

# PROSPECTS FOR ONTARIO'S PROSPERITY

A look back and a look ahead

TASK FORCE ON COMPETITIVENESS, PRODUCTIVITY  
AND ECONOMIC PROGRESS

# 10

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## **Task Force on Competitiveness, Productivity and Economic Progress**

The Task Force on Competitiveness, Productivity and Economic Progress was announced in the April 2001 Speech from the Throne. Its mandate is to measure and monitor Ontario's competitiveness, productivity, and economic progress compared to other provinces and US states. In the 2004 Budget, the Government asked the Task Force to incorporate innovation and commercialization issues in its mandate. The Task Force reports directly to the public.

It is the aspiration of the Task Force to have a significant influence in increasing Ontario's competitiveness, productivity, and capacity for innovation. This, we believe, will help ensure continued success in the creation of good jobs, increased prosperity, and a high quality of life for all Ontarians.

The Institute for Competitiveness & Prosperity is an independent not-for-profit organization established in 2001 to serve as the research arm of the Task Force. Working Papers published by the Institute are primarily intended to inform the work of the Task Force. In addition, they are designed to deepen public understanding of macro and microeconomic factors behind Ontario's economic progress and stimulate debate on a range of issues related to competitiveness and prosperity.

Comments on this Tenth Annual Report are encouraged and should be directed to the Institute for Competitiveness & Prosperity. The Task Force and the Institute are funded by the Government of Ontario through the Ministry of Economic Development and Innovation.

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ONTARIO'S PROSPERITY**

A look back and a look ahead

**Tenth Annual Report**

November 2011

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ON BEHALF OF ONTARIO'S TASK FORCE ON COMPETITIVENESS, PRODUCTIVITY AND ECONOMIC PROGRESS, I am pleased to present our Tenth Annual Report to the Ontario public, *Prospects for Ontario's prosperity: A look back and a look ahead*. Because of this special anniversary and the beginning of a new government in Ontario, we look back over the decade since 2001 and ahead to 2020 in this year's Report. Our challenge has been, and continues to be, to achieve our full economic potential through higher productivity and more robust innovation performance.

A recurring theme over the past ten years has been a recognition that Ontario is one of the most competitive and prosperous regions in the world. We have much to be thankful for – a rich endowment of natural resources, a tradition of building great physical assets and infrastructure to support prosperity, and a talented and diverse workforce that can get the job done.

But despite these great strengths and solid economic results, we could do so much better. We have a wide prosperity gap with other large North American jurisdictions. The source of this gap is our inability to be as innovative as we could be in our economic life. While we lead most other regions around the world in competitiveness and prosperity, we do so largely by working more, not by being more innovative and productive – or working smarter.

In taking stock of the past decade, we have some significant accomplishments to celebrate. Frankly, these accomplishments are more in the public policy arena than in the business sector.

The provincial government has helped turn around our flagging investment in post secondary education. Along with the federal government, it has moved our tax system for business investment from being one of the world's worst to one that is better than most. The province has worked closely with the federal government to expand international trade and has avoided the worrisome trend toward protectionism that we have seen elsewhere, particularly in the United States.

Going forward, the provincial government should continue its international trade initiatives, keep investing in post secondary education, and explore new approaches to its Innovation Agenda. We urge the federal and provincial governments to build on our tax policy accomplishments by exploring fundamental tax reform that is surely coming in other parts of the world.

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While we lead most other regions around the world in competitiveness and prosperity, we do so largely by working more, not by being more innovative and productive – or working smarter.

The positive developments in public policy will not turn our innovation performance around overnight. Education investments take up to a generation to deliver a return, negotiations for trade deals are slow processes, and tax policy changes are just barely implemented. But they are a solid platform to support more innovation by our businesses.

Our business leaders and people understand the need for innovation, but they still need to turn these positive attitudes into action. They cannot be complacent; instead, they must relentlessly pursue improved products, services, and processes. Our businesses have to step up investments in innovation – from R&D and patenting to adapting existing technology to their business; from investments in physical capital to investments in human assets.

As in past Reports over the decade, we offer a set of recommendations for an overall Prosperity Agenda for 2020. And, as in the past, none is a quick fix, but they put Ontario on the right track to build a more competitive and prosperous economy.

