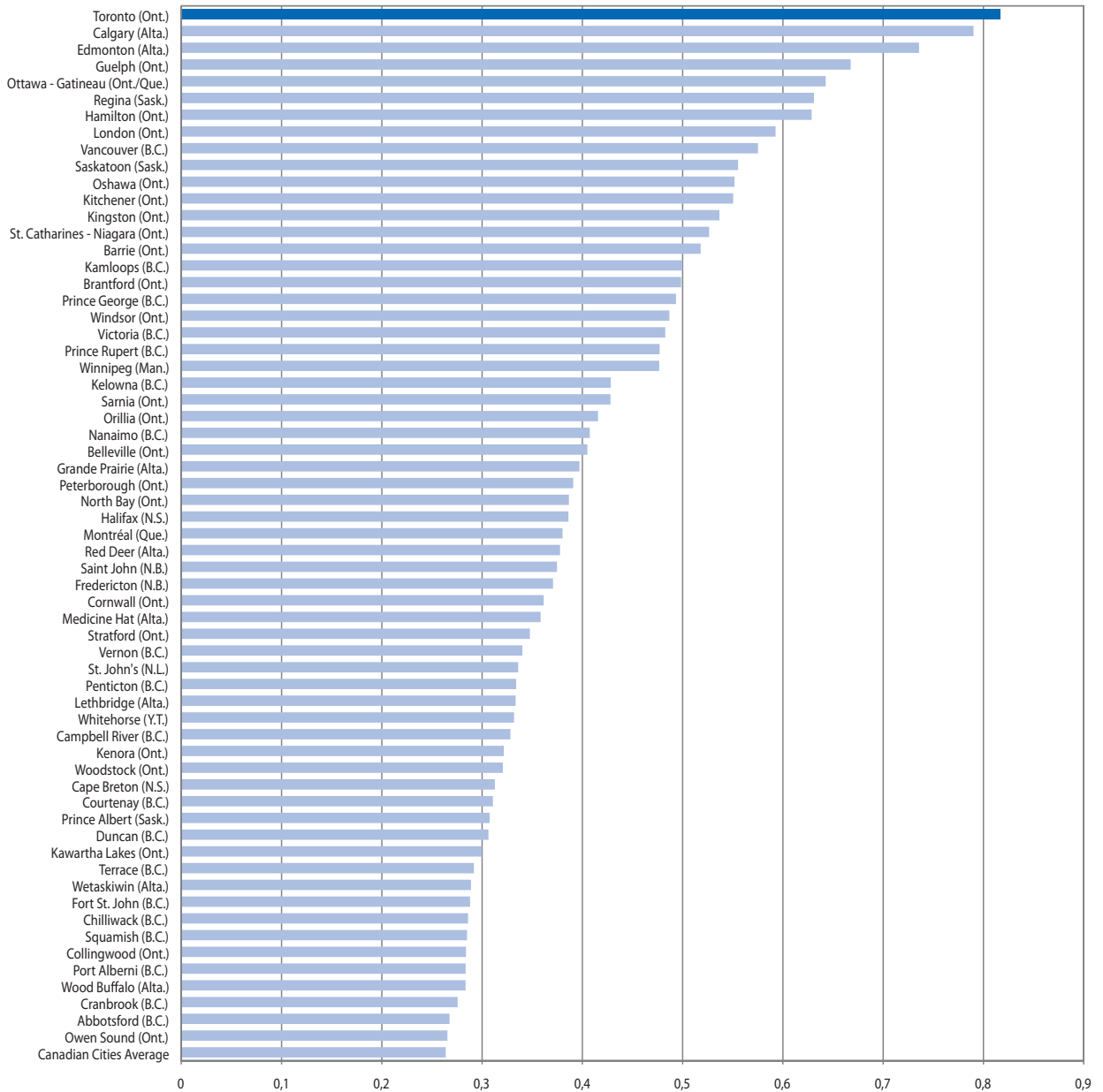
A number of studies relating diversity to urban agglomeration suggest that cultural diversity can have positive economic consequences. Sassen (1994) studies “global” cities, such as London, Paris, New York and Tokyo, and their strategic role in the development of activities that are central to world economic growth and innovation, such as finance and specialised services. A key characteristic of “global” cities is the cultural diversity of their population. Bairoch (1985) sees cities and their diversity as the engine of economic growth. More recently, Florida (2002) argues that cultural diversity helps to attract knowledge workers, thereby increasing the creative capital of cities and the long-term prospect of knowledge-based growth (Gertler, Florida, Gates and Vinodrai, 2002).

These insights suggest that cross-country comparisons may not target the correct level of aggregation to identify the possible positive effects of diversity. Finer spatial units, such as cities, where differences more easily interact, seem more appropriate laboratories. The focus on cities makes it possible to control for differences in institutional quality and stage of development. Glaeser, Scheinkman and Shleifer (1995) examine the relationship between a variety of urban characteristics in 1960, and urban growth (in income and population) between 1960 and 1990 across US cities. They find that racial composition and segregation are basically uncorrelated with urban growth. However, segregation seems to positively influence growth in cities with large non-white communities. Alesina and La Ferrara (2005) use the basic specification of Glaeser, Scheinkman and Shleifer (1995) to estimate population growth equations across US counties over the period from 1970-2000. Consistent with their result at the country level discussed above, they find that diversity has a negative effect on population growth in initially poor counties and a less negative (or positive) effect for initially richer counties.

Following Roback (1982), Ottaviano and Peri (2006a) develop a model of a multicultural system of open cities that allows them to use the observed variations of wages and rents of US-born workers to identify the impact of cultural diversity on productivity. They find that on average, US-born citizens are more productive in a culturally diversified environment. This is robust to the use of instrumental variables, thus implying a causal relationship between diversity and productivity. This result is qualified in two specific respects. First, cultural diversity in a locality has a negative effect on the provision of public goods, which is consistent with previous findings at the national level. Second, the positive effects are stronger when only second- and third-generation immigrants are considered, which suggests that the positive effects are realised only when some degree of integration between communities has taken place. The foregoing insights contrast with earlier findings by Borjas (1995 and 2003) showing a negative impact of immigrants on the wages of native-borns and a positive impact on capital returns. However, these findings rely on the key assumptions of perfect substitution between native-borns and foreigners as well as on a fixed capital stock. Allowing for imperfect substitutability between native-borns and foreigners as well as endogenous capital accumulation, Ottaviano and Peri (2006b) find that the effects of immigration on the average wages of native-borns are positive and quite significant. Moreover, they find that the effect is particularly strong for the most educated (college graduates) and negative for the least educated (high school drop-outs). The latter result is consistent with analyses showing a negative impact of immigrants on the relative wages of less educated workers (Borjas 1994, 1999, 2003; Borjas, Freeman and Katz 1997; and to a minor extent, Butcher and Card 1991; Card 1990 and 2001; Friedberg 2001; Lewis, 2003). Bellini, Ottaviano, Pinelli and Prarolo (2008) provide an overview of the relationship between diversity and economic performance across a large set of European regions and find that diversity is positively correlated with productivity.

Peri and Sparber (2008) further investigate the substitutability between immigrants and native-borns sharing the same levels of educational attainment and experience. They show that less-educated workers specialise in differentiated production tasks. Immigrants are likely to have imperfect language (or equivalently, “communication”) skills, but possess physical (or “manual”) skills similar to those of native-born workers. Thus, less-educated native-born workers have a comparative advantage in jobs demanding communication skills, while immigrants are in comparison better able to compete in occupations requiring manual labour. Immigration encourages workers to specialise accordingly. Importantly, language-intensive tasks earn a comparatively higher return, and those returns are further enhanced by the increased supply of labour-intensive tasks that complement them. Therefore, productivity gains from specialisation, coupled with the high compensation paid for communication skills, mean that the presence of foreign-born workers does not result in pronounced adverse consequences for wages paid to less-educated native-borns.

Figure 1.30. Ranking of cultural diversity in Canadian cities
Most diverse cities in Canada, according to the Hachman Index of Cultural Diversity (HICD)

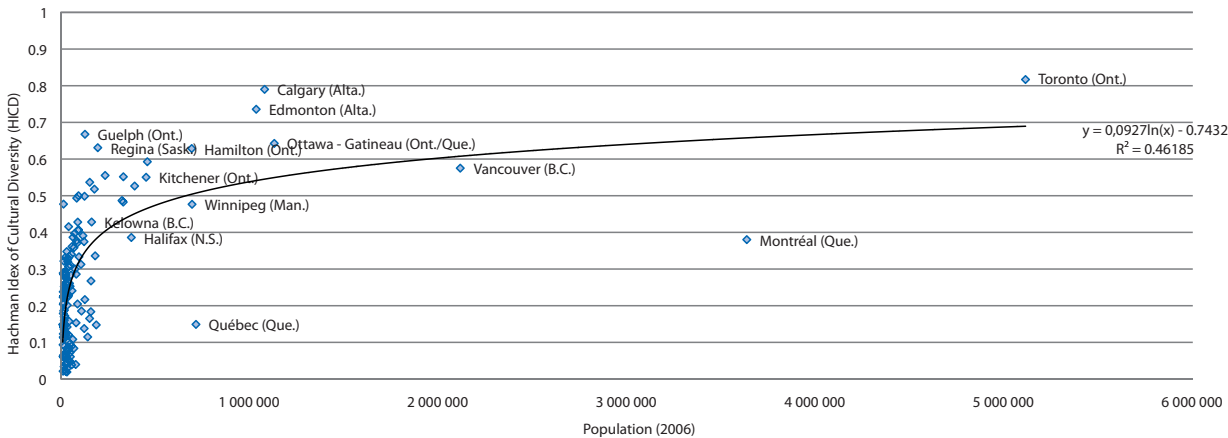


The Hachman Index of Cultural Diversity is defined as:

$$HICD = \frac{1}{\sum_i \left(\left(\frac{m_{ei}}{m_e} * m_{ci} \right) \right)} \quad \text{where } m = \text{migrants } e = \text{ethnic group and } i = \text{city}$$

Source: Own calculations based on Statistics Canada 2006 Population Census.

Figure 1.31. Cultural diversity and city size in Canada
Hachman Index of Cultural Diversity (2005)

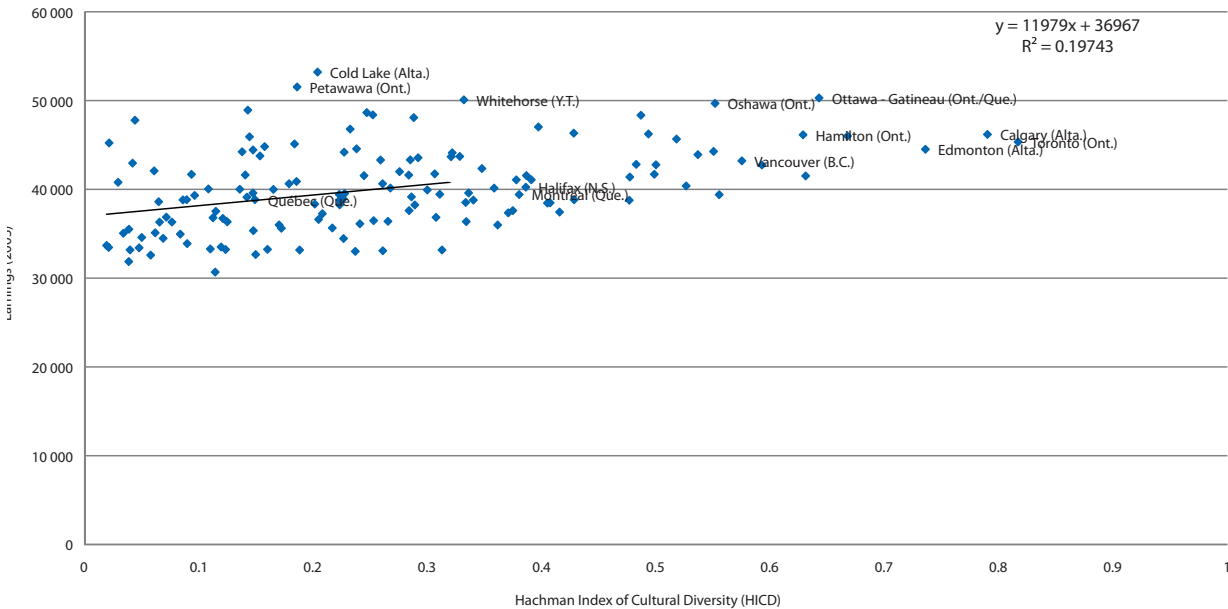


The Hachman Index of Cultural Diversity is defined as:

$$HICD = \frac{1}{\sum_i \left(\left(\frac{m_{ei}}{m_e} * m_{ci} \right) \right)}$$
 where m = migrants e = ethnic group and i = city

Source: Own calculations based on Statistics Canada 2006 Population Census.

Figure 1.32. Cultural diversity and earnings in Canadian cities
Relationship between EHDI index values and median earnings across Canadian CMAs and CAs



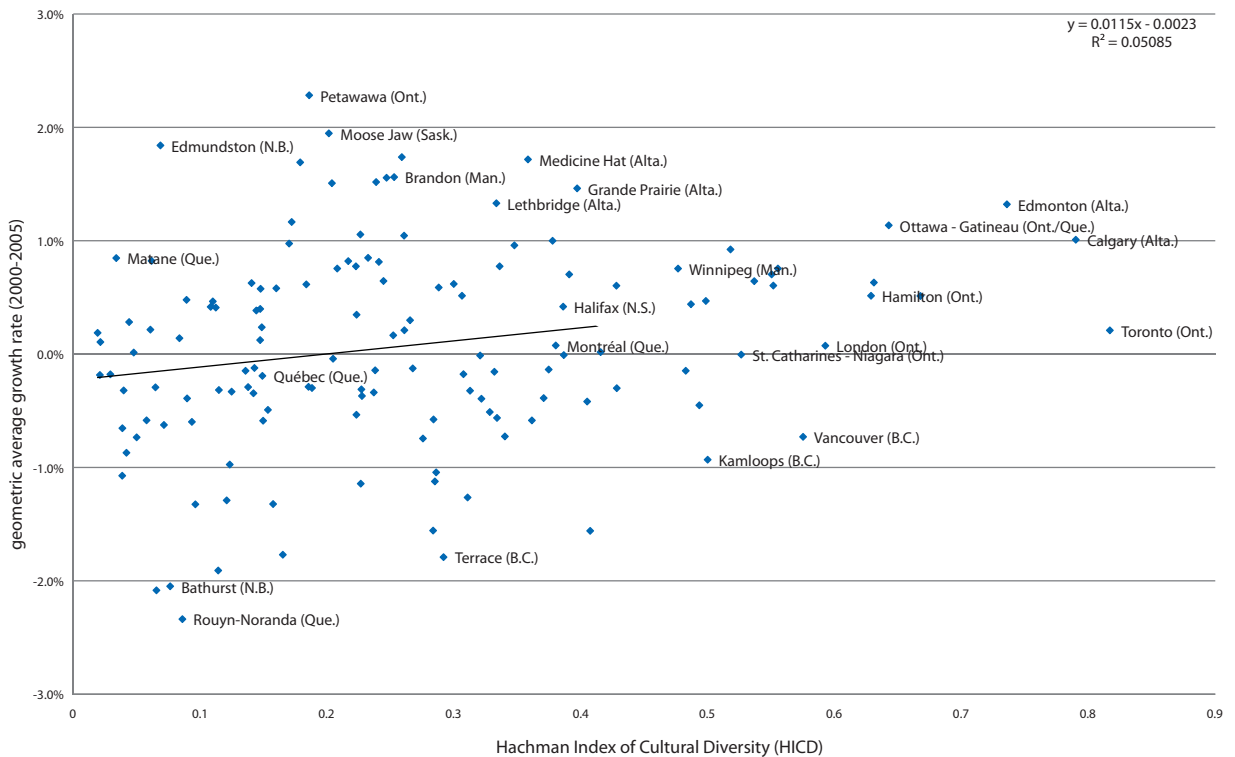
1. Median earnings and HICD are both calculated from data derived from the Canadian Population Census of 2008 that make reference to 2005 data.

2. The Hachman Index of Cultural Diversity is defined as:

$$HICD = \frac{1}{\sum_i \left(\left(\frac{m_{ei}}{m_e} * m_{ci} \right) \right)}$$
 where m = migrants e = ethnic group and i = city

Source: Own calculations based on Statistics Canada 2006 Population Census.

Figure 1.33. Cultural diversity and economic growth



The Hachman Index of Cultural Diversity is defined as:

$$HICD = \frac{1}{\sum_i \left(\left(\frac{m_{ei}}{m_e} * m_{ei} \right) \right)}$$

where m = migrants e = ethnic group and i = city

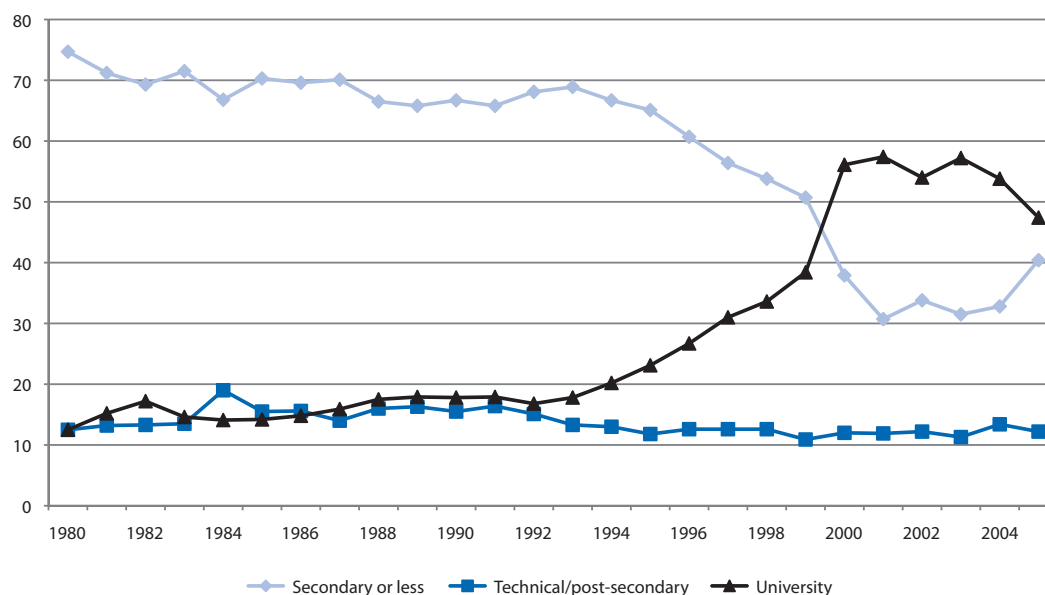
Source: Own calculations based on Statistics Canada 2006 Population Census.

Skills of immigrant population: an under-used asset

Recent migrants to the Toronto region are more highly educated than non-migrants. Around 26% of non-migrants older than 15 years had a bachelor's degree or higher in 2006, as compared with 43% for Toronto residents who immigrated between 2001 and 2006 (2006 Census, Statistics Canada). Since the second half of the 1990s, and even more so following changes in the points system in the federal immigration policy in 2002, the proportion of highly skilled immigrants that are admitted into Canada has increased (Figure 1.34).³² At the same time, the average education level of different newcomer communities in Toronto varies considerably. Immigrants from Russia, Korea, Iran and Pakistan have, on average, a significantly higher degree of educational achievement than does the population of the Toronto region at large, while newcomers from Sri Lanka and Italy tend to be less well educated. The disparities in average education levels for different foreign-born population groups are in large part related to the period when these groups arrived. Immigrants who arrived in the 1950s-1960s, for example, were subject to lower educational requirements for entry into Canada than those who have arrived in the past decade. Foreign-born populations that have arrived more recently will thus in most cases have higher education levels.

Canada, like the Toronto region, remains an attractive destination for international students, attracting 5% of foreign students worldwide. This is less than in the United States (20%),

Figure 1.34. **Educational attainment of immigrants to Toronto**
Permanent residents arriving in Toronto 1980-2005; percentage by education



Source: City of Toronto, Social Development Finance and Administration Division (2008), "The city of Toronto: a profile of diversity".

UK (11%), Germany (9%), France (9%) and Australia (6%), but ahead of Japan (4%). Between 2000 and 2006, Canada's share of the international student market remained constant, while the US share fell markedly (from 25% to 20%). There were however large increases in market shares in Australia, France and Japan. Despite high fees, campuses in Canada are relatively internationalised, with international students accounting for 7.4% of total enrolments in the tertiary-type A and advanced research programmes. More or less similar rates are found in the Toronto region, with 6% international students at York University and 11% at the University of Toronto. In Canada, the internationalisation is most pronounced in advanced research programmes, where international students represent 21.4% of enrolments (above the OECD average of 15.9%) (OECD, 2008c).

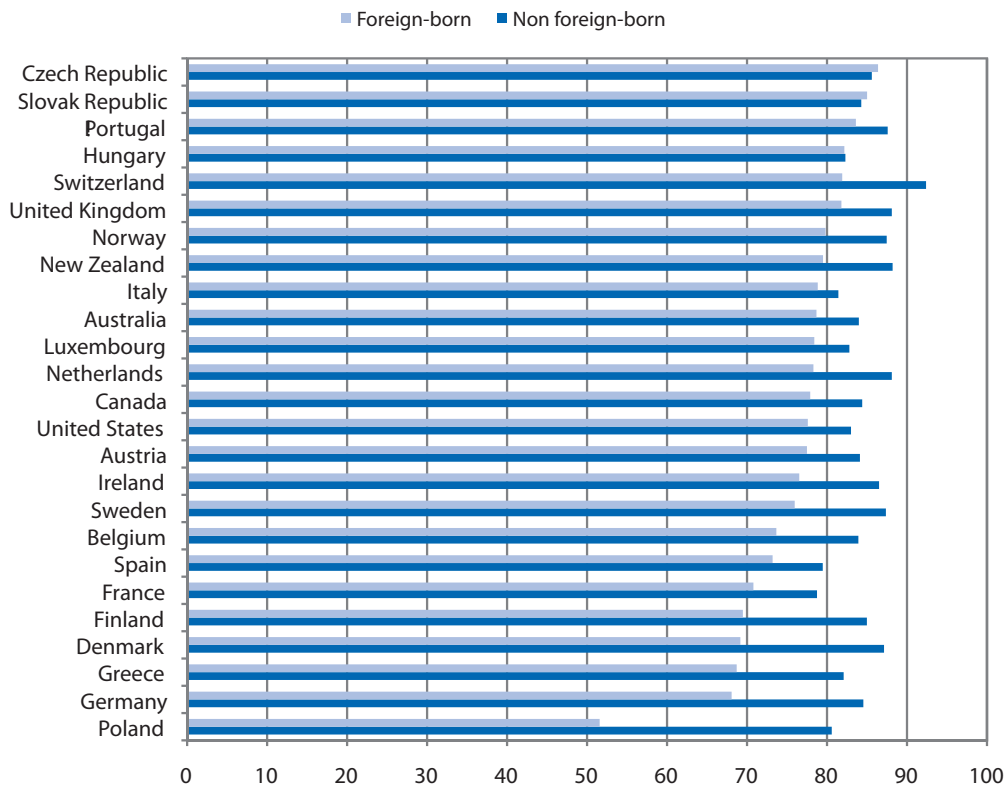
In comparison with other OECD members, Canada is doing relatively well at facilitating the entry of immigrants into the labour market, although not necessarily into professions or jobs that are commensurate with their skill level and educational background. The employment rate for highly skilled non-foreign-born Canadians is 6.5 percentage points higher than the employment rate for highly skilled immigrants (OECD Immigration Database, based on 2001 Census). Although not remarkably large in comparison to other OECD countries, this gap is larger than that of other OECD countries which, like Canada, have been successful in attracting highly skilled foreigners, such as the United States and Australia (Figure 1.35). Canada is doing well in integrating low-skilled immigrants: the employment rate of the low-skilled foreign-born population is actually slightly higher than the rate for native-born Canadians. There are, however, several OECD countries, like the United States, Luxembourg, Greece, Italy and Austria, where the employment rate of foreign low-skilled labour far exceeds the non-foreign-born rate (Figure 1.36).

Reflecting national trends, many highly skilled immigrants in the Toronto region are unemployed or working in jobs well below their level of training, expertise or education.

While recent immigrants to the Toronto region are, on average, far better educated than immigrants who arrived 20, 30 or 40 years ago, they end up more likely to be unemployed. Within the Toronto region, the 2006 unemployment rate among very recent immigrants of core working age (25 to 54 years) is 11%, but 4% for Canadian-born Torontonians;³³ unemployment rates for very recent immigrants were 18.1% in Montréal and 9.6% in Vancouver. At the same time, the Toronto region compares favourably to Montréal and Vancouver with regards to employment rates: very recent immigrants living in the Toronto region were the most likely to be employed of the three largest CMAs and had the smallest difference in the share of their core working-age populations who were employed compared to the Canadian-born in the metropolitan area (Zietsma, 2007). In Toronto, Montréal and Vancouver, 30.9% of immigrants suffer a labour market mismatch, insofar as they are employed in a job that does not correspond to their skills and qualifications. This mismatch rate is approximately 10% for the Canadian-born population (Haan, 2008)³⁴ and may damage the overall immigrant experience in the Toronto region, which was perceived as the least satisfactory among newly arrived immigrants in large Canadian metropolitan regions.^{35, 36} Maximising the potential of the immigrant population takes on an added importance in light of the ageing population and low endogenous birth rate in Canada and the Toronto region.

Credential qualification, lack of Canadian work experience, language proficiency and social and cultural competencies are found to be the main explanations for the labour market integration outcomes of immigrants to the Toronto region. Nearly one out of four recent

Figure 1.35. **Employment rates of highly skilled foreign-born and non-foreign-born population in OECD countries (2003-2004)**



Note: Data for Canada based on 2001 Census for reasons of international comparability. Highly skilled population is defined as those with education at ISCED-levels of 5 and 6.

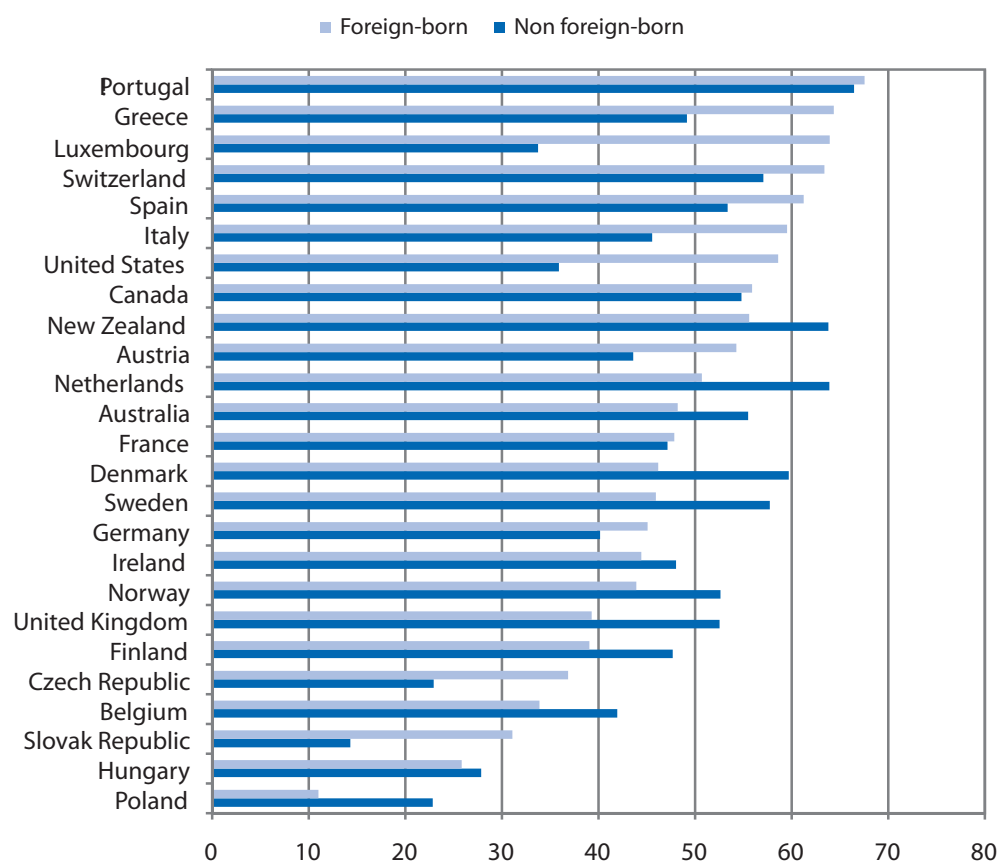
Source: OECD Immigration Database.

immigrants affirmed that their qualifications and work experience were not recognised (Statistics Canada, 2003). Language problems were reported by a relatively large proportion of recent immigrants to Ontario. Whether language ability is the primary indicator for immigrant economic success in the Toronto region remains unclear. Only 13% of recent newcomers to the Toronto region cited language difficulties as the “area of most serious difficulty in the labour market”, which outperformed the national average of 15% and rates in Calgary (18%) and Vancouver (18%).³⁷ While these levels of language proficiency are self-reported by newcomers, a lack of profession-specific language competency has been reported by Canadian employers as a reason for not hiring newcomers.

The potential to leverage cultural diversity for innovation outcomes

Research suggests that cultural diversity could in some situations contribute to innovation performance, but no studies exist on whether and how cultural diversity fosters innovation in Toronto. The presence of highly skilled immigrants has also been found to have a positive impact on the number of patents in cities (Box 1.3). A positive and significant correlation has been found between ethnic diversity and innovative strength in Canada generally; however, cultural diversity offers a weaker explanation for innovative performance

Figure 1.36. **Employment rates of low-skilled foreign-born and non-foreign-born population in OECD countries (2003-2004)**



Note: Data for Canada based on 2001 Census for reasons of international comparability. Low-skilled population is defined as those with education at ISCED-levels of 0, 1 and 2.

Source: OECD Immigration Database.

Box 1.3. Immigration, innovation and business performance

In a study on the relationship between skilled immigration and innovation in the United States from 1950-2000, it is found that one percentage point rise in the share of immigrant college graduates in the population increases patenting by 8-15%; the equivalent range for immigrants with post-college education is 15-33%. A one percentage point rise in the share of immigrant scientists and engineers in the workforce increases patenting by at least 41% (Hunt and Gauthier-Loiselle, 2008). Kerr and Lincoln (2008) have quantified the impact of changes in H-1B admission levels, the visa programme that governs most admissions of temporary immigrants into the United States for employment in patenting-related fields. They find that total invention increases with higher admission levels, primarily through the direct contributions of ethnic inventors over the 1995-2006 period. Chellaraj, Maskus and Mattoo (2005) find that both international graduate students and skilled immigrants have a significant and positive impact on future patent applications, as well as on future patents awarded to university and non-university institutions. Their central estimates suggest that a 10% increase in the number of foreign graduate students would raise patent applications by 4.7%, university patent grants by 5.3% and non-university patent grants by 6.7%. Increases in skilled immigration also have a positive, but smaller, impact on patenting.

Growth in a city's share of ethnic patenting has been found to correlate closely with growth in total national patenting. Across a sample of US metropolitan regions over 1975-2004, an increase of 1% in a city's ethnic patenting share correlates with a 0.6% increase in the city's total invention share. This coefficient is remarkably high, as the ethnic share of total invention during this period was around 20% (Kerr, 2008a). International patent citations confirm that knowledge diffuses through ethnic networks, and manufacturing output in foreign countries increases with an elasticity of 0.1-0.3 to stronger scientific integration with the US frontier (Kerr, 2008b).

The prospect of increasing interchanges across domains at a number of levels is often associated with creativity. There is a potentially fruitful dynamic as cultures and their systems encounter each other. These are edges and points of intersection where great opportunities exist for creative abrasion (Westwood and Low, 2003). McLeod *et al.* (1996) found that creative ideas produced by culturally heterogeneous groups were of better quality and more functional than those produced by culturally homogeneous groups. Teams composed mostly of ethnic minorities rated working with the group to be more enjoyable (Paletz *et al.*, 2004). In other studies, the importance of context is stressed as crucial in determining the nature of diversity's impact on performance. In some groups, diversity may improve performance, while in other groups, diversity may be detrimental to performance. Racial diversity may enhance performance when organisations foster an environment that promotes learning from diversity; and diversity as a source of innovation (Kochan *et al.*, 2003). More diverse groups were found to make higher-quality decisions (McLeod *et al.*, 1996), to generate more creative ideas and to have the potential for increased productivity (Jackson 1991, Bantel and Jackson 1989). With the exception of a few studies carried out in the United States, there is a gap in empirical studies linking ethnic diversity to key financial and international business performance indicators (Shoobridge, 2006). This limited number of studies indicates, however, that racial diversity, as a knowledge-based resource, positively influences business performance. Firms that had more diverse workforces reported higher levels of business performance and better financial performance (Richard 1997, Richard and Johnson 2001, Hartenian and Gudmundson 2000; Salomon and Schork 2003).

than human capital and creativity indicators (Gertler *et al.*, 2002).³⁸ These studies tend to point at correlations rather than causalities and have in many cases left the reasons for the relation between cultural diversity and innovation unexplained. Unfortunately, there are no existing studies to document whether and how cultural diversity has fostered innovation in the Toronto region specifically.

The foreign-born population in Toronto is generally employed in sectors where the benefits of cultural diversity are potentially less obvious. Ethnic diversity could present a competitive advantage for firms in knowledge-based sectors. A study on the effects of ethnic diversity on US industries found positive impacts in sectors with many highly educated workers and where creative decision-making and idea generation were essential to the service or good being produced (Sparber, 2006). Although these findings might be US-specific, and although ethnic minorities, immigrants and foreign-born population do not refer to the same population groups, there might be some relevance for these findings to the Toronto region. The economic sectors in which the foreign-born population in the Toronto region is highly over-represented are manufacturing, hotels and restaurants, transportation and warehousing, as well as wholesale trade, construction and retail trade sectors that generally rely less on innovative inputs benefiting from intercultural interaction (Figure 1.37). With regards to the most knowledge-intensive sectors, the picture is mixed: the foreign-born population is, for example, over-represented in finance and scientific and technical services, and under-represented in the management of companies, information and culture and educational services.

Figure 1.37. **Shares of foreign-born population in economic sectors in the Toronto region (2006)**



Source: Statistics Canada 2006 Census.

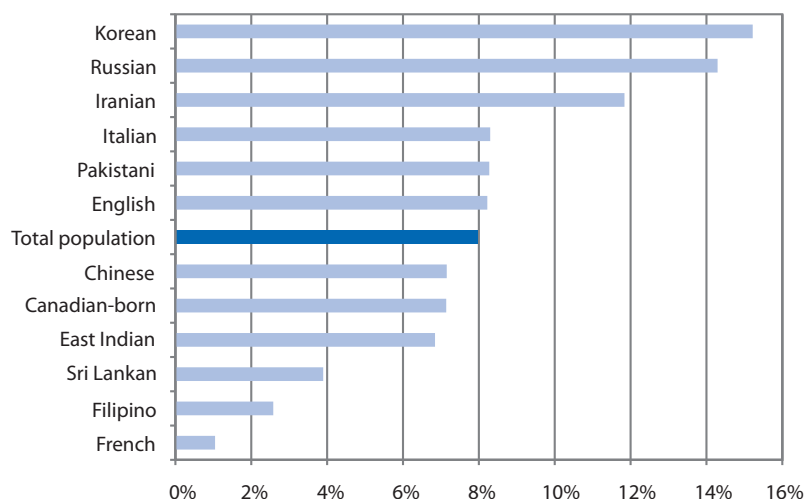
Limited association of exports and immigrants in the Toronto region

Cultural diversity in the Toronto region does not appear to have a large impact on the composition of its export markets, as is the case in California. There is a strand of research that has highlighted the gains from immigration and diversity that may accrue in terms of enhanced international trade. For example, Saxenian (1999) discussed how a trans-national community of Indian engineers helped to outsource software design from Silicon Valley in California to Bangalore in India, and Bardhan and Howe (1998) found that for every 1% increase in the number of first-generation immigrants from a given country, exports from California to that country have been found to rise nearly 0.5%. No evidence exists of an export diversity effect for the Toronto region in terms of international ethnic networks at the provincial level (the only one that can be evaluated, due to the lack of data on international trade at the sub-provincial level). Whereas the Chinese community is now the largest immigrant group in the area, the relative importance of trade with China is below the national average. Ontario's shares of overall exports and imports with China are 1.0% and 9.3% respectively, compared with national averages of 2.2% and 9.9%. Although trade with China has increased over the last decades in parallel with the growing Chinese immigrant population, trade volumes remain rather limited: California, for example, managed to export 7.6% of total export value to China in 2008 (Foreign Trade Division, U.S. Census Bureau, 2009). Cultural diversity may have an impact on the composition of export markets only under certain circumstances that happen to exist in California, but not in the Toronto region, *e.g.* market conditions, geographical position and availability of logistic facilities (sea ports). An area where Toronto region's immigrant population could be leveraged for export markets is tourism, considering the over-representation of immigrants in some of the tourism sub-industries.

Making use of entrepreneurial activities of newcomers and foreign-born population

Immigrants to the Toronto region are more entrepreneurial than non-migrants. While there are differences in self-employment by country of origin, established immigrants in general are much more likely to be self-employed than non-migrants. The self-employment rates for those who immigrated before 1961 are more than two times as high as for other Canadians. In

Figure 1.38. **Self-employment rates of selected foreign-born population groups in the Toronto region (2006)**



Source: Statistics Canada 2006 Census.

addition, several foreign-born population groups in the Toronto region are considerably more entrepreneurial than Canadian-borns. Self-employment rates among Korean and Russian foreign-born immigrants are twice as high as the average population in the Toronto region, but other foreign-born population groups (French, Filipino and Sri Lankan) are much less often self-employed (Figure 1.38). Immigrants' endowments can be used to find opportunities, especially to create ethnic businesses and ethnic niches, which can make up a considerable share of the metropolitan labour market (Van Gelderen 2007).³⁹ This is also the case in the Toronto region, in particular among large foreign-born population groups such as the Chinese (Box 1.4). Some areas in the Toronto region use ethnic commercial strips as a marketable branding mechanism to produce nearby residential gentrification, such as the City of Toronto's Gerrard India Bazaar (Hackworth and Rekers, 2005).

Social cohesion

As the largest immigrant gateway in Canada, Toronto has historically excelled in the integration of newcomers. Indicators of social integration include feelings of belonging, voting behaviour, citizenship rates, inter-ethnic friendships and marriages, as well as ethnic community involvement. The 2003 General Social Survey indicated that immigrants to Canada have a strong sense of belonging, for the older cohorts even stronger than the Canadian-born population.⁴¹ Data from the Ethnic Diversity Survey indicate that newcomers are voting at levels that are similar or higher than the Canadian-born.⁴² Civic engagement among visible minorities is substantial (Picot, 2008), and about 85% of eligible immigrants in Canada take up citizenship, among the highest rates in the world (Statistics Canada 2006 Census, Banting, Courchene and Seidle, 2007). Immigrants are less likely

Box 1.4. Chinese entrepreneurs in Toronto

In 2003, there were 64 Chinese shopping centres in Toronto, 62 outside the city core, with sizes ranging from 15 store units and 9 500 square feet to 200 units and 285 000 square feet (Wang, 2004). Chinese ethnic businesses in Toronto have been able to capture a significant share of the Chinese immigrant market for consumer goods. In surveys and focus groups, a consistent preference for ethnic stores over mainstream stores is revealed. Chinese and mainstream travel agencies are substitutes, but Chinese and mainstream supermarkets and electronic stores are complements. Ethnic identity and trans-national relationships are found to be closely related to preferences for ethnic businesses. Those who identify themselves more strongly as Chinese and who engage in more trans-national activities tend to patronise Chinese businesses more frequently than those at a lower level of ethnic identification and trans-national involvement (Wang and Lo, 2007).

Locational patterns of ethnic businesses differ depending on the different industrial sectors. In a study on Chinese entrepreneurs in Toronto, it appeared that Chinese manufacturing firms are more likely to be located in non-Chinese neighbourhoods, whereas Chinese businesses in retail, finance, insurance and real estate are more likely to be found in Chinese neighbourhoods (Fong *et al.*, 2008). Chinese businesses no longer concentrate in the Chinatown located in the central city. They scatter to almost every part of the city, a large number of them to the suburbs.⁴⁰ Of all the Chinese businesses in the City of Toronto and York Region, 78% are located in suburbs. The level of clustering is also higher in the suburbs: on average, 17 Chinese businesses are located in suburban neighbourhoods, as compared with only 14 in city neighbourhoods. About 4% of neighbourhoods in the city, but 16% in the suburbs do not have any Chinese business presence. Ethnic manufacturing businesses cluster in areas that have easy access to transportation networks; city ethnic businesses in various industries do not have to be located in ethnic neighbourhoods or in certain areas to maximise customer flow. Suburban ethnic businesses are only significantly associated with higher proportions of recent co-ethnic immigrants. Ethnic enclaves are not necessarily related to areas characterised as having a substantial proportion of ethnic members with limited socio-economic resources (Fong *et al.*, 2007).

than Canadian-borns to volunteer (40% vs. 49%). However, those immigrants who did volunteer contributed slightly more hours (171 vs. 163) (Hall *et al.*, 2009). Cross-ethnic friendships are more common in the Toronto region than many cities in the United States and Britain, as has been revealed by studies of junior high school students in the area (Smith and Schneider, 2000; Schneider *et al.*, 2007).⁴³ Similarly, research shows that 23% of the marriages recorded in the Toronto region in 2001 were ethnically mixed, a rate higher than the national rate and on a par with many diverse cities in the United States and Europe (Lee and Boyd, 2008; Coleman, 2004; Kalmijn, 1998).^{44,45}

Although the Toronto region is a worldwide example for the integration of immigrants, some challenges remain. Social integration of immigrants in Canadian cities, and the Toronto region, has been relatively successful over the past decades. Yet the demographic evolution of the population, and spatial and economic trends, raise a number of challenges for integration which, if not addressed, could have an impact on labour productivity and the economic potential of the Toronto region. These include: (i) strain on housing, (ii) trends toward spatial concentration in certain (often high-poverty) neighbourhoods and (iii) infrastructure needs.

Strain on housing

Many of the Toronto region's new immigrants face housing stress at levels that exceed those of non-migrants and immigrants elsewhere. In 2005, 60% of newly arrived immigrants in the Toronto region spent at least half of their income on housing costs, exceeding rates in Vancouver (56%) and Montréal (52%) (Statistics Canada, 2005) (Table 1.7). The majority of the "housing poor" in the Toronto region are immigrants: 62% of all households spending at least 30% of total before tax income on housing were immigrant households (Preston *et al.*, 2007). According to case studies of samples of specific immigrant groups, housing stress is particularly acute for Jamaicans and Somalis and to a lesser extent recent Punjabi and Sinhalese immigrants, who tend to have higher rates of home ownership (Ferdinands, 2002; Murdie, 2002; Oliveira, 2004). Nevertheless, over time, the need for housing amongst immigrants falls to levels comparable to non-immigrants: *e.g.* in 2001, the incidence of core housing need in the Toronto region was 41.9% for immigrants who arrived in Canada during the period 1996-2001, compared to 16.7% for those who arrived before 1979.⁴⁶

Demand for rental housing will continue to grow in the Toronto region thanks to a consistent flow of immigrants, who generally start their housing tenure with rental housing. The construction of rental housing units over the last decade has been limited and mostly focused on high-income groups. Although there is a considerable vacancy rate of rental homes in the City of Toronto, these vacant homes are not sufficient to accommodate the expected population growth. Moreover, the long waiting lists for social housing and other indicators mentioned above suggest that housing affordability is a significant issue.

**Table 1.7. Housing costs in the three largest metropolitan regions in Canada (2001)
(as a proportion of family income for immigrants)**

	Montréal	Toronto	Vancouver	Canadian immigrant average
Family lodged for free	3.08%	3.85%	3.39%	4.42%
Less than 30%	22.56%	16.78%	22.32%	33.50%
30%-49.9%	22.82%	19.41%	18.36%	21.94%
50% and over	51.54%	59.97%	55.93%	40.14%

Note: The category, "Don't know, refused, not stated", is excluded from the calculations in this graph.

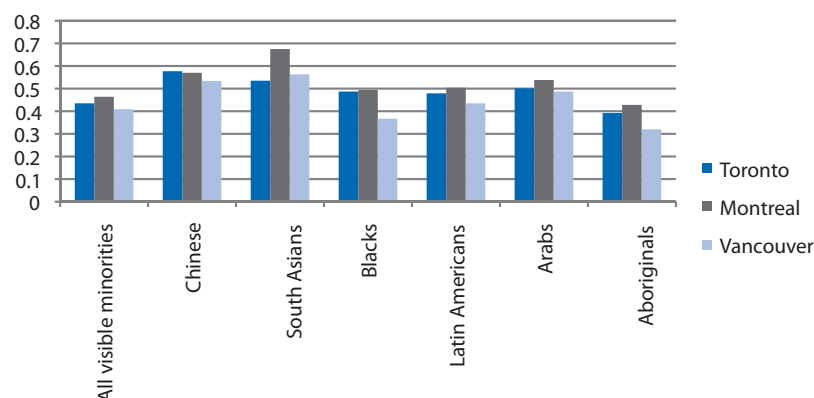
Source: Statistics Canada (2005), compiled in Mendez *et al.* (2006)

The relative affordability of housing in the suburbs has led to an outward shift of immigrant communities. The recent suburbanisation of the immigrant population differs from historical patterns. While before 1970, immigrants who arrived in the city settled primarily in immigrant gateway communities east and west of the downtown business core,⁴⁷ in 2006, due to the elevation of home prices in the city centre and a greater supply of housing stock in the periphery, almost of all of the Toronto region's newly arrived immigrants first settled in the suburbs. New ethnic communities have burgeoned in the inner suburbs, where high-rise private rental apartments provide affordable housing, especially for low-income immigrants and refugees from Asian, African and South American countries. The outer ring of suburbs, by contrast, is often inhabited by Chinese and East Indian newcomers who can generally afford homeownership.⁴⁸ These include Indian immigrants in Mississauga and Brampton and the Chinese communities in Scarborough, Markham, and Richmond Hill (Murdie, 2008a).⁴⁹ Ethnic enclaves in these areas have crystallised and are marked by extensive business and institutional presence (Murdie, 2008b).

Spatial concentration, often in low-income neighbourhoods.

Immigrants are increasingly concentrated in low-income neighbourhoods in suburban locations. In 1981, the majority of the “low-income” family population in higher-poverty neighbourhoods were Canadian-born (55.2%).⁵⁰ Twenty years later, 65% of the “low-income” families were immigrants, while non-immigrants accounted for just 35%. In 2001, four times more immigrant families lived in low-income neighbourhoods than twenty years earlier. An index to reveal the level of concentration in relation to the distribution of whites – an index of dissimilarity – illustrates a lower level of racially mixed neighbourhoods than London, Vancouver and Sydney, but higher than Montréal and many US cities (Walks and Bourne 2006; Musterd, 2005) (Figure 1.39).⁵¹ Large increases in racial minorities produced a rise in the number of racial majority-minority neighbourhoods, particularly amongst Chinese and South Asian communities.^{52,53} This residential concentration is not always connected with neighbourhood poverty, and in many cases reflects a choice rather than a constraint, but it underlines the importance of having a transport infrastructure in place that can provide quick access from residential areas to employment opportunities across the region.

Figure 1.39. Residential concentration indexes in Toronto, Montréal and Vancouver (2001)



Note: The unit of analysis is the metropolitan area (Census Metropolitan Area). The residential concentration indexes are expressing dissimilarity, calculated in relation to the distribution of whites (non-visible minorities and non-Aboriginals).

Source: Walks and Bourne (2006).

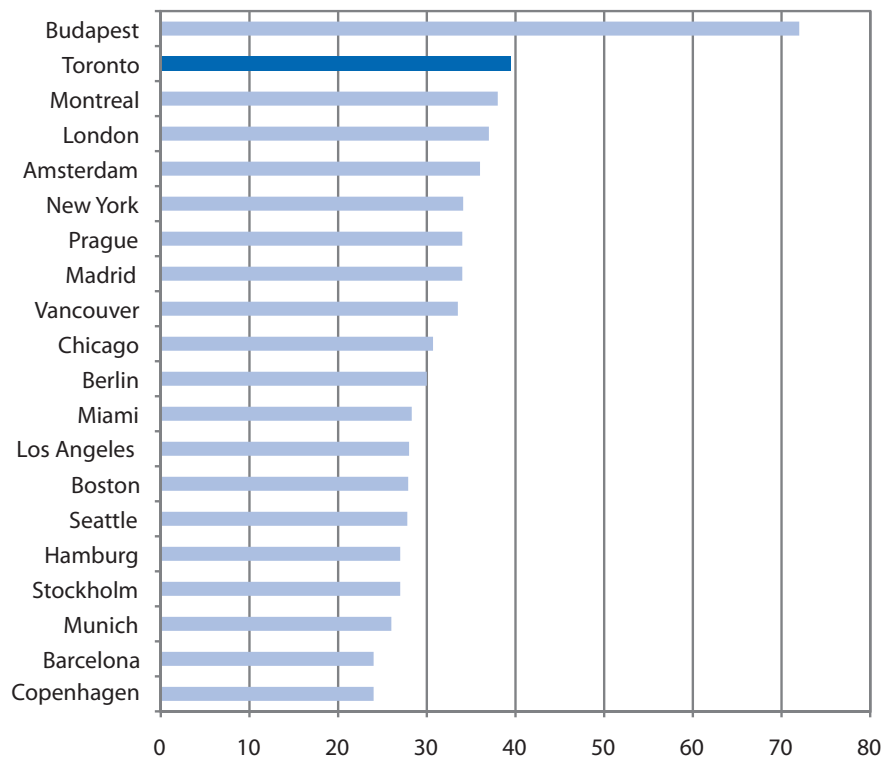
New infrastructure needs

The crystallisation of immigrant communities in the Toronto region and continuous population growth have created new needs for additional infrastructure in these neighbourhoods. In the past, immigrants benefitted from social services that were mainly concentrated in the city centre where they resided. Several social service organisations operating in the Toronto region, such as the United Way of Greater Toronto, have called for the construction of additional community infrastructure – early learning and child care, social housing, English and French language training, accessible recreation programs – in these diversifying neighbourhoods. Continuous population growth has implications for the infrastructure and other services required. Public transport should be leveraged to better facilitate inter-urban mobility and to improve access to jobs for residents living in Toronto's inner suburbs and other suburban communities in the Toronto region.

1.2.3. Unsustainable and inadequate infrastructure and environment challenges

Rapid urban development and population growth in the Toronto region has resulted in high congestion costs and productivity losses. Average commuting time in the Toronto region is now one of the highest among metropolitan regions in the OECD and has increased in recent years, although differences with other metropolitan areas remain relatively small

Figure 1.40. Average commuting time (of all commuters and different commuting modes) in minutes in OECD metropolitan regions (2005)



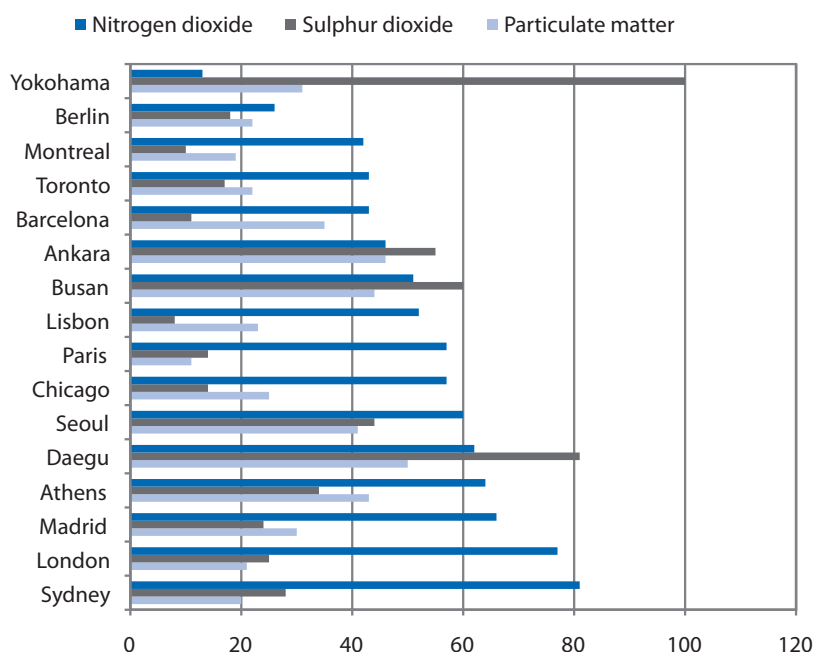
Note: The unit of analysis is the metropolitan region. Time of travel from place of residence to place of work is established through time surveys by the different statistical bureaus.

Source: Statistics Canada 2005, US Census 2005, EU 2005.

(Figure 1.40). Depending on the unit of analysis, estimated congestion costs range from CAD 1.6 billion to CAD 2.2 billion (in 2001-2002) up to CAD 4.1 billion in 2031.⁵⁴ Annual costs for commuters in 2006 were estimated at around CAD 3.3 billion per year and the annual economic costs at CAD 2.7 billion for the Greater Toronto and Hamilton Area. Congestion costs in the Toronto region are the highest of all major urban areas in Canada (Transport Canada, 2006). This has important economic, social and environmental implications. The competitiveness of several large economic sectors in the Toronto region (wholesale, retail, logistics and food) is dependent on quick transportation unhindered by delays. Congestion might constrain commuting, thus limiting the labour pool effectively available in the Greater Golden Horseshoe. Finally, congestion adds to air pollution and has consequences in terms of human health in the area.

Congestion impairs air quality and impinges on the health of Toronto residents. When comparing cities of similar size, the Toronto region appears to score fairly well on several air quality indicators.⁵⁵ It has relatively low concentrations of particulate matter, sulphur dioxide and nitrogen dioxide (Figure 1.41).⁵⁶ Vehicles are the largest source of carbon monoxide (85%) and nitrogen oxide (69%) emissions within the Toronto region, and a significant source of particulate matter (16%). In addition, vehicles are a significant and chronic source of “air toxins”. Air pollution due to traffic has been estimated by the City of Toronto’s Medical Officer of Health to cause 440 premature deaths per year in the city alone. According to the Ontario Medical Association (2005), smog and exposure to air pollutants have been associated with approximately 6 000 premature deaths, 17 000 hospital admissions and 29 million minor illnesses each year in Ontario. Air pollution from

Figure 1.41. **Air quality in selected metropolitan regions**
(between 2.5 million and 10 million inhabitants)



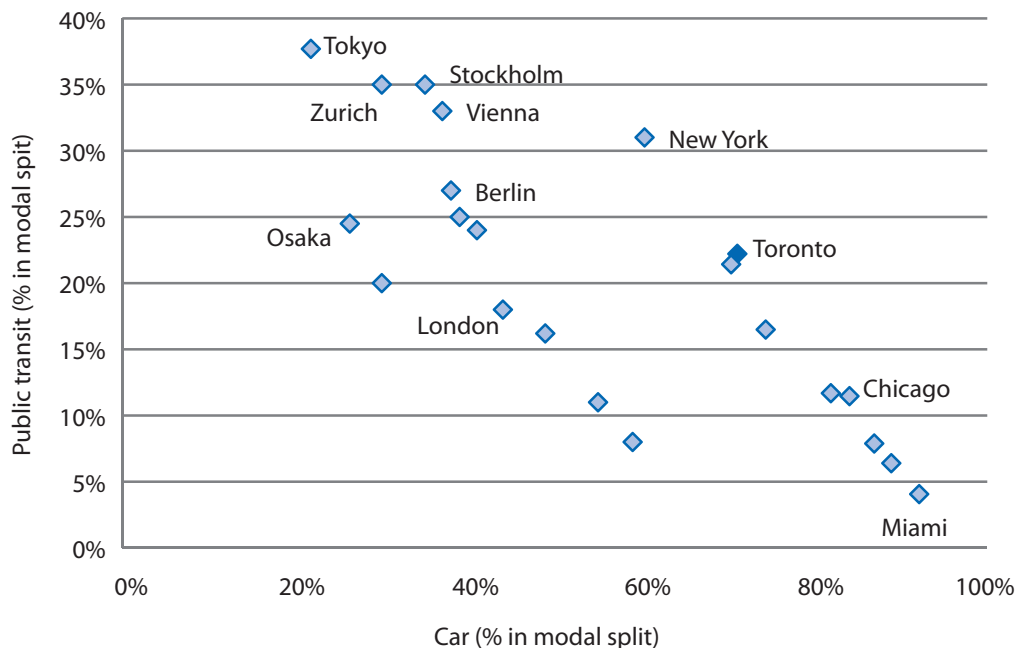
Source: Sources: NO₂ measurements for cities in the OECD derive from OECD Environmental Data Compendium 2002, EEA (AirBase), and national statistical websites (cited in OECD, 2009b). They refer to 2002. Data on particulate matter concentrations are from Pandey *et al.* (2006) (cited in World Bank, 2007). These data refer to 2004.

ground-level ozone and particulate matter costs the Ontario economy CAD 7.8 billion in lost productivity, health care costs, pain and suffering, and premature loss of life. A little over one-third of the greenhouse gas emissions are sourced from transportation, most notably diesel trucks and passenger vehicles (ICF International, 2007). Congestion alone has been estimated to produce 651 318 tonnes of CO₂ emissions each year (Transport Canada, 2006). Nevertheless, air quality throughout the Toronto region is not uniform.⁵⁷ Neighbourhoods in the Toronto region marked by low education, one-parent families and low median income were more likely to have higher NO₂ exposure (Buzzelli and Jerrett, 2007). In terms of green house gas emissions, the top ten most polluting tracts are located in the lower-density suburbs, and their high emissions are largely due to private auto use (VandeWeghe and Kennedy, 2007).

Congestion and air pollution in the Toronto region is related to high car dependency. The Toronto region is one of the metropolitan regions in North America with the highest share of public transit in the modal split, around 23% in 2006, only surpassed by New York City. The share of the Toronto region is comparable to those of many European metropolitan regions, such as London, Munich and Amsterdam, but falls well below public transit shares in Japanese cities like Tokyo (Figure 1.42). Despite the high use of public transit, the Toronto region has one of the highest rates of car use among OECD metropolitan regions (71% in 2006). European metropolitan regions have been able to lower car use through walking and cycling, which is fairly limited in the Toronto region.

The Toronto region's automobile use has been facilitated by its increasingly polycentric urban form. High to medium density is critical in supporting an environment where public

Figure 1.42. **Public transport and car transport as % of modal split**



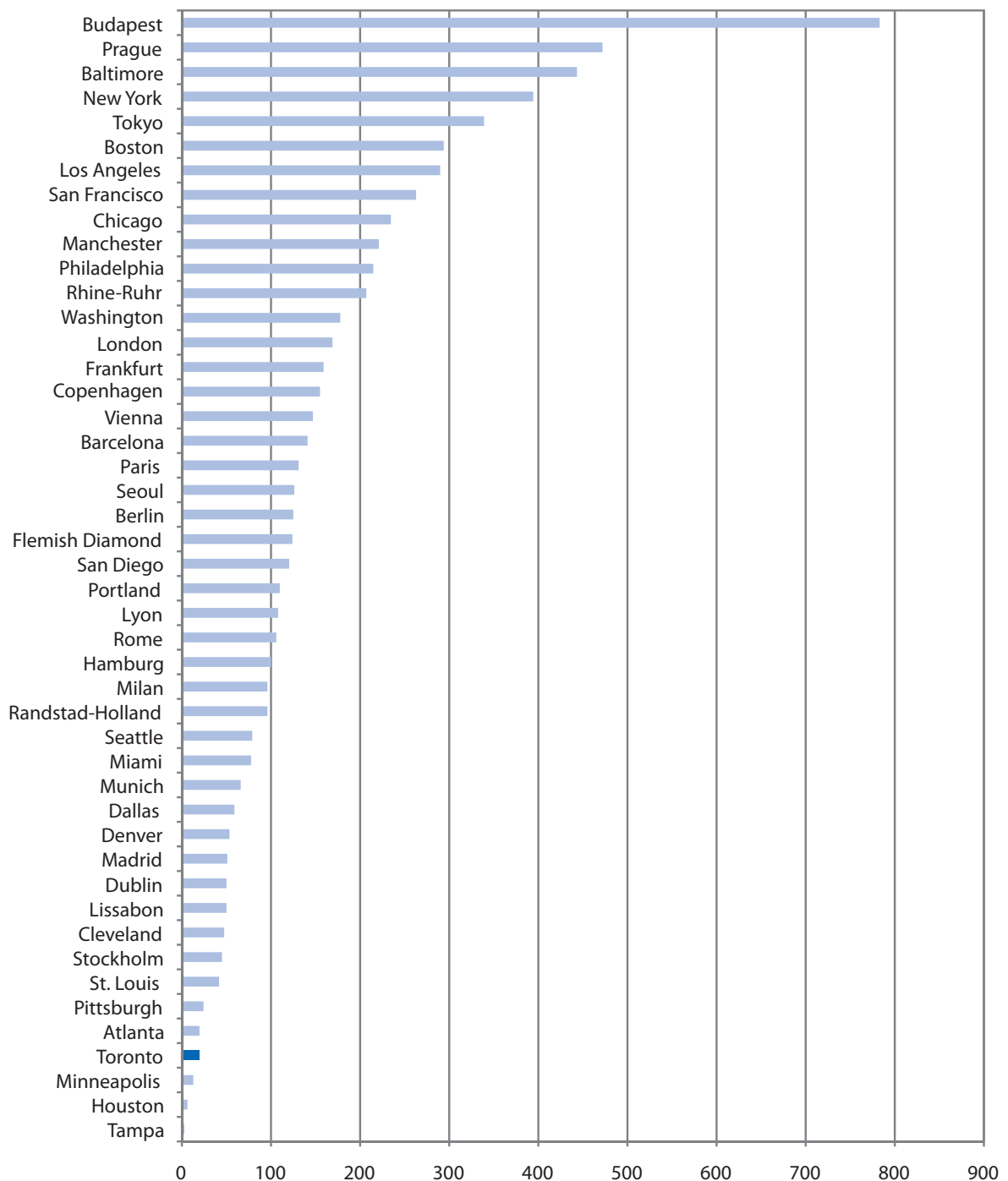
Note: The modal split describes the percentage of travelers using a particular type of transportation. The unit of analysis is the metropolitan region. Data on Canadian metropolitan regions refer to 2006, US metropolitan regions to 2005, Japanese metropolitan regions to 2005.

Source: Statistics Canada, Census USA, Japanese Ministry of Land and Transport, Apel *et al.* (1998), Krag, Ege and Dyck-Madsen (2005), Zwerts and Nuyts (2004) and City of Copenhagen (2006).

transportation systems can be financially viable. It has been found that density explains nearly 60 percent of the variations observed in transit ridership (Pushkarev and Zupan, 1977). Several established public-transit cities, such as New York, Tokyo and London, have higher densities than the Toronto region. The Toronto region's density has fallen mainly due to the suburbanisation of economic production. While 59% of Montréal's employment is located within 10 kilometres of the CMA's central point, only 32% of the Toronto region's employment is within 10 kilometres of downtown Toronto. Indeed, 29% of jobs are located at least 20 kilometres away from the central point. Several high-density suburban nodes have been established in the Toronto region, often the result of deliberate region-wide policies of planned concentration, such as the developments alongside the airport and near certain highways, *e.g.* Highway 7. Many of these included concentrated clusters of office parks: office space in the suburban centres of North York, Scarborough and the City of Mississauga, for example, grew by 250% from 1981 to 2004 (Charney, 2005a). This urban sprawl carries costs not only in the form of congestion and air pollution, but also on individual households: Miller *et al.* (2004) have shown that households in suburban regions poorly served by transit spend more of their household income on transportation than other households.

Under-investment in the Toronto region's infrastructure, particularly public transit, over the past few decades offers an additional explanation for its low public transit share in suburban areas. While between 1955 and 1977, new investment in urban infrastructure grew by 4.8% annually, it grew by only 0.1% per year between 1978-2000 (Golden and Brender, 2007). The investment in public transport in Toronto (as a percentage of GDP) between 1993-1997 was one of the lowest in selected OECD metropolitan regions (Scheurer *et al.*, 2005, cited in Slack and Bourne, 2006). Much of this was interrelated with intergovernmental issues. Between 1955 and 2007, much of the funding for infrastructure in Canada shifted to sub-national levels of government. During this period, the federal share of public infrastructure steadily declined, from 26.9% in 1955 to 5.3% in 2007, while that of the local level of government increased from 26.7% to 54.9%.⁵⁸ As explained in the governance chapter, local revenue sources have not kept pace with expenditure requirements, and the result has been a deterioration of existing local infrastructure. Although the government of Canada and government of Ontario have since 2007 made additional funds available for infrastructure in Toronto, a more sustainable infrastructure financing scheme is required to both address the existing infrastructure deficit and keep pace with forecast urban growth.⁵⁹

Although comparative data on transit in different metropolitan regions need to be interpreted with caution, it appears that transit infrastructure in the Toronto region is relatively limited in comparison to European metropolitan regions and several US metropolitan regions. One of the indicators to compare transit infrastructure is the relationship between a metropolitan region's metres of railway track and its population size or surface area. Although this indicator is not perfect, as differences in freight railway track capacity (which are unrelated to transit infrastructure) and non-rail public transit options could distort the comparison, it is useful for international comparison because the data informing this indicator are relatively standardised and available. These data are, however, not available for all metropolitan regions in the OECD, and railway track data for Ontario are used as a proxy for the Toronto region; this leads arguably to an underestimation of Toronto's railway capacity. Using this indicator, Toronto's railway capacity is 19 metres per square kilometre, which is not only limited compared to European metropolitan regions, but also compared to most US metropolitan regions. It is considerably lower than railway capacity for European polycentric regions such as Randstad-Holland (96 m/km²), the Flemish Diamond (124 m/km²) and Rhine-Ruhr-area (207 m/km²) (Figure 1.43). In addition to this, other characteristics confirm Toronto's relatively limited transit infrastructure endowment, such as the

Figure 1.43. **Railway capacity in selected OECD metropolitan regions (2003)**

Source: BTI (2007), OECD (2009b), Japanese Ministry of Land, Infrastructure, Transport and Tourism, Korean Ministry of Land, Infrastructure and Maritime affairs.

lack of high-speed railway connections between the core city and the international airport. Although Toronto's Pearson International Airport is one of the larger airports on the North American continent, there is no high-speed rail connection between the airport and the city, as is the case in several OECD metropolitan regions, such as Stockholm and Oslo. Efforts are under way, however, to make this connection, and on 21 January, 2009, the Province of Ontario announced that Metrolinx is leading a project to expand GO Rail services and build a rail link to Pearson International Airport from downtown Toronto. The expansion is expected to provide two-way, all-day service.

Infrastructure is not only a necessary condition for growth but, together with human capital and innovation, a determinant for growth in regions across the OECD (OECD, 2009a). The state of the Toronto region's infrastructure could therefore significantly strain its capacity to compete with other OECD metropolitan regions. In addition, developing a sustainable mode of funding public transit is a key issue, given demographic projections and immigrant settlement patterns. It has been shown that recent immigrants are much more likely to use public transit to commute to work than the Canadian-born, also after controlling for demographic characteristics, income, commuting distance and residential distance from the city centre (Heisz and Schellenberg, 2004). This has important implications. First, projections for future public transit needs should take into account that the urban population is not only growing, but shifting towards a high-use group. Second, immigrants have a high use rate no matter how far they live from the downtown core. Unlike earlier cohorts of immigrants, who initially settled in the downtown areas of metropolitan regions in Canada, many immigrants in the 1980s and 1990s tended to settle directly in suburban areas. This has implications for the routing of transit services.

Notes

1. Statistics Canada's April 2009 population estimate was 33 592 686 people.
2. The OECD regional typology distinguishes between three types of regions: predominantly urban regions, predominantly rural regions and intermediate regions. These regions are defined using three steps. The first step consists in classifying regions at a lower geographical level (local units) as rural if their population density is below 150 inhabitants per square kilometre (500 inhabitants for Japan and Korea, to account for the fact that its national population density exceeds 300 inhabitants per square kilometre). A second step consists in aggregating this lower level into TL3 regions and classifying the latter according to the percentage of population living in local units classified as rural. A TL3 region is classified as predominantly urban if the share of population living in local units classified as rural is below 15%. An additional criterion is based on the size of the urban centres included in the TL3 regions. A region that would be classified as intermediate on the basis of the first two steps becomes predominantly urban if it contains an urban centre of more than 500 000 inhabitants (1 million for Japan and Korea) representing at least 25% of the regional population.
3. The OECD methodology defining functional metropolitan regions considers population size, population density and commuting flows as an indicator of whether an urban area represents a contained labour market, that is, an area in which commuting within the region is considerably higher than between it and the surrounding areas (OECD, 2006).
4. Statistics Canada has strictly defined criteria for CMAs. The urban core municipality must have at least 100 000 inhabitants to form a Census Metropolitan Area. For inclusion in the CMA, adjacent municipalities must have high integration with the urban core, evidenced by significant commuter flows. In order to establish this, several rules have been established. One of these rules is the Forward Commuting Flow rule, which requires a minimum of 100 commuters, with at least 50% of the employed labour force living in the municipality working in the delineated urban core. Another rule is the Reverse Commuting Flow rule, which requires a minimum of 100 commuters, with at least 25% of the employed labour force working in the municipality, lives in the delineation urban core. The Toronto CMA is comprised of the city of Toronto and 23 other municipalities: Ajax, Aurora, Bradford West Gwillimbury, Brampton, Caledon, East Gwillimbury, Georgina, Georgina Island, Halton Hills, King Township, Markham, Milton, Mississauga, Mono Township, Newmarket, Tecumseth, Oakville, Orangeville, Pickering, Richmond Hill, Uxbridge, Whitchurch-Stouffville and Vaughan.
5. The US definition of Metropolitan Statistical Area refers to a larger urban area than the Canadian definition of CMA; the Hamilton and Oshawa CMA's would be consolidated with the Toronto CMA if US definitions had been used.
6. The GTA is slightly larger than the Toronto CMA, since it includes most of the Oshawa CMA. Greater Toronto Area (GTA) refers to the City of Toronto plus the surrounding regions of Durham, York, Peel and Halton, which include 24 municipalities: Ajax, Aurora, Brampton, Brock, Burlington, Caledon, Clarington, East Gwillimbury, Georgina, Halton Hills, King Township, Markham, Milton, Mississauga, Newmarket, Oakville, Oshawa, Pickering, Richmond Hill, Scugog, Uxbridge, Whitby, Whitchurch-Stouffville and Vaughan. A term commonly used to designate the suburban areas in the GTA outside the City of Toronto is the "905 area", a reference to the telephone area code assigned to the area before the city's area code was split in 1992. The telephone area code for the City of Toronto is 416. Urban-suburban dichotomies in Toronto often coincide with these different telephone area codes.

7. Another 28.3% spread across the remaining urban areas, while only 2.8% chose to live in a rural area.
8. Other metropolitan regions with lower elderly dependency ratios, but lower income levels than Toronto, are cities in Turkey, Korea and Mexico.
9. These data are based on comparisons of gross densities of metropolitan regions and are subject to several limitations, as these data do not look at the actual built-up areas (net densities) and are highly dependent on boundaries drawn for metropolitan regions.
10. Although some studies use immigrant and foreign-born population interchangeably, these categories do not mean exactly the same thing in Canada, as foreign-born population is considered a sum of immigrants and non-permanent residents. The share of 46% for Toronto actually refers to immigrant population in the Toronto region.
11. As will be discussed in Chapter 2, the harmonisation of the general sales tax and the provincial sales tax, announced in the 2009 Ontario Budget, is expected to reduce the marginal effective tax rate on investment substantially.
12. Economic sectors in Canada with high investment in product design and development (as a share of total sales) are aerospace product and parts (22.1%), pharmaceuticals and medicine (21.2%) and computer and electronic product manufacturing (18.2%). Relatively low shares of investment in product design and development occur in motor vehicle manufacturing (6.2%), motor vehicle parts (4.6%) and motor vehicle body and trailers (2.9%) (Industry Canada, 2008).
13. In this study (Martin and Florida, 2009), professions have been categorised according to the analytical and social intelligence skills required in their jobs. The creative content of sectors is established by taking into account all the different professions in a certain sector. On the basis of this modelling, the creative content of 41 sectors in Ontario has been compared with those of peer US states.
14. Similar studies of other business sectors show that Toronto does not figure in the top 15 world cities with the highest global architectural practice (Knox and Taylor, 2005), but that it ranks 16th as a global media city. This is measured as the number of enterprise units of 33 global media firms located in the respective city: as many as 38 units of 15 different global media firms are located in Toronto. One of these firms (Thomson) has its parent company in Toronto (Krätke, 2003).
15. Toronto's Pearson Airport has also been found to have relatively inward-looking connections: over 96% of the nodal hierarchy (that is, the connections for which it is the dominant airline node) of Toronto airport is located in Canada (Grubestic et al., 2008).
16. Geographic proximity could also to some extent lead to an overstatement in international trade statistics of the trade relations with the United States and understate those with other countries, as Canada's imports from other countries via the United States could be recorded as originating from the United States, and Canada's exports to other countries via the United States may end up being recorded as exports to the United States, as these statistics are collected through customs forms.
17. The Toronto Region has in the TRRA definition been defined as the city of Toronto plus the regions of Durham, Halton, Peel, Waterloo, the cities of Guelph, Hamilton and the county of Wellington, counting 7 million inhabitants.
18. Bessen and Meurer (2008) have argued that instead of encouraging innovation, patents could in fact interfere with innovative activity in many industries.
19. An alternative measure would have been the number of patents per R&D investment. This could be considered a measure of the effectiveness of R&D spending (as it measures patent outcomes compared to input), but the calculation of this measure is not possible due to data limitations (patent data for Toronto are available at TL3 level, but not R&D spending).
20. Hospitals affiliated with the University of Toronto are not included in these data. Canadian universities that had more new patent applications in 2007 were McGill University, the University of British Columbia and Université Laval (AUTM, 2008).

21. These citations are measured with different methodologies, such as ARIF and ARC. The Average Relative Impact Factor (ARIF) is a weighted measure of citations in science and social science journals that demonstrates the importance of a journal in its field. Average Relative Citations (ARC) indicate the average number of times that papers from academics in a region are referenced by other academics, providing an indication of the relevance of the work as determined by academic peers. Both indicators confirm the pattern for the Toronto Region.
22. This is the number of publications indexed by Thomson ISI over 2003-2007 (source: Thomson ISI Database). The University of Toronto had a particularly high number of publications in health and life sciences, materials science and environmental engineering.
23. The Tech Pole-Index is created by the Milken Institute and ranks location quotients and patterns of growth of city-regions in 19 high-tech industry categories. These results are then aggregated to determine overall high-tech performance. This benchmarking metric is based on employment and wages; it also looks at the concentration of technology in the local economy and each metro's relative share of aggregate North American activity.
24. Not all universities in the Toronto Region appear in these international rankings. This is for example the case for the Ryerson University.
25. These findings have to be interpreted with caution, since the metropolitan regions and institutes concerned are of differing sizes, and having several small high-quality institutes is not necessarily preferable to having one bigger one. At the same time, it indicates the variety and choice that inhabitants of metropolitan regions have when choosing a high-quality university.
26. The University of Toronto figures among the best 15 universities in the world in fields as diverse as social sciences, arts and humanities, technology, natural science and the life sciences. In all these subjects, University of Toronto ranks highest among Canadian universities, with the exception of life sciences and social sciences, where McGill University in Montréal ranks higher (THES, 2007). The universities that score higher are mostly from the United States, as well as the University of Tokyo and some from the United Kingdom.
27. Schulich School of Business ranks third in the Aspen Institute ranking, 11th in the Wall Street Journal ranking, 24th in the Economist ranking, 48th in the Financial Times ranking, 83rd in the University of Texas ranking. Rotman School of Management scores 24th in the Wall Street Journal ranking, 30th in the ranking of University of Texas and 40th in the Financial Times ranking.
28. The Toronto Region Research Alliance estimated that in 2005, CAD 38 per capita was invested as venture capital in the Toronto Region Research Alliance area. Estimations based on the Thomson Financial database showed the investment in the "Toronto area" (roughly equivalent to the Toronto CMA) to be CAD 89 per capita in 2007. The World Knowledge Competitiveness Indicators in 2005 for Ontario indicated around USD 110 of venture capital per capita in Ontario.
29. Licensing income of the University of Toronto over 2007 was USDA 2.5 million. This was USD 791 million for New York University (AUTM, 2008).
30. Recent progress in the academic literature has focused on establishing a link between cultural diversity and economic performance. To that effect, a number of indexes measuring the extent to which cities have a mix of cultures have been created and later linked to economic growth and productivity. A measure of cultural diversity can be created by using a Hachman index applied to Canadian immigration statistics. Such a Hachman Index of Cultural Diversity (HICD) was applied to Canada's 144 cities (CMA and CA).
31. An econometric model that takes into account earnings would encounter severe problems of misspecification, as many of the variables that would determine earnings are not available.
32. Economic immigrants to Canada are selected with a selection grid in which points are awarded according to several criteria. The maximum number of points is 100, and the pass mark for admission is 67. In the 2002 revision of the points system, the weight assigned to education was raised to 25 points.

33. Based on data from 2006 Census of Statistics Canada.
34. Employment mismatch in the quoted study is assessed for those with a bachelor's degree or higher, and defined as anyone who is working in a job that requires only a high-school diploma or less. These findings are based on 2001 Census Data from Statistics Canada.
35. After two years, 35% of a specific immigration cohort sampled in Toronto, as measured in the LSIC study, affirmed that their experience in Canada had not met their expectations; no other large metropolitan region exhibited such a low rating (Statistics Canada/Statistique Canada, 2003).
36. The probability of employment mismatch is highest for non-English or French speakers and does not decrease with time spent in Canada. Employment mismatch is particularly high for Filipinos, who have mismatch rates that are 34% higher than whites. Blacks, Koreans, Latinos and South Asians are also considerably more likely to experience mismatch, although their rates are less than half that of Filipinos. Of the visible minorities in Montréal, Toronto and Vancouver, only Chinese and Japanese immigrants do not have under-employment rates that are significantly different from whites' (Haan, 2008).
37. These data refer to a representative sample of newcomers to Canada, aged between 25 and 44 years, interviewed between 2001 and 2002, two years after their arrival in Canada.
38. This is the correlation between the Mosaic Index and the Tech-Pole Index as quoted in note 23.
39. In a study of labour market niche-ing involving 100 ethnic groups living in 216 US metropolitan regions, it was found that approximately 14% of the labour force of these areas was employed in ethnic niches; this was 31% for non-European ethnic groups, including those from Latin America, the Caribbean and Asia (Wilson, 2003).
40. Suburban is here defined as those neighbourhoods in the five former municipalities now forming the City of Toronto, which had housing that was one standard deviation above the average year of housing built. All census tracts in York Region are considered to be suburban.
41. The 2003 General Social Survey indicated that 88% of immigrants who arrived in Canada between 1980 and 1990 had a strong sense of belonging, which was higher than that of Canadian-born respondents (85%). The strength of sense of belonging for recent immigrants (*i.e.* those who arrived between 1990 and 2003) is similar to the Canadian-born (84%).
42. Voter participation is lower for those who arrived between 1991 and 2001, as compared with immigrants who arrived earlier. Findings also show that attachment to ethno-cultural roots is not a barrier to electoral participation.
43. An investigation of inter-ethnic friendship among 79 grade 7 and 8 students (aged 12-14) in two schools in the city of Toronto indicate that cross-ethnic friendships were not as rare as found in studies on the United States and Britain. Participants in the study were found to be relatively non-ethnocentric in their choice of friends: the difference between in-group (52.44%) and out-group friends (47.56%) was slight and not significant (Smith and Schneider, 2000). Another study on inter-ethnic friendships of 390 junior high school students in multi-ethnic neighbourhoods of Montréal and Toronto found, however, that co-ethnic friendships were more likely than inter-ethnic friendships to survive a six-month interval. Co-ethnic friendships were found to be more cohesive and stable than inter-ethnic friendships (Schneider et al., 2007)
44. There are, however, significant differences between ethnic groups. The ethnic groups with the lowest inter-ethnic marriages were South Asians, Chinese, Arabs and Jews. The highest degrees of ethnically mixed marriages were realised by Europeans and Japanese (Rodriguez-Garcia, 2007).
45. Inter-ethnic marriages might not only be an indicator of social integration, but also have effects on productivity: immigrants married to native-born spouses could assimilate faster than comparable immigrants married to foreign-born spouses, because spouses could play an integral role in the human capital accumulation of their partners. Meng and Gregory (2002), for example, found evidence of a substantial inter-ethnic marriage premium for non-English speaking immigrants in Australia, but a similar effect has not been found in the United States (Kantarevic, 2004).