Ontario has many of the building blocks to achieve its full prosperity, productivity, and innovation potential. Ontarians need to put them together for the benefit of ourselves and our future generations.

We gratefully acknowledge the research support from the Institute for Competitiveness & Prosperity and the funding support from the Ministry of Economic Development and Innovation. We look forward to sharing and discussing our work and findings with all Ontarians. We welcome your comments and suggestions.



**Roger L. Martin, Chairman**

Task Force on Competitiveness, Productivity and Economic Progress  
Dean, Joseph L. Rotman School of Management, University of Toronto

# PROSPECTS FOR ONTARIO'S PROSPERITY





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IN THIS TENTH ANNUAL REPORT TO THE PEOPLE OF ONTARIO, the Task Force on Competitiveness, Productivity and Economic Progress looks back on the last decade of economic progress in the province and looks ahead with recommendations for stakeholders in our future prosperity. This historical and future perspective is the essence of this year's Annual Report, and is especially timely as a new government begins its mandate.

But even on this occasion for a long-term perspective, it is hard to avoid a review of the recent tumultuous past. Ontario, the rest of Canada, and countries around the globe have been on an economic roller coaster. And it's not over yet.

Over much of the decade since our establishment in 2001, Ontario experienced moderate growth in Gross Domestic Product (GDP). But it was too moderate for our economy to achieve its full economic potential. And since the beginning of the downturn in 2007, GDP growth has been anemic. The net effect is that between 2001 and 2010, Ontario's GDP per capita has barely budged.

Our stock market has been whipsawed. Between 2002 and 2008, the TSX index more than doubled. It has swung dramatically in the past three years.

The Canadian dollar has strengthened since 2002, when it was at 62 cents, reaching \$1.08 in November 2007. Recently, it has fallen back from that high and stood near parity in October 2011.

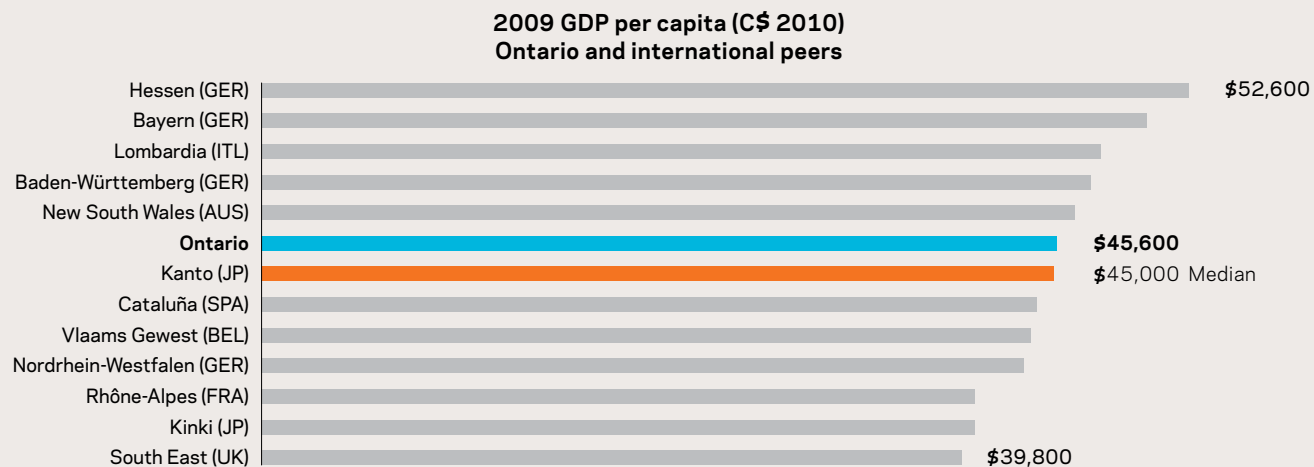
The dollar's rise has certainly boosted pride among Ontarians, but it had severe consequences for our export industries, particularly manufacturing. Between 2002 and 2009, Ontario's manufacturers shed 300,000 jobs. While the hemorrhaging has stopped, there is no evidence that these jobs will be coming back soon.