46. A household is said to be in core housing need if its housing falls below at least one of the adequacy, suitability, or affordability standards and if it would have to spend 30% or more of its total before-tax income to pay the median rent of alternative local housing that is acceptable (meets all three standards). Adequate dwellings are those reported by their residents as not requiring any major repairs. Suitable dwellings have enough bedrooms for the size and make-up of resident households, according to National Occupancy Standard (NOS) requirements. Affordable dwellings cost less than 30% of total before-tax household income.
47. Most came from southern European countries such as Greece, Italy and Portugal, and attached considerable importance to home ownership. Typically, they purchased relatively inexpensive housing, undertook extensive renovations and rented parts of the house to other people from their home countries to pay the mortgage. Subsequently, many of these immigrants capitalised on the increased equity in their inner-city houses to buy more modern and spacious houses in the suburbs. There, they often formed spatially concentrated residential enclaves and developed new or relocated ethnic businesses and institutions (Murdie, 2008).
48. In Toronto, there are considerable differences within immigrant subgroups. Ghosh (2006) for instance, found that Indian Bengalis aided by an immigration agency often lived in overcrowded and poor-quality homes, while the housing careers of Indian Bengalis who had familial ties or were recruited through employers were better housed. These findings, however, should be carefully considered in light of evidence that suggests that cultural factors may determine how tenure options are perceived and valued by different groups of people living in Toronto (Skaburskis, 1996).
49. The changing ethnic landscape was documented through the 2006 Census and mapped through the Greater Toronto Urban Observatory. For maps of the spatial distribution of 25 different ethnic categories in Toronto, Montréal, and Vancouver, see www.urbancentre.utoronto.ca/gtuo/dl_urban_ethno_mosaic.html.
50. The United Way of Greater Toronto and the Canadian Council on Social Development (2006) define high-poverty neighbourhoods as those that have twice or more the national average poverty rate of economic families. They calibrated this to the 1981 threshold (13.0% national poverty rate), which measured a high-poverty neighbourhood as one with at least 26.0% of its residents living in poverty. The authors employ the Low-Income Cut-Off (LICO) measurement developed by Statistics Canada to compare the relative economic well-being among Canadian households. Using this measure, a Toronto family of a husband and wife and two children in 2004 is considered poor if its income is less than CAD 36 247.
51. These findings correspond with findings on urban areas in five immigration countries, showing that ethnic residential segregation is generally less pronounced in Australia and New Zealand than in Canada, England and the United States (Johnston et al., 2007).
52. Neighbourhoods are here defined as Census tracts, over 30% of whose population is either from a single racial minority group or from a combination of racial minority groups.
53. By 2001, approximately half of all Census tracts in Toronto exceeded the 30% level; this was only 27% in 1991 and 7% in 1981. Among single-minority neighbourhoods, 60% were Chinese and a third South Asian. Net out-migration of whites had rapidly reduced the population shares of whites (Hou, 2006).
54. Transport Canada (2006) estimated congestion costs in Toronto in 2002 to be CAD 1.6 billion. The Greater Toronto Services Board (GTSB) has estimated that congestion in the Greater Toronto/Hamilton area costs around CAD 2 billion per year, due to delays in the movement of people and goods (cited in TD Bank, 2004). The Toronto City Summit Alliance has estimated that the costs of congestion will rise from CAD 2.2 billion in 2001 to CAD 4.1 billion in 2031 (Toronto City Summit Alliance, 2007).
55. Metropolitan regions of similar size are here considered to be metropolitan regions with between 2.5 million and 10 million inhabitants.

56. The only metropolitan region that scores better on all these three air quality measures is Montréal. Paris scores better on two of these three indicators. If smaller metropolitan regions are included in the selection, more do better than Toronto on air quality.
57. Similarly, variation in total car and building related emissions is quite significant between Census tracts, ranging from 3.1 to 13.1 tonnes of carbon dioxide equivalents per year.
58. The provincial share has been more or less constant.
59. The extent of the infrastructure gap for the whole country was estimated in 2003 at between CAD 50 billion and CAD 125 billion (Mirza, 2007), of which one-sixth would be in transport. Other estimations pointed to an infrastructure gap in 2008 of up to CAD 200 billion (Brox, 2008). The Canadian Urban Transit Association has estimated that transit systems across the country need CAD 20.7 billion for infrastructure between 2006 and 2010.

Chapter 2

Capitalising on competitive assets

The Toronto region has the largest metropolitan economy in Canada, as noted in Chapter 1. It is home to a variety of economic sectors with strong export performance, both in manufacturing (the automobile industry, food industry, information and communication technologies, or ICT, and aerospace) and services (particularly financial and professional services), and it is the headquarters for by far the largest number of large companies in Canada. It houses a range of renowned universities and research institutes, and it attracts around 40% of the immigrants who arrive in the country every year. The Toronto region also has an enviable reputation for quality of life, and has positioned itself as Canada's main economic centre, thanks to demographic and economic growth since the 1970s-1980s. The signing of the NAFTA agreement in 1992, which came into force in 1994, allowed the Toronto region to integrate into a wider and cross-border regional manufacturing system, and stable fiscal and macro-economic policies have sustained its relatively low business costs. Federal immigration policies have encouraged a steady inflow of highly skilled labour into Canada. This has sustained the Toronto region's economy, which is heavily integrated with the United States, thanks to its proximity to US markets. But as noted in Chapter 1, the Toronto region is at a crossroads: productivity growth has been lagging, and several sectors have been hard hit by the global economic downturn, the appreciation of the Canadian dollar and increased competition from countries such as China and Mexico. Manufacturing, in particular, has suffered, highlighting a national decline in manufacturing employment since 2000. This new context calls for renewed competitive efforts: (i) boosting productivity, (ii) leveraging cultural diversity, one of the region's unique competitive assets and (iii) decongesting the metropolitan area and putting in place the infrastructure for sustainable public transport.

These three priorities are interrelated. Whether productivity can be increased will depend on whether the region can sustain its specialisation in high value-added industries by boosting innovation. The Toronto region has a number of important assets, including its culturally diverse and skilled labour force, but these could be better deployed to cultivate innovative firms and industries. The region's competitiveness is also constrained by its infrastructure, which, notwithstanding significant recent investments by all orders of government, has suffered from sustained periods of underinvestment and has not kept pace with rapid growth, as illustrated by indicators such as railway capacity. A higher proportion of residents and businesses are now located in the suburbs, and the resulting sprawl and congestion constrain productivity, generate pollution and raise the cost of delivering public transit and other services. Moreover, economic development and environmental sustainability often reinforce each other. Beneficial environmental conditions could enhance the Toronto region's quality of life and its appeal to highly qualified people, and environmental technologies could attract high value-added employment. Innovation in non-carbon based or renewable sources of energy could promote new globally competitive

clusters. The economic crisis provides the region with a window of opportunity to transform its economy by focusing on high value-added, innovative and sustainable activities. In addition to developing new environmentally friendly policies, a region-wide economic development agenda should target a fourth objective: applying a green overlay to existing policy instruments and developing green industries.

2.1 Fostering productivity

A region-wide sustainable competitiveness agenda could build on valuable initiatives such as the City of Toronto's *Agenda for Prosperity*, the Government of Ontario's *Innovation Agenda*, the Government of Canada's recent announcement to establish a Federal Economic Development Agency for Southern Ontario, and the action plan of the Greater Toronto Economic Summit, entitled *Choosing Our Future*. Economic development also plays an important role in the different strategic visions of the governments within the Toronto region, as expressed in documents such as the *Community Strategic Plan* of the Durham Region, the *2007-2010 Strategic Plan of the Halton Region*, the *Strategic Plan 2007-2010* of the region of Peel, *Vision 2026* of the York Region and *A Vision for Mississauga's Future; Strategic Plan for the New Millennium* of the city of Mississauga.

The strategic economic vision for the City of Toronto is expressed in the 2008 *Agenda for Prosperity*, drawn up by the Mayor's Economic Competitiveness Advisory Committee, which was established in 2006 with representatives from business, civil society and academic institutes. The *Agenda for Prosperity* includes an assessment of the Toronto region's current strengths and challenges and offers recommendations on four factors considered to be essential for competitiveness: business climate, internationalisation, productivity and economic inclusion. The *Agenda* provides an annex with 40 concrete proposals for action, and a distinction is made between actions that the city can take on its own, actions in which partners, such as business and academic institutions, should take the initiative, and jointly led actions. Recurrent themes are the improvement of the city's fiscal position, transport infrastructure, commercialisation of knowledge, environmental sustainability and city marketing. Other recommendations include improving tourism infrastructure, developing a major international events strategy, and integrating city services and programmes intended to stimulate economic development, as well as establishing market-specific business development teams to stimulate exports to such countries as China and India.

The government of Ontario's *Innovation Agenda* is a key driver of Ontario's plan for the economy, which includes investing in skills and education, accelerating provincial investments in infrastructure, lowering business costs, strengthening key partnerships to maximise Ontario's potential and supporting innovation. Commendably, the *Agenda* applies a broad and holistic definition of innovation, which includes human capital development as an inherent part of the innovation process, in line with OECD and EU approaches to innovation. The Province of Ontario has proposed to convert the provincial Retail Sales Tax (RST) by July 2010 into a federally administered single sales tax using a value-added tax structure. The current RST applies to many purchases made by businesses in the course of providing goods and services for sale. As a result, a "hidden RST" is embedded in the price of goods and services and passed on to consumers. The proposed harmonised sales tax would use a value-added tax structure, meaning that most businesses would be reimbursed for the tax they pay on most of their inputs. Experience in other Canadian provinces that have undertaken sales tax harmonisation is that the majority of the savings are passed through to consumers in the first year. Exported goods would also be generally free of an embedded sales tax, making Ontario exports more competitive.

In June 2009, the Greater Toronto Region Economic Summit, which assembled regional leaders from the public and private sector, released a 12-point action plan with short-term measures for improving the competitiveness of the region. One of the proposals is the creation of a regional “war cabinet” composed of all mayors, regional chairs and municipal economic development officers, in concert with Ontario’s Minister of Economic Development and Trade. Other recommendations include support for a stronger financial sector, improved access to government services and accountable infrastructure spending to lift the region out of recession.

A competitiveness strategy for the Toronto region could draw on the strongest elements of these plans and maintain a sharp focus on fostering labour productivity. In so doing, it should include the following goals: (1) boosting innovation; (2) strengthening competitive clusters; and (3) improving education and skills policies.

2.1.1 Boost innovation

Innovation in the Toronto region has been encouraged by federal and provincial policies aimed at stimulating research and development in the private sector. In addition to supporting basic and applied research, the federal and provincial government stimulate business research and development (R&D) both directly and indirectly. One of the main federal *direct* support programmes is the *Industrial Research Assistance Program* (IRAP), run by the National Research Council, which provides a range of both technical and business-oriented advisory services, along with financial support to growth-oriented Canadian small and medium-sized enterprises. The programme is delivered by an extensive integrated network of 240 professionals in 100 communities across the country. Working directly with clients, NRC-IRAP supports their innovative research and development and helps them to prepare their new products and services for commercialisation. *Indirect* federal funding is provided by a tax credit programme for *Scientific Research and Experimental Development* (SR&ED). In addition, there are a wide range of federal programmes intended to support the diffusion of technology, such as the National Research Council (NRC) Technology Clusters.¹ The Ontario Ministry of Research and Innovation is responsible for a range of programmes to foster public and private R&D, such as the *Biopharmaceutical Investment Programme*, the *Innovation Demonstration Fund*, the *Ontario Research Fund* and the *Emerging Technologies Fund*. In addition to cross-cutting innovation policy applicable to all economic sectors, there are also provincial policies to support specific economic sectors, such as biotechnology.² Indirect funding in Ontario includes a 10% refundable and 4.5% non-refundable tax credit for SR&ED and a refundable tax credit for contract research performed at eligible research institutes.

Most of these policies appear to function well. Although thorough programme evaluations are often difficult to conduct, in cases where they have been conducted there is some indication that they are effective. Bérubé and Mohnen (2007) found, for instance, that firms that received R&D grants and tax credits introduced more world-first innovations (unique inventions that had not been introduced elsewhere in the world), and derived proportionally more sales revenues from new product innovations than firms that received tax credits only. The Office of the Auditor General concluded in a broad evaluation of R&D programmes and tax credits that they undoubtedly contributed to improving innovation performance, although it was not possible to tell by how much (Auditor General of Canada, 1999). Large federal programmes, such as the *Industrial Research Assistance Program* (IRAP) and *Scientific Research and Experimental Development* (SR&ED) were evaluated positively in most of the assessments (summarised in McFetridge, 2008). The Ontario Ministry of Research and Innovation, like every ministry in Ontario, reports annually on its programmes in its *Results-Based Plan*.

The Toronto region has benefitted from commercialisation programmes designed by federal and provincial governments to make better use of public research. Federal and provincial programmes in this regard include the Centres of Excellence (Box 2.1), funded by both the federal government and the Province of Ontario, commercialisation schemes and funding arrangements for innovation and research. These programmes include the *Canada Foundation for Innovation*, Ontario's *Idea to Market Strategy*, the *Ontario Research Commercialisation Programme*, the *Innovation Demonstration Fund*, and the *Ontario Research Fund*. The Ontario Ministry of Economic Development and Trade is responsible for the *Next Generation of Jobs Fund* and the *Advanced Manufacturing Investment Strategy* (Table 2.1). Most universities in the Toronto region have expanded their focus to include commercialisation and applied research programmes. As a result, research in the Toronto region has become increasingly commercialised. In electronics, the two largest players, Bell Canada and Nortel Networks, have launched major research initiatives with the University of Toronto (Wolfe, 2003). Many of the Toronto region's specialised biotechnology firms are spin-offs of the University of Toronto (Niosi and Bas, 2003). In addition, other universities, such as the University of Ontario Institute for Technology (UOIT), have established linkages with energy and automotive industries. To further support spin-off companies commercialising research in priority areas – such as bio-economy/clean technologies, advanced health technologies, and telecommunications, computer and digital technologies – the Ontario government introduced a 10-year tax exemption for new corporations that commercialise intellectual property developed at qualifying Canadian universities, colleges and research institutes.

More could be gained from commercialisation policies by further addressing the capacity of SMEs to engage in networks with academic institutions. SMEs play an important role in the Toronto region's economy, as indicated by the fact that 99% of enterprises in Ontario are SMEs, including firms in creative industries, food and business services, and provide employment for half of Ontario's population. SMEs frequently lack the resources to interact with governments and engage in long-term planning, making it is easier for governments to interact with large companies. Commercialisation programmes in several OECD regions are not always well adapted to the size of SMEs. These challenges for SMEs have been acknowledged in a number of government initiatives in Canada and Ontario, such as the *Industrial Research Assistance Program* (IRAP) and in federal and provincial tax credits, as well as in targeted city programmes, such as incubators in the fashion and food industries. The Province has made a substantial effort to reach out to and encourage the growth of SMEs. The *Open for Business* initiative aims to reduce regulatory burdens for business, tax administration has been simplified to reduce compliance costs, and the Province operates Small Business Enterprise Centres around Ontario to provide services to small companies and entrepreneurs. Access to finance is facilitated by several initiatives, such as Ontario's *Investment Accelerator Fund* and *Innovation Demonstration Fund*, the federal BDC Programmes (*Operating Line of Credit Guarantee*, *Business Credit Availability Programme*), the IRAP programmes, and initiatives by the Canadian Youth Business Foundation to support young Canadians who are starting new businesses. Support for venture capital has been provided through a variety of measures, including the creation of a CAD 205 million *Ontario Venture Capital Fund* (OVCF) and the new CAD 250 million *Ontario Emerging Technologies Fund*. Innovation policies could focus on strengthening the formation of networks of SMEs and universities, making use of bottom-up initiatives and creating conditions for these initiatives to succeed based on existing best practices (such as MaRS Innovation) and empirical evidence about what works.

Box 2.1. Ontario Centres of Excellence

The Ontario Centres of Excellence (OCE) are important vehicles for commercialisation of research in Ontario. They support industrially relevant R&D, the opening of new market opportunities and the commercialisation of leading-edge inventions, by building industry and academic relationships, and stimulating knowledge transfer. There are Ontario Centres of Excellence in a variety of economic sectors, including ICT, environmental technologies, energy and manufacturing. The three key areas OCE's programmes focus on are research, commercialisation and talent.

OCE's Research Programme is focused on meeting the competitive needs of Ontario industry by tapping into the potential for Ontario colleges, universities and hospitals to act as generators of innovation. The programme aims to encourage scientific and commercial collaborations to boost Ontario's productivity and global competitiveness. It consists of four targeted initiatives:

- *Interact*: Research collaborations that create new industry-academic relationships.
- *Proof of Concept*: Feasibility studies that test an idea in order to mitigate the risk of further research investments.
- *Champions of Innovation*: Research projects that develop disruptive technologies with the potential to create new markets and form the basis for new start-up companies.
- *Collaborative Research*: Research collaborations between industry and academia that move technologies from the laboratory to the marketplace.

The OCE Commercialisation Programme addresses the “innovation gap” between valuable research results and the new, marketable products and services that drive economic growth. It consists of three initiatives:

- *Market Readiness*: Prepares entrepreneurs and their technologies for the market by investing in a range of activities, including market analysis, technology validation and business plan development.
- *Investment Accelerator Fund*: The Investment Accelerator Fund (IAF) helps Ontario technology companies with high potential by providing early-stage investment of up to CAD 500 000.
- *Martin Walmsley Fellowship for Technological Entrepreneurship*: Supports a researcher establishing a new technology-based start-up company.

The OCE Talent Programme generates the next-generation innovators and entrepreneurs. It consists of five initiatives that support innovators at various stages of their development:

- *Connections*: Supports research collaboration between final-year undergraduate students and companies, creating an early opportunity for the conduct of industry-relevant research.
- *International Scholarships*: Gives student researchers opportunities to work with international leaders in their field.
- *Professional Outreach Awards*: Supports opportunities available to students who want to be further involved in the conference they are attending through such activities as chairing a session or volunteering to be a member of an organising body for a conference or trade show.
- *Value Added Personnel (VAP)*: Helps student researchers develop essential skills to complement their technical expertise.
- *First Job*: Makes it possible for companies to hire young researchers with significant academic experience and potential.

Source: www.oce-ontario.org.

Table 2.1. **Federal programmes (in 2009) to stimulate specific economic sectors with impacts on the Toronto region**

Sector	Programme	Budget	Goal	Instrument
Aerospace	Strategic Aerospace and Defense Initiative (SADI)	CAD 900 million over five years	To support private sector industrial research and pre-competitive development (R&D) in Canada's aerospace, defence, security and space (A&D) industries.	Loans
Agriculture	Agricultural Adaptation Council (AAC) programmes			
Automotive	Automotive Innovation Fund (2009 Budget)	CAD 250 million over five years	To support strategic, large-scale R&D projects to build innovative, greener, more fuel-efficient vehicles.	
	Short-term repayable loans (2009 Budget)	CAD 2.7 billion		Loans
	Canadian Secured Credit Facility (2009 Budget)	CAD 12 billion	To support financing of vehicles and equipment.	
Energy	NextGen Biofuels Fund	CAD 500 million	To support the development and production of the next generation of renewable fuels in Canada.	Loans supporting up to 40% of eligible project costs
	Sustainable Development Technology Fund	CAD 550 million	To support the late-stage development and pre-commercial demonstration of clean technology solutions: i.e. products and processes that contribute to clean air, clean water and clean land that address climate change and improve the productivity and global competitiveness of Canadian industry.	Grants
Film	Film or Video Production Services Tax Credit	Access to CAD 300 million/year	To stimulate job growth by encouraging Canadians as well as foreign-based film producers to employ the services of Canadians.	Refundable tax credit
Manufacturing	Incremental Tax Relief Programs	Up to CAD 12 billion over six years	Tax relief for manufacturers and processors.	
Research	Canada Foundation for Innovation Funds	CAD 750 million/ year	To strengthen the capacity of Canadian universities, colleges, research hospitals, and non-profit research institutions to carry out world-class research and technology development that benefits Canadians.	Grants contributing up to 40% of a project's infrastructure costs
	Going Global–Innovation (GGI)	CAD 390 000/year	To promote and enhance Canada's international innovation efforts by supporting Canadian companies and/or researchers in pursuing international R&D collaborative opportunities through the development of partnerships with key global players.	Grants contributing up to 75% of eligible expenses
	Industrial Research and Development Fellowships	CAD 146 million/ year	To provide financial assistance for companies to hire recent doctoral graduates in science and engineering to conduct research and development in industries.	Grants contributing towards the fellows' salary by CAD 30 000 per year for two years
	Canadian Institutes of Health Research (CIHR)	CAD 916 million/ year	To help the academic community interact with Canadian companies with an interest in health research and development. CIHR is actively encouraging innovation, facilitating the commercialisation of health research in Canada and promoting and diversifying the growth of Canada's new economy.	Grants, training awards, salary awards

Table 2.1. **Federal programmes (in 2009) to stimulate specific economic sectors with impacts on the Toronto region** (*continued*)

Sector	Programme	Budget	Goal	Instrument
	Scientific Research and Experimental Development (SR&ED) programme	Access to around CAD 4-5 billion/year (SR&ED+provincial R&D tax credits) ³	To encourage Canadian businesses of all sizes and in all sectors to conduct R&D in Canada that will lead to new, improved, or technologically advanced products or processes.	Non-refundable investment tax credit (ITC), partially refundable for certain corporations
Skilled Trades	Apprenticeship Job Creation Tax Credit	Access to CAD 200 million/year	To encourage employers to hire new apprentices in eligible trades.	Non-refundable tax credit
	Apprenticeship Completion Grant	CAD 40 million		Grant
	Apprenticeship Incentive Grant	CAD 100 million		Grant

Source: Industry Canada.

2.1.2 Strengthen competitive clusters

A variety of federal and provincial programmes stimulate the development of economic sectors, many of which are located in the Toronto region. These programmes have different goals, but have in common their sectoral angle. Several of them focus on sectors in which the Toronto region is specialised, such as the automotive industries, film, digital media, ICT and manufacturing. Many of these programmes are aimed at stimulating research and development, although some others provide broader support or tend to support certain sectors with subsidies, as is the case for the automobile sector and film industry. Many of the federal programmes involve investment programmes in R&D, such as the *Strategic Aerospace and Defence Initiative*, or tax expenditures, such as the tax credits for film and the tax incentives for manufacturing (Table 2.1). The Province of Ontario has a similar set of tax credits, for film, interactive digital media and book publishing, in addition to investment programmes and commercialisation programmes run by the Ontario Centres of Excellence.

Underlying the City's *Agenda for Prosperity* is a strong commitment to support a variety of economic sectors in the City of Toronto. The city supports sectors through specific programmes, sectoral organisations and strategic visions for economic clusters. It has initiated business incubators in the fashion and food sector (Box 2.2) and provides such grants as *Imagination, Manufacturing, Innovation, Technology Grants* (IMIT), supporting new building construction and building expansion for selected sectors, including biomedical industries, creative industries, environmental industries, ICT, manufacturing and tourism. In addition, the Economic Development department of the City of Toronto, together with local businesses and other stakeholders, has created economic development strategies for the aerospace, design, environmental industries, film and television, food and beverage, ICT and medical and biotechnology companies. There are several sectoral organisations, such as the Toronto Film Board, the Toronto Financial Services Alliance, the Toronto Biotechnology Initiative and the Design Industry Advisory Committee, in which the City of Toronto works with main stakeholders to increase the competitiveness of firms in each sector. Most of this city involvement is intended to bring together different actors within sectors to create networks of firms and increase the strategic awareness of different economic sectors.

Box 2.2. The Food Business Incubator in the City of Toronto

The Toronto Food Business Incubator (TFBI) is an independent, not-for-profit organisation, run by a volunteer board of directors, which attempts to foster growth in food industry micro-enterprises. The organisation helps new companies become established, with the goal of sustaining economic growth, creativity, and the vitality of the food manufacturing industry. Members of TFBI have access to business resources and industry-standard equipment that can shift start-up micro-enterprises into commercialised food businesses. These companies receive 24-hour access to a production space and a fully equipped commercial kitchen, and they share TFBI's network of industry contacts, supplemented with training, field trips and mentoring.

The Toronto Food Business Incubator offers several services for new food companies. The TFBI Pre-Commercial Programme has been developed to help reduce the risk and drastically lower the cost of developing a sustainable food manufacturing venture through:

- business plan analysis and feedback
- access to consultant(s) on a limited basis
- an option to purchase shared liability insurance
- assistance in developing business principles such as business plan improvements; sales attraction; accounting; market research; low-cost marketing tools for business promotion; product and service pricing; employee recruitment and motivation; and financial statement analysis.

After the successful completion of TFBI's Pre-Commercial Programme, companies immediately re-evaluate their business plans and decide if they wish to continue with their venture. Companies may remain and use the TFBI facility production space and fully equipped commercial kitchen, or use the TFBI as a base for ongoing operations, renting additional storage space and using its resources. Companies may also choose to continue the relationship but move into a co-packer agreement for product production or transition into their own manufacturing plant. Companies continue to have access to all supplementary services, including training, field trips, and mentoring. Companies continue to share TFBI's network of industry contacts.

Source: www.tfbi.ca.

These sector-specific interventions are complicated by the overlap between the interventions of the different orders of government. This is to some extent inevitable, considering the allocation of responsibilities, given that the federal and provincial government have shared responsibilities in science, technology and innovation policies. One of the challenges for the Toronto region is to bring these areas closer together, and the overlap of programmes aiming at commercialisation of research could be considered an expression of a shared concern. In addition to the overlap of instruments, there is also an overlap of clusters supported by the federal government and the Province of Ontario: both of them have programmes for the automotive industry, film and energy. This signifies that these clusters are considered to be strategic for both the federal and provincial government.

This overlap would require co-ordination to enhance policy effectiveness and avoid duplication (Box 2.3). Examples of co-ordination for economic sectors that could be expanded to other areas are the co-ordination in the auto sector and financial services. The Ontario and federal government have worked closely together during support efforts for General Motors and Chrysler following the global economic crisis. They also co-operate through the Canadian Automotive Partnership Council (CAPC), whose membership is comprised of the CEOs of Canada's five assemblers, the CEOs of Canada's four leading

parts suppliers, heads of industry associations, the President of the Canadian Automotive and Aerospace Workers Union, the President of the University of Windsor, and provincial and federal ministers of industry. A similar partnership in financial services is maintained by the Toronto Financial Services Alliance (TFSA), which the Ontario government and the City of Toronto aim to provide with necessary resources to promote the Toronto region as a global financial centre.

There is overlap between sector-specific interventions in other parts of the Toronto region and those in the City of Toronto. All the regional municipalities and some of the local municipalities in the Toronto region define their key economic sectors. These visions are supported by some form of business development office, with different services ranging from network development and start-up assistance and sometimes support for specific clusters. There is considerable overlap between key sectors identified by the City of Toronto and the municipal and regional governments in the Toronto region. Peel Region, for example, singles out advanced manufacturing, aerospace and life science, and Durham Region mentions (among other sectors) advanced manufacturing, film and tourism, all of which are also considered key sectors by the City of Toronto.

Some of the programmes are supporting industries rather than stimulating cluster-building or fostering an environment for competitiveness. For instance, the programmes that are in place to support the automotive industry, including several new programmes added in the federal budget of 2009, such as the *Automotive Fund*, loans and credit facilities, not only aim to stimulate R&D, but also to support the industry to avert job losses. Support for the film sector in the form of tax credits reduces the costs for the sector, with the aim of

Box 2.3. Intergovernmental co-ordination of cluster development in OECD countries

National governments of federal countries generally have limited options in promoting policy coherence across levels of government, as they do not always have the legal authority to dictate certain programmes or policies to sub-national governments. The promise of funding can however induce sub-national governments to take certain policy directions. Germany is a federal country that has successfully used national-level cluster programmes. BioRegio and InnoRegio for example, were national competitions for projects in the *Länder* (states). The German federal government sees its role mainly as a facilitator, organising competitions and selecting regions but playing little active role in managing the programmes. That is either a responsibility of the individual states or assigned directly to NGO consortia or networks.

Shared responsibility for the selection and funding of recipients is one potential vehicle for supporting policy coherence. In Sweden, the national government has asked that regional governments adopt regional growth plans that make explicit which areas of regional specialisation are the most important to the region's economic development. The national cluster programme, the *Visanu* programme, supported clusters that in most cases were pre-selected by the regions themselves. Regions are also required to match national-level funding to increase the leverage effect of national funding and to ensure regional support.

Contracts and other funding agreements for national/regional policy articulation are another vehicle for supporting policy coherence with respect to clusters. In Germany, the joint task force funding for network development has incorporated finance for co-operation and cluster management within the wider framework of negotiated funding agreements between the federal and state governments.

Source: OECD (2007b).

creating jobs in the film industry, rather than building up a cluster with interdependent firms and education institutions. Phasing out tax credits might be considered for sectors benefiting from favourable tax treatment, while at the same time developing strategies for cluster policies where they might be needed. Many car-producing countries, including Canada, have intensified their support for the automobile sector during the global economic downturn; the Canadian support provides possibilities for the car industry in the Greater Golden Horseshoe to strengthen high value-added activities similar to the initiatives that car industries around Gothenburg (Sweden) undertook around 2004 to refine their competitive edge (Box 2.4).

A cluster-based policy would aim at increasing linkages between firms, which play an essential role in incremental innovation in metropolitan regions. Despite initiatives to map economic sectors in the Toronto region, relatively little is known about firm interlinkages. More knowledge could be gathered and disseminated, so that public interventions could focus on areas where such linkages might increase innovation. Developments in the Toronto region's life-science cluster support this argument. In this cluster, firms combine core strengths in biotechnology and biomedical technologies with service activities like contract research and manufacturing, blood banks, data management, device repair and distribution. The federal and provincial government have taken steps to formalise

Box 2.4. Development of the automotive cluster in Gothenburg

There is a strong commitment of different government levels in Sweden to strengthen high value activities in the Swedish automotive sector, clustered around Gothenburg. This commitment was expressed by public authorities in different levels of government in 2004 with the creation of *Automotive Sweden*, a network to help promote the development of the automotive sector. The network's strategic objective, in co-operation with industry and academia, is to help foster a favourable business environment for the industry and to support R&D and the long-term development of skills in emerging critical areas. The creation of this network was the result of a study in 2003 that identified several competitive disadvantages of the Swedish automotive industry, such as low productivity, high dependence on foreign owners, limited and mostly regional networks and a relative lack of connections between academic institutions and industry.

A priority in the Swedish government's initiatives to support the automotive sector is automotive safety and the elimination of vehicle accident-related casualties. A government-sponsored programme called *Vision Zero* stimulates the development of advanced safety features and systems. The *Intelligent Vehicles Safety Systems* (IVSS) programme, designed to help introduce new safety solutions in vehicle and roadside systems, are another government-sponsored initiative. This programme is regarded as a driver for the development of skills that will be critical for research and education, as well as a platform for the development and application of advanced information technologies in the automotive production process.

The convergence between automotive and information technologies is another element of *Automotive Sweden's* programme; this convergence is regarded as a key competence in the industry's positioning as a leader in telematics, given the country's industrial experience in both sectors (Volvo Cars, Volvo Trucks, Saab and Scania in automotive; Ericsson in information technology). "Telematics Valley" is the result of this convergence, an automotive telematics cluster around Gothenburg.

Another area of strategic action of *Automotive Sweden* is the combination of Sweden's experience in design and engineering with the dynamics of automotive production. The objective is to combine skills that cross these domains and lead to the development of products that combine excellence in industrial design, product durability and road-holding ability.

Source: OECD (2007c).

bottom-up initiatives for this kind of linkage. Governments could build on and expand developments and laudable initiatives like the *MaRS Discovery District* in downtown Toronto, in which technological start-ups in life sciences are assisted with work space and services, allowing for relationships between sectors (Box 2.5).

Public actors, including governments, could take a more active role in stimulating inter-linkages, for example by linking design to other firms, or by facilitating spatial clustering of firms through making space available. With design, arguably the creative sector with

Box 2.5. MaRS Discovery District in Toronto

MaRS is a non-profit innovation centre connecting science, technology and social entrepreneurs with business skills, networks and capital to stimulate innovation and accelerate the creation and growth of enterprises. This collaboration happens physically through location of research labs, companies of all sizes, business advisors, investors and professional services within the MaRS Centre and more broadly through advisory services, entrepreneurial programming, networks and an electronic community.

Located in Toronto's Discovery District, two square kilometres that have been designated as the city's centre of innovation, the MaRS Centre is the gateway to Canada's largest concentration of scientific research, anchored by major teaching hospitals, the University of Toronto and more than two dozen affiliated research institutes. The centre is also close to the Bay Street financial district, provincial legislature, key government organisations, arts and cultural attractions.

The MaRS Centre, both as a physical complex and as the hub for an extended virtual community, is designed to accelerate the commercialisation of Canadian innovation by uniting the disparate worlds of science and technology with industry and capital. The MaRS Centre includes research facilities for some of the area's top scientists and incubation facilities for young companies. It has grown into a cluster of professional services firms and investors, technology transfer offices, research and community networking organisations and mid-sized and established global companies, benefiting from a state-of-the-art conference and multimedia facility, as well as the programming required to animate the shared spaces and maximise the impact of cluster development.

The MaRS Advisory Services unit helps Ontario-based companies to commercialise early-stage innovations, in information and communications technology, nanotechnology and clean tech, life sciences, medical technology and beyond. Services that are provided include:

- Advice, including business strategy, investor readiness and mentorship
- Education, through a range of MaRS-produced events, including peer-to-peer offerings and the Entrepreneurship101 program
- Market Research, with access to a range of proprietary databases and skilled market analysts
- Money, through funding from the Ministry of Research and Innovation for business projects and investments of up to CAD 500 000 in seed capital, and preparation for and providing contacts to angel networks and other venture capitalists.

Business Project Funding enables entrepreneurs to access specialised advisory services. Projects might include consultation from niche market experts, intellectual property strategy, third-party validation or testing or primary market research. Recommended companies can apply to receive up to CAD 10 000 in a given year.

Source: www.marsdd.com.

the most potential for spillovers to other sectors, the challenge for policy is to find effective ways to highlight the importance of designers' contributions to competitiveness and innovation. Capitalising on its large design workforce, the Toronto region could re-brand itself as a centre for design and creativity. Public actors in the Toronto region could promote the value of design to key industries; continue to place designer-consultants strategically in business incubators and science parks; and include design in public sector innovation and commercialisation strategies. Providing space and services for economic clusters, as applied to the creative industries, appears to have been successful in spatially clustering firms, although thorough evaluations are lacking. Under this model, governments provide funds for redevelopment of real estate aimed at certain industry clusters, in addition to programmes and services (Box 2.6).

Box 2.6. Place-based policies for the creative industries in the City of Toronto

The *Imagine a Toronto* report, produced in 2006 for the City of Toronto, recognises the contribution of creative industries to economic growth and suggests support to private actors that stimulate local creative sectors through place-based policies.

One such private catalyst in community-based creative initiatives is Toronto Artscape Inc., a non-profit real estate development organisation helping artists, theatre and dance groups set up in low-rent spaces. It responds to the challenge of displacement of artistic people through a range of development projects, programmes and services. Acting as a landlord, property owner/manager and developer with a variety of funding sources, it straddles the real estate, business, government and arts world. It has been a catalyst in the development of many of Toronto's communities, including Liberty Village, the Spadina corridor, Queen Street West, the Distillery Historic District and Toronto Islands. In 2003, Toronto City Council gave Artscape the rights to redevelop four abandoned streetcar repair barns. This 57 000 square-foot redevelopment project features a greenhouse and environmental education centre, affordable living/working units for artists, facilities for community groups and indoor-outdoor public space. Another recent success is the Distillery Historic District, an arts, entertainment and cultural complex in the East End, where support from multiple levels of government contributed to Artscape's renovation of two of the 44 vintage buildings for 42 artists, theatre and dance groups (Bradford, 2004). An indicator of their success is the years-long waiting list for these affordable spaces.

The Property Group developer also provides affordable space for creative practitioners, by restoring historic spaces for the creative sector. One example is a building at 401 Richmond Street West that is home to creative producers and micro-enterprises of many different types, charging both market rates and below-market rates according to the tenants' ability to pay (Creative Cities Project Group, 2006).

2.1.3 Education and skills policies

Productivity in the Toronto region is also strongly linked to the education and skill level of the area's population. The level of innovation is dependent on the performance of the whole educational system, since strong literacy and numeracy skills are the critical foundation for academic achievement and innovative activity. These key determinants are addressed by the Province of Ontario in its programme *Reach Every Student; Energising Ontario Education*, enacted in 2008, which attempts to increase the share of grade 6 students achieving the provincial standard in reading, writing and math from 54% in 2002-2003 up to 75%, and to increase high school graduation rates to 85%. Instruments used to achieve these targets are increased funding, early childhood learning for all 4- and 5-year-olds and

smaller classes (with the ambition of reducing class sizes to 20 or fewer students in 90% of the primary school classrooms). In addition, the *Student Success* programme offers expanded programmes in Ontario high schools to help meet students' individual learning styles and interests, and better prepare them for graduation and beyond. In order to stimulate post-secondary education, the Province of Ontario has adopted its *Reaching Higher* programme, with increases in operating grants to universities and colleges. In recognition of the substantive enrolment and operating pressures facing colleges and universities, the 2009 Ontario Budget announced an additional CAD 150 million for postsecondary institutions, as well as CAD 10 million to expand graduate fellowships to assist students pursuing higher levels of education. Ontario's *T-Stop* and *Y-Stop* programmes are also designed to help teachers and students improve their abilities and generate further curiosity in science and research. At the post-secondary level, the *Post-Doctoral Fellowship* (PDF) programme provides funding for outstanding researchers to work at leading research institutions.

Specialised training programmes are in place to certify and upgrade professional skills. Through funding from the Ontario Ministry of Citizenship and Immigration (MCI), bridging projects help organisations develop and deliver occupation-specific training that gives newcomers the skills, language and Canadian work experience they need to access high-quality jobs quickly. The aim is to reduce the time it takes for them to catch up with the income levels of their Canadian-born counterparts. Bridging projects are delivered by Ontario regulatory bodies, employers, community agencies, colleges and universities, among other organisations. MCI also funds local school boards to deliver *Adult Non-Credit English and French as Second Language* (ESL/FSL) training to help newcomers enhance their English or French language skills, including occupation-specific language classes. These classes may be delivered in classrooms or in the workplace to help immigrants increase their workplace language skills. A detailed analysis of these programmes is provided in the next section.

2.2 Leveraging cultural diversity for economic competitiveness

Cultural diversity is one of the Toronto region's chief assets, and as noted in Chapter 1, can enhance its economic competitiveness: a more diverse workforce can be more innovative, stimulate international trade relations, provide cultural amenities and create a more cosmopolitan outlook that adds to the quality of urban life. All these elements can help to improve the Toronto region's labour productivity and economic competitiveness. To maximise the opportunities presented by cultural diversity, the following policy goals must be pursued: i) continue to attract and use highly skilled immigrants; ii) promote social integration that stimulates interaction; and iii) encourage immigrant entrepreneurs to diversify their trade relations.

2.2.1 Skills

Policies must be implemented to sustain the influx of highly skilled immigrants and to ensure that newcomers' skills and talents are used productively to maximise their potential. The Toronto region has become one of the world's chief destinations for highly skilled immigrants, but other metropolitan areas, such as Madrid, have begun to put increasing emphasis on immigrant attraction, and efforts will be needed to keep pace. As noted in Chapter 1, the skills of newcomers to the Toronto region could be put to better use: many immigrants end up in jobs that do not match their capabilities. This presents an opportunity for improving the Toronto region's economic performance.

Successful federal policies to attract highly skilled workers

Federal immigration policies have contributed to Toronto's success in attracting highly skilled immigrants. The main responsibilities for the design and implementation of immigration policies are carried out by the federal government. Immigrants are admitted to Canada under three different categories: economic, family reunification and humanitarian. In these last two categories, skills are not a criterion for admission. The majority of highly skilled immigrants, however, enter Canada under the "economic" class, most in the *Federal Skilled Worker Programme*, based on a points system. Applicants are awarded points on such factors as education, work experience, language proficiency and age, and must earn a minimum of 67 points out of 100 to be selected. It is important to note that while points are awarded on the skilled worker grid for foreign education and work experience, the credentials of immigrants who work in regulated professions (e.g. health care professionals and engineers) are still required to be formally recognised by the appropriate regulatory body before they can practice in Canada.

Recent reforms focusing on temporary workers and students are likely to sustain this success in attracting highly skilled immigrants. A new category of immigrants, the *Canadian Experience Class*, was introduced in 2008 by the federal government. This allows temporary foreign workers and students with a Canadian education who have obtained work experience in Canada in a highly skilled job to apply for permanent resident status. Temporary foreign workers who are currently in Canada for periods up to one year are permitted to remain longer, and if their jobs remain stable over a period of three years, may apply for permanent residence. In recent years, Canada has also introduced a number of initiatives to attract and retain international students. For example, the *Off-Campus Work Permit Program* allows students to work for up to 20 hours per week during academic sessions and full-time during scheduled breaks, and recent changes in the *Post-Graduation Work Permit Programme*, the federal programme of work permits for graduated international students, allow international students to work for up to three years after graduation in any occupation, without a previous job offer.

Increased responsiveness to labour market needs

Federal policies have become more responsive to short-term labour market needs. In November 2008, the Minister of Citizenship, Immigration and Multiculturalism announced the *Action Plan for Faster Immigration*. This strategy makes the immigration system more flexible and responsive to Canada's labour market needs, ensuring that skilled immigrants can enter Canada quickly when their skills are in demand. As part of the *Action Plan*, the Government of Canada amended the *Immigration and Refugee Protection Act (IRPA)*. These amendments led to the release of the first set of ministerial instructions giving special preference to new *Federal Skilled Worker* applicants who respond to current labour market demand. The ministerial instructions prioritise Federal Skilled Worker applicants who have an offer of Arranged Employment, who already reside legally in Canada as a temporary foreign worker or as a student, or who can demonstrate at least one year of paid work experience in one or more of 38 occupations identified as being in high demand nationally. This provides a new instrument that can be adjusted to socio-economic shifts and evolving immigration priorities. During the consultations on the development of the Ministerial Instructions, the Province of Ontario expressed concern that a list of only 38 occupations does not reflect the Province's broad labour market needs. In addition, it remarked that the list, which is pan-Canadian, does not reflect certain specific growth sectors that are found in the Greater Toronto Area (e.g. creative industries, information technology).

In addition to these federal policies, specific provincial labour market needs have increasingly been taken into account. A Provincial Nominee Programme, *Opportunities Ontario*, allows pre-screened companies in Ontario to nominate employees who would fill a labour

market gap. This programme has seen several changes recently. First of all, eligibility criteria have been widened to include skilled workers from any managerial, professional or skilled trade (which represents approximately 350 occupations, as compared to 38 occupations under the *Federal Skilled Worker Programme*). Second, international students can now qualify for jobs outside their field of study and, third, the annual number of nominees is being increased from 500 to approximately 1 000 per year. Investors to Ontario are now also eligible for the programme as long as they invest at least CAD 3 million and create at least five permanent, full-time jobs in Ontario.

Promising policies to make better use of immigrants' skills

There is growing recognition, however, that recent newcomers to the Toronto region face a number of barriers that may inhibit their ability to access the labour market and integrate successfully. The unemployment rate for newcomers to Canada is higher than that of non-foreign-born Canadians, and almost one-third of the immigrants to the Toronto region are underemployed. A range of research has tried to explain the relative lack of labour market utilisation of highly skilled immigrants in the Toronto region and in Canada more generally. The main explanations identified are foreign credentials recognition, language skills and lack of Canadian work experience (Weiner, 2008). These barriers have been frequently cited by newcomers, and Canadian employers have acknowledged them as the biggest issues in recruiting immigrants (Lochhead, 2003).

Immigrant settlement has been served by commendable vertical intergovernmental co-operation. In 2005, the federal and provincial governments signed the Canada-Ontario Immigration Agreement (COIA). The COIA required the federal government to spend an additional CAD 920 million, over five years, on settlement and integration programmes for newcomers. Although the federal government has immigration agreements with most provinces and territories, the COIA was unique in that municipalities are provided a role on discussing immigration issues (Box 2.7). The key objectives and areas of activity of the agreement are:

Box 2.7. The Canada-Ontario-Toronto Memorandum of Understanding on Immigration and Settlement

The Canada-Ontario-Toronto Memorandum of Understanding (MOU) on Immigration and Settlement is an important provision under the Canada-Ontario Immigration Agreement for a partnership with the City of Toronto on immigration matters. While it contains no provisions for financing, the agreement outlines trilateral co-operation in settlement and language-training services. Both governments agreed on the need to provide opportunities for the City of Toronto to express their interests in immigration and develop and collaborate on information-sharing and consultation mechanisms. In addition to collaborating with Canada and Ontario under the auspices of the MOU, the City of Toronto actively participates in working groups on settlement and language training established under the Canada-Ontario Immigration Agreement.

The Memorandum established clear expected outcomes for co-operation. The MOU will, above all else, assist Canada, Ontario and the City of Toronto in meeting their respective immigration and settlement objectives and clarifying jurisdictional responsibilities. Secondly, it establishes a framework for the enhanced participation of Toronto in groups that were predominantly used for communication between Ontario and Canada. For example, the MOU includes the City of Toronto as a member of the Language Training Working Group, which was previously established in the Canada-Ontario Immigration Agreement. Likewise, the MOU encourages the participation of the City of Toronto in the Settlement Working Group so as to facilitate the achievement of shared priorities and address specific issues of relevance to the City of Toronto.

Source: Citizenship and Immigration Canada (2006).

support successful social and economic integration of newcomers; address Ontario's labour market needs through a pilot *Provincial Nominee Program* and the *Temporary Foreign Worker Agreement*, and build partnerships with and involve municipalities in immigration and integration.

A wide range of policies by various actors has been put in place to address challenges connected to labour market integration of immigrants (Table 2.2). The assessment and regulation of foreign qualifications and experience for the regulated professions is conducted by provincial regulatory bodies, assessment agencies, training and higher education institutions and employers; the federal and provincial government fund initiatives aimed at facilitating this process. "Regulated" occupations are controlled by provincial and territorial law and governed by a professional organisation or regulatory body. The regulatory body governing the profession/trade has the authority to set entry requirements and standards of practice, to assess applicants' qualifications and credentials, to certify, register, or license qualified applicants, and to discipline members of the profession/trade. In addition, the Province of Ontario passed the *Fair Access to Regulated Professions Act* (FARPA) and amendments to the *Regulated Health Professions Act*, to ensure that individuals applying for registration with regulated professions encounter transparent, objective and fair practices. With regards to language training, federal, provincial and municipal governments fund services to newcomers. Work experience in Canada via "bridge-to-work" programmes is funded by provincial and federal governments and facilitated by professional associations, education institutions and not-for-profit organisations such as the Toronto Region Immigrant Employment Council (TRIEC). An example of such a "bridge-to-work" programme is the *Career Bridge* paid internship programme for internationally qualified professionals, operated by Career Edge Organisation, a national not-for-profit that works with employers across Canada and has provided more than 9 200 paid internships since 1996. In order to increase labour market integration of immigrants, federal and provincial governments agreed in 2009 to develop a Pan-Canadian Framework for the recognition of foreign qualifications.⁴

Table 2.2. **Programmes for labour market integration of immigrants in the Toronto region**

Programme	Purpose	Government Agency/ Organisation
Credential recognition		
Foreign Credential Recognition programme	Funding assessment and recognition of foreign qualification projects	Federal (HRSDC)*
Foreign Credential Referral Office	Providing information on labour market and credential assessment at Service Canada centres	Federal (CIC)
Essential Skills in the Workplace	Describing occupations in National Occupational Classification in terms of nine essential skills	Federal (HRSDC)
Internationally Trained Workers Initiative	Assessment of credentials of health care professionals	Federal (CIC)
From Consideration to Integration	Support to 12 regulatory bodies and other organisations to improve licensing processes for foreign-trained engineers	Federal (HRSDC)
Bridge Training programmes	Help internationally trained individuals achieve licensure and employment that match their skills, education and experience in over 100 professions and trades	Funded by OMCI, delivered by universities, colleges, community agencies, regulators and school boards
World Educational Service (WES)	Assess academic credentials for Internationally Trained Individuals (ITIs), employers, regulatory bodies and educational institutions against Canadian standards	Partially funded by OMCI and OMTCU, delivered by WES

Table 2.2. **Programmes for labour market integration of immigrants in the Toronto region**
(continued)

Programme	Purpose	Government Agency/ Organisation
Career Maps	Information about licensing, certification and labour market conditions for trades and professions, 38 career maps and 9 interactive e-career maps	Provincial (OMCI)
Global Experience Ontario	Resource centre providing information on licenses and registration for 14 non-health regulated professions (the remaining 20 professions are with Health Force Ontario, which is an agency of MOHLTC)	Provincial (OMCI)
Health Force Ontario	Resource centre for internally trained health professionals	Provincial (OMH)
International Medical Graduates (IMG)	Training, assessment and support for international medical graduates	Provincial (OMH)
Projects recommended by Colleges Integrating Immigrants to Employment (CIITE)	Credential recognition, language proficiency assessment and employment preparation	Provincial (OMTCU)
Language training		
Language Instruction for Newcomers to Canada programme	Basic language training	Federal (CIC)
Enhanced Language Training	Language training geared specifically to occupations	Federal (CIC)
Adult Non-Credit Language Training Programme	Provides English or French language training to adult newcomers to improve their language skills, including occupational language training	Provincial (OMCI)
Work experience		
Workplace Support Services	Support for tradespeople to obtain recognition of trade qualifications and experience and to enter apprenticeship training	Provincial (OMTCU)
Employment Services in Health Sector Employment for Internationally Trained Physicians	Skills training and employment mediation for international medical graduates in non-regulated health jobs	Provincial (OMH and OMTCU)
Ontario Public Service Internship Programme for Internationally Trained Individuals	Internships of up to six months in the Ontario Public Service	Provincial (Ontario Ministry of Government Services)
Profession to Profession Mentoring Immigrants Programme	Mentorship of internationally trained professionals by a City of Toronto employee	City of Toronto
Career Bridge	Internship programme for skilled newcomers	TRIEC
Mentoring Partnership	Mentorship programme linking skilled immigrants to professionals in their field	TRIEC (funded by both OMCI and OMTCU)
Bridge Training programmes	Help internationally trained individuals achieve licensure and employment that match their skills, education and experience in over 100 professions and trades.	Funded by OMCI Delivered by universities, colleges, community agencies, regulators and school boards

Note: **HRSDC** refers to Human Resources and Social Development Canada, **CIC** to Citizenship and Immigration Canada, **OMCI** to Ontario Ministry of Citizenship and Immigration, **OMTCU** to Ontario Ministry of Training Colleges and Universities; **OMH** to Ontario Ministry of Health and Long-Term Care, **TRIEC** to Toronto Region Immigration Employment Council.

Source: Websites websites of HRSDC, CIC, OMCI, OMTCU, OMH and TRIEC and Weiner (2008).

The recent implementation of these programmes and the lack of systematic evaluation make it difficult to establish whether they are effective. For example, the Foreign Credentials Referral Office (FCRO) was launched in 2007, the *Fair Access to Regulated Professions Act* (FARPA) was implemented in 2007, and initiatives by TRIEC were established in 2005. Many programmes and initiatives by professional organisations have only been initiated in the last few years. For the programmes that have been in effect for longer, relatively few evaluations exist. Opportunities exist at all levels of government for further evaluation of settlement and integration programmes. These evaluations could lead to dissemination of best practices for programme changes and new initiatives. This weakness has however been recognised by all governments, and benchmarking is a major component of new COIA funding. In anticipation of rigorous evaluations, indications of success will have to be interpreted with caution.

There are, however, indications that several bridging programmes and internships have had positive results. The success rates of these programmes are high: over 80% of the Career Bridge interns, mentioned above, secure positions in their field after participating in the programmes, 60% in the organisation in which they served their internship; and 85% of those passing through the Mentoring Partnership programme secure employment, although not always in their chosen fields (Young, 2007; Full Circle Consulting, 2008). In an Ontario government-funded bridging programme called *Care for Nurses*, internationally educated nurses have been given occupation-specific language training and assistance in preparing for a multiple-choice exam. More than 70% of the applicants in this programme passed the exams of the College of Nurses of Ontario, while in the past, more than 70% had failed it (Owen, 2005). Another example of a successful bridging programme is the University of Waterloo's *International Optometric Bridging Programme*, which increased the success rate of the licensure exam from 37% to 87%. In addition to helping skilled newcomers obtain licensure in regulated professions, the Ontario Ministry of Citizenship and Immigration also supports bridge training programmes that help individuals obtain employment in non-regulated professions (e.g. construction managers, financial services).

More programmes, such as those mentioned, should thus be rolled out. Participation rates in the programmes for bridging and internships are relatively modest. Many programmes were provided for relatively small groups. For example, the *Career Bridge* programme, since its launch in 2005, has created only about 1 000 internships among 370 employers. Now that the approaches have been tested and can still to some extent be further improved, bridging and internship programmes could be used more widely (Full Circle Consulting, 2008). Many of the programmes could also focus on sectors of the workforce where the assessment processes are less formal, such as the non-regulated professions, and where there may be a larger credentials gap to bridge (Reitz, 2007b). Such a roll-out has been facilitated by the Province of Ontario in 2009 with its investment of nearly CAD 700 million over two years in new skills training and literacy initiatives and enhancements to existing programmes, including CAD 94 million (through the Canada-Ontario Labour Market Agreement's Strategic Training and Transition Fund) to expand support for new Canadians, for bridge training and mentorship opportunities, serving 15 000 more clients each year. These measures include extension of funding for the *Colleges Integrating Immigrants to Employment (CIITE)* programme to assist internationally trained individuals in their efforts to integrate in the labour market. An additional measure taken by the Province of Ontario is the creation of the Ontario College of Trades, a regulatory body to modernise the apprenticeship and skilled trades system, which could stimulate the use of successful programmes for labour market integration of immigrants.

More could be done to advance the applications of prospective immigrants before they arrive. Canadian embassies offer a range of information on national labour market

trends, and most of the relevant information on credential recognition is available on the Foreign Credential Referral Office's website through its "Working in Canada" tool, but the existence of this site could be better communicated to individuals applying for residency in Canada. Ontario also has a website that provides information to immigrants and prospective immigrants living and working in Ontario.⁵ The Ontario Ministry of Citizenship and Immigration has provided funding through COIA to the City of Toronto to develop a Toronto-specific website to provide information to immigrants. In addition, through the Municipal *Immigration Information Online Programme (MIIO)*, which supports municipalities in developing websites to attract newcomers and assist in their integration at the local level, many municipalities in the Greater Toronto Area have set up municipal portals to assist in the integration of immigrants. For example, the *Peel Immigration Web Portal* is a website that provides newcomer information about services, the labour market and employment opportunities in Peel.

In addition, the credentialing process could be started while the prospective immigrant is still overseas. This approach is being taken by Professional Engineers Ontario (PEO), a professional association with regulatory authority for the engineering profession, which allows written examinations to be taken prior to immigration and issues provisional licenses to applicants who have satisfied all the licensing requirements except for the minimum 12 months of acceptable engineering experience in Canada (Weiner, 2008). Such an approach could usefully be implemented by other professional organisations. As for certified workers arriving from other provinces and territories in Canada, a positive step has been taken with the introduction in 2009 of the *Ontario Labour Mobility Act*, which makes them eligible for the same certification in Ontario without additional training or testing, thus making it easier for workers to start employment without long delays.

Further determination and dissemination of best practices could help implement policy. One element that could benefit federal-provincial-municipal discussion is the development of a common evaluation framework to assess the different policy programmes that are funded. Ideally, this framework should be extended to all the programmes in the area, including bridging programmes delivered by non-profit organisations, and professional and regulatory bodies. This need to frame programme evaluations could be linked to ongoing initiatives to disseminate best practices, such as the one by the Ontario Regulators for Access, an association of self-regulating professional bodies, which – through funding from the Ontario government – has identified 29 promising practices that have improved or are likely to improve access for international candidates while maintaining standards. As labour market integration initiatives provide a highly relevant testing ground that could inform future policies in many OECD metropolitan regions, successes in the Toronto region should continue to be communicated to a large number of international delegations to the City of Toronto, as is currently the case, and used in increased international city marketing efforts.

Need for stronger co-ordination

Policy implementation could also be improved by more co-ordination and collaboration by governments on the many different initiatives in play. Although the different approaches might lead to institutional innovations that could be disseminated, there is also ground for co-operation on several fronts. Many of the professional and regulatory bodies confront similar questions, and economies of scale could be realised from common standards for assessment, a common, regularly updated databank of university and college programmes abroad to determine Canadian equivalences and joint missions to new source countries of immigration to assess their university and college programmes (Alboim, 2003). The

federal government and government of Ontario are participating with other provinces and territories in the *Foreign Qualification Recognition Process* to develop a pan-Canadian framework for foreign credentials recognition. A prioritised list of initial occupations is expected to be implemented by 31 December, 2010, with remaining occupations to follow. This work will make it possible for newcomers to obtain more quickly employment corresponding to their qualifications.

The *Fair Access to Regulated Professions Act* (FARPA), adopted in 2006, created a new institutional actor, the Fairness Commissioner, a provincial body to assess the registration practices of regulated professions. At the same time, FARPA established a *Fair Registration Practices Code* and an *Access Centre for Internationally Trained Individuals*, which came to be known as Global Experience Ontario, helping immigrants to obtain the necessary licensing information for regulated professions. The Act made it possible to fine regulatory bodies when they do not comply with an order made by the Fairness Commissioner and also amended the *Regulated Health Professions Act* to create similar requirements for the health professions. In 2008, the Fairness Commissioner observed that 18 of the 34 regulated professions in Ontario had begun to offer bridging programmes (OFC, 2008).

2.2.2 Social integration

Social integration is evidently important in providing a stable environment where mutual trust facilitates economic activity, especially in an environment such as the Toronto region's with a large inflow of newcomers every year. Ethnically diverse teams of professionals, marshaling a variety of perspectives as they tackle a problem, can often help to generate innovative solutions, and a core benefit of cultural diversity in a city goes untapped when it does not translate into a diverse set of urban amenities and a more cosmopolitan outlook among the city's population. Several indicators suggest that different population groups in the Toronto region are interacting closely with each other: inter-ethnic marriage and friendship rates in the Toronto region, for example, are relatively high. It is important to sustain and further stimulate this interaction, considering the consistently large inflows of immigrants every year.

Immigrant settlement policies

While in practice the federal government has played the primary role in immigration and settlement for most of the twentieth century, in recent decades provincial governments (and governments of territories),⁶ have asserted a more active role. For example, the governments of Québec, British Columbia and Manitoba are fully responsible for the design and delivery of settlement services in their provinces, and receive federal funding for this purpose. In other provinces, such as Ontario, the federal government is responsible for the management of most settlement services, which are delivered by service provider organisations. However, the Province of Ontario is actively expanding its role and often supplements federal services. Municipal governments, employers and educational institutions are also playing an increasing part in furthering newcomer settlement (Box 2.8). The City of Toronto is endowed with several settlement service groups that offer a range of settlement services to newcomers. Many of the settlement organisations in the Toronto region and Ontario are represented by the Ontario Council of Agencies Serving Immigrants (OCASI).

Public actors from different orders of government provide a wide variety of settlement services in the Toronto region. The federal department Citizenship and Immigration Canada (CIC) and the Ontario Ministry of Citizenship and Immigration (MCI) work with and fund

immigrant-serving agencies to support the successful settlement and integration of newcomers to Canada and Ontario. CIC funds a number of programmes that help newcomers settle, adapt and integrate into Canadian society. These include programmes and services to support newcomers in a variety of ways by providing: language training so they have the language skills to function in Canada; the information they need to better understand life in Canada and make informed decisions about their settlement experience; the required assistance to find employment commensurate with their skills and education; and help to establish networks and contacts so they are engaged and feel welcomed in their communities.

Box 2.8. Actors involved in immigration settlement and integration in Canada

Primary actors:

- *Federal government*: funds immigrant settlement programmes in all provinces and territories, and is responsible for the management of settlement services (which are delivered through service provider organisations) in most provinces and territories. The federal government also funds labour market training and multiculturalism programmes.
- *Provincial governments*: fund immigrant settlement programmes and often supplement federally funded settlement services with provincially funded programmes. Provincial governments, specifically Ontario's, fund various labour market integration programmes (some through Employment Ontario) such as bridge training programmes, language-training programmes, workplace internships and mentorships.
- *Regulators*: Establish standards of entry; decide how an applicant's competencies will be assessed and determine whether an individual is qualified for entry into the profession and licensure.

Secondary actors

- *Municipalities*: Help with social and economic integration (job searching and matching), fund anti-discrimination and cultural diversity programmes, provide referrals to social, health, cultural, education and counselling services for newcomers.
- *Employers*: Responsible for recruiting, hiring and on-the-job training; many provide co-op work placements in partnership with educational institutions.
- *Colleges and universities*: Provide educational courses, counselling and advice to their students; some arrange co-op work placements with employers.
- *Academic credential assessment services*: Provide comparisons between foreign academic credentials and their equivalents in Canadian institutions.
- *Community-based immigrant settlement agencies*: Provide language training; orientation; information and referral services to newcomers.
- *Specialised training agencies*: Provide labour market orientation and training.
- *School boards*: Provide language training, some bridge training and labour market integration services.
- *Professional associations*: Provide services and representation for members of their profession.
- *Immigrant professional associations*: Advocate on behalf of immigrant professionals; Toronto-based Skills for Change has a project called STIC, which involves informing immigrants about how professional systems work in Ontario, the language, regulatory requirements and job trends. Another example is the Chinese Professional Association, which helps its members with career advancement through networking events and support for career and professional development.

Source: Adapted from Harding (2003).

In addition to federal programmes, the Ontario government funds programmes that facilitate the economic integration of immigration in the Province. Currently, MCI provides funding to help more than 100 000 immigrants annually get language training through the *English as a second language/French as a second language* (ESL/FSL) programme. Also, the Province has invested more than CAD 120 million since 2003 in over 180 bridge training programmes that serve 30 000 newcomers annually. Recently, the government of Ontario committed an additional CAD 50 million over two years to expand bridge training projects so that more skilled immigrants can access these innovative programmes. MCI also funds 81 settlement agencies to deliver settlement and employment programmes, through the *Newcomer Settlement Programme*.

The federal and provincial governments have worked to facilitate municipal involvement in immigration issues through the *Canada-Ontario Immigration Agreement* (COIA). For example, the Canada-Ontario-Toronto Memorandum of Understanding (MOU) on Immigration and Settlement is an important provision under the COIA that enables City, provincial and federal officials to engage in an ongoing dialogue on immigration matters. Through other channels, Citizenship and Immigration Canada (CIC) and the Ontario Ministry of Citizenship and Immigration (MCI) work with the City of Toronto and the Association of Municipalities of Ontario on issues of immigrant attraction, retention, settlement and integration. As a result of this collaborative work, the three levels of government developed the *Local Immigration Partnership* programme to help communities develop locally planned solutions to support effective and efficient settlement and integration of newcomers. The programmes will help co-ordinate local and provincial programmes and initiatives that can help immigrants integrate into their community.

Box 2.9. Settlement services at the Toronto Public Library

The Toronto Public Library addresses the needs of a diverse and multicultural society. In 2006, 31% of Toronto's population spoke a language other than French or English at home. The library's focus on newcomer services and multilingual collections has contributed to the successful settlement of these newcomers, as they use the library to help with their integration into Canadian life and to keep connected with their homeland. The Toronto Public Library has collections in over 100 languages and actively collects in more than 40 languages.

Increasingly, Citizenship and Immigration Canada (CIC) has recognised Toronto Public Library and public libraries in general as important strategic partners in the delivery of community-based settlement services. The development of a partnership with the federal government's Citizenship and Immigration Canada has brought settlement workers into library branches, which in turn provide settlement support to the many newcomers who pass through the library system. This partnership began with the Settlement Workers in Schools (SWIS) programme, which allowed school-based settlement workers to offer settlement services in libraries for six weeks over the summer. The library settlement programme is a complement to the school-based programme, as libraries offer longer service hours and serve the entire community. Settlement workers provide a bridge to library services and programmes, as they are familiar with the newcomer experience, speak the language represented in the local newcomer community and have the resources of the community-based agency to support them. The success of the summer programme led to the funding of a year-round library-based settlement service pilot in seven library branches in fall 2006. This programme was also piloted in Ottawa and in Hamilton. An evaluation of the pilot was completed in 2007 and was very positive. Based on this evaluation, LSP expanded. It now serves 48 library branches in 11 different library systems across Ontario.

As a result of its partnership with CIC, TPL has enhanced its service to the newcomer community. In 2008, more than 11 700 newcomers accessed settlement services in the library. The wireless network has enhanced the ability of settlement workers to access online resources to support their clients and has provided free wireless service to all library users in 17 libraries. Another important outcome of the partnership is that the Toronto Public Library has a strong network of community-based settlement agencies that provide outreach to newcomers on behalf of the library.

Source: Glass and Sheffield (2008).

Several public institutions, such as the Toronto Public Library, provide services that contribute to the integration of immigrants that are exemplary from an international perspective (Box 2.9). This has led some observers to suggest that there is a link between the availability of settlement services and the high proportion of immigrants in the Toronto region who choose eventually to become Canadian citizens (Bloemraad 2002, 2005). International comparisons, though, are complicated by differences in citizenship laws.

Affordable housing policies

With 60% of newly arrived immigrants in the Toronto region spending at least half of their income on housing costs, it is essential to increase the affordable housing supply and bridge the housing affordability gap in the Toronto region. Demand for rental housing will continue to grow in the Toronto region, due to consistent flows of immigrants, who generally start their housing career in rental housing. The supply of rental construction over the last decade has been limited, and mostly focused on high-income groups. Although there is a considerable vacancy rate of rental homes in the City of Toronto, these vacant homes will not be enough to accommodate population growth. Moreover, as large waiting lists for social housing and other indicators indicate, housing affordability continues to be a problem.

Elements of current policies will help to address these challenges. Despite the focus in Canadian housing policy on homeownership, programmes are in place to support rental housing and housing affordability (Table 2.3). The federal and provincial governments provide funding for housing allowances and rent supplements in Ontario through a number of

Table 2.3. **Federal and provincial social and affordable housing initiatives in the Toronto region (2009)**

Programme	Purpose	Targets (in affordable housing units)	Budget (in million CAD)
Federal government			
Budget 2009	Repair of social housing in Ontario		CAD 622 million over 2009-2011
Province of Ontario			
2009 budget affordable housing investment	New affordable housing for people of low income, including seniors and disabled persons, and rehabilitation of existing social housing	4 500 new affordable housing units and rehabilitating 50 000 social housing units	CAD 622 million from Ontario to match federal funding; total of more than CAD 1.2 billion
Canada-Ontario Affordable Housing Programme	Acquisition, renovation and creation of affordable housing units and down-payment assistance in Ontario	More than 10 000 rental and supportive units, plus housing allowances/rent supplements, homeownership units, and northern housing units	CAD 734 million from Ontario, federal government, and municipalities
2008 Budget investment in social housing repair	Distributed a total of CAD 100 million among all 47 municipal service managers to repair existing social housing stock	Enables the repair of 4 000 units	CAD 100 million
Developing Opportunities for Ontario Renters (DOOR)	Funding for repair needs and creating new affordable rental housing		CAD 127 million
Housing assistance for off-reserve Aboriginal families	New rental units, homeownership loans and home repairs for off-reserve Aboriginal families		CAD 80 million

Source: Information provided by federal government and the Province of Ontario.

initiatives, including the *Strong Communities Rent Supplement Programme*, the *Canada-Ontario Affordable Housing Program–Housing Allowance/Rent Supplement Component* and the *Rental Opportunity for Ontario Families* initiative. Both the federal government and the Province of Ontario have recently adopted policies to address challenges connected to rental housing construction and repair. The City of Toronto’s affordable housing framework for 2008-2018, *Housing Opportunities Toronto*, aims to assist 200 000 households over the next ten years. To achieve this goal, it identifies 71 actions to be taken by the City, provincial and federal governments, as well as the private and non-profit sectors, and calls for new investment of CAD 469 million annually for the next decade. Federal and provincial housing programmes could consider developing guiding principles for housing and immigrant integration, in which dedicated funding by the Province for immigrant housing initiatives might be an option.

These policies could be intensified by a more regional rental and affordable housing approach. The City of Toronto has more rental housing than the other municipalities in the Toronto region: the rental tenure share in the City of Toronto is around one-half (a fifth of it in social housing), whereas rental housing constitutes only a fifth of all housing in the surrounding metropolitan ring (MacLennan, 2008). The City has, however, the highest average housing rents in Canada, which might constrain housing opportunities for poor or new immigrants. In order to increase the social housing mix in the Toronto region, a more regional approach to housing would be required, so that municipalities other than the City of Toronto also increased their share of social and rental housing. This could be done by empowering and encouraging municipalities in the Toronto region to introduce inclusionary zoning in areas where new development is planned. In order to increase the affordable housing mix in the Toronto region, agreements could be made within the whole region on the share of affordable housing to be included in new developments, as city-regions in the Netherlands have done. The Province might also consider sanctioning municipalities failing to meet affordable housing targets, as municipalities in France do (Box 2.10).

Box 2.10. Affordable housing policies in the Netherlands and France

Housing agreements in the Netherlands have, over the last decade, increasingly been made at the level of the city-region. Regional agreements were made on the location of new housing developments and the percentages of social housing in such developments, although such agreements have not always come to fruition, partly due to conflicts of interest. Suburban municipalities do not always want to solve the problems of the large cities by providing more social housing, while large cities do not want to be held exclusively responsible for the groups needing such housing. In some city-regions, such as Utrecht, the idea of a provincial housing allocation policy has been floated.

Social housing construction in France has slowed since 1999, due to the decentralisation of social housing responsibilities. Mayors with a large social housing stock had to confront social and economic challenges associated with the population in the social housing and were hesitant to expand it, whereas in municipalities with limited social housing, the electorates were in general hostile to constructing more. In order to break out of this deadlock, the 2000 Solidarity and Urban Revitalisation Law introduced a specific social housing target for each municipality and a sanction mechanism. Municipalities with a share of social housing lower than 20% are obliged to reach this target within 20 years and pay a “solidarity contribution” for the housing that is lacking. This contribution is set at EUR 150 per social housing unit that is lacking. One might wonder whether this incentive has been set high enough, given that one-third of the municipalities concerned preferred (at the end of 2004) to pay the solidarity contribution.

Source: OECD (2007d), Merlin and Choay (2009).

2.2.3 Leveraging entrepreneurship to diversify trade relations

The potential of cultural diversity for export possibilities for firms from the Toronto region is recognised in policy documents such as the *Agenda for Prosperity* of the City of Toronto. Policies aimed at diversifying exports by using its culturally diverse population have in practice used programmes to attract transnational entrepreneurs. The federal government of Canada has a business immigration programme in place to attract foreign entrepreneurs, investors and self-employed persons. The objectives are for these new immigrants to provide capital and innovation and create jobs. Within the framework of this programme, an entrepreneur must demonstrate business experience and establish or buy a business in Canada, and fulfil two out of four conditions in order to remain in Canada. One is to establish a business with equity (investment) of CAD 125 000 within three years of arriving as a permanent resident in Canada. The entrepreneur is expected to participate actively in managing the business, required to invest CAD 400 000 in the Canadian economy and must demonstrate business or management experience. Business immigrants account for approximately 4% of all immigrants to Canada annually. An additional programme is the *Opportunities Ontario–Provincial Nominee Programme* investor stream. The investor stream allows the Province to nominate someone who is willing to open a business by investing a minimum of CAD 3 million and creating at least five permanent full-time jobs for Canadian citizens or permanent residents, along with additional requirements.

Only a small share of immigrants to Canada is attracted for their entrepreneurial skills, and market conditions play a large role in shaping export opportunities. However, efforts to use the immigrant population to diversify exports from the Toronto region could provide an additional source of economic growth. Export development policies might make more use of immigrants' expertise and networks, building on recent trade missions by the Province and the City of Toronto to countries such as China. The Toronto region has an opportunity to create cutting-edge programmes involving immigrants in export development policy and providing focused support for exports by SMEs, including immigrant entrepreneurs. Several metropolitan areas within the OECD have intensified their internationalisation strategy, for example to increase international trade opportunities for the metropolitan area. Although the City of Toronto is engaged in such an internationalisation strategy, the resources and staff devoted to it are relatively small compared to those in cities such as London, Paris and Madrid. A pro-active internationalisation strategy could perhaps borrow from the tri-level arrangements set up by the governments of Canada, Québec and Montréal in the 1990s to pursue such a strategy tailored to the Montréal region (*Montréal International*). Market share in foreign markets could be expanded in part by using cultural diversity to diversify trade relations. Such a co-ordinated strategy, which could include a pro-active marketing and branding component, might be managed by a purpose-built tri-level institution, as in Montréal. Alternatively, existing responsibility centres within each order of government could be co-ordinated, while building on partnerships with such organisations such as *Invest Toronto* and existing region-wide organisations.

Considering its cultural diversity and the different policies in place, the Toronto region is well positioned to design programmes that will succeed in leveraging cultural diversity for export diversification. This might require continued experimentation and refinement of current policies. The government of Ontario has undertaken a number of initiatives to diversify its export markets. These initiatives include support to exporters by helping to identify export opportunities in target markets and opening new International Marketing Centres (IMCs), which encourage foreign direct investment and promote the export of Ontario's goods and services. Currently, there are ten of these International Marketing Centres located in strategic centres around the world. Export development policies might, however, make

more use of immigrants' expertise and networks. In order to stimulate exports by immigrant entrepreneurs, targeted support might be considered in the design of export strategies of small and medium enterprises, many of which are run by immigrant entrepreneurs.

2.3 Developing sustainable infrastructure

It is widely recognised that regional transportation is closely linked with land use patterns, and that compact urban development is better able to sustain public transit networks, which will help to decongest metropolitan areas and limit air pollution. Yet as in many urban centres, population increases in the Toronto region, coupled with underinvestment and limited regional co-ordination, have resulted in high car dependency rates. This, in turn, has led to serious traffic congestion within the Toronto region. The resulting economic costs include productivity losses for certain economic sectors that depend on rapid delivery, such as retail, logistics and food; increased commuting times and consequently a reduction of the labour pool that is effectively available for the Toronto region; and less likelihood of knowledge and innovation spillovers.

2.3.1 Regional transportation policies

Public transit policies are well developed in the City of Toronto, but have long remained rudimentary at a regional scale. Canada, unlike many other OECD countries, has no national transit policy, and federal transportation policies have been mainly concerned with highway infrastructure. Although there are train connections between large urban centres in Canada, these are generally not very rapid and do not compete with internal flights. Recent provincial policies and initiatives stress the importance of public transit, for example in the *Growth Plan for the Greater Golden Horseshoe 2006*, which is intended to manage population growth of the Greater Golden Horseshoe Area up to 2031 and the *Metrolinx Regional Transportation Plan* (2008). But investment in transportation infrastructure by the Province over the last few decades has been primarily dedicated to road infrastructure, sometimes conflicting with the land use development plans of certain municipalities in Ontario that have attempted to promote higher transit shares and more compact development (Hatzopoulou and Miller, 2008). The City of Toronto has been active in formulating transit strategies, for example in its *Transit City* plan of 2007, and other municipalities in the Toronto region have developed transit strategies to increase their modal share, e.g. Mississauga's *Transit Way*, York Region's *VIVA* and Brampton's *Aceleride*.

As a result, the Toronto region is currently served by a loose network of regional transportation corridors. Regional rapid transit is currently limited to the GO Rail network and the Toronto subway system, which serves downtown Toronto and stretches across the city from Scarborough in the east end of the city to Etobicoke in the west end. High-order east-west regional travel is accommodated primarily through highways, with only limited east-west high-order transit options. Options for north-south travel include several rail corridors radiating outward from downtown Toronto, as well as a few highways. High-order transit services connecting destinations outside central Toronto are almost entirely lacking (Metrolinx, 2008a).

An ambitious plan to improve regional transportation was proposed in 2008 by Metrolinx. The regional transportation agency for the Greater Toronto and Hamilton Area (GTHA), established in 2006 by the Province of Ontario as the Greater Toronto Transportation Authority, became known as Metrolinx in 2007. Metrolinx, a provincial agency with board members appointed by the Province, has the mandate to develop and implement an integrated multi-modal transportation plan for the GTHA. In its *Regional Transportation Plan* (RTP), finalised

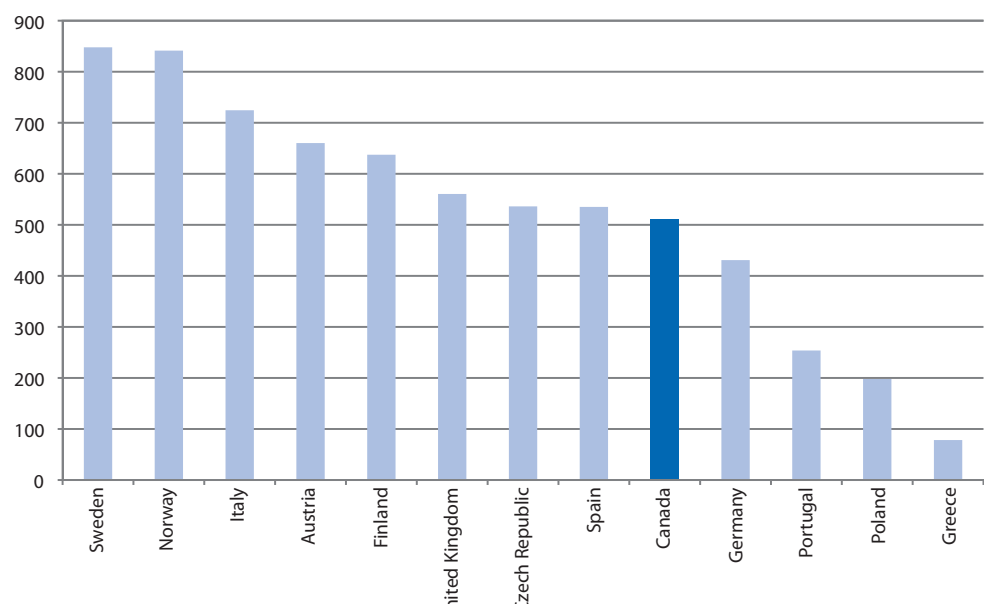
in 2008, Metrolinx developed a 15- and 25-year plan for a seamless, integrated regional transportation network, building on the provincial government's *MoveOntario 2020* plan for the extension of rapid transit networks in the Greater Toronto and Hamilton Area, and incorporating the *Transit City* plan. The RTP aims at a 33% modal share of public transit in 2031 and 20% for cycling and walking. In order to achieve these goals, the *Regional Transportation Plan* consists of strategies and precise proposals in several areas, including investment and initiatives to support comprehensive regional transit, expansion of walking and cycling, and improving the efficiency of the road network. The capital investment in rapid transit expansion would require CAD 2 billion annually between 2008 and 2033. One result of these investments would be an additional 1 200 kilometres of rapid transit lines, tripling the existing number, and offering over 80% of residents in the region a rapid transit route within 2 kilometres of their home.

The Province's *Move Ontario 2020* funds form the foundation investment for the Metrolinx regional transportation plan. Metrolinx will report to the Province in 2013 with recommendations for financing the RTP. Other funds that have become available since 2006 will also help to create a stronger and more comprehensive regional transportation system in the Greater Golden Horseshoe, including the federal government's fiscal stimulus package (which mentions the Montréal-Ottawa-Toronto corridor). In addition, the Province provides 2 cents per litre of provincial gas tax revenues to municipalities as a source of long-term, sustainable funding for public transit. Since 2004, over CAD 1.3 billion in gas tax funding has flowed to Ontario municipalities. This has allowed municipalities to introduce service improvements, such as additional buses, expanded routes and improved security infrastructure. Along with substantial financial commitments by Toronto area municipalities, these investments by the provincial and federal government will help to address the region's infrastructure gap in transit and transportation, noted in Chapter 1.

Despite additional transport investment since 2006, Canada spends less on transport than several European countries. In Canada around EUR 510 per capita was spent on transport, which is considerably lower than countries such as Sweden (EUR 850 per capita), Italy (EUR 725 per capita), and several other European countries. Other benchmarks than these are unfortunately not available, as several countries do not release their National Accounts (COFOG) data at a sub-category level, which would be needed to compare similar spending categories in transportation. Additional infrastructure spending since 2006 has raised per capita spending to around EUR 570 per capita in 2008, which brings Canada's transportation spending more in line with the average per capita expenditure across European countries (Figure 2.1). These transportation investments could arguably have a positive impact on productivity in Canada. A Statistics Canada study concludes that for every dollar of infrastructure investment in Canada, businesses realise permanent cost savings of 11 cents. The cost savings associated with infrastructure expenditure translates, on average, to an annual boost of 0.2 percentage points to GDP growth in Canada (Gu and MacDonald, 2009).

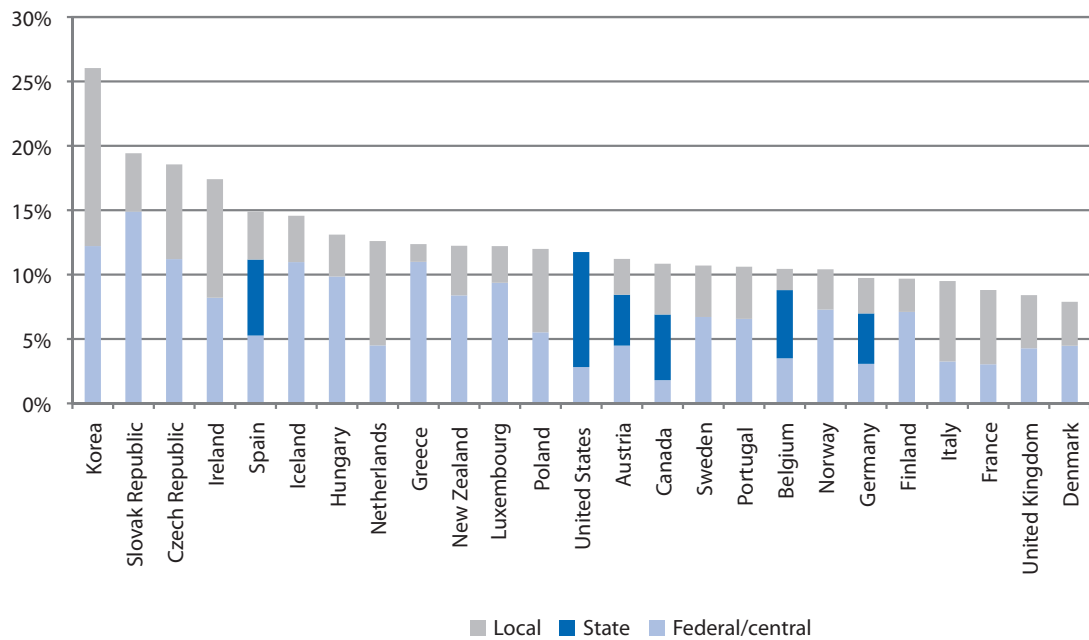
Transportation services and infrastructure are financed by federal, provincial and local governments, but federal spending on transportation (combined with spending on economic affairs) as a share of total government spending was the smallest compared to other OECD countries in 2005 (Figure 2.2). This cross-national comparison of sub-national transportation spending is complicated by the fact that data on transport spending are only available for many OECD countries as part of a broader spending category (*e.g.* economic affairs). This category might, however, be indicative of transport spending, as transport is shown to make up around half or more of such expenditures in countries that collect transport data at the sub-national level (Table 2.4).

Figure 2.1. Government transportation spending per capita (EUR, 2006)



Source: OECD National Accounts Database. Data for Canada provided by Infrastructure Canada.

Figure 2.2. National and sub-national financing of transport (including economic affairs)



Source: OECD National Accounts Database.

Table 2.4. **Government transportation spending as a share of economic affairs spending (2006)**

Government transportation spending as a share of economic affairs spending	
Czech Republic	68%
Poland	63%
United Kingdom	60%
Norway	53%
Sweden	51%
Italy	49%
Spain	48%
Canada	48%
Germany	47%
Portugal	45%
Finland	44%
Austria	43%
Greece	9%

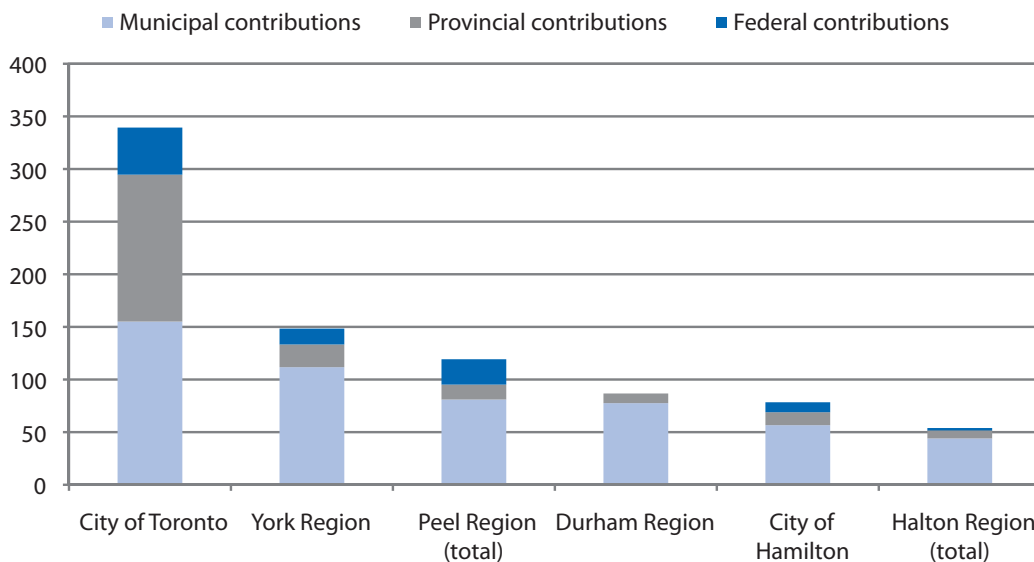
Source: Eurostat.

In most countries, the national government is involved in urban transport infrastructure investment. Typically, the higher an infrastructure's capital intensity, the higher the participation of central governments in the investment. Therefore, national-level governments are most engaged on the local level in financing rail and metro infrastructure. Despite the lower capital intensity of bus transport, the national government is involved in its funding in Finland, Germany, Ireland, Italy, the Netherlands, Portugal, the United Kingdom and the United States. Beneficial national spillovers from urban infrastructure, including the potential to increase national competitiveness, justify central government funding in many OECD countries. The efforts of regional municipalities to increase transit shares are expressed in their per capita municipal spending on transit, which in several cases comes close to the expenditures of the City: *e.g.* CAD 112 per capita by York Region in 2007, compared to CAD 155 per capita by the City of Toronto (Figure 2.3).

Infrastructure grants are an essential element of funding mechanisms. The federal Gas Tax Fund was made permanent in the federal 2008 budget, and the federal *Building Canada Fund* provides transfers with a commendably long time-line (2007-2014); the Province of Ontario also provides long-term financial support for transit through programmes like the *Dedicated Gas Tax Funds for Public Transportation Programme*, the *Ontario Bus Replacement Programme* and commitments associated with its *Move Ontario 2020* funds. The *Provincial Gas Tax programme* provides 2 cents per litre of provincial gas tax revenues to municipalities as a source of long-term, sustainable funding dedicated for public transit. The *Ontario Bus Replacement Program* (OBRP) is a multi-year, capital funding program that supports the replacement of ageing municipal transit bus fleets. The OBRP provides up to CAD 50 million annually to Ontario municipalities to support the replacement of both conventional and specialised municipal transit buses.

The federal government could consider providing additional predictability for municipal governments by addressing the need for longer-term infrastructure commitments. A mix of budget transfers and project-based contributions would support the goal of enhancing a region's competitive position by addressing its infrastructure needs. The federal government's fiscal stimulus package, the Province's *Budget 2009* and *Move Ontario 2020* funds, and other recent investment programmes help to address these needs. As these and similar

Figure 2.3. Transit spending (CAD per capita) in the Greater Toronto Area (2007)



Note: Transit spending includes operating and capital budgets. Spending for Peel Region includes spending in the Peel Region, Brampton, Caledon and Mississauga. Spending for the Halton Region includes spending for Burlington, Halton Hills, Milton and Oakville. Contributions to GO Transit are not included in this figure.

Source: Data provided by the Province of Ontario.

programmes reach maturity and investments start to materialise, it will be important for all levels of government to evaluate not only whether infrastructure needs are being met, but also whether they adequately address in the short term the Toronto region's broader competitiveness challenges.

The federal and provincial governments have several other programmes that could be useful for achieving sustainable transport goals. Transport Canada's *ecoMOBILITY* programme aims to reduce emissions from urban passenger transportation by helping municipalities to increase modal shares of transportation options, such as walking, cycling, public transit and ridesharing. One of the elements in this programme is the funding of Transport Demand Management projects. Various local governments within the Greater Golden Horseshoe presented travel demand initiatives that were accepted for funding; similar travel demand management projects were previously financed under the *Urban Transportation Showcase Programme* (UTSP). Transport Canada also developed an urban transportation emission calculator, a tool for estimating annual emissions from personal, commercial and public transit vehicles. The Ontario Ministry of Transportation has also established the *Ontario Transportation Demand Management Municipal Grant Programme*. Several municipalities in the Greater Golden Horseshoe have received funding for Transportation Demand Management projects that aim to reduce reliance on the single-occupant vehicle. Metrolinx also manages the *Smart Commute programme*, a partnership with cities and regions of the Greater Toronto and Hamilton Area aimed at reducing traffic congestion by helping local employers and commuters to explore different commuter choices such as carpooling, teleworking, transit, cycling, walking or flexible work hours.

In the implementation of the regional transportation plan, particular attention should be given to three issues: (i) regionally integrated services; (ii) cost-effectiveness and (iii) fiscal incentives.

Regionally integrated services

A more integrated regional approach is needed towards public transit fares, marketing and information for passengers. The public transit system in the GTHA is currently comprised of 11 separately governed local transit agencies, run by some regional municipalities and larger local governments in the Toronto region, and one regional transit provider (GO Transit).⁷ Two systems operate only specialised services (Halton Hills and Peel Region). These agencies plan and operate the public transit in their area, interconnected with the regional commuter lines operated by GO Transit. In 2009, GO Transit was merged with Metrolinx, the provincial agency responsible for the co-ordination of regional public transit planning. Every municipality or regional transit agency has a separate system for paying fares and its own fare structure, which means that commuters using the local bus, GO Train and Toronto subway will pay three different fares or need three different transit passes for their trip. A quarter of the passengers in the GTHA cross regional boundaries, and these arrangements must change if transit is to attract a larger share of trips (Metrolinx, 2008a). One solution would be for Metrolinx to have access to its own revenue source, which would allow it to have a larger influence over local operators. This could take the form of performance contracts, as is the case in Frankfurt (Box 2.11).

Metrolinx should propose a standard for fare integration in the near future. Such an initiative was facilitated by the merger of Metrolinx with GO Transit announced at the beginning of 2009. This is a positive development allowing for better alignment of regional transit strategy and operational activities, and a highly desirable first step for further regional co-ordination in the short term, particularly with regards to integrating transport fares. Integration of the other local public transit operators in Metrolinx is not foreseen and would not be necessary as long as co-ordination of public transit services can be improved. Although the Ontario Ministry of Transportation launched a regional fare card technology pilot project, Presto, in 2007, planning a gradual introduction starting in 2009, implementation of this fare card for the entire GTHA, including automatic billing, is foreseen only for 2011. This project will contribute to regional integration of public transit systems, as has been the case in several OECD metropolitan areas such as Tokyo

Box 2.11. Regional transport co-ordination in Frankfurt

The Frankfurt Rhein Main transport authority (RMV) organises the public transport in the area of Rhein Main, which comprises two-thirds of the state of Hessen. RMV co-ordinates the regional public transport system. This is done in close co-operation with the local transport organisations that provide the public transport. Decisions about transport facilities and tariffs are made at a political level with the RMV and the local transport organisations implementing these decisions. Transport enterprises such as the national railways or bus enterprises are accountable to the RMV through performance contracts. The 130 enterprises within the territory of the RMV carry out the contracts and achieve the required performance levels independently.

Although RMV does not have its own rail network or materials, it can plan for the construction of new rail networks, stations and material. One of the priorities when RMV was first created in 1995 was to harmonise about 100 tariff systems that existed in the area that it covered. It created one universal tariff and a single ticket that works on all modes of public transport, no matter how many transfers are made. The price is dependent on the number of tariff areas one crosses. Every December, the time schedules of regional transport in the RMV area are adjusted. The RMV informs the public about the changes in the 14 local transport systems and one regional transport system.

Source: www.rmv.de.

(Box 2.12). In order to achieve its goal of seamless multi-modal public transport in the GTHA, Metrolinx will in the short term have to formulate a proposal for integrating public transit fares to precede introduction of the Presto fare card. A single integrated approach to marketing and passenger information would also need to be introduced.

Public transit fares could also be modified to account for distance travelled. At present, municipal public transit fares are rarely based on distance travelled and do not promote efficient use. This creates an incentive for travellers to live farther from their work than they would if additional fares were charged for each zone travelled, and thus contributes to sprawl. Together with the integration of public transit fares in the region, a distance-based fare system should be designed. This system should take into account commuting patterns of lower-income groups in the Toronto region in order to avoid adverse social consequences.

Box 2.12. Integrated public transportation fare systems in Tokyo metropolitan area

The Tokyo metropolitan area has one of the most extensive public transit networks in the world, run by a large variety of operators. As the majority of commuters in Tokyo make multiple connections in an extensive interconnected network, they needed multiple passes and prepaid cards for different train and bus lines, which created demand for a single comprehensive ticketing system for the whole metropolitan area. The Pasmo card introduced in March 2007 provided such an integrated ticket system.

Pasmo is a rechargeable contactless smart card ticketing system for public transport. A Pasmo card is available for a JPY 500 deposit, and the balance added on the card is automatically deducted for trains and buses. Since the Pasmo card has smart card technology (or an integrated circuit card) embedded in it, users hold the card by the top of the sensor at the train station gate, which increases passenger flows and eliminates time spent at the ticket machine. The function of Pasmo as e-money is extended and integrated into retail businesses such as kiosks, convenience stores, cafés and soda machines that carry the Pasmo sticker, and the balance is deducted from the Pasmo card upon purchase. If the balance falls below a certain amount, a new balance is automatically transferred to Pasmo from the linked bank account that users submit when creating an account, provided that this has been agreed to in the contract at the time of purchase. The system offers interoperability with the East Japan Railway Co.'s (JR) Suica card, which was introduced before Pasmo and has similar functions, in addition to card-less functions affiliated with the mobile phone. The fare charged by the stored fare system is the same as for the users of paper tickets. The Pasmo card can be used in public transportation networks run by 106 different transport operators, creating one integrated public transport network of 119 metrolines, 1 755 subway stations and 14 000 bus stations. As of April 2009, over 11 million cards are in circulation, and the number of cards issued and the coverage of the card has continuously increased.

Source: www.pasmo.co.jp/en/index.html.

Cost-effectiveness of infrastructure investment in low-density areas

It will be a policy challenge to provide cost-effective public transit in the low-density areas in the GTHA. Trip volumes to and from several of the urban growth centres outside the City of Toronto, as designated in the *Growth Plan for the Greater Golden Horseshoe*, are not considered to be generally sufficient to justify higher-order transit on their own. They have densities below 100 people and jobs per hectare, which is generally accepted by transportation experts as the threshold for cost-effectiveness to support high-order transit lines (Toronto City Summit Alliance, 2007). The highest growth rates in trips up to 2031 are projected to be trips within the different regional municipalities of Durham, York, Peel and Halton, rather than between them (IBI Group, 2007).

This situation will require flexible transit solutions, such as rapid bus transit, and close monitoring of developments. Rapid bus transit, which includes right-of-way lanes and

several other technological advances, could provide such a solution. Increasingly considered a cost-effective and flexible transit option, BRT was pioneered in Curitiba, Brazil, and has been introduced in a host of cities including Brisbane, Sydney, Vancouver and Ottawa (Box 2.13). For this reason, the regional transportation plan expands current bus service along Highway 407, across Halton, Peel, York and Durham, with priority measures, such as bus bypass shoulders. This appears to be a sensible proposal, considering the relatively low density in these areas. Despite the intensification targets in the *Growth Plan for the Greater Golden Horseshoe*, it is unlikely that densities in these regional municipalities up to 2015 will increase enough to make more fixed links, such as light rail, a cost-effective transit option. Metrolinx indicates in its regional transportation plan that for every project mentioned in the plan, a benefit case analysis will be undertaken. This is of key importance; this analysis should be based on realistic projections of future trips, in order to secure the best value for public spending.

Box 2.13. Rapid bus transit in selected metropolitan areas

Metropolitan areas have increasingly shown a tendency to shift from light rail to rapid bus-based public transport systems. A key element of bus rapid transit (BRT) is that the buses have their own dedicated right of way and that dedicated roads (sometimes two lanes, so that BRT buses can overtake each other) are set aside for bus rapid transit. This form of public transit has successfully been implemented in metropolitan areas as diverse as Brisbane, Curitiba, Bogotá, Pittsburgh and Ottawa. Underlying this shift to rapid bus transit are several elements, including value for money, service capacity, affordability, relative flexibility and network coverage.

The performance of these bus rapid transit schemes over the last few decades has been good in terms of cost-effectiveness, capacity and absorbing transport demand. Typically, USD 1 billion was shown to buy 400 kilometers of dedicated bus rapid transit, in contrast to 15 kilometers of elevated rail or 7 kilometers of underground rail (Wright, 2005). Although the traditional view was that buses could cover up to 6 000 passengers per hour in one direction, compared to up to 15 000 for light rail or heavy rail, advanced BRT systems, as in Curitiba (Brazil) can move 20 000 per hour in each direction, TransMilenio in Bogotá (Colombia) is even able to achieve 35 000 passengers (Menckhoff, 2005). Buses in Sydney have the capacity to carry about 7 500 people an hour, at 60 people a bus. In comparison, light rail's capacity is 3 600 an hour at working capacity and 4 800 an hour at crush capacity. Not only is the capacity of rapid bus transit high, it is also more cost effective: a dedicated bus rapid transit system can carry the same number of people as light rail for a typical cost of 4 to 20 times less than a light rail system, and 10 to 100 times less than a heavy rail system (Hensher, 2007). Recent evidence shows that investment in bus rapid transit is less risky than rail in terms of cost overruns and patronage forecasts (Flyvbjerg *et al.*, 2007). Bus rapid transit can play an important role in changing modal shares. The South-East Busway in Brisbane, opened in 2000 and 16 kilometers long, is an example of a busway that has exceeded expectations in patronage. In the first six months of operation, the number of passengers grew by 40%, and 88% over the first 3.5 years.

Source: Wright (2005), Meckhoff (2005), Hensher (2007), Flyvbjerg *et al.* (2007).

Fiscal incentives to reduce car congestion...

Presently, the Toronto region has limited fiscal incentives for reducing car use. The main fiscal incentive is the gasoline tax levied by the federal and provincial governments and paid by consumers when buying gas from service stations and other retailers. In Canada, excise taxes on gasoline and diesel are collected by both federal and provincial governments, as well as by some select municipalities (Montréal, Vancouver and Victoria); with combined excise taxes varying from 16.2 ¢/L in the Yukon to 30.5 ¢/L in Vancouver. The federal government and some provincial governments (Newfoundland and Labrador,

Nova Scotia and Québec) also collect sales tax (GST and PST) in addition to the retail price and the excise taxes. Car users are not charged for their use of the road network, except for the toll road Highway 407. Personal income tax regulation favours automobile use over transit, as the costs of owning, operating and parking a car are directly deductible for self-employed individuals and for firms that provide cars or car allowances, whereas transit benefits for employees were not, until July 2006, when a federal tax credit on the purchase of transit passes was introduced (FCM, 2007). Negative externalities, such as air pollution and congestion, are not factored into the costs of car use. As a result, many people have an incentive to use a car rather than public transit. As additional investments have come available for transit infrastructure over the last years, and more investments will become available in the coming years, governments could make more use of pricing signals, such as parking fees, congestion charges and tolls, in order to increase the transit modal share.

A congestion charge or a toll road is an effective instrument for regulating traffic congestion and decreasing air pollution that the Toronto region could usefully consider. The congestion charge, increasingly applied in various metropolitan areas, has been shown to reduce congestion considerably, ranging from a 14% reduction in Milan (over 2008), 15% in London (2002-2003) and Singapore (1998) and 22% in Stockholm (January-July 2006) (Beevers and Carslaw, 2005; Olszewski, 2007; Milan municipality, 2009; Johansson *et al.* 2008). In addition, it has been observed to reduce CO₂ emissions up to 19.5% (in London),

Box 2.14. Congestion charges in Singapore

Singapore was one of the first metropolitan areas in the world to introduce a congestion charge, operating the Area Licensing Scheme (ALS) from 1975 to 1998, and a fully Electronic Road Pricing (ERP) scheme from 1998. Not only did it create a cordon for vehicles entering the central city or the central business district, as is the case in London, Stockholm, Milan and several other cities, but it has also implemented congestion charges on expressways that are not in the central city, which Toronto might also consider.

Under the scheme in Singapore, the congestion charge is deducted automatically from a pre-paid smart card when a vehicle passes under an ERP gantry; the driver sees the amount subtracted flash in front of him. At present, there are 48 of these gantries: 30 form a cordon around the central business district, 13 others are located on selected expressway segments and five on radial arterial roads. The rear plate of a driver who has no transponder, fails to insert his cash card into the transponder, or fails to maintain a cash balance sufficient to pay a particular charge, is automatically photographed as it passes under a gantry. Such drivers originally had to pay a fine of SGD 70, but now pay an administrative charge of SGD 10. The charges at the central business district cordon apply on working days during daytime hours (7.30 a.m.–7 p.m.), but there are periods with zero charges (10 a.m.–noon). On other roads, charges apply during the morning peak period (7.30 a.m.–9.30 a.m.) and in some locations in the evening (5.30 p.m.–8 p.m.). The ERP system makes it possible to vary charges by location, time of day and vehicle type, so as to relate them to the actual level of congestion. The rates for different types of vehicles are set to be approximately proportional to their passenger car equivalent (PCE) values. A method called “shoulder pricing” is used, which involves increasing the rate in steps every half an hour before the peak and decreasing it after the peak. Charges are relatively low: the maximum rate for cars is SGP 3 and SGP 2.50 to enter the central business district; but the traffic flow has appeared to be quite sensitive to the charge: short-term elasticities have been estimated to be in a range between 0 and -0.42 (Menon and Shin, 2004).

Congestion charges in Singapore have been effective in reducing congestion. The immediate effect of the introduction of ALS in 1975 was the reduction of car traffic entering the city centre during the morning peak hours by over 70%. In 1992, the car volume was still at 54% of the pre-1975 level. As a result, the share of private car drivers among commuters entering the central business district decreased from 48% before, to 29% after the ALS introduction (Olszewski, 2007). The volume of average daily traffic after introduction of the ERP scheme fell by 20% to 24% (Seik, 2000).

along with emissions of other air pollutants (Beevers and Carslaw, 2005). Some of these initiatives (Singapore, Milan) are designed to tax higher-polluting vehicles more heavily, and different technologies support congestion charging systems. In the Toronto region, a congestion charge could be implemented on the major highways (the 400 series) and on other major arterial roads. A cordon around the downtown, comparable to those in force in London and Stockholm, might be difficult to implement in the Toronto region, due to the grid structure of its downtown, and would not be able to reduce the increasing congestion outside the City of Toronto. Charges on expressways outside the central city, which form part of the congestion charge scheme in Singapore, might thus be preferable (Box 2.14).

A step in the direction of congestion charges in the future might be the introduction of high-occupancy toll (HOT) lanes, if pilot projects proved their usefulness over HOV lanes in the Toronto region. HOV lanes are highway lanes on which only vehicles with a minimum number of occupants (usually two or three) are allowed to drive, in order to promote car pools. Vehicles with less than the minimum number of occupants are in some cases permitted to use these lanes if they pay a toll. The Greater Golden Horseshoe has a limited number of HOV lanes, but by 2031, a network of more than 300 kilometres will be in place on 400 series highways in the GTHA, as part of Ontario's *HOV Lane Network Plan* for the Greater Golden Horseshoe.⁸ In the United States, several of these HOV lanes have been found to be ineffective, because car pooling did not have a wide appeal. In order to use their excess capacity, several HOV lanes instituted in the United States are being transformed into high-occupancy toll (HOT) lanes. HOV use in the Toronto region has been higher than projected, and HOV users save transit time thanks to the higher speed of traffic, but there is currently some excess capacity in the HOV lanes. As a more extensive and connected HOV network comes into being, it can be expected that the number of carpoolers using the lanes will further increase. If HOV use dropped significantly, pilot projects on the existing HOV lanes could be introduced to establish whether HOT lanes would be more effective.

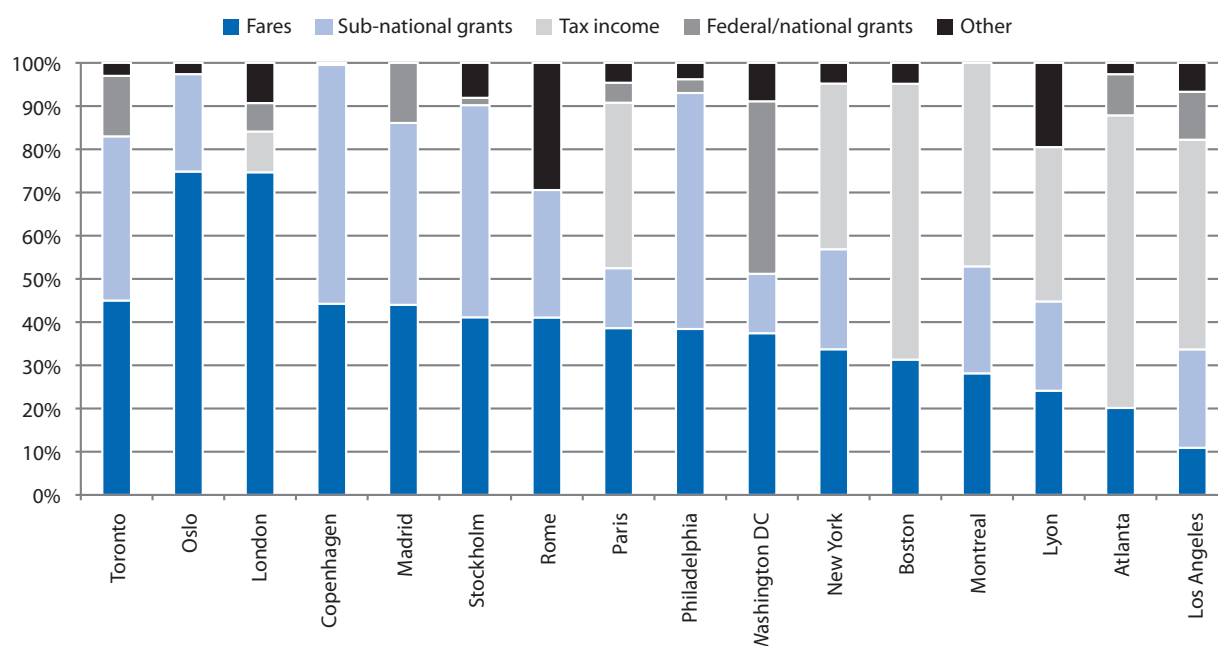
Other options worth considering include a local fuel tax and parking taxes. A local fuel tax has an effect somewhat similar to a congestion charge, taxing car use rather than car ownership, but it is less refined an instrument, because it cannot be used to regulate congestion or be adjusted to vehicle emissions. Taxes of this kind are however easier to implement than a congestion charge, because they require no investment in a charging system. In combination with a parking tax, they could discourage car use. Parking fees and taxes are price-elastic, and there is ample evidence that they are effective in reducing car trips and decreasing the car share in the modal split. The new *City of Toronto Act*, in force since 2007, permits the city to levy a tax on parking spaces, based on a fixed charge per square metre or adjusted according to area or zone. The City recently considered and declined to pursue this option, but it could be reconsidered on a regional basis, given its effectiveness in discouraging car use. The timing of the introduction of these and other fiscal disincentives for car use might be considered in connection with the future completion of transit infrastructure investment projects, in order to facilitate higher transit modal shares.

Some of these transportation-related taxes could form a suitable future revenue source for Metrolinx. Provincial subsidies almost entirely funded Metrolinx, until its merger with GO Transit in 2009 added fare revenues to its budget. In order to strengthen Metrolinx's role in regional co-ordination, access to additional revenue sources could be considered. Metrolinx is required to come up with an Investment Strategy by 2013 to fund the balance of the *Regional Transportation Plan*; various additional revenue sources could be considered as part of the development of this investment strategy.

Metropolitan transit authorities in other OECD metropolitan areas are largely financed by transit fares and subsidies. The coverage of urban public transport operating costs by fare box revenues varies greatly in OECD countries (Figure 2.4). The definition of cost categories is not uniform across countries, which makes comparisons risky, but in the majority of operations, cost-coverage levels vary between one-third and two-thirds. Some metropolitan transport bodies, such as in London and Oslo, manage to get 75% of their revenues from transit fares, while the cost-coverage share can be as low as 20% (Atlanta) and 11% (Los Angeles). Grants for transit come in many cases from sub-national governments, usually a combination of regional and municipal governments. Central governments in some cases also finance urban transit, but this is more often the case for transit investments and not operational expenses. In some countries, cross-subsidies from other economic activities generate a surplus for public agencies. This was the case in many German cities, where the integrated supply of water, electricity and sometimes other utilities together with public transport allowed consolidated accounts to show a positive balance, with surpluses from the first group making up for deficits in public transportation. This practice has been significantly reduced because of the lack of transparency and because markets, mainly in the energy sectors, have been opened up to competition.

Some of these metropolitan transit authorities also have access to tax income and other revenue sources. For those metropolitan transit agencies with tax revenues, the share of these in their budget ranges from 36% (Lyon) to 68% (Atlanta). Most of these tax revenues are levied on indirect beneficiaries, *i.e.* entities that are understood to benefit from the existence of urban public transport services, independently of the actual use of these activities by their affiliates. This can include economic activities benefitting from greater ease of access to their premises by their employees and customers; land owners benefiting

Figure 2.4. Revenue sources of transit agencies in selected OECD metropolitan areas (2008)



Source: 2007/2008 Annual reports New York Metropolitan Transportation Authority, ATAC (Rome), Southeastern Pennsylvania Transportation Authority, Agence Métropolitaine de Transport (Montréal), Storstockholms Lokaltrafik, Movia (Copenhagen), Oslo Sporveier, Metropolitan Atlanta Rapid Transit Authority (MARTA), Washington Metropolitan Area Transit Authority, STIF (Paris), Los Angeles County Metropolitan Transportation Authority, Transportation for London, Massachusetts Bay Transportation Area, SYTRAL (Lyon). Data for Toronto Transit Commission (TTC) in 2008 CUTA Factbook.

from higher property values because of increased accessibility; and private car drivers from less congested roads. Examples of revenue charges on economic activities benefitting from greater ease of access are the transport charge (*versement transport*) in France (Box 2.15), surcharges on sales taxes in several metropolitan areas in the United States (New York, Atlanta, Los Angeles), a mortgage recording tax in New York, and a share of the fuel tax and licence fee in Montréal. These tax revenues in many cases bear more resemblance to tax shares, rather than own tax revenues, as the metropolitan transit agency does not have the right to set tax rates or define the tax base. Another example is revenues from congestion charges; a substantial share of the revenues from the London Congestion Charge is allocated to urban public transport. In Stockholm, the design is slightly different: grants compensate the transit agency for additional costs due to the introduction of the congestion charge. An interesting alternative scheme along the lines of land-value capture consists of internalising transport investment costs and land valuation benefits in the same entity, *i.e.* the same agency or company receives the land development rights and builds the infrastructure within those areas; this practice is common in Japan. Other revenue sources for metropolitan transit authorities include revenues from advertisement, rents, taxi licenses and parking.

Box 2.15. The *versement transport* in metropolitan Paris

The *versement transport* was introduced in 1971 for the Ile-de-France (Paris) region, with the aim of making employers cover the cost of fare reductions for their employees on their commuting trips by public transport. The aim and geographical coverage were progressively widened: in 1973, the use of the funds collected for investment in services and service improvements was also permitted, and in 1982, their use was extended to all public transport. Furthermore, in 1982, this funding became available to urban agglomerations across the whole of France. It is collected from companies employing nine or more people as a surcharge on salaries at a rate that may vary between 1% and 2.2%, at the discretion of the organising authority. The *versement transport* has been largely criticised as an instrument that leads to economic distortion, encourages inefficiency and discourages employment, but the ease of collection (together with social security charges on labour) and its relatively low rate have ensured its survival (Darbéra, 1990). The *versement transport* has been instrumental in securing the stability and quality of public transport systems in France, in developing new systems and in ensuring affordability for users (Vigrass and Smith, 2005).

Source: OECD/ITF (2008).

2.3.2 Land use policies

There have long been inconsistencies between regional and local planning in the Toronto area. The City of Toronto, quite unique within North America, has a long history of metropolitan planning, which has resulted in a relatively dense urban downtown and inner suburbs. This planning tradition became less prevalent after the 1970s, which resulted in considerably less dense outward development in the municipalities outside the central city. While provincial and city land use plans continued to stress compact development and public transit use, the realities in many parts of the Toronto region were urban sprawl and high car use, as a result of the application of many land use instruments, such as zoning by-laws and building codes, that did not support compact, higher-density development. Although the Toronto region has one of the highest public transit shares in North America (23% in 2006 as compared to less than 5% in for example Miami), the figure in other urban nodes of the Greater Golden Horseshoe, such as Hamilton, is only one-quarter of the

Toronto region's share. As mentioned in Chapter 1, high car use in the Toronto region has led to increased congestion, air pollution and an estimated 440 premature deaths per year. Low densities in some parts of the Greater Golden Horseshoe have made it very costly to extend public transit lines.

Commendable efforts by the Province to co-ordinate land use planning...

The Province of Ontario has recently intensified regional planning efforts to address urban-suburban land use inconsistencies. This has taken the form of two provincial initiatives: the *Greenbelt Plan* (enacted in 2005) to protect countryside and farm land, and the *Growth Plan for the Greater Golden Horseshoe* (2006). The Growth Plan aims to direct population growth towards built-up areas including 25 centres within the Greater Golden Horseshoe area, in order to stimulate compact development and increase intensification. It also directs more compact, mixed-use, transit-oriented development in new suburban communities. In addition, Metrolinx, the provincial agency responsible for transportation planning in the region, formulated a *Regional Transportation Plan* in 2008 that closely followed the vision of the two land use acts.

These are laudable efforts: they are concrete, have broad regional support and provide the possibilities for regional co-ordination with respect to transport and land use:

- *Concreteness*: The *Growth Plan for the Greater Golden Horseshoe* uses several concrete indicators for directing land use: it specifies that at least 40% of all residential development should occur within existing built-up areas, and it provides minimum densities for urban cores and other areas. In a separate document, the boundaries of the urban cores are delineated, to be refined by municipalities. The *Greenbelt Plan* delineates an area of environmentally sensitive and agricultural land at the heart of the Greater Golden Horseshoe, protecting it from major urban development.
- *Support of local governments in the area*: municipalities have been involved in the formulation of the plan and the legislation and are generally supportive of the broader vision and key principles outlined in the plan. This support is important, as it is local governments that have many land use instruments, including zoning by-laws and building permits.
- *Possibilities for regional co-ordination*: The *Growth Plan* aims to co-ordinate transportation system planning, land use planning and transportation investment, and to require municipalities to develop and implement transportation demand management policies. A more extended analysis of this will be provided in Chapter 3.

...to be integrated with transport planning...

It is debatable whether the *Growth Plan for the Greater Golden Horseshoe* will stimulate efficient public transit use. Certain densities must be attained to make fixed public-transit investments cost effective and sustainable. Outside downtown Toronto, residential density and public transit in the Toronto region are only very weakly related, reflecting the lack of co-ordination between land use developments and public transit in the past (Filion and McSpurren, 2007). This co-ordination is facilitated when much of the land is in public ownership and the government is responsible for much of the housing development, as is the case in some of the most successful transit metropolises in the world, such as Copenhagen, Stockholm and Singapore. Considering the lack of these favourable conditions in the Toronto region (where most of the land is in private ownership and where housing development is mainly driven by the market), policies will have to find other ways to stimulate the

co-ordination of land use and transit. Local governments have concrete powers to influence land use, for example via an official plan that lays out their vision for land use, building codes and zoning by-laws. The *Places to Growth Act* requires that the official plans of all municipalities in the Greater Golden Horseshoe be brought into conformity with the *Growth Plan for the Greater Golden Horseshoe* and that all planning decisions since the release of the *Growth Plan* conform to the *Growth Plan*. In order to achieve the desired increase in public transit, it is important that there is a connection between the regional land use targets and local instruments, to direct high-density developments towards locations that are well provided with transit. This connection is for example made in the City of Toronto's official plan, which identifies major transportation corridors throughout the city and proposes higher densities to support light-rail transit corridors. Ontario's *Metrolinx Act, 2006*, aims to further co-ordinate transportation and land use planning by allowing the Minister of Transportation to issue *Transportation Planning Policy Statements* (TPPS) that conform to the *Growth Plan* and conform with the RTP. The Act also requires single and upper-tier municipalities in the Greater Toronto and Hamilton Area, and any designated municipalities, to develop *Transportation Master Plans* consistent with the TPPS.

Land use and public transit planning could be further integrated to stimulate public transit. This could, for example, take the form of planning requirements that new development must take place within a certain distance from public transit lines, as is the case in Copenhagen. Such requirements do not form part of the *Growth Plan for the Greater Golden Horseshoe*. Municipal official plans and municipal transportation master plans, which are supposed to translate provincial visions into more detailed local implementation, could also identify transit priority zones where transit agencies should be allowed to enforce operations to ensure optimal transit. Considering the strong relationship between land use and public transit, it will be important that municipalities are only eligible for certain public funding programmes, e.g. for transportation, under the condition that their land use and transportation plan favours transit.

...and more incentives for brownfield and compact development

Municipalities will continue to have fewer incentives for in-fill or brownfield development, despite the net benefits to the whole Toronto region. Such development is usually less profitable for developers and takes more time than greenfield development, and is thus undertaken less frequently unless it is specifically stipulated by local governments. Suburban municipalities have actively pursued greenfield development because it brings in revenue and expands the local tax base. But this approach does not take into account the costs of sprawl, since other actors are responsible for much of the transport infrastructure and bear the brunt of congestion and air pollution. A study on greenfield and brownfield development in the City of Toronto and the City of Brampton (in the Peel Region) calculated the total economic, social and environmental benefits and costs associated with redeveloping brownfields for the City of Toronto. It indicated that brownfield residential redevelopment presents a net cost by comparison with greenfield development. However, brownfield development offers significant net benefits from for the Greater Toronto Area as a whole, mainly because it avoids the high transportation costs incurred by people living in greenfield areas (De Sousa, 2003).

There are several local governments in the Greater Toronto Area, such as Oshawa, with programmes for stimulating brownfield redevelopment. Local governments in Ontario have several responsibilities for brownfield development sites: they formulate brownfield visions as part of the *Community Improvement Plan* process, and have several regulatory and

financial instruments, such as grants, to cover certain costs and discounts of property taxes and development charges.⁹ The City of Toronto's programme includes a major emphasis on waterfront development, which is being managed by Waterfront Toronto, initiated by the three tiers of government and incorporated in provincial legislation. This body is charged with overseeing and leading waterfront renewal, and managing the many government and private sector entities that own the different parcels of waterfront land. Within the Greater Golden Horseshoe, both the City of Hamilton and the City of Oshawa have established brownfield programmes. Yet despite these programmes, the redevelopment of brownfield sites in older suburban clusters is still insignificant, as most new development takes place on greenfield sites. Brownfield development is also eligible for funding under the federal government's Building Canada Fund.

Brownfield development could however be stimulated further by a stronger role for the Province. The Province of Ontario has enacted recent reforms that facilitate brownfield development, but has relatively limited financial incentives at its disposal. Ontario can match the municipal property tax assistance to brownfield development with provincial education property tax assistance for cleanup of eligible brownfield properties, but municipalities remain responsible for initiating these processes. The Ontario Ministry of the Environment can order the remediation of a brownfield site through the *Environmental Protection Act*, but in practice, this remediation has been observed to unfold largely as a voluntary process (De Sousa, 2002). Brownfield development, however, demands initial costs, cost-sharing and risk-sharing policies and financial incentives that local governments cannot necessarily absorb. Since brownfield development has positive externalities (in limiting traffic congestion, for example), the case could be made that the Province of Ontario might take on more financial involvement in brownfield development, possibly by reconsidering responsibilities for brownfield development of a certain size.

Evidence from around the world shows that local fiscal systems can be redesigned to provide incentives that promote compact land use. For example, development charges levied on developers to provide funding for the infrastructure needed to service the developed area, are in principle good instruments for compensating for the costs of sprawl, as long as they take into account real costs and as long as charges for single detached homes are considerably larger than those for apartments. An in-depth analysis of the impact of local finance on land use goals, including policy alternatives, is undertaken in Chapter 3. This analysis indicates that the design of local taxation in the Toronto region is currently at odds with infill and compact development goals. Many municipalities in the region have, for example, higher property tax rates for rental apartments than for single detached homes, thereby subsidising sprawl. Similarly, high commercial property tax and provincially levied business education tax rates in the City of Toronto have contributed to dispersing firms across the region. In addition, most development charges applied in the Toronto region use a uniform rate for the whole municipality, which also conflicts with the goal of stimulating compact development.

2.4. Making an innovation agenda sustainable

2.4.1 Sustainability policies in the Toronto region

A wide variety of green plans and programmes have been initiated in the Toronto region. In 2007, the City of Toronto adopted a *Climate Change, Clean Air and Sustainable Energy Action plan*, entitled *Change Is in the Air*, and a green economic development strategy entitled *People, Planet, Profit*. The Province of Ontario launched a Climate Change Action Plan

called *Go Green* and introduced the *Green Energy and Green Economy Act*. In addition, several local governments within the Toronto region introduced environmental sustainability agendas, such as York Region with its *Greening Strategy* and Halton Region's *2007-2010 Strategic Plan*. Although not all local governments in the Toronto region have climate change or environmental sustainability plans, most have policies in place to promote the sustainable management and use of waste, water, buildings and transport. The ambitions of these programmes are broad in comparison with US cities (Box 2.16).

Box 2.16. Sustainable policy commitment of the City of Toronto and US cities

Comparing the environmental commitment of different cities is complicated, but comparative frameworks have been developed to assess urban sustainability policies. In one such assessment, 36 programme and policy criteria were identified as indicators of policy commitment, ranging from policies on land use, transportation, and pollution prevention to energy efficiency and “smart growth” activities (Portney, 2003; 2008). In this assessment, each city is awarded points for enacting and implementing each of the 36 programmes or programme elements, and a summary score is computed that simply counts the number of such programmes. To get credit for a specific programme, the city must have created the programme or policy, and documented evidence must be available to show that it was in fact implemented. These criteria were applied to 45 US cities with articulated policies on sustainability, and Seattle, Denver and Portland were ranked highest in taking sustainability seriously as a matter of public policy.

Applying the same framework to the City of Toronto, it is clear that it ranks with the best-performing US cities in its comprehensive commitment to sustainable policy, taking into account each of the 36 policies and programmes cited. In terms of policy initiatives, it lacks only three elements: HOV lanes on downtown streets¹⁰ (an idea that is actively under consideration), limits on downtown parking and a permanent multi-city, county, or metropolitan sustainability co-ordinating agency. While this indicates that the City of Toronto has a broad variety of policies in place, it is not an assessment of the effectiveness of these policies.

Source: Portney (2003), (2008).

The climate change plans of the Province of Ontario and the City of Toronto set clear targets for greenhouse gas reductions. Inspired by the goals of the Kyoto Treaty, the City of Toronto is committed to achieving a 6% reduction in green house gas emissions from 1990 levels by 2012, while Ontario is committed to a similar reduction by 2014. The City and the Province have also set medium and long-term GHG reduction targets, namely: a reduction from 1990 levels of 30% for the City of Toronto and 15% for Ontario by 2020; and a reduction from 1990 levels of 80% for both the City and the Province by 2050 (Table 2.5). Through the *Green Energy and Green Economy Act 2009*, the Province has committed to facilitating the development of new sources of clean energy, phasing out reliance on coal-fired generation and meeting ambitious climate change targets.

Table 2.5. GHG reduction targets of the City of Toronto and the Province of Ontario (relative to 1990 levels)

	2012	2014	2020	2050
City of Toronto	6%	n.a.	30%	80%
Province of Ontario	n/a	6%	15%	80%

Source: Climate change plans of the City of Toronto and the Province of Ontario.

The City of Toronto's climate change plan includes more than 100 actions to reduce the greenhouse gas and smog-causing emissions that contribute to climate change. Measures proposed in the plan include renewing the city's concrete high-rise residential buildings, promoting local food production, developing a community energy plan, doubling Toronto's tree canopy, and shifting taxis to low-emission or hybrid technology. Ontario's *Go Green* plan specifies various actions to support public transit (*MoveOntario 2020*), nurture a green economy (*Next Generation of Jobs Fund*), expand the use of green energy and protect green spaces (*Greenbelt Plan and Growth Plan for the Greater Golden Horseshoe, 2006*).

A number of actions are under way within the field of energy efficiency. The Greater Toronto Area is not one of the most energy-efficient metropolitan areas: when compared to other OECD metropolitan areas, electricity use in the Greater Toronto Area, at 10 MWh per capita per year, is higher than in Los Angeles (6.7 MWh) and twice as high as the per capita energy use levels of London and Barcelona (Kennedy *et al.*, 2009). This may reflect the fact that the highest proportion of residential usage of electricity in Greater Toronto relates to space heating, due to climatic conditions that differ from those of most other metropolitan regions in the OECD. Responsibility for energy generation falls to the Province, which has created a number of policies and programmes designed to encourage conservation and electricity generation through renewable resources. Ontario's target is to double output from renewal energy sources by 2025. On the demand side of the equation, the City of Toronto, the Province, and various local utilities have introduced metering devices and begun to experiment with peak load and other pricing mechanisms to encourage energy conservation. The City of Toronto is increasingly using renewable energy in its municipal buildings, and Enwave, a corporation partly owned by the City of Toronto, operates a highly innovative district cooling system that uses cold water from Lake Ontario to provide air-conditioning for 51 high-rise buildings in the central city. This system currently saves an estimated 128 KWh of electricity, which translates into reductions of about 79 000 tons of carbon each year.

Other examples of sustainability policies in the Toronto region are noted below:

The City of Toronto has adopted a green development standard to promote environmentally sustainable development. The Toronto Green Development Standard contains performance targets and guidelines for site and building design. The standard is a "made-in-Toronto" approach that integrates existing City guidelines and targets with standards from private rating systems such as Leadership in Energy and Environmental Design (LEED) and Green Globes. It is intended not to compete with rating systems like LEED, but to ensure that when there is a desire to "build green" in Toronto, local environmental objectives are met.

The City of Toronto's *LiveGreenToronto* website provides a one-stop information portal for residents and businesses to learn more about green initiatives and to make applications for programmes and grants.¹¹ These programmes are supported by a number of agencies, including the Toronto Atmospheric Fund, the Toronto Energy Efficiency Office and the Toronto Environment Office. The programmes cover a range of topics, including household composting, rain barrel water storage and usage, and solar water heating.

Solid waste. The City of Toronto operates a number of pollution prevention and remediation programmes, including its solid waste programme. This programme set a target of diverting 70% of the city's household solid waste from landfill and incineration by promoting greater recycling and reuse, to be achieved by 2010. In 2008, diversion of 44% of solid waste was achieved.

Green buildings. In order to promote green roofs on flat-roofed buildings, the City of Toronto has developed a comprehensive green-building programme, which includes a pilot project initiated in 2007 that provides grants to underwrite the cost of installing such roofing systems. In May 2009, the City of Toronto passed a Green Roof bye-law that generally mandates green roofs on new buildings of over 2 000 square metres. The City indicates that Toronto is the only city in North America with a bye-law that requires green roofs and establishes the construction standards for them. Stakeholder reaction to the city's adoption of a mandatory green roof bye-law has been mixed. Developers have expressed concern about the significantly increased costs of construction over conventional roofs, along with maintenance costs and warrant cost impacts; environmentalists have noted that other options such as white roofs and solar panels can sometimes be more sustainable choices than vegetative green roofs.

Water conservation. The City of Toronto has adopted an industrial water conservation plan designed to promote economic development while ensuring responsible water usage by large commercial and industrial users. The City has a reduced water pricing system for large consumers of water, but to ensure that the lower rates do not lead to excessive use, all industrial water customers must submit for approval a detailed water conservation plan. Such water conservation plans typically require specification of reduced use and recycling efforts. In order to stimulate efficient water use, the *Water for Tomorrow* programme in York Region offers CAD 75 rebates to single-family home owners in York Region purchasing an eligible water-efficient toilet; similar programmes exist in Halton Region and the City of Toronto. Water quality and waste reduction also constitute important elements for the *Durham Region Strategic Plan 2009-2014, Growing Together*.

In addition, appropriate and adequate land use policy, public transit and brownfield development have great potential for advancing sustainability objectives, as discussed in Chapter 2. Policy initiatives currently being implemented, such as the *Regional Transportation Plan* of Metrolinx and the *Growth Plan for the Greater Golden Horseshoe 2006*, will stimulate more sustainable transport patterns. Although Toronto's climate imposes a limit on how robust its bicycle ridership programme can become, local governments in the region have nonetheless developed a wide array of programmes, including the creation of bicycle paths and lanes, the provision of bicycle storage lockers and sheltered bicycle racks. Numerous transit agencies in the Toronto region, as well as GO Transit, have equipped their buses with racks to make it easier for transit passengers to travel with bicycles. Brownfield redevelopment programmes by several local governments in the Toronto region provide incentives for private developers to remediate contaminated parcels of land so that they can be put to economically productive uses. As part of the *Community Improvement Plan* (CIP) process, developers can seek tax and fee benefits for projects that are deemed consistent with a municipality's overall economic development and employment goals.

In 2008, the City of Toronto adopted a *Tax Increment Equivalent Grant* (TIEG) financial incentive programme.¹² This is a component of its economic development plan and contains a bonus mechanism to provide incentives for private developments that are consistent with the city's development and employment goals. Grants under this programme are not normally refundable, nor do they reflect the value of any special public infrastructure costs required related to the development. The City of Toronto has approved the application of this TIEG financial incentive programme in area-specific CIPs – including a green-field “transformational” development in the north-west section of the city (called *Woodbine Live!*) and in an existing node in the mid-town area of Yonge-Eglinton. Academic studies on the efficacy of such property tax incentive programmes suggest that such incentives may not be an effective strategy for achieving economic growth and that lowering non-residential property taxes on all businesses is preferable to tax concessions to specific businesses (Slack, 2008).

The introduction of a cap and trade system is a key element of Ontario's sustainability agenda. Cap and trade regimes put a reliable price on carbon, introduce emissions trading and stimulate cost-effective emissions reduction actions. Proposed amendments to Ontario's *Environmental Protection Act* set the stage for the introduction of a cap and trade system in Ontario. Ontario's system is likely to include nine industrial sectors, representing 40% of the Province's total emissions in 2007.¹³ It aims to harmonise its cap and trade programme with Canadian federal, US and international approaches, to ensure a level playing field for its industries and avoid punitive cross-border tariffs. In parallel with the United States, which is moving to put a national programme in place that could begin as early as 2012, the Province of Ontario expects by mid-2010 to have completed the necessary groundwork to be able to implement cap and trade in 2012.

While much attention has been given to climate change mitigation, the issue of climate change adaptation policies has only recently come to the attention of policy makers. Although global risk analyses of natural disaster hot spots indicate that the Toronto region may be less vulnerable to natural risks than many other metropolitan regions in the OECD, the region will experience more frequent and severe weather as a result of climate change, including higher temperatures, extreme heat, heavy rainfall, drought and the introduction of new and invasive species. Although estimates have been made for some of these impacts, such as an increase in deaths attributable to excessive heat and air pollution, no comprehensive specific impact assessment yet exists for the Toronto region that quantifies potential damage from climate change. *Ahead of the Storm: Preparing Toronto for Climate Change*, endorsed by Toronto City Council in 2008, outlines a series of actions to improve the City of Toronto's resilience to climate change, including a series of short-term actions to help minimise the impacts of climate change in the City of Toronto and actions to guide the City's development of a comprehensive, long-term strategy to adapt to climate change. These include planting more trees to increase shade and to clean and cool the air; using rain barrels to capture rainwater for re-use; using permeable surfaces (rather than asphalt, for example) to reduce runoff from heavy rainfall; landscaping with drought-resistant plants, and using cool/reflective materials on the roofs of homes and buildings to reduce urban heat. In issuing the climate change adaptation plan, the City of Toronto has become one of the first Canadian cities to launch a city-wide process to reduce its vulnerability to climate change (Penney and Dickinson, 2009).

2.4.2 Introducing a green overlay to the competitiveness agenda for the Toronto region

The commitment to sustainability demonstrated by the City of Toronto and other area municipalities puts the Toronto region in a strong position not only to apply a "green overlay" in the formulation of a region-wide competitiveness agenda, but to make green industries a centrepiece of such a plan. The City of Toronto's 2007 Green Economic Development Strategy, entitled *People, Planet and Profit*, took inventory of how much sustainable economic activity takes place in the city and its metropolitan area (City of Toronto, 2007c). This report provides extensive information about the specific companies, products and supporting organisations that make up what amounts to a sustainable economic development cluster, and presents a potential roadmap for the development of a more robust, region-wide economic development agenda with a green focus. As indicated below, opportunities exist for applying a green overlay to each of the three main elements of a competitiveness agenda for the Toronto region: (i) fostering productivity, (ii) leveraging cultural diversity and (iii) providing sustainable infrastructure.

(i) *Fostering productivity.* Sustainability is a key element of the City of Toronto's *Agenda for Prosperity* and its *Green Economic Development Strategy*. The latter aims to support the creation and growth of companies and organisations that offer products and services to reduce the negative impact on the environment. Part of this strategy is an effort to stimulate green market demand through green procurement and the cultivation of new networks, for example in the commercialisation of environmental research and a sustainable employment district pilot. The creation of the *Toronto Environmental Research and Commercialisation Initiative* to strengthen research partnerships in the fields of sustainable energy and the environment is another promising initiative that can be built upon. Another project that could be expanded to other areas is *Partners in Project Green* (PPG), a community of businesses working together in an “eco-business zone” around Toronto's Pearson International Airport. This programme helps businesses to reduce energy and resource costs in sectors such as the automobile sector, logistics and warehousing, food processing, plastics and aviation. *Partners in Project Green* is co-ordinated by the Toronto Region Conservation Authority and the Greater Toronto Airports Authority (GTAA), with the support of several municipalities, including the City of Toronto (Raissis, 2009).

Ontario's *Green Energy and Green Economy Act* provides a useful basis for provincial co-ordination on a sustainable competitiveness agenda, given that it makes use of the strengths of the economic sectors in the Toronto region's various urban nodes. Together with the City of Toronto's green economic strategy, it provides a fruitful basis for upgrading the Toronto region's economy by expanding its green economic sectors and by greening existing economic sectors. Such an effort could concentrate on the region's proven economic sectors, such as automobiles, to foster high value-added production using innovative technologies, in order to develop alternative energy sources for cars and public transport vehicles, such as fuel cells or electric motors, and non-carbon energy generation for industrial and residential purposes. Opportunities exist for adding clusters that would directly serve the region and the City's need for particular goods and services to help reduce its carbon footprint. For example, increasing local capacity to manufacture and market photovoltaic and thermal solar panels and associated equipment, wind turbines and related materials, and many other products, could contribute to the region's pursuit of energy efficiency while expanding its employment base. At the same time, these efforts will have to compete with the significant competitive advantages enjoyed by existing industrial clusters in the United States, Europe and Asia that are well advanced in these industries.

(ii) *Cultural diversity.* The City of Toronto has long relied on high-rise residential buildings, and as a result, has a relatively high residential population density. However, this has not always translated into energy savings (and a lower carbon footprint), largely because so many of these high-rises were built before such structures were explicitly designed for energy conservation. As a consequence, Mayor David Miller has initiated a citywide effort known as *Mayor's Tower Renewal*, which will catalyse the retrofitting of older high-rise structures with materials that will reduce heat loss, including thermal over-cladding, greenhouse roofs, and modern windows (Duncan, 2008). As the population of these towers is relatively poor and chiefly houses foreign-born residents, the *Tower Renewal* project combines social and environmental sustainability goals, incorporating neighbourhood revitalisation and community improvements. Other such initiatives could be envisaged. Targeting brownfield redevelopment in poorer and/or under-served neighbourhoods in the Toronto region (many of them with large numbers of immigrant residents), and ensuring that “green” skill-(re)training programmes are accessible to residents of these communities, would clearly serve both sustainability and economic development goals.

(iii) *Providing sustainable infrastructure.* The provision of sustainable (transit) infrastructure is one of the main challenges for the Toronto region. While the City of Toronto is struggling to maintain its existing public transit assets and expand transit lines to under-served inner suburbs, other municipalities in the region face the challenge of providing cost-effective higher-order transit in low-density communities that were designed, in the first instance, for cars. Some regional municipalities in the Toronto region have introduced more sustainable transport solutions (such as the *Cycling and Pedestrian Infrastructure Plan* in Halton Region and the development of bus rapid transit systems in York Region), but these are for the most part exceptions. Further regional approaches are called for, considering the interlinking of the different areas within the Toronto region. A good basis for such a regional approach to sustainable transport planning is provided by Metrolinx's *Regional Transportation Plan*, but its implementation could be enhanced by enabling Metrolinx to raise its own revenue (through parking fees, for example) in order to increase its capacity for co-ordinating this effort.

The involvement of the business community and related stakeholders in the City's sustainability efforts provides a promising basis for further co-operation on a green competitiveness agenda. For example, the *Sustainable Energy Business Plan* for the City of Toronto had extensive input from a wide range of stakeholders. The *Better Buildings Partnership* of the City of Toronto benefits from close co-operation with non-profit organisations and the private sector, using green building techniques and technical assistance in pursuit of reduced energy and carbon reduction. The business community, led by the Economic Development, Culture and Tourism Division, has been an important player in the City's efforts to define an economic development cluster focused on sustainability and the environment (City of Toronto, 2007d).

The Toronto region ranks highly among major metropolitan areas worldwide in its public policy efforts for sustainable development, but further progress could be made, especially in the field of transport. The lack of predictable, dedicated long-term funding for public transit by the federal government (as exists in many other OECD countries) and the absence of a concerted regional approach to sustainability issues should be viewed as priorities to address in the near future. In addition, as will be discussed in Chapter 3, inter-sectoral co-ordination in the Toronto region is needed. Sustainable development will take considerable co-ordination, and administrative mechanisms for this within the government tiers should also be considered.

Notes

1. Sector-specific programmes also support business innovation, such as Sustainable Development Technology Canada (SDTC) and the Strategic Aerospace and Defence Initiative (SADI) and support to fourth-pillar organisations (e.g. CANARIE, Precarn, CMC Microsystems).
2. One of the sectors supported by provincial policies is biotechnology, for which several programmes have been set up. Examples are the Biotechnology Commercialisation Centre Fund for the support of regional biotechnology centres for small start-up firms, later replaced by the Biotechnology Cluster Innovation Programme, now integrated into the Ontario Regional Innovation Programme. The Ontario Genomics Institute aims to increase competencies in genomic research and the Ontario

Cancer Research Network, to acquire equipment to conduct research on new therapies (Niosi and Bas, 2003). Other areas of focus included in the recently released Ontario Innovation Agenda are digital media and ICT, advanced health technologies and the bio-economy and clean technologies.

3. This range captures the size of the programme in recent years, but there is no cap to the credits that will be issued, as all qualifying claims are accepted.
4. In December 2008, the Forum of Labour Market Ministers (FLMM) established an ad hoc working group consisting of Human Resources and Social Development Canada (HRSDC), Citizenship and Immigration Canada (CIC) and the provinces and territories, to inform the discussion at the January 2009 First Ministers' Meeting (FMM), representing the Prime Minister and provincial and territorial Premiers. During the January FLMM, First Ministers agreed to task the FLMM to develop a Pan-Canadian Framework and supporting implementation plan by September 2009 (with an interim report in June 2009). The 27 January, 2009, federal budget supported this initiative with an allocation of CAD 50 million.
5. Further details are available at www.ontarioimmigration.ca.
6. Provincial jurisdictions in Canada receive their authority directly from the Constitution Act, 1867, whereas territories derive their mandates and powers from the federal government. The ten provinces are Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland and Labrador, Nova Scotia, Ontario, Prince Edward Island, Québec and Saskatchewan, and the three territories are Northwest Territories, Nunavut and Yukon.
7. There are different local transit systems in the following areas: Brampton, Burlington, Durham Region, Hamilton, Mississauga, Oakville, Toronto, York Region.
8. HOV lanes in the GTHA are in force on parts of highways 403 and 404.
9. Costs that can be covered by municipal grants are associated with Environmental Site Assessments (ESA) or environmental remediation. Property tax assistance may partially offset the remediation costs undertaken on an eligible brownfield property. For properties designated under the Ontario Heritage Act, municipalities may also provide a 10% to 40% reduction in property taxes under the Heritage Property Tax Relief Measure.
10. While HOV lanes are a feature of some provincial highways in the Toronto region, it should be noted that Toronto does have lanes on some key arteries that limit access to traffic to buses, taxis and bicycles.
11. See www.toronto.ca/livegreen/index.html.
12. The City of Toronto Act 2006 provided broad powers of taxation, under certain limitations (*i.e.* no general sales or income tax). The City has since used this power to create a Land Transfer Tax and a Personal Vehicle Tax. Other municipalities in Ontario are subject to the Municipal Act, 2001; they do not have broad authority to create new taxes.
13. These sectors are base metal, cement, chemical, electricity, lime, natural gas, petroleum, pulp and paper, and steel.

Chapter 3

Improving competitiveness through better governance

The formulation and implementation of an economic competitiveness agenda for the Toronto region would require some changes to current governance practices and frameworks. Co-ordination, both within a single order of government and vertically between orders of government, must be maximised in order to articulate a series of commonly defined policy objectives based on a common understanding of the policy challenges, and a competitiveness agenda is needed to pursue these objectives.

Two critical developments at the end of the 1990s had a large impact on governance arrangements and intergovernmental relationships in the Toronto region. The first was the amalgamation process undertaken by the Province of Ontario in 1998, in which several core municipalities were merged to create the City of Toronto. The second major operation was the transfer of funding responsibility for several government functions to local governments, known as “down-loading”. Amalgamation required the merger of different government administrations and was accompanied by an attempt to improve regional governance through functional bodies such as the Greater Toronto Services Board. This was created in 1998 to provide services for the Toronto area but disbanded in 2001. Because responsibility for services was transferred to municipalities without the requisite funding, it left local governments with funding gaps or “unfunded mandates”. In recent years, however, relations have become much more co-operative: the City of Toronto and other local governments have concluded policy agreements with the Province and federal government, the Province has intensified its co-ordination mechanisms in transit and land use for the Toronto region, and formal commitments have been made to eliminate a considerable part of the down-loading in the coming years under a process known as “up-loading” of social service programme costs (*Ontario Drug Benefit*, *Ontario Disability Support Programme*, and *Ontario Works*) and court security costs.

Despite these improvements in the governance framework, several issues remain unresolved. The Toronto region continues to suffer from lagging productivity, slow growth, infrastructure challenges, sprawl and concerns associated with environment and labour market integration of immigrants. Such policy challenges are all the more urgent considering global competition and the economic downturn affecting industries heavily integrated into US markets, such as the automobile industry. Building on the more functional and co-operative governance relations in recent years, and in order to strengthen the competitiveness of the Toronto region, a set of governance challenges will have to be tackled:

Lack of co-ordination on economic development, social and environmental policies within the region. Co-ordination mechanisms in the Toronto region now exist for public transit and land use planning, but remain relatively limited with regards to economic development and social integration. Several problems, which can also be found in other metropolitan areas in the OECD, are associated with this: competition for investment among local governments within the Toronto area, lack of an economic strategy for the whole region,

and fewer housing opportunities and integration services in several suburban municipalities for newcomers to Toronto. Although various initiatives exist at the regional level to attract investment and research-intensive activities, not all local governments in the Toronto area adhere to them, and they have not been integrated with an economic development strategy co-ordinated with land use. With regards to the integration of immigrants, commendable co-ordination has been achieved between federal and provincial governments and the City of Toronto, but co-ordination between different local governments in the Toronto region has been more limited. Finally, the need to confront externalities makes regional co-operation and co-ordination between governments a critical component of any urban centre's sustainability efforts.

Inadequate local fiscal architecture to fund infrastructure, as well as to combat sprawl and to align transit and land use. The provincial impetus for regional land use and transit planning is welcome, given that public transit has been constrained by low densities in some areas of the metropolis, but its implementation has been complicated by the fiscal architecture in the Toronto region. The location of employment appears to be a strong determinant of modal choice, and fiscal arrangements influence this. Lower municipal and provincial education property taxes for office space in the suburbs as compared with the City of Toronto may have contributed to the location of employment in lower-density areas, where effective transit is more difficult to sustain. Property tax rates for rental apartment buildings are generally higher than for condominiums (although all new housing is taxed at the condo/single family tax rate in the City), townhouses and single-family homes, and in many cases, developers have more incentive to engage in greenfield development than in brownfield development. Although the cost of sprawl can to some extent be mitigated by development fees, these do not currently offset the full costs of sprawl. While the City of Toronto has recently implemented an annual Personal Vehicle Tax on residents with cars, the City and other local governments in the Toronto region do not impose other vehicle-related charges common in other OECD metropolitan areas, such as charges for parking and congestion. Some municipalities are moving away from flat fees for services in favour of consumption-based fees, for example in waste and water services. Finally, local governments in the Toronto region are highly dependent on the property tax for their funding, whereas the experience of other OECD metropolitan centres indicates that a broader mix of revenue sources is needed to support adequate investment in infrastructure. To address the present challenges, improved institutional frameworks, co-ordination mechanisms and financial arrangements are needed.

3.1 Institutional framework in the Toronto region

3.1.1 Main actors in the Toronto region

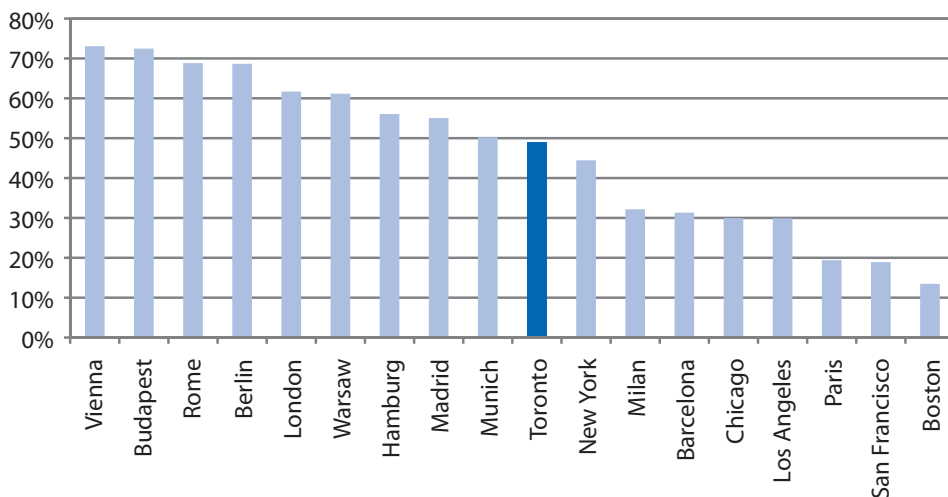
Neither the Toronto region, nor the Greater Golden Horseshoe has a single unified metropolitan government; they instead consist of several local governments. These governments include one large one-tier municipality (the City of Toronto), surrounded by four regional municipalities. These four regional municipalities (York, Peel, Durham and Halton) are the upper tiers of two-tier structures, and each regional municipality contains several lower-tier municipalities. In total, there are 24 lower-tier municipalities in these four regional municipalities, 23 of which form part of the Toronto Region. Depending on the definition applied, a larger set of local governments exists: the Greater Golden Horseshoe Area is comprised of 110 municipal governments. Each of these local governments is governed by an elected council responsible for decision-making within its jurisdiction.

This structure is the result of provincial decisions since the 1970s not to build on the metropolitan model that was instituted in the 1950s. From 1953 until 1997, Toronto had a two-tiered government structure, whose upper level of government, the Metropolitan Toronto Council (Metro), was responsible for “metropolitan” issues. This structure was not updated, however, to take account of the population growth outside the boundaries of Metro. Instead, in 1971, the provincial government created four new two-tier governments in the suburbs surrounding Metro, the regional governments of Halton, Peel, York and Durham. After this period, five regional municipalities effectively governed the Toronto region, but no single body was responsible for the entire area. A report by a committee appointed by the provincial government in the early 1990s, recommending the creation of a Greater Toronto Council, was not implemented by the subsequent government.¹ Instead, the government of Ontario proposed in 1996 to merge the six low-tier municipalities within Metro and the upper-tier Metro itself into one single-tier municipality: the City of Toronto, which came into effect in 1998. The Province of Ontario also established a functional body, the Greater Toronto Services Board, as an attempt to enable the municipal governments across the Toronto region to address issues of cross-jurisdictional concern, but this board ceased to exist in 2001 (Bourne, 2005).

The functional area of the Toronto region largely transcends the boundaries of the city, as is the case in many OECD metropolitan areas. The population of the City of Toronto represented 49% of the metropolitan area in 2006, which is a relatively low share compared to European cities, but higher than many North American cities (Figure 3.1). Despite this, the City of Toronto is considered to be the core of the Toronto region by the federal and provincial governments. Recognition by the federal and provincial governments of the City of Toronto’s importance to the region and, indeed, the country as a whole, has opened the door to the development of trilateral agreements between the three orders of government. The Province of Ontario has also provided the City of Toronto with broader legislative authority and a more robust set of financial instruments through the *City of Toronto Act, 2006*.

This core function of the City of Toronto has been emphasised by a reform that strengthened its executive power. A proposal that came into force in November 2006 gives the mayor the right to appoint a deputy mayor and the heads of council standing committees. It also

Figure 3.1. **Dominance of core city as against the whole metropolitan area in a selection of OECD metropolitan areas (2006) (% population)**

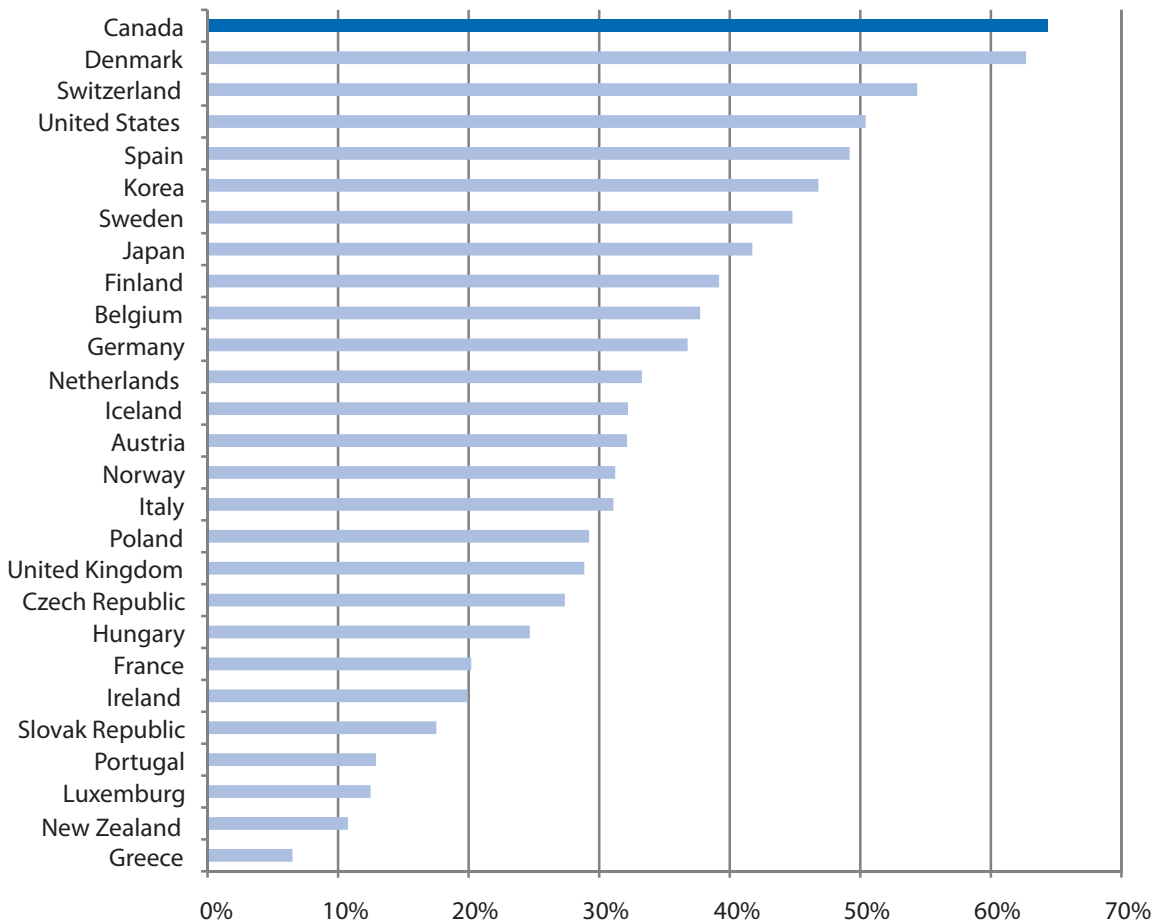


Source: OECD Metropolitan Database and Web sites of the cities concerned.

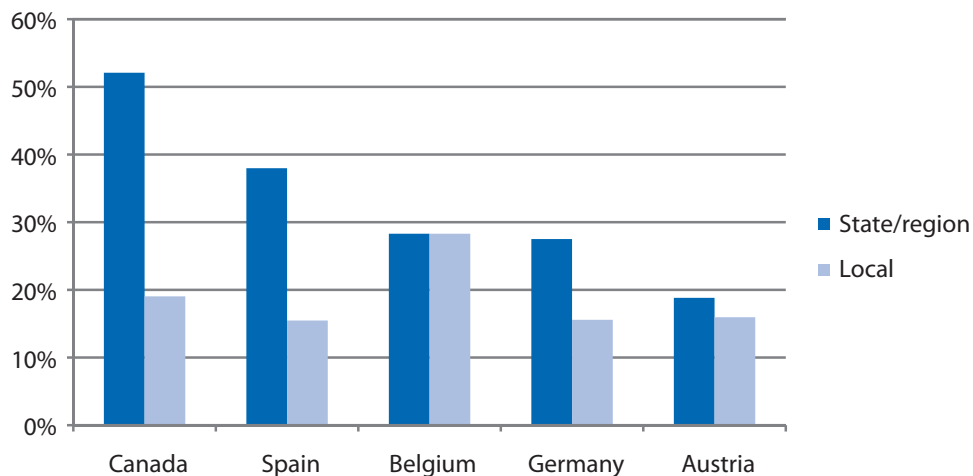
establishes an Executive Committee, largely comprised of members appointed by the mayor. This Executive Committee consists of the mayor, deputy mayor, the chairs of standing committees and four other members, and it has the power to draft the budget and oversee finances. In addition, Toronto City Council acquired the authority to delegate powers to administrators and community councils. Notwithstanding these changes, City bye-laws, including the budget, must be passed by a majority of Council members, and each member of Council, including the mayor, has only one vote. A new administrative model in 2005 organised City divisions into three broad clusters of services overseen by a Deputy City Manager. Since the introduction of this new model, co-ordination between divisions within the City administration that are part of the same broad cluster of services has improved substantially, improving policy implementation.

The province is the main sub-national government level in Canada, and has extensive authority over municipalities. Canada is a federal country in which many responsibilities have been decentralised to provinces. It is arguably the most decentralised country within the OECD: sub-national expenditures as a share of total expenditures are the highest among OECD countries (Figure 3.2). Most of this sub-national authority is vested in provinces rather than municipalities (Figure 3.3). All aspects of municipal governance, including local finance, the scope of local powers and government structure, are subject to provincial authority.

Figure 3.2. Sub-national expenditures as a share of total government expenditures (% , 2006)



Source: OECD National Accounts Statistics.

Figure 3.3. **State and local expenditure shares in selected federal OECD countries (2006)**

Note: Intergovernmental grants are included in these figures, explaining the discrepancies with the previous figure.

Source: OECD National Accounts Statistics.

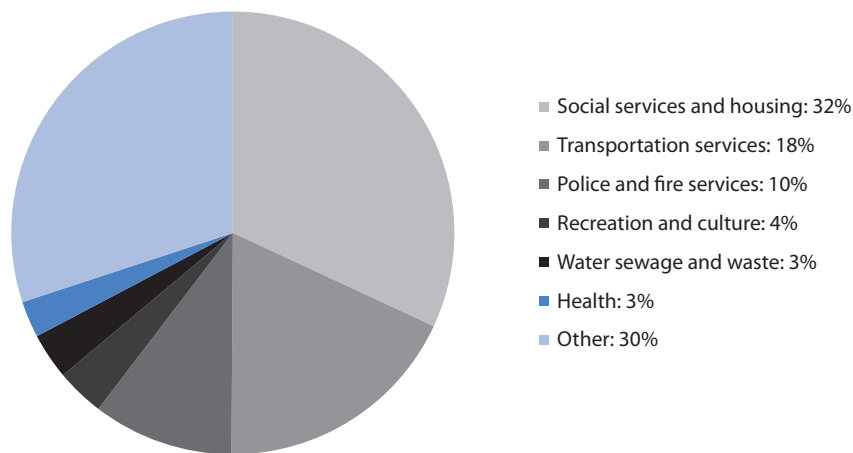
3.1.2 Main local government functions

Under the Canadian constitution, most of the sub-national authority is vested in provinces rather than municipalities, which are described as “creatures of the province”. As a result, there are large differences in municipal roles in the various provinces. Municipalities in Ontario have historically played a significant role in the provision of social services, unlike municipal governments in most other provinces in Canada (Mintz and Roberts, 2006). In addition to these social services, municipalities in Ontario, like those in the rest of Canada, are largely responsible for delivering services such as police and fire protection, roads and transit, water and sewage, solid waste, recreation and culture, and planning.

Provincially mandated social services and social housing, transportation and police are among the largest responsibilities of municipalities in the Toronto region. Upper-tier municipalities in the Toronto region have responsibilities that span their respective regions, such as land use planning, water supply, sewage-treatment systems, and major inter-municipal physical infrastructure, whereas lower-tier municipalities are responsible for providing local services such as zoning and recreational facilities. The upper-tier level is not hierarchically superior to the lower-tier level, as each level has full autonomy to act within the legal authority allocated to it by the provincial legislation. Social services and social housing account for a large part of the budget of local governments, in particular for the City of Toronto, where social services represent 32% of the City’s budget.² Other important expenditures include transport and transit, and police. The expenditure profile of other municipalities in the Toronto region is somewhat different: social services also play an important role, but less than in the City of Toronto. Expenditures relatively more important in other municipalities (e.g. Peel Region) than in the City of Toronto are police, recreation and culture (Figures 3.4 and 3.5). On a net expenditure basis, after accounting for the receipt of offsetting grants and fees and charges for both the City of Toronto and regional municipalities such as the Regional Municipality of Peel, policing costs are by far the largest single component of net local tax cost. In the City of Toronto, net expenditures for transit and social services/housing constitute a close second and third. Excluding about CAD 100 million in debt charges that represent federal mortgages, close to 50% of the balance of debt charges in the City of Toronto relate to transit.

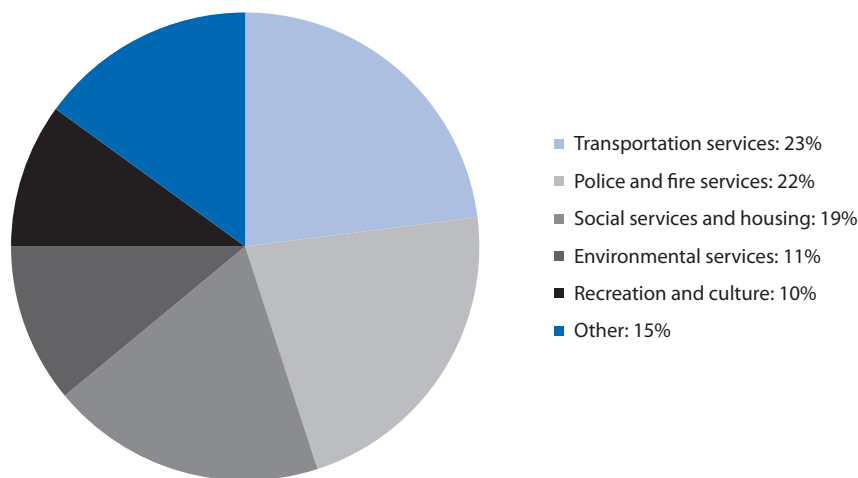
Recent reforms, such as the *City of Toronto Act*, have provided the City of Toronto with expanded flexibility and legal authority to fulfil these functions. The *City of Toronto Act* gives the city new planning and development powers, including authority to restrict the demolition and conversion of rental housing, to establish design guidelines and to set up tax increment financing zones. It removes the requirement to secure provincial approval for a variety of actions, such as extending bar hours for special events. The new Act also provides the City with the ability to delegate final decision-making authority over certain matters to

Figure 3.4. Main gross expenditure items in the operating budget of the City of Toronto 2008 (%)



Source: City of Toronto 2008.

Figure 3.5. Main gross expenditure items in the operating budget of the Peel Region 2007 (%)



Note: Expenses of both upper-tier (Peel Region) and lower-tier municipalities (Mississauga, Brampton, Caledon) are taken into account in order to improve comparability with the City of Toronto, a single-tier municipality.

Source: 2008 Annual Financial Statements of Region of Peel, Mississauga, Brampton and Caledon.

committees of Council or public officials. In addition, the *City of Toronto Act* allows the City to levy a range of new local taxes. These reforms have increased the capacity of the City of Toronto to tackle its main policy challenges. With the enactment of amendments to the *Municipal Act 2001* in January 2007, other municipalities in Ontario have been granted many of the powers provided to the City of Toronto, the notable exception being the power to levy (new) taxes.

Responsibilities for the policy challenges identified in earlier chapters are shared across levels of government.

With regards to *economic development policies*, all three orders of government play a role. The federal and provincial governments determine to a large extent the business environment conditions, such as tax regimes, trade and investment rules and labour legislation. Both the federal and provincial level have functions in science policy, and although innovation is considered to be economic policy and thus a federal responsibility, provinces also play considerable complementary roles. Municipalities also provide generic and sector specific interventions aimed at attracting economic development, for example by incentives, taxation, building networks and other forms of support.

Policies related to *immigration, social integration and cultural diversity* are shared among different levels of government. The federal government is responsible for immigration policy, the federal and provincial governments (as well as municipalities and other actors) for immigration settlement and housing; and municipalities for local services.

Similar shared responsibilities can be found in the *physical domain and sustainability policies*. The federal government is responsible for national highways and railways, but the provincial government and its agencies develop and maintain most of the regional networks, and local governments are responsible for local public transit and local roads. The links to land use planning also take place in a multi-level government context: the Province of Ontario determines broad policy, but local governments have the responsibility for official plans, zoning, building codes and permits.

The institutional framework in the Toronto region, with its institutional fragmentation and shared responsibilities, has implications for co-ordination mechanisms and financial arrangements. As will be shown below, effective governance in the Toronto region will require stronger alignment of policies between different levels of government and improved co-ordination between local governments in the area. Shared responsibilities also require sufficient funding, and revenue-raising options that can align incentives with shared policy goals.

3.2 Intergovernmental co-ordination in the Toronto region

Shared responsibilities require co-ordination between different levels of government. Although a case can be made for institutional competition between different government levels, there are few examples in practice where this form of vertical policy competition has improved policy effectiveness. Vertical policy alignment is all the more important because different levels of government can have different functions (setting standards, policy design, funding, implementation, etc.) in the same policy field.

Co-ordination between local governments within the same metropolitan area is also needed to internalise inter-jurisdictional externalities. The case for horizontal co-ordination (between different local governments) is subtle, as there is a trade-off between competition and co-ordination.³ Competition, which can create diversity and responsiveness to local

preferences, is one of the main arguments for decentralisation and can be limited by extensive co-ordination. Co-ordination, however, makes it possible to internalise inter-jurisdictional externalities, that is, actions in a jurisdiction that have a regional impact beyond the boundaries of that jurisdiction. Underinvestment can occur when positive externalities (for example the benefits that suburbs in the Toronto region can derive from good public transit in the city centre) are not taken into account. Over-investment occurs when negative externalities are ignored, such as environmental harm that is costly for other jurisdictions, as in the case of the automobile use associated with urban sprawl in the Toronto region. Such co-ordination can take different forms, depending on the responsibilities of local governments and other specific circumstances. In areas such as transportation, there are massive externalities, and regional co-ordination is important. For housing policy, a mixed system might have value. Localities would maintain control over land use decisions, but regions or territories (*i.e.* provincial governments) would provide incentives to encourage localities to make the right choices (Glaeser, 2007). Depending on the policy objectives, several models have been applied in OECD metropolitan areas to achieve policy alignment, ranging from inter-municipal co-ordination mechanisms to single-purpose bodies, multi-purpose bodies and metropolitan government (OECD, 2006).

3.2.1 Co-ordinating economic development policies

With regards to economic development, municipalities in the Toronto region tend to act independently of one other. The *Growth Plan for the Greater Golden Horseshoe*, the provincial strategy for managing population growth in the Greater Golden Horseshoe Area, gives some indications as to where economic activity should take place (in the urban nodes, preferably around transit facilities), but leaves economic planning up to local governments. Municipalities in the Toronto region have defined their economic development strategies independently and do not always have the same perception of economic challenges. Municipalities are competing with each other to attract investment via marketing, favourable business tax rates and land lease arrangements. Although competition between localities in economic development policies could give incentives for efficiency, there are important spatial externalities connected to spatial economic development, as companies have workers and suppliers who might be based in other localities, co-operate with universities in other areas of the metropolitan region and use goods and services provided by other local governments in the region. Because of these externalities, several local governments in metropolitan areas in the OECD engage in regional co-ordination of local economic development.

At present in the Toronto region, co-ordination for economic development mostly takes place in public-private bodies that depend on local governments' willingness to co-operate. Two of these bodies are the Greater Toronto Marketing Alliance (GTMA), and the Toronto Region Research Alliance (TRRA). The GTMA is a public-private partnership that serves as the key point of contact for businesses exploring opportunities in the Greater Toronto Area (GTA), bringing together 29 local governments, the governments of Ontario and Canada, several not-for-profit organisations, and a broad cross-section of private sector corporations. The GTMA promotes the GTA internationally, and provides companies with assistance in evaluating, planning and implementing an expansion or move to the GTA. The TRRA is a public-private partnership focused on attracting research-intensive investment to the region. A non-profit organisation, it is supported by a wide range of regional stakeholders and the governments of Ontario and Canada. The involvement of local governments from the Toronto region in these bodies, through representation on their boards or other forms of support, could provide some form of policy co-ordination, but local actors are free not to engage.

Relations between these bodies and senior levels of government have developed: the GTMA, for example, has a co-operative relationship with the Ontario government. In February 2008, what was then Ontario Ministry of Economic Development and Trade launched the Ontario Investment and Trade Centre (OITC) in the Toronto region. This is an investment attraction and trade promotion presentation facility, and federal, regional and municipal partners, including the GTMA and the individual municipal governments within the GTA, are free to use the facility for investment attraction and trade promotion meetings and events. The GTMA regularly uses the facility. Additionally, the OITC has a mandate to act as a hub for collaboration across all levels of government for investment and trade activities. The collaborative mandate demonstrates the government of Ontario's commitment to co-ordinate the promotion of investment and international trade and business, so that it can offer better service to federal, regional and municipal stakeholders as well as business clients.

There remains a need for stronger co-ordination of economic development, especially in spatial planning. It is not clear that the governance arrangements in economic development have always resulted in stronger co-ordination. Member buy-in in organisations such as the Greater Toronto Marketing Alliance is largely symbolic, since some key municipalities in the region, including the cities of Toronto and Mississauga, have sometimes opted to mount their own foreign trade missions without the participation of the Marketing Alliance. Although the case for co-ordination of local government policies in economic development is less straightforward than in transportation, land use planning and housing, there are areas where more co-ordination is warranted. As noted in Chapter 1, certain benefits from geographical concentrations of interdependent firms, such as knowledge spillovers, are particularly localised. Although market mechanisms could in principle take care of this clustering, governments tend to distort locational decisions of firms with a variety of incentives, such as taxes, subsidies and other forms of support. Co-ordination of these incentives could prevent clusters from becoming dispersed, rather than agglomerated in close proximity. Inter-municipal co-ordination could also help stimulate linkages between sectoral firms located in different jurisdictions within the metropolitan area, to stimulate synergies between sectors.

Higher levels of governments could participate in, lead or provide incentives in a regional spatial economic strategy for the whole metropolitan area. As will be developed below, the Province of Ontario has increased regional co-ordination in public transit and land use planning since the mid-2000s; this could be further extended towards the spatial aspects of economic development, such as the co-ordination of regional clustering. The announcement in the 2009 federal budget of the creation of a Federal Economic Development Agency for Southern Ontario could also provide opportunities for co-ordination of economic development. The creation of this agency has been presented in the context of the hardship associated with the plant closures and slower economic growth in Canada that resulted from the weakening US economy. The federal budget for 2009 provides more than CAD 1 billion over five years to this Federal Economic Development Agency for Southern Ontario. Its programmes will support economic and community development, innovation and economic diversification. The Canadian federal government has similar agencies in other parts of Canada, such as for Atlantic Canada (the economic promotion agency for the Atlantic provinces and territories)⁴ and Canada Economic Development for Quebec Regions. All these agencies have similar over-arching aims: namely, to design and implement policies and programmes promoting the economic development of their region. One of the agencies' key functions is to participate in the implementation of national economic development priorities in order to maximise the benefits for every region. Several federal programmes are at their disposal to achieve these goals, such as services intended for SMEs, and skills and innovation enhancement (OECD, 2002).

The restructuring of the City of Toronto's economic development agency in 2008 has created an opportunity to give a sharper regional focus to the city's economic development activities. After its creation in 1986, the City of Toronto Economic Development Corporation (TEDCO) managed a significant portfolio of land with up to 75 tenant leases; it sponsored and funded City economic development work, as well as incubators and strategic initiatives such as the World Expo bid and Filmport. Over the years, dissatisfaction with its performance built up: its mandate overlapped with City agencies', and TEDCO was not considered to be supportive of the City's needs. Following the recommendations of two external committees – the Mayor's Fiscal Review Panel and the Mayor's Economic Competitiveness Committee – it was decided in 2008 to split TEDCO up and transfer its mandate to new organisations. Responsibility for developing under-utilised City real estate was assigned to *Build Toronto* for investment promotion and marketing was handed to *Invest Toronto*; and TEDCO's incubator support function was transferred to the City of Toronto's Economic Development, Culture and Tourism Division.

3.2.2 Co-ordinating social and immigration integration policies

Immigrant settlement has been served by commendable vertical intergovernmental co-operation. Tripartite collaborative agreements between the City of Toronto, Ontario and the federal government are in place to facilitate the effective co-ordination of newcomer policy and programmes. The Canada-Ontario-Toronto Memorandum of Understanding (MOU) on Immigration and Settlement, for example, was designed to provide a framework for the three governments to discuss matters related to immigration and settlement. The MOU is a provision under the Canada-Ontario Immigration Agreement. Through this MOU, the three orders of government agree to collaborate in their efforts to improve outcomes for immigrants in the following four areas of mutual interest: access to employment, education and training, services and citizenship and civic engagement. The three orders of government should be complimented for achieving such a high level of intergovernmental co-operation.

As noted in Chapter 2, the Canada-Ontario Immigration Agreement provides for the federal government to spend an additional CAD 920 million over five years on settlement and integration programs. The agreement also facilitates discussion among the various levels of government on priorities and issues relating to newcomer settlement and integration. As the current agreement approaches its expiration in 2010, post-expiration arrangements between the federal and provincial governments are due to be considered, including handing sole management of settlement and integration services to the Province.

Another co-ordination mechanism in the field is the Intergovernmental Committee for Economic and Labour Force Development in Toronto (ICE Committee). Since 1997, this committee, established by officials from the federal government, the Province of Ontario and the City of Toronto, has aimed to promote information-sharing about economic and labour market developments at the three government levels. The funding of this committee is shared. The committee brings together the main actors in the field to discuss information on programmes and projects.

Further co-ordination of immigration settlement policies between municipalities in the Toronto region might however be required. More-extensive regional programmes could improve immigration settlement policy, given the outmigration of the Toronto region's population to outlying municipalities. Although the City of Toronto is still the core area attracting immigrants, research indicates that immigrants are increasingly locating in other urban nodes of the Toronto region, partly due to the deconcentration of economic activity within the Toronto region. This trend creates challenges for the provision of settlement

and integration services (e.g. language training, support in locating affordable housing, etc.) which have been traditionally supported by the City of Toronto and a network of community organisations operating in the city. Whereas the City of Toronto has developed and helped to finance affordable housing used for newcomers to the Toronto region, most other local governments in the area have not made comparable investments. Regional co-ordination of affordable housing options, as practiced in the metropolitan area of Montréal, might increase contributions of all local governments in the Toronto region to house newcomers.

3.2.3 Infrastructure and land use co-ordination

As mentioned in Chapter 2, the Province has recently strengthened metropolitan co-ordination for public transportation by creating Metrolinx. In 2006, the provincial government created Metrolinx to develop and implement an integrated multi-modal transportation plan for the Greater Toronto and Hamilton Area. Metrolinx is overseen by a 15-member board consisting of non-elected individuals reflecting expertise in the areas of transportation, project management, finance and law. In addition to its role of developing a long-range transportation plan for the GTHA, Metrolinx is responsible for centrally co-ordinating the more cost-efficient procurement of transit buses and related equipment and services for all Ontario municipalities wishing to participate. Metrolinx will also co-ordinate GO Transit and Presto, a fare card technology system, which will integrate all fare collection mechanisms across the GTA and Hamilton, plus Ottawa, making commuting by transit more convenient.⁵ In early 2009, the Province of Ontario announced the merger of Metrolinx with GO Transit, which was in force in May 2009.

This increased co-ordination is promising, but its effectiveness could be increased by adding financial incentives. The regional transportation plan released by Metrolinx shows the potential advantages of more regional co-ordination in public transit. The implementation of this plan will require the co-operation of several of the local actors within the field, which might not always have similar interests or perspectives on the desirability of more public transit. Although its merger with GO Transit in 2009 has given Metrolinx more institutional weight, it might need additional instruments and incentives, most notably its own revenue sources. The effectiveness of Metrolinx in particular could be increased if it were able to use the proceeds of a revenue source that stimulates public transit at the same time, such as a congestion charge or HOT toll lane revenues.

Regional co-ordination in regional transport has gone hand in hand with increased co-ordination of land use. The provincial *Growth Plan for the Greater Golden Horseshoe* has given impetus to the co-ordination of transportation planning, land use planning, and transportation investment, and requires municipalities to develop and implement transportation demand management policies. Metrolinx is required to conform to the *Growth Plan* in the implementation of a *Regional Transportation Plan*. To further co-ordinate transportation and land use planning, Ontario's *Metrolinx Act 2006*, allows the Ontario Minister of Transportation to issue *Transportation Planning Policy Statements* (TPPS) that conform with the above-mentioned Growth Plan and take the RTP into account. The Act also requires single-tier and upper-tier municipalities in the Greater Toronto and Hamilton Area, and any designated municipalities, to develop *Transportation Master Plans* consistent with the TPPS.

3.2.4 Co-ordination for environmental sustainability

A specific governance issue associated with the implementation of sustainability policies is related to the lack of inter-municipal co-ordination within the region. The need to confront externalities makes regional co-operation and co-ordination between governments a critical component of any city's sustainability efforts. Cities acting alone face great difficulties in dealing with externalities – both those that they impose upon surrounding areas and those that surrounding areas impose upon them. If they are truly to pursue sustainability, cities must account for and reduce these externalities: a city cannot sustain itself simply by displacing its environmental costs.

Regional policy co-ordination on sustainability issues in the Toronto region needs to be strengthened. Local governments surrounding the City of Toronto have been involved in the pursuit of sustainability, although sometimes in different and un-coordinated ways. Much of the sustainability-related co-ordination across municipalities is carried out on an *ad hoc*, informal basis rather than through formal structures or co-ordinating bodies: voluntary co-operative efforts, such as the Clean Air Council or the Great Lakes/St. Lawrence Cities Initiative, which was formed to improve environmental conditions in the Great Lakes district, have no formal authority to act. As residents in suburban municipalities in the Toronto region do not necessarily accept the idea that sprawl is a negative externality, addressing the problem through informal and voluntary means is frequently not a viable option. A more structured regional approach to environmental sustainability would be required to address these externalities, which could take the form of a regional sustainability agenda stimulated by the Province of Ontario, interlinked with its land use and public transit strategy.

3.2.5 Fostering a multi-sectoral and integrated approach

There is currently no institution providing co-ordination for the Toronto region that goes beyond sectoral co-ordination, as is the case in several OECD metropolitan regions. After the amalgamation process in the 1990s, the only formal organisation that had responsibility for Greater Toronto was the Greater Toronto Services Board (GTSB). Its mandate included managing the regional commuter system, GO Transit, but it did not develop into a multi-functional regional planning agency with responsibility for other services, and it was closed down in 2001. In the absence of holistic and integrated metropolitan arrangements for the City of Toronto and nearby regional municipalities, a business-led group called the Toronto City Summit Alliance emerged around 2003 to provide a platform to inform and encourage policy development at the level of the city-region. In addition, a number of collaborative bodies have been created; a sampling of which include the Mayor's and Regional Chairs of Ontario (MARCO), GTA and Hamilton Mayors and Chairs, the Large Urban Mayors Caucus of Ontario (LUMCO). These bodies have contributed to policy co-ordination in a variety of areas, although concrete results of this co-ordination have so far been difficult to identify, as these bodies have not yet developed into well-established co-ordination mechanisms.

There could, however, be benefits from more inter-sectoral co-ordination at the regional level. Economic development is linked to transport and land use planning: the location of economic activity near public transit networks rather than highways could increase public transit shares in the modal split; de-concentration of economic activity in the Toronto region has led to new mobility patterns requiring a policy response; and strong accessibility between certain economic concentrations could stimulate knowledge spillovers and linkages between firms. Similar connections could be made between immigrant integration and land use planning. As most of the population growth in the Toronto region will continue to be through immigration, the availability of settlement policies in localities will influence

where newcomers will locate, which might not necessarily correspond to land use planning targets. Finally, there are links between cultural diversity and economic development; and the exploitation of these links will require co-ordination of policies in both fields, as was mentioned in Chapter 2.

It is preferable that inter-sectoral co-ordination be achieved by existing actors, as the chances of creating a new institution are limited. Several models have been applied in OECD metropolitan areas in order to achieve inter-sectoral co-ordination at the metropolitan level. They have included the amalgamation of local governments; the creation of a new government tier; and light co-ordination mechanisms (Box 3.1). The amalgamation process of the 1990s in Ontario has left little appetite for local government mergers and the results of amalgamations in OECD metropolitan areas appear mixed. Although several authors have proposed a new institutional organisation for the Toronto region (*e.g.* Rowe [ed.] 2000, and Broadbent 2008), such as provincial status for the Toronto region and other large metropolitan areas in Canada, there are many practical difficulties associated with such proposals (Sancton, 2008), and the costs of bringing such an entity into existence would probably outweigh its benefits. Inter-sectoral co-ordination is therefore most likely to be achieved by existing institutions.

Box 3.1. Metropolitan governance models within OECD metropolitan areas

The discussion of how to manage metropolitan regions revolves around a continuum of models that range from relatively “heavy” options, such as the creation of metropolitan governments and amalgamations, to middle positions including inter-municipal joint authorities, sectoral and multi-sectoral agencies and “light” government options, such as informal co-ordination bodies or networks.

Amalgamations provide the most radical option. They are promoted on the grounds that they could improve the delivery of public services, reduce duplication and produce economies of scale, a more equitable sharing of tax burdens and improved spatial planning capacity. In general, the results of amalgamations appear mixed. Cost reduction and quality increases have not always been realised, and amalgamations are difficult to pull off. In addition, many of the objectives of amalgamations could be achieved through inter-municipal collaboration. As a result, there are only a limited number of metropolitan areas with a metropolitan government (Stuttgart and Portland being examples) whose administrative boundaries correspond with the functional economic area. Having an over-arching metropolitan government may facilitate metropolitan planning, but it can also dampen local competition.

Inter-municipal co-operation can engage in single-purpose or multi-purpose endeavours. Public transport and urban planning are likely to fall within the domain of such bodies, given their metropolitan scope. A special form of inter-municipal collaboration around a single theme is the economic development agency that co-ordinates economic development activities in a given geographical area. The advantage of such special-purpose districts is that the boundaries can be drawn up so that they correspond neatly with the spillover boundaries of each service. Potential disadvantages include the problem of co-ordinating different sectoral agencies and the emergence of sectoral constituencies that hinder the development of holistic views. Multiple-purpose metropolitan bodies, on the other hand, can perform a wide range of functions, such as planning and co-ordination and sometimes delivery of public services. These have the potential advantage of preserving local autonomy and the distinct identity of member municipalities. Popular legitimacy may, however, become an issue when the institution takes on increasing responsibilities and fiscal revenue. In addition, problems may arise for policy implementation when the municipalities are not bound to respect the decisions of the institution.

Lighter forms of inter-municipal co-operation generally involve mobilising local actors around common development projects and longer-term strategic visions, on the assumption that all parts of a metropolitan region share some common objectives. Light forms of collaborative frameworks have proved to be easier to implement at a wider regional level.

The Province of Ontario might build and expand on its initiatives in co-ordinating land use and transport. The relevant actors in economic development, immigration and sustainability could be brought together with those in transport and land use to formulate policy. Such co-ordination would require inter-sectoral arrangements within the provincial administration, as well as incentive mechanisms to stimulate co-operation between local governments. Existing networks of municipalities and a wide range of non-public stakeholders could be used as a starting point. Such arrangements could be developed as part of a provincial urban policy agenda, which would start with the Toronto region and which could be extended to cover other urban centres in Ontario. As part of such a policy, clear, measurable targets could be set to provide extended datasets and indicators that would be useful in assessing progress as an agenda for sustainable competitiveness was implemented.

Although municipal affairs fall under the authority of the provinces in Canada, the federal government can play a key role in fostering a sustainable competitiveness agenda for the nation's largest urban centre. In August 2009, Canada's Prime Minister announced the establishment of the Federal Economic Development Agency for Southern Ontario, as promised in the government of Canada's 2009 budget. This agency could provide a valuable platform for reaching such an objective. Southern Ontario was, until the Prime Minister's announcement, the only region in Canada⁶ without a regional development agency. This region now has an institutional tool with the mandate to address, among other things, the economic challenges facing the region's small and medium-sized enterprises, workers, and families. The new agency could develop and help fund an approach to cluster development that builds on the specific attributes and strengths of the Toronto region and then tailor its new programming accordingly. This approach has been developed by Canada Economic Development-Québec (CED-Q), the federal regional economic development agency in Québec, for the metropolitan region of Montréal. Just as CED-Q develops and implements differentiated agendas for the Montréal region and for the other regions in Québec, the Ontario regional development agency can develop differentiated strategies that build on the strengths and assets of each region in Southern Ontario. In the Toronto region, special attention could be devoted to SME activities that focus on developing and commercialising innovative and energy-efficient technologies in key industrial sectors, including the automobile sector, transportation, information and communications technologies, media content, biotechnologies and biopharmaceuticals. These would include non-carbon based renewable energy sources for industrial processes, transportation and heating and cooling.

The federal government also has a wide range of infrastructure programmes, some managed in partnership with provincial governments, as well as specific agreements aimed at supporting green municipal projects (e.g. the federal government's *Green Municipal Fund*, managed on its behalf by the Federation of Canadian Municipalities, or its *Green Infrastructure Fund*, announced in Budget 2009 as part of the federal Economic Action Plan and aimed at large-scale green infrastructure projects). These infrastructure programmes potentially represent key strategic investments for the Toronto region, given the national spillover effects from investment in urban infrastructure across the OECD and the importance of the Toronto region to Canada's competitive position. Indeed, in addition to helping the region's SMEs become more innovative and efficient and expand their export capacity, the Federal Economic Development Agency for Southern Ontario is also likely to be charged with managing the federal government's *Building Canada* infrastructure investment envelope for the region.

The new Federal Economic Development Agency for Southern Ontario would therefore be in a good position to partner with the Province, the City of Toronto and other municipalities in the region. A coherent tri-partite sustainable competitiveness agenda could be developed to identify commonly defined policy goals and to co-ordinate programme design and investments for infrastructure and SME innovation and expansion among the three orders

of government. While less comprehensive than what is being suggested here, the contractual arrangements already in place in Vancouver, Edmonton, Winnipeg and, more recently Regina, can offer guidance on the arrangements most helpful for the pursuit of a commonly defined sustainable competitiveness agenda.

Such multi-sectoral vertical governance arrangements make institutional collaboration possible through a negotiated planning process, enhancing efficiencies in programme planning and delivery. They also provide for the occasional participation of other stakeholders, both within government and outside it, whose input will be critical in implementing the new policies. For instance, given the demographic challenges in the region, available skills must be mapped to jobs, and training matched with the needs of SMEs. Co-ordination between agencies charged with implementing the new agenda and educators and trainers must be arranged. Recognizing foreign credentials and providing mentoring and apprenticeship opportunities are crucial if SMEs in the region are to harness the region's labour force effectively maximising innovation capacity and commercialising products and services both at home and in international markets. These contractual arrangements can also allow for a structured round of negotiations to define clear objectives; for a precise timetable and robust instruments for monitoring and assessing results; and for reporting to the public on the progress in implementing the new policies. Part of such an engagement could be an expansion of datasets, which would have to include such key economic indicators as GDP and export data at the metropolitan level.

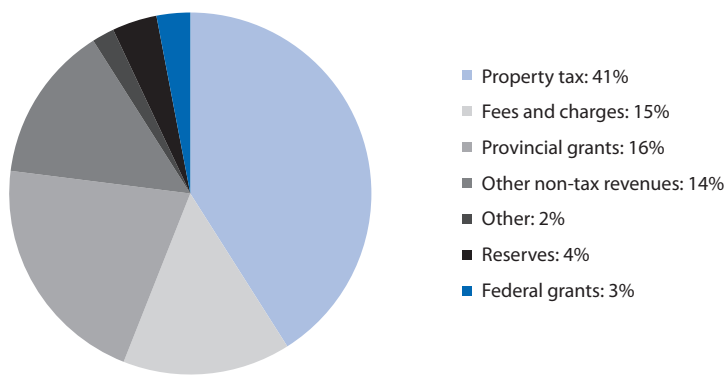
3.3 Financing metropolitan development

3.3.1 Towards a variety of funding sources to finance infrastructure

The property tax is the main revenue source for local governments in the Toronto region, constituting about 41% of total revenues for the City of Toronto and 56% of the total revenues of regional municipalities in the Greater Toronto Area (Figures 3.6 and 3.7). The lower figure for the City of Toronto reflects the fact that it has a higher social services and housing burden⁷ and receives proportionately more revenues from grants and GTA pooling equalisation. The property tax is imposed on residential and non-residential property (commercial and industrial). The City of Toronto's share of own revenues has increased in the last decades, mainly due to revenues such as fees. Municipalities in Ontario generally rely more on provincial grants and user fees and less on property tax revenues by comparison with municipalities in other provinces. Revenues from user fees form a slightly higher share of municipal revenues for Ontario than for the whole of Canada.

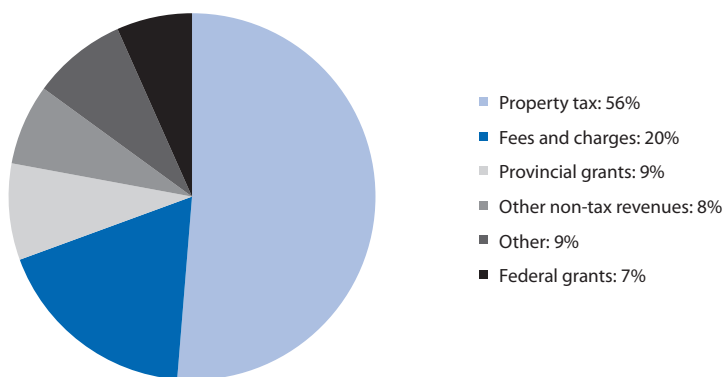
The dependence of Canadian municipalities on the property tax is quite exceptional within the OECD. Around 95% of local tax revenues in Canada come from property taxes. Since tax revenues are not the only revenue sources for Canadian municipalities, property taxes' share of total municipal revenue is of course lower (Figures 3.8 and 3.9). Although property taxes are in many cases appropriate local sources of taxation, they are generally associated with local governments that have fairly limited, traditional local tasks. In general, the dependence of local governments on property tax revenues declines when sub-national taxing powers increase. In the 12 OECD countries where sub-national governments have considerable taxing powers and raise more than 20% of total government revenues (e.g. Switzerland, Denmark and Spain), local governments rely on an array of other tax bases; in nine of these countries, the property tax represents less than 30% of local tax revenues. The exceptions, along with Canada, are Australia and the United States (Figure 3.8). Local governments in Scandinavian countries generally share the income tax base with national government, and local governments have the autonomy to set their own income tax rates.

Figure 3.6. Main revenue sources, City of Toronto (2008)



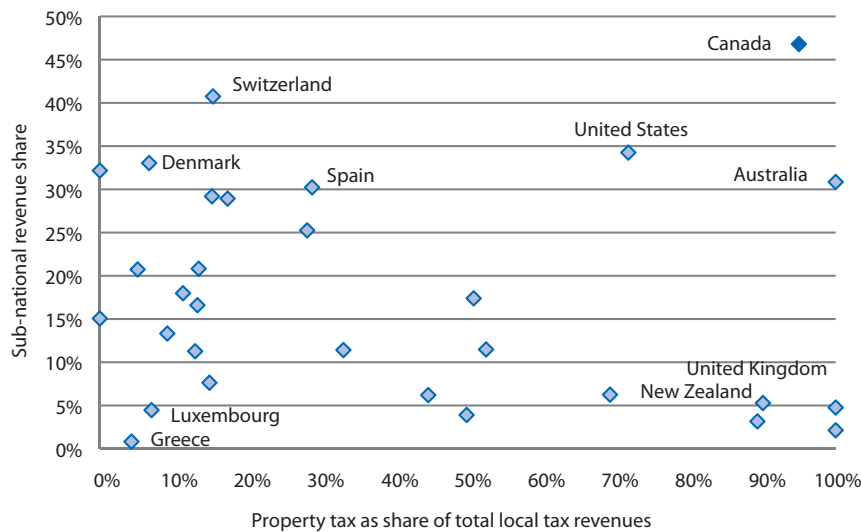
Source: City of Toronto 2008 Budget.

Figure 3.7. Main revenue sources, Greater Toronto Area (GTA) Regions 2008



Source: Statistics Canada.

Figure 3.8. Decentralisation and dependence of local governments on property tax in OECD countries (2006)



Source: OECD Revenues Statistics Database.

This dependence on property taxes has disadvantages for local governments in the Toronto region. Property taxes are less responsive to economic growth than many other taxes, because property values respond more slowly to annual changes in economic activity than incomes do. Consequently, property taxes appear to be less appropriate for financing services that are closely linked to developments in the population and economy (Kitchen, 2006; Slack, 2004; Ahmad and Brosio, 2006). This is exacerbated if property values are not updated every year, as is the case in Ontario. Although property tax revenues provide some of the stability needed to fund social services, there are limits to the revenues that can be reasonably collected from a property tax base. The infrastructure gap in the Toronto region discussed in Chapter 2 could arguably have been reduced if local governments had had access to a larger base of financing sources, along with adequate and predictable grants from the provincial and federal governments for transit as is typical in many other OECD countries. Attempting to close the infrastructure funding gap with property taxes must be considered unrealistic: the experience of other OECD metropolitan centres indicates that a broad mix of revenue sources is needed to support adequate investment in infrastructure.

Local governments in the Toronto region could benefit from a wider variety of revenue sources. Some of these have already been mentioned in Chapter 2, for example congestion charges, a municipal fuel tax and parking fees. These revenue sources not only generate revenue that can be used for infrastructure spending, but have a broader policy function, in that they provide incentives for limiting car use and reducing congestion. These are not the only additional revenue sources that could be considered: metropolitan areas within the OECD use a wide set of local taxes, such as income taxes, consumption taxes, business taxes and a host of smaller taxes, such as tourist taxes and vehicle registration taxes (Box 3.2). In addition to fiscal instruments that could be used to stimulate land use goals, such as fuel taxes, parking taxes and other taxes that will be discussed in depth below, special attention might be given to a value capture tax, borrowing for infrastructure, municipal bonds and tax increment financing. The experience of the Province of Ontario, whose *Alternative Financing and Procurement* model uses private financing to rebuild infrastructure, could be used to expand the involvement of the private sector in financing public infrastructure in the Toronto region.⁸

A revenue source that captures property value increases due to infrastructure investment could be considered. Studies in several OECD countries have concluded that proximity of property to public transit services leads to an increase in property values.⁹ There are similar findings for Canadian metropolitan areas, suggesting that homes near a subway station were worth CAD 4 000 more than other homes in the area, due to their higher level of accessibility (Haider and Miller, 2000). This suggests some room for capturing some of the value increase of the property due to infrastructure investment. Models in other OECD metropolitan areas could also be considered (Box 3.3).

In addition, municipalities in the Toronto region could make more use of borrowing to finance infrastructure. Borrowing is allowed to local governments under certain conditions,¹⁰ but Canadian cities in general do not come close to their legal or market debt capacity. This is particularly the case for the City of Toronto: its debt charges relative to its own revenue sources were 5% in 2002; this was the lowest percentage for the seven large cities in Canada (Slack and Bird, 2006). In comparison to other countries in the OECD, however, the level of debt financing by local governments in Canada is not particularly low, although local governments in several countries, such as the Netherlands, Spain and France, borrow more (Figure 3.9). The City Council of Toronto recently updated its policy guidelines on allowable debt from 10% to 15%, and the City is now planning a much higher level of debt utilisation (15% by 2010).

Box 3.2. Local tax sources in metropolitan areas in the OECD

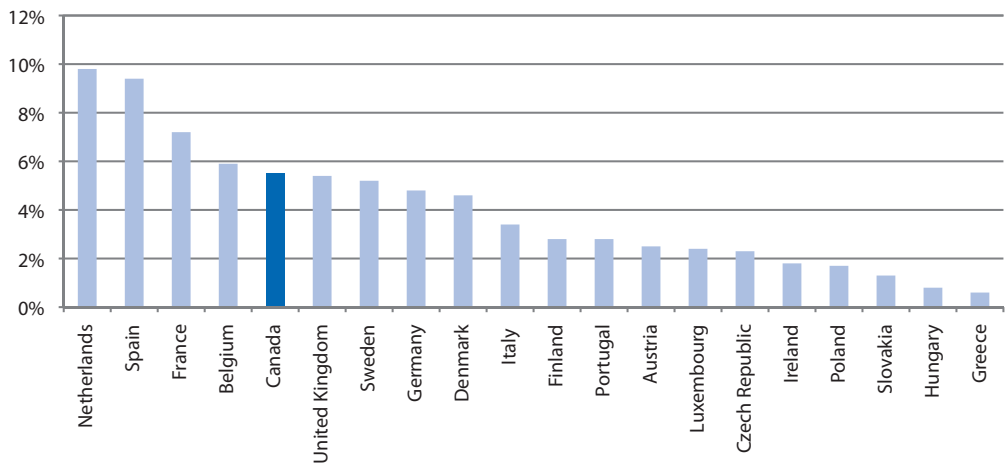
The main local tax sources found in OECD metropolitan areas are the property tax, income tax, local sales tax and local business tax. The property tax is most widely used in OECD metropolitan areas. One of the reasons for this is that it is levied for the most part on assets that cannot easily be moved elsewhere, meaning that they entail only minimal risks of tax flight or other attempts to evade taxation. Furthermore, a property tax is highly visible and therefore fosters accountability. A high reliance on property taxes, however, appears to restrict revenue flexibility, since no country seems able to raise more than 10% of total tax revenues from property taxes. This can be debilitating for large urban administrations that are forced to provide more than a minimal set of services and infrastructures.

Income taxes are levied at the local level in 13 of 27 OECD countries. In a few cases, such as Sweden, the income tax is the only local tax. The income tax is highly responsive to changes in the economy and so offers buoyancy in periods of growth. In large metropolitan areas, the income tax may be more appropriate than the property tax, as the incomes of residents in large metropolitan areas appear to correlate better with the consumption of locally supplied goods and services than property values do. One of the disadvantages of a local income tax is its volatility and pro-cyclicality.

Sales taxes are levied by many cities, especially in the United States, but they are generally a funding base for provincial and state governments. Local retail sales taxes in general provide moderate sources of revenue. Moreover, the scope of local sales taxes is limited by distortions such as erosion of the tax base as economic agents seek substitutes or evade the levies. Local business taxes come in various forms, but are in general difficult to administer, encourage tax exporting and are generally an option only for large urban centres.

Source: OECD (2006a).

Figure 3.9. Local government debt as a share of GDP (2001)



Source: OECD National Accounts Database and Dexia (2004).

Box 3.3. Value capture taxes in OECD metropolitan areas

The principle of a value capture tax is to capture a portion of the increased value that accrues to property owners when a large infrastructure improvement is constructed in close proximity to their property. The base for a land value capture tax is an increase in property values arising from public infrastructure development. The increased value is not due to the effort of property owners and accrues only from the infrastructure provided. The increased value results from the increased desirability of the location, better access and the potential for higher rents, increased resale value or higher-density development. The funds captured by the tax can then be used to fund the infrastructure that is provided. Value capture taxes should be distinguished from development fees or impact fees, which are levied on the buyers of a newly constructed house so that they can finance part of the infrastructure associated with the house. A value capture tax is levied on already existing properties. Value capture taxes can be imposed or take the form of a negotiated agreement; and may be levied as an ongoing annual charge or as a one-time tax. Value capture taxes are less useful when property taxes are assessed on a yearly basis, since the annual assessment captures any increases in the property value that might result from public infrastructure investment; in Ontario, however, such assessments are not made annually. Value capture taxes have been rare in Canada. In the Greater Toronto Area, the municipality of Brampton has used one to partially fund a large office complex built over a local bus and GO Transit terminal (Vander Ploeg, 2006).

Another option would be to develop a municipal bond market in the Toronto region, although it might not be more effective than borrowing. Tax-exempt bonds are used extensively throughout the United States to finance infrastructure. Under a bond, the interest earnings to the bondholder are exempted from federal and state income tax, which allows the government issuing a bond to sell it at an interest rate below the prevailing market rate. In 2003, Ontario released a single issue of tax-exempt *Opportunity Bonds* through the provincial Ontario Municipal Economic Infrastructure Financing Authority (OMEIFA). There was no Ontario income tax on the interest earned by purchasers of these bonds during the five-year term. This was the first tax-exempt bond issuance by a Canadian province for municipal infrastructure purposes. Since this single issue of tax-exempt bonds, Ontario has utilised the issuance of Infrastructure Renewal Bonds (IRB) for the subsequent *Infrastructure Ontario's Loan Programme*. IRBs are fully taxable. *Infrastructure Ontario* indicates that the taxable IRBs are a more efficient financial instrument, as they maintain a link among investors and the investments in Ontario communities, but also impose accountability and discipline on borrowers. There have been concerns in the United States about the effectiveness of the instrument, as it is considered not to offer many advantages over local borrowing that can take part in state or provincial borrowing (Vander Ploeg, 2006).

Another option currently implemented is tax increment financing (TIF). This is a tool that allows municipalities to finance development by dedicating property tax revenue from increases in assessment values within a designated TIF district. TIFs are not always viable as a financing method, because they may not generate enough additional revenue. Despite their mixed record of success to date, TIFs allow cities to implement public improvements without an increase in tax rates, and they have been used frequently in the United States (Dye and Merriman, 1999; Brueckner, 2001). In Ontario, participating municipalities agree to provide incremental municipal tax, and the Province agrees to provide a grant equivalent to the incremental education property tax revenues to the authority governing the TIF. These revenues are used to help pay off TIF-related debt and costs. Once TIF-related debt is retired, municipal tax and provincial education property tax revenues revert to the participating municipalities and the

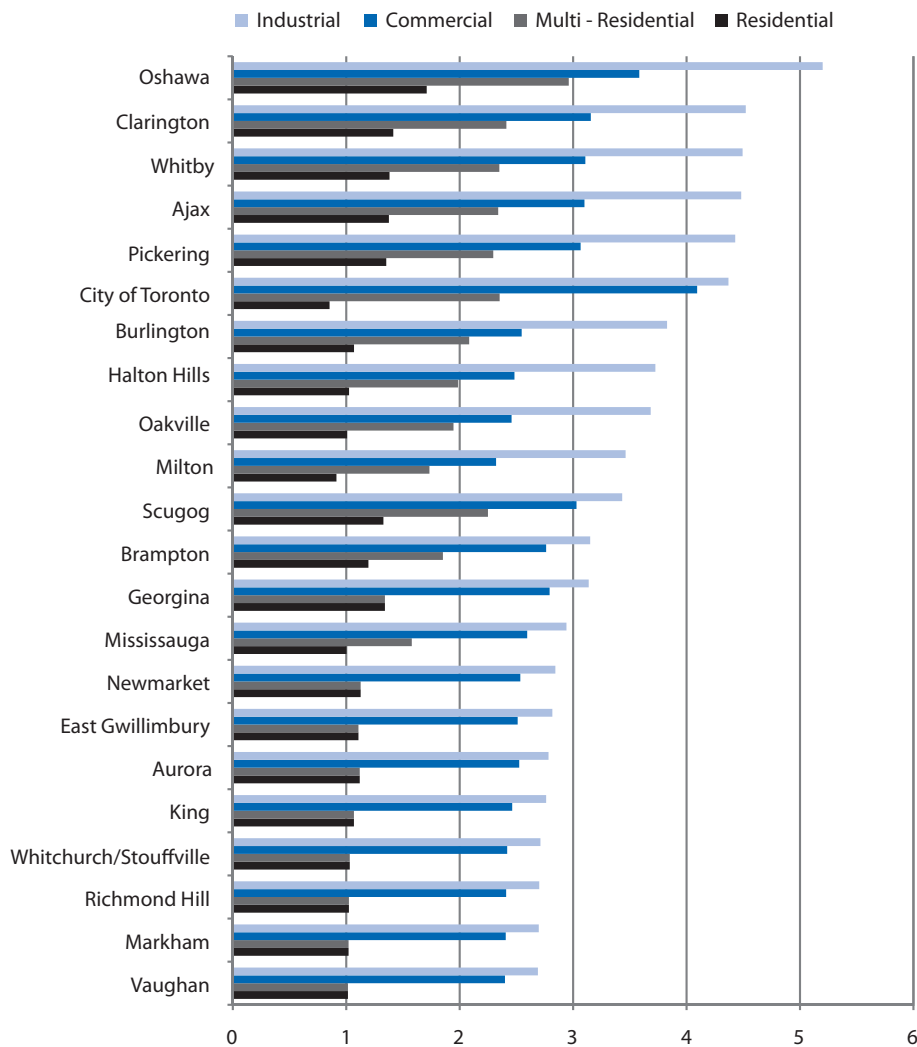
Province. The application of these instruments in Canada is recent, and experience of them is limited. Calgary and Winnipeg started to use them in 2005. Two pilot projects in the Toronto region have been identified as potential beneficiaries for this type of financing arrangement: the subway expansion involving York Region and the City of Toronto; and the West Don lands, a brownfield redevelopment initiative that is part of the revitalisation of the City of Toronto's waterfront.

In order to achieve a wider variety of funding sources, the taxation powers provided by the *City of Toronto Act* could be supplemented – and extended to other municipalities in the Toronto region. The *City of Toronto Act*, which came into force in 2007, gave new powers of taxation to the City. The new taxation power under the Act is a broad authority, limited only by specific restrictions detailed in the Act itself, most notably on income and most types of sales taxes. Land transfer taxes, personal vehicle taxes, parking or advertising taxes are examples of taxes that the City now has the option to levy. And in fact, a land transfer tax and a personal registration vehicle tax have been approved by Toronto City Council and are now in place; together, they are expected to generate around CAD 200 million in revenues for the 2009 fiscal year. The Province would need to amend the *City of Toronto Act* to give the City the authority to levy a fuel or hotel tax. New taxation options could be made available to other municipalities in the Toronto region as well.

3.3.2 Fiscal arrangements stimulating economic development

The announced provincial tax reform will make the Toronto region more hospitable to business. The Province of Ontario launched an ambitious tax reform in its 2009 budget, involving CAD 4.5 billion in tax relief over three years. As part of this tax reform, several tax rates for business will be cut, such as the corporate income tax and capital tax. This will cut in half Ontario's marginal effective tax rates on new investments, to a level that by 2010 would be under the OECD average currently estimated for 2012. In addition, the Ontario government committed itself to harmonise its sales tax with the federal General Sales Tax (GST). The Province of Ontario has proposed to convert the provincial Retail Sales Tax (RST) by July 2010 into a federally administered single sales tax using a value-added tax structure. The current RST applies to many purchases made by businesses in the course of providing goods and services for sale. As a result, a "hidden RST" is embedded in the price of goods and services and passed on to consumers. The proposed harmonised sales tax would use a value-added tax structure, meaning that most businesses would be reimbursed for the tax they pay on most of their inputs. The experience of other Canadian provinces that have undertaken sales tax harmonisation has been that the majority of the savings are passed through to consumers in the first year. Exported goods would also generally be free of an embedded sales tax, making Ontario exports more competitive. This reform should also be helpful in attracting businesses to the Toronto region and should improve business productivity.

However, higher property tax rates on business in the City of Toronto relative to other local governments in the Toronto region have undermined the City's appeal as a business location. In 2008, the industrial property tax rate in the City was one of the highest among municipalities in the Greater Toronto Area, and its commercial property tax was the highest (Figure 3.10). Several businesses have relocated to the areas surrounding the City of Toronto, which in turn may contribute to sprawl (Canadian Urban Institute, 2005). In all local governments in the Toronto region, commercial and industrial property tax rates are higher than those levied on residential property. This practice is historically rooted but is problematic given the value of consumed public services: evidence suggests that businesses use considerably fewer public services than residential properties relative to the property taxes they pay (Wen, 2007).

Figure 3.10. **Property tax rates (in percentages) in the Greater Toronto Area (2008)**

Source: Websites of the municipalities mentioned.

The City of Toronto and the Province of Ontario are implementing policies to moderate municipal business tax rates. The City of Toronto has adopted a programme to shift rates over a 15-year period in order to reduce the differential between residential and business tax rates. This arrangement will be fully implemented for smaller businesses by 2013, and will be complete for the rest of the business community by 2017. The Province of Ontario has made an attempt to converge tax rates: it has restricted levy increases (to a maximum of 50% of residential increase) on multi-residential, commercial and industrial classes where the tax ratios are above threshold levels. This will give municipalities the ability to share the burden of any municipal tax increases among all taxpayers, while continuing to reduce the municipal taxation gap between business and residential property taxpayers. This also ensures a uniform set of tax rules across the Province.¹¹ The new tools and flexibility provided by the *City of Toronto Act* could be used to lower property taxes on businesses in order to attract more investment. The revenue lost in business property tax can be made up using the other taxation instruments available to the City under the Act.

A more level playing field for economic development in the Toronto region is currently being created by converging business education tax rates. Education property taxes are collected by municipalities and remitted to school boards to fund education expenditures, but the tax rates are determined by the Province, which provides grants to school boards from general provincial revenues. For historic reasons, businesses in the City of Toronto face educational tax rates that are higher than those paid by businesses in neighbouring municipalities: 43% higher than the lowest rate in the region (Halton) for the commercial rate (Table 3.1). The City of Toronto has no authority over education property tax rates, as they are set by the Province. This inequity presents a competitive disadvantage to the City and is not related to any additional services that businesses located in the City of Toronto benefit from, considering that the outcomes of education (educated people) are highly mobile and have spillovers to other jurisdictions within the metropolitan region.¹² In order to solve this challenge, the Province of Ontario has implemented a business education tax (BET) reduction plan, which will reduce high BET rates, such as those in the City of Toronto, to a maximum of 1.52% by 2014. In addition, all eligible new construction will immediately be subject to the 1.52% maximum rate. These measures will equalise Provincial education tax rates for manufacturing enterprises across the GTA and reduce (but not entirely eliminate) differences in commercial (*i.e.* office, distribution and retail) property tax rates, thereby helping to stimulate new investment and establish a level playing field for businesses facing investment location decisions. During the transition period, to prevent businesses leaving the City of Toronto because of property tax rates, both the City and the Province could consider accelerating the harmonisation of property tax rates and reducing property tax rates on businesses.

Table 3.1. **Differences in business education tax rates within the Toronto region (2009)**

	Commercial rate	Industrial rate
City of Toronto	1.80%	1.86%
Peel Region	1.44%	1.68%
Durham Region	1.39%	1.94%
York Region	1.39%	1.55%
Halton Region	1.26%	1.86%

Source: Websites of the municipalities mentioned.

3.3.3 *Financing social integration*

Municipalities in the Toronto region carry a large share of the costs for social services. In 1997, the Province of Ontario took full control of education in exchange for an increase in municipal service provision (and, in some cases, associated benefit costs) in welfare assistance, public housing, ambulances, public transit, and water and sewage systems (Tindal and Tindal, 2004). This operation, intended to eliminate overlapping responsibilities between levels of governments, was referred to as “local services realignment” (LSR). As a result, municipalities in Ontario have more responsibility for public health services, social services and social housing services than elsewhere in Canada. Their expenditure share on health and social services is twice as high as the national average for local governments, even though a large share of these expenditures is financed by provincial grants to municipalities.

These responsibilities, however, were not matched with corresponding resources, resulting in fiscal imbalance. In the 1990s, federal reductions in intergovernmental transfers led to provincial cutbacks in services and transfers known as “down-loading”. Down-loading

meant the transferring of certain responsibilities to municipalities and in many instances entailed reductions in provincial grants and service withdrawal from the provincial side. Municipal governments were left to decide whether to fill the gap by these unfunded mandates.¹³ This led to a vertical fiscal imbalance between the Province of Ontario and municipalities in the Toronto region, with a larger share of the budget consisting of provincially mandated services than of revenues from provincial grants.

Since 2008, several measures have been taken to address this fiscal imbalance between the Province of Ontario and its municipalities. The process of down-loading has been partly reversed: on 31 October, 2008, the Province and its municipal partners, including the City of Toronto, released *Facing the Future Together*, the final report of the *Provincial Municipal Fiscal and Service Delivery Review* (PMFSDR). As a result of this review, the Province will begin a phased up-load of *Ontario Works* (OW) Benefits in 2010, up-load court security costs over seven years starting in 2012, up to CAD 125 million a year when fully implemented; and continue with the previously announced up-load of the *Ontario Drug Benefit* (ODB) and the *Ontario Disability Support Program* (ODSP).¹⁴ The up-loads represent a net benefit for Ontario municipalities of CAD 1.5 billion a year by 2018.

Due to long transition periods and worsened economic conditions over 2008-2009, the effects of the fiscal imbalance will however affect the City of Toronto's budget and those of other municipalities in the region until 2018. Municipalities will still bear 20% of the *Ontario Works* benefit costs in 2009 and 17% in 2010, until they gradually fade out in 2018. The average monthly social assistance caseload of the City of Toronto is estimated to surge by 18 000 to 20 000 during the 2009 recession, imposing CAD 65 million to CAD 70 million in additional costs on the City of Toronto. If borne by property taxes, this would represent an additional 4% in revenues (TD Bank Financial Group, 2009b). These social services expenses will crowd out expenditures needed for improvements in infrastructure, limiting beneficial provincial and national spillovers.

Further steps could thus be considered to address the vertical balance between the City of Toronto and the Province of Ontario. This might be in the form of quicker up-loading of social services, for which the City of Toronto and other local governments in the Toronto region are currently responsible. An alternative solution would be for the Province of Ontario to have local governments in the Toronto region share more in the provincial tax base. The *Provincial-Municipal Fiscal Service Delivery Review*, released in 2008, affirmed that all new regulations with an impact on municipalities will continue to be reviewed through the Memorandum of Understanding with the Association of Municipalities in Ontario and the *Toronto-Ontario Cooperation and Consultation Agreement*. Although this commitment is certainly a step in the right direction to avoid down-loading practices in the future, it could be further enhanced by amendments to the *Municipal Act* and *City of Toronto Act*. The key principle could be that when other levels of government introduce policies and measures that result in increased municipal costs, funding should accompany these measures. Such a principle forms part of the *Act on Municipalities* in the Netherlands and is one of the key principles underlying the annual negotiations between central government and associations of local governments in Denmark (Box 3.4).

The horizontal fiscal balance among municipalities in the Toronto region is supported by an inter-municipal equalisation scheme. Several metropolitan areas within the OECD have such schemes, to ensure that municipalities are compensated for certain relatively higher costs for services that benefit the whole metropolitan area, or for relatively lower tax revenue bases that can finance them. This inter-municipal equalisation function is carried out under the GTA "pooling" scheme: under this arrangement, the costs of social assistance and social housing in the Greater Toronto Area are paid from a funding source in which

the tax revenues of all municipalities in this area are pooled. The Province announced in 2007 that it would phase out GTA pooling on an annual basis over seven years and remove CAD 200 million in social assistance and social housing costs funded under the programme. The government will provide compensation for the phase-out of GTA pooling to the effected municipalities. At the provincial level, the Ontario Municipal Partnership Fund (OMPF) assists municipalities with their share of social programme costs; it includes equalisation measures for areas with limited property assessment, addresses challenges faced by northern and rural communities, and responds to policing costs in rural communities.

This inter-municipal equalisation scheme could start to take into account differences in tax revenue bases, so that local governments within the Toronto region have more equal opportunities to provide services to its residents. The OMPF operates at the provincial level, with funding provided to about half of the municipalities in the Greater Toronto

Box 3.4. Institutional arrangements against down-loading in the Netherlands and Denmark

In the Netherlands, legal requirements exist for the central government to compensate sub-national governments in case of decentralisation. The *Act on Provinces* and the *Act on Municipalities* stipulate that the delegation of responsibilities to provinces and municipalities must be accompanied by full coverage of the costs of this new activity. This compensation should preferably be allocated through a general grant rather than a special grant, which should be used only when there is a particular reason for it. This requirement is embedded within a framework of other instruments, such as bi-annual negotiations between the central government and associations of provinces and municipalities, as well as a code of conduct for intergovernmental relations. The bi-annual negotiations allow for discussions on new developments, policies and regulation. They are presided over by the Prime Minister and include the participation of the Minister of Finance, Minister of the Interior and the chairs of the Association of Municipalities (VNG) and the Association of Provinces (IPO).

In Denmark, a similar set of framework conditions exists for intergovernmental finance, although there is no legal requirement for central governments to compensate sub-national governments. Parliament and the national government set country-wide political and economic goals, but the allotment of resources and methods to attain these is reached through voluntary negotiations with associations of local governments and only to a limited extent by input and procedure regulation. Since 1989, this procedure has been codified in an annual negotiation process. The annual agreement, which is normally finalised in the spring, fixes caps on the level of taxation and the level of spending overall, on selected policy areas such as children, seniors, hospitals, handicapped etc., and on economic types (current vs. capital expenditure). The result of the agreement is to a large extent accepted at the local level, and thus the municipalities are willing to hold up their end of the bargain concerning implementation. One of the principles of the system is that if the government makes any commitments in areas that are under municipal control, the municipalities must be compensated. In this way, unfunded mandates are avoided.

Despite similar tendencies in Ontario for consultation between the provincial government and local governments, there is no institutionalised form of annual or bi-annual agreements on budgets or policies, nor is there any legal requirement to compensate local governments for the costs associated with the delegation of government functions. The existence of these elements may have made down-loading of provincial functions in the 1990s more difficult. The initiatives to reverse the effects of down-loading are commendable, but the introduction of some of the institutional elements in play in the Netherlands and Denmark might provide better guarantees for local governments in Ontario that future delegation of functions will come with the required funding.

Source: Netherlands Ministry of the Interior (2007), OECD (2009b).

Area. Some GTA municipalities receive funding as a result of the Rural Communities grant component of the OMPF, which is based on the proportion of the municipality's population that is living in rural areas or small communities. Other GTA municipalities receive OMPF funding as a result of a series of annual one-time transition funding decisions. Funding is being provided to municipalities whose revenue would otherwise be reduced under the Ontario Municipal Partnership Fund by comparison with the funding they received in 2004 through the former Community Reinvestment Fund. Although the OMPF has a province-wide Equalisation grant component, GTA municipalities have not qualified for this component, as their assessment bases are too high. There is no grant component that recognises differences in tax revenue bases within the GTA region. The GTA pooling scheme provided a redistribution of resources in the Greater Toronto area, compensating the City of Toronto (and certain other local governments in the Toronto region) for a higher social welfare burden, but not for a lower tax base. As a result, the local governments in the Toronto region with lower tax bases have fewer possibilities to provide services to their residents that are not covered by government grants, as compared with other local governments in the Toronto region. This situation is less pronounced for the City of Toronto, since it now has a wider set of tax instruments available to it thanks to the *City of Toronto Act*, but it might constrain some of the poorer suburbs within the Toronto region. Other metropolitan areas within the OECD, such as Amsterdam, have developed equalisation schemes that take differences in tax bases into account.

3.3.4 Sustainable infrastructure funding

Urban finance has an impact on public transit and regional land use in the Toronto region. Sprawling development can be stimulated or contained by fiscal arrangements, depending on how land, property and compact development are taxed. Chapter 2 mentioned that several elements in the urban fiscal architecture do not stimulate compact development, such as the current use of development charges, and property tax rates that are higher for rented apartments built before 2002 than for single detached homes. The real costs of car use, including externalities (such as air pollution and congestion), have not been taken into account in the urban finance system in the Toronto region, leading to increased congestion. The current fiscal architecture could be better aligned with public transit and land use policies via (1) development charges; (2) property taxes; and (3) other charges and fees.

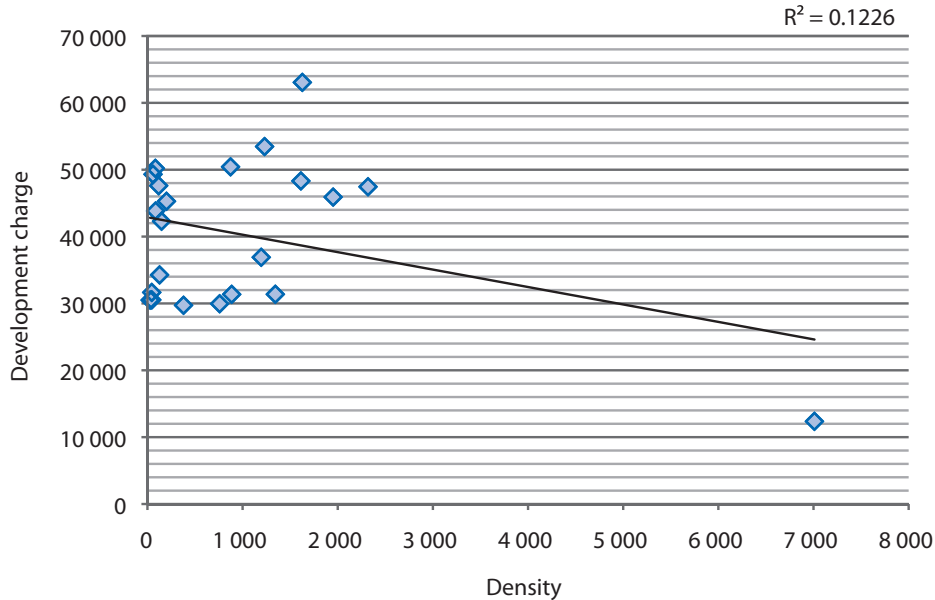
Internalising costs of sprawl via development charges

Development charges can be used to compensate for the costs of sprawl as long as they take into account the real incremental costs for municipalities. Development charges are levied by municipalities in the Toronto region on developers in order to fund services attributable to new development. These charges are regulated by Ontario's *Development Charges Act, 1997*, which provides the eligible services for which a development charge can be levied. In addition to municipal development charges, there are GO Transit development charges to finance growth-related GO Transit capital costs, and education development charges that are levied by school boards to acquire sites for new schools as a result of residential growth.

In practice, there is only a limited correlation between development charges and population density in the Toronto region (Figure 3.11). The level of development charges does not depend on population density. In order to calculate development charges, the municipality determines growth projections, looks at the existing infrastructure capacity, establishes the need and the cost for additional infrastructure and calculates development charges expenditure per capita. The development charge per unit (detached house, apartment, etc.)

is calculated by multiplying per capita development charges expenditure by the average occupancy per unit. Under current development charge bye-laws, larger, built-up urban areas generally have lower development charges. This reflects the fact that development in a larger, built-up urban area results in a smaller increase in the need for eligible services. At the same time, within a large urban centre a development in a specific area may result in a greater increase in the need for eligible services. In these situations, municipalities could make greater use of enacting a development charges by-law for a specific area, commonly referred as area rating.

Figure 3.11. Population density and development charges in the Toronto region (2008-2009)



Source: Data from Web sites of the municipalities in the Toronto region.

Note: The development charge in this figure is for single-family homes, excluding GO Transit charges, but including educational charges.

Area-specific charges could give developers incentives to develop compactly, but they are not widely used in the Toronto region. Various OECD countries, such as the Netherlands, make use of site-specific development charges paid for by either residents or developers. Most development charges applied in the municipalities that make up the Toronto region use a uniform rate for the whole municipality (Table 3.2). This means that the costs for the municipalities are equalised over the various development projects being undertaken in the municipality. Only municipalities in York Region use a mixed system in which municipal-wide charges are combined with area-specific charges. All municipalities in the Toronto region charge higher rates for single homes than for apartments, and several municipalities have a wider set of charging categories, which provides some incentive for more compact development. These differences are however relatively small in comparison to area-specific rates, where the lowest area rate can be six times lower than the highest one.¹⁵ The relatively limited application of area-specific charges can be explained by their potentially contentious nature; they are not negotiated with developers, as was the case before the *Development Charges Act* of 1997 became effective, but imposed upon them. The risk of conflicts with developers can be minimised by applying a universal rate. The disadvantage, however, is that the development charge does not have a direct relation to the costs needed to service a specific project, so it might not encourage developers to develop compactly.

Table 3.2. **Development charges in the municipalities of the Toronto region (2008-2009)**

	Uniform or area-specific	Residential categories	Non-residential categories	Rate for apartments (CAD)	Rate for single homes (CAD)	Commercial rate (CAD per square metre)
City of Toronto	Uniform	5	1	8 021	12 366	99.3
Region of Durham	Uniform	4	3	10 808	18 486	8.8
Durham School Board	Uniform			1 259	1 259	
Clarington	Uniform	4	2	9 940	14 521	54.0
Whitby	Uniform	4	2	7 171	10 208	39.0
Scugog	Uniform	3	1	6 978	12	62.9
Brock	Uniform	4	1	6 305	10 757	46.4
Uxbridge	Uniform	4	2	6 537	10 785	44.7
Ajax	Uniform	4	3	6 409	11 631	130.6
Pickering	Uniform	4	1	5 670	9 981	30.8
Halton Region	Uniform	6	2	14 730	31 387	131.9
Halton School Board	Uniform			2 138	2 138	0.6
Oakville	Uniform	6	2	8 970	14 102	67.6
Burlington	Uniform	8	4	4 633	8 702	32.8
Halton Hills	Uniform	6	4	6 755	13 961	66.1
Peel Region	Uniform	3	2	12 402	17 362	93.4
Peel Board of Education	Uniform			2 141	2 141	5.0
GO (Peel)	Uniform			337	472	
Brampton	Uniform	3	3	8 496	21 941	75.2
Caledon	Town-wide & area specific	8	2	12 771	19 181	42.6
Mississauga	Uniform	3	2	8 464	11 850	52.5
York Region	Uniform	4	2	14 783	23 752	249.0
York Board of Education	Uniform			1 670	1 670	2.8
Vaughan	Town-wide & area specific	3	1	7 425	12 505	20.0
Markham	Town-wide & area specific	4	1	10 220	15 540	4.2
East Gwillimbury	Town-wide & area specific	4	1	3 690	5 904	17.3
Newmarket	Town-wide & area specific	5	2	5 060	7 981	11.1
Richmond Hill	Town-wide & area specific	3	2	5.642	10 395	30.4
King	Town-wide & area specific	4	1	6 900	11 391	51.8
Whitchurch Stouffville	Town-wide & area specific	4	2	5 497	9 682	65.1
Georgina	Uniform	4	1	3 009	4 370	16.9

Note: Storm development charge in Peel Region (CAD 53 363 per hectare). Development charges in Georgina are uniform, but make a slight difference between municipally serviced plots and those with private wells/septic tanks. When municipalities use different rates for different categories for apartments, the rate for large apartments (more than two bedrooms/larger than 70 square metres) is selected.

Source: Web sites of the municipalities concerned, in addition to information provided by the City of Toronto and the Province of Ontario.

In addition, the costs of sprawl are not always completely internalised by development charges in the Toronto region. An explanation for this is that several cost categories cannot be recovered via development charges. As a general rule, only capital costs of certain “hard” infrastructure categories can be completely recovered by development charges. This is the case for water and wastewater services, storm water drainage, roads, electrical power, police and fire protection services. Services that cannot be covered by a development charge are hospitals, cultural or entertainment facilities, tourism facilities, acquisition of land for parks, waste management services and municipal administrative buildings. For some service categories, not all costs can be recovered, but a 10% discount applies; this is the case for transit, recreation facilities and other services.¹⁶ The discount for these services is funded by other sources of municipal revenue, such as property taxes or user fees. Development charges exemptions for high-density developments are not widely applied, although they are allowed in the *Development Charges Act*. Some municipalities use exemptions: the municipality of Brampton, for example, applies discounts on development charges for inner-city development. This application could form an effective instrument to contain sprawl. Only a limited number of municipalities, however, apply such exemptions.

Moreover, it will be difficult for intended and projected increases in public transit to be covered by development charges. The *Development Charges Act* spells out certain rules for calculation; one of them states that the average service level over the previous 10 years forms the basis for calculation and that the development charge cannot recover money that would pay for services that exceed this level. Moreover, capital costs calculated must be net of any surplus capacity in existing services. These provisions are sensible from the viewpoint of accountability and predictability for developers, but they make it difficult to recover transit costs in a context where the intent is to raise public transit shares, following the provincial land use vision as expressed in the *Growth Plan for the Greater Golden Horseshoe*.

In conclusion, municipal use of development charges and cost coverage of the charges could be brought more in line with the provincial land use vision. Municipalities could implement more widely the area-specific rather than municipal-wide development charges and apply exemptions (or discounts) for high-density projects in order to stimulate compact development. The government of Ontario recently announced that it does not intend to change the *Development Charges Act* in the near future. The Province of Ontario could monitor the uptake of area-specific charges. Depending on the progress towards more sprawl-containing development charge implementation, it could consider amendments to the Act to include more categories of costs that can be covered and to loosen regulations on cost estimations based on historical trends.

Local taxes should be redesigned so as to avoid sprawl

Sprawl-inducing elements within property taxes need to be avoided. Multi-residential property tax rates (levied on rental apartment buildings) within most local government units in the Toronto region are higher than the residential rates levied on other housing options, sometimes up to three times as high.¹⁷ The property tax rate for new multi-residential property since 2002, however, has been identical to the residential property tax rate. Although this implies that the disincentives to build multi-residential units have been removed, there are still disincentives to live in multi-residential property built before 2002, and incentives for tenants to choose housing options, such as townhouses and single family homes, that are generally less dense than those in multi-residential property. Nor are people in multi-residential properties consuming more government services financed by the property tax that would justify higher tax rates. The elimination of these differences

would help to limit sprawl. An additional advantage would be that the housing option for many newcomers to the Toronto region, rental apartments, would become more affordable in comparison to other housing options.

Tax redesign could be considered in order to tax suburban sprawl. Through differential taxation, a special area tax could be applied on suburban properties, or a set of cascading taxes could be used that gradually increase, moving from the city centre towards the periphery. A relatively simple form of such a tax might be a higher standard property rate for suburban inhabitants or preferential rates for multiple dwellings. Although the introduction of such a tax would be politically difficult to implement, some cities have introduced a tax along these lines. The City of Austin has, for example, introduced a special transportation levy on all municipal utility bills, based on the estimated average number of daily trips made by individuals residing in different types of property (Box 3.5). Compact development is also stimulated by introducing a form of land taxation, for example through a split-rate property tax. The key characteristic of such a tax, applied in Pittsburgh and Harrisburg and a selection of other cities within the OECD, is that land value is taxed more heavily than the buildings on the land (Box 3.6).

Box 3.5. Transport utility fees in Austin

Municipal utility bills in the City of Austin (Texas) include a transportation utility fee based on the average number of motor vehicle trips generated per property, reflecting its size and use. The levy averages USD 30 to 40 per year for a typical household, but differentiation takes place according to housing type. Single-family housing development is for example estimated to generate 40 trips per acre per day, condominium residential use and townhouse residential use generate approximately 60 motor vehicle trips per acre per day, and offices generate around 180 motor vehicle trips per acre per day. This results in higher bills for sub-urban households. The City of Austin provides exemptions to residential properties with occupants who do not own or regularly use a private motor vehicle for transportation, or if the user is 65 years or older.

Source: Litman, T. (2009).

Wider application of user fees

User fees in the Toronto region should be designed in such a way as to stimulate efficient use of resources. User fees are ideal for funding local services where specific beneficiaries can be identified and non-payers excluded. Fees are particularly effective when they recover full costs and when fees are paid according to individual or household use, as these provide residents with strong incentives to make more efficient use of resources. With regards to water consumption by households, fees are levied according to household use in all local governments in the Toronto region, which gives households an incentive to conserve water. The Ontario Ministry of Energy and Infrastructure has stated that moving towards full cost recovery for water and wastewater services is a fundamental principle of its infrastructure strategy. With regards to waste collection, however, practices in the Toronto region are more mixed. The City of Toronto in 2008 introduced a volume-based rate structure for residential waste collection customers, allowing fees to be tied to the volume of waste produced by residential customers and per building (in the case of multi-unit residential customers). The waste collection fees in the regional municipalities

in the Toronto region are not connected to waste volumes, but the regions of Peel, Halton and Durham all put a maximum on the number of items that can be presented per collection round. In the case of Peel Region, two bag items per week can be set out for collection, with the possibility of buying a CAD 1 garbage tag for each additional item. The objective of all such approaches is to achieve more efficient resource use of solid waste, through increased diversion, by the creation of a disincentive to dispose of waste. The example of the City of Toronto's volume-based fee structure may provide a more direct linkage of the level of fee paid with the generator of waste. With regards to electricity pricing, the Province of Ontario announced in 2009 that time-of-use electricity rates would be rolled out in Ontario, starting with 10 000 homes in the City of Toronto from June 2009, to 1 million households in Ontario in the summer of 2010.

Box 3.6. Split-rate property taxation in Pittsburgh

The conventional property tax has been criticised for its effects on urban sprawl. Distortions created by the property tax may include inefficient spatial expansion of cities, and the tax may be one of the causes of urban sprawl (Brueckner and Kim, 2003). These effects on urban sprawl could be tackled by taxing land at a higher rate than the built structure. This is done in a split-rate or two-rate property tax structure that taxes the assessed land value of each parcel at a higher rate than that on the building assessment; this contrasts with the conventional equal-rate system, which applies the same tax rate to land and to improvements. Placing proportionally higher taxes on land makes it more costly to hold on to vacant or under-utilised, centrally located sites. Reducing the tax burdens on improvements would facilitate revitalisation and the replacement of obsolete buildings in older central cities. The two-rate tax would also discourage land speculation.

In 1980, the City of Pittsburgh revamped its property tax system by raising tax rates on land to more than five times the rate of structures, from its tax rate on buildings that was twice the rate on land from 1913 to 1979. This increase of tax rates has proved a fertile basis for research on the effects of a split-rate property tax. As the change in property tax regime in 1980 was followed by a striking building boom, far in excess of anything that took place in the region, much of the research has focused on determining to what extent the building boom was due to the tax reform. Oates and Schwab (1997) have shown that it is not only underlying favourable economic factors, leading to low downtown office vacancy rates, that have accounted for the Pittsburgh building boom. They point out that none of the other cities in the United States with similarly low office-vacancy rates experienced an equivalent expansion in commercial building activity, suggesting that the land-value taxation has provided city officials with a tax instrument without damaging effects on urban development. Although this study has certain limitations (Cohen and Coughlin, 2005), other studies on split-rate property taxes have also found positive results. Banzhaf and Lavery (2008) found that the primary effect of split-rate property taxes in Pennsylvania is more housing units, suggesting that the split-rate tax is potentially a powerful tool against sprawl. A disadvantage of the split-rate property tax could be the transaction costs of valuing urban land values independently from built structures, which would be necessary in order to levy the split rate.

In the Toronto region, the existing legislation effectively discourages developers from engaging in brownfield and infill development. Leaving urban land undeveloped is in many cases a beneficial option for developers (but not for the community), creating a pattern of high-density development next to low-density development. The introduction of a split-rate property tax might create more incentives within the Toronto region for compact development.

Notes

1. This was the report by the Task Force on Greater Toronto (1996), commonly referred to as the Golden Report. Another report was also ignored, the “Who Does What Panel”. This group recommended that the provincial government take responsibility for all policies that generate general benefit or are income-redistributive, such as education, social services and health, and that local government takes charge of services more related to local property.
2. These are gross expenditures, that is: expenditures prior to offsetting provincial and federal conditional grants or transfers, and any fees and charges.
3. The debate between proponents of inter-municipal competition and co-ordination remains unresolved. Hawkins and Ihrke (1999) analyzed 30 empirical studies and concluded that 21 supported the hypothesis that inter-municipal competition lowers the cost of public services or does not increase expenditures. Nine studies in their analysis, however, concluded that inter-municipal competition increases costs or has other damaging effects. Hamilton et al. (2004) added to this discussion about horizontal government a vertical component expressing whether a state is centralised or decentralised. Their study suggests that the metropolitan areas in the United States that are the most competitive are centralised regions within decentralised states.
4. New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador.
5. In addition to Metrolinx, there is also the Southern Ontario Gateway Council, whose goal is to make transportation throughput in the regions of Southern Ontario more efficient and competitive.
6. The Canadian Territories north of the 60th parallel have benefited from the Northern Development programme of the federal department of Indian and Northern Affairs for several decades. The 2009 federal budget also announced the creation of a stand-alone regional development agency for these three Territories.
7. As will be explained in section 3.3, many of these social services programmes are currently being up-loaded to the Province of Ontario.
8. Infrastructure Ontario’s Alternative Financing and Procurement model uses private financing to strategically rebuild vital infrastructure. Depending on the specific project, private sector organisations may be asked to provide proposals to design, build, finance or maintain the building. AFP projects are generally large, complex projects where the benefits to the public sector of transferring risks to the private sector exceed the costs charged by the private sector to compensate for assuming the increased risk.
9. For a meta-analysis of the different studies, see Debrezion et al. (2007), who find a price gap between zones within a quarter-mile of the railway station and other areas of 4.2% for the average residence and about 16.4% for the average commercial property.
10. The Province of Ontario allows municipal borrowing only for capital expenditure. For municipalities other than the City of Toronto, annual repayment in respect of long-term borrowing may be not more than 25% of the municipality’s own source revenues. (As a result of the City of Toronto Act, the City of Toronto has its own debt limit framework). If a municipality wants to exceed these limits, it must make an application to the Ontario Municipal Board, which will make a decision on the application. Municipalities cannot run deficits in their operating budgets, since they are explicitly prohibited from doing so by provincial legislation. Both the Ontario Municipal Board and the Ontario Ministry of Municipal Affairs have a significant role in the process that regulates the level

of indebtedness and the general financial affairs of municipalities. Under certain circumstances, the statute allows for ministry or board appointees to take over the financial operations of the local government and to charge back the costs to the local tax base.

11. In the period 2001-2003, municipalities in Ontario could not increase levies on commercial, industrial or multi-residential classes if the tax ratio of that class relative to the residential tax rate exceeded the prescribed provincial threshold: 1.98 for commercial property, 2.63 for industrial property and 2.74 for multi-residential property (Mintz and Roberts, 2006).
12. Nor do Toronto's publicly funded schools benefit from businesses paying a higher rate of education taxes, as all schools are funded through a uniform, province-wide, per student funding formula that uses provincial revenues to top up any portion of per student funding not covered by property taxes.
13. Down-loading was particularly severe in Ontario. Although other municipalities in Canada also complained about it, there are indications that the municipal fiscal squeeze in the 1990s may have been largely an Ontario problem (Macmillan, 2006). This disentanglement of responsibilities did not take the same form in other provinces. Due to the provincial fiscal squeeze in the past, as well as the choice of the city not to cut expenditure and use property tax increases as actively as other municipalities, the City of Toronto has used operating surpluses and one-time revenues (such as land sales proceeds) for maintenance of infrastructure, and has used reserve funds to alleviate annual budget pressures.
14. The previously announced up-load included the up-loading the municipal cost of ODB effective January 1, 2008; starting in 2009, up-loading the ODSP costs over three years, with ODSP administration costs being up-loaded effective January 1, 2009.
15. This is for example the case in the town of Richmond Hill, where the Oak Ridges Lake Wilcox (Douglas Road) development area is charged CAD 30 453 per net hectare, whereas the Elgin West development area is charged CAD 189 946 per net hectare.
16. The 10% discount also applies to old-age homes, library facilities, parkland development, social housing, emergency shelters, parking, airports, day care space and works vehicles and equipment.
17. For example, the residential property tax rate in the City of Toronto over 2009 was 0.8547807%, whereas the multi-residential property tax rate was 2.2893418%. The property tax rate for new multi-residential property was, however, identical to the residential property tax rate.

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OECD PUBLISHING, 2, rue André-Pascal, 75775 PARIS CEDEX 16
PRINTED IN FRANCE
(04 2009 12 1 P) ISBN 978-92-64-07940-3 – No. 57203 2010

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TORONTO, CANADA

The Toronto region is one of the chief economic powerhouses of Canada. It generates almost one-fifth of national GDP and 45% of Ontario's GDP. The region is home to 40% of Canada's business headquarters and is a main manufacturing hub, with major automotive, biomedical and electronics companies. Toronto is one of the most diverse metropolitan regions in the world: half of its population is foreign born and it hosted 40% of all immigrants to Canada during 2001-2006.

Nevertheless, the region's current economic development model is under pressure and its economic performance has been mixed in recent years. From 1995 to 2005, GDP per capita and GDP growth rates were below the Canadian average while its annual economic and labour productivity growth were lower than the average for OECD metropolitan regions. During this period, population growth boosted demand in the construction, sales and retail, professional and financial services sectors. However, the recent decline in the area's manufacturing jobs has illustrated the structural difficulties of some traditionally strong areas, such as the automotive and electronics industries.

This *Review* proposes a new sustainable competitiveness agenda to enhance productivity, focusing on innovation, cultural diversity and infrastructure, as well as on green policies. To implement such an agenda, the *Review* proposes improving the current governance framework by intensifying strategic planning at the level of the Toronto region.

The *Territorial Review of Toronto* is integrated into a series of thematic reviews of metropolitan regions undertaken by the OECD Territorial Development Policy Committee. The overall aim of these case studies is to draw and disseminate horizontal policy recommendations for national governments.

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