Despite the recent losses in manufacturing jobs, for most of the past decade, we have experienced low and declining unemployment rates. At the outset of our work, Ontario's unemployment rate stood at 7.0 per cent and then declined to a low of 5.9 percent in May 2006. But, with the onset of the recession beginning in December 2007, the rate turned up to 9.4 percent, adding 261,000 workers to the unemployment rolls. In last year's Annual Report, we ventured the hope that the recession was over, but the August 2011 unemployment report and other recent economic reports here in Canada and in the United States hint that we may be headed toward a double dip recession.

The seeds for this decline and instability were not sown in Ontario. All developed economies are undergoing this turmoil. Ontario and Canada have experienced less economic volatility than many other countries, and we do not face the same level of challenges most do. Many have truly daunting government deficits and debt loads, high average lengths of unemployment, and financial systems that are still not back to full health. But we cannot be complacent, especially as economic indicators around the world become more discouraging.

# Our economy is standing still while other jurisdictions stay ahead of, or gain, on us.

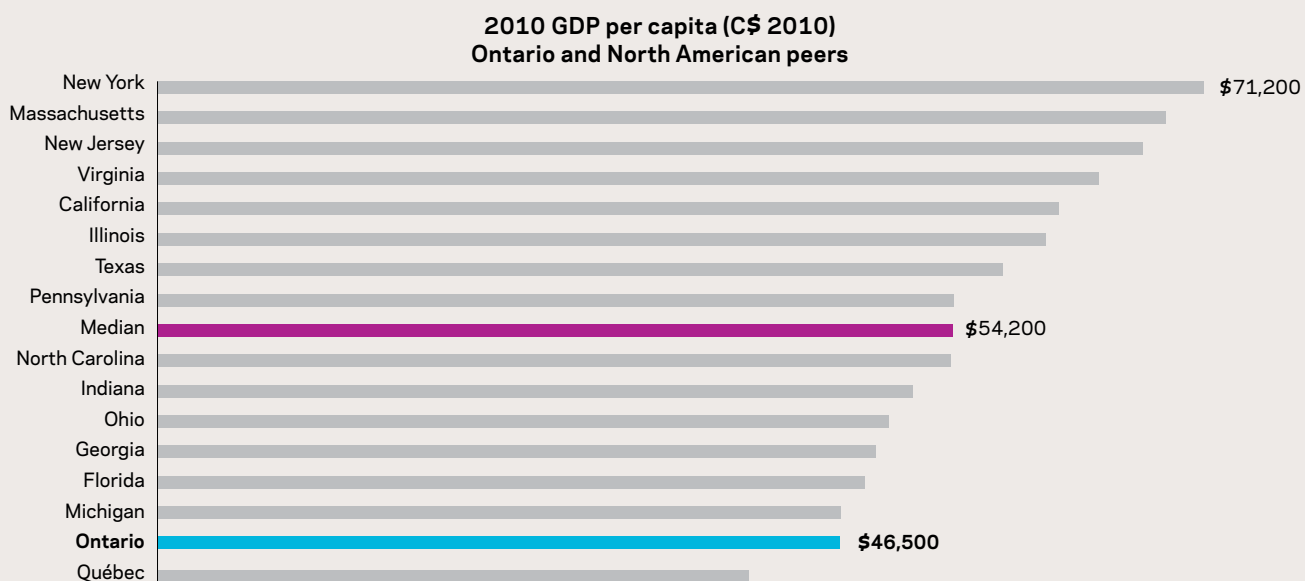
Exhibit 1 Ontario ranks among the leading international peers



Note: Because of limited GDP data on Kanto & Kinki, Japan's national GDP growth rate from 2008 to 2009 is used to estimate Kanto & Kinki's GDP in 2009. All currencies converted to Canadian dollars using PPP.

Source: Institute for Competitiveness & Prosperity analysis based on data from Statistics Canada; Australian Bureau of Statistics; Ontario Ministry of Finance; Statistische Ämter Des Bundes Und Der Länder; Regional Statistical Yearbook Lombardia; National Bank of Belgium; Institut national de la statistique et des études économiques (INSEE); SNA Statistics National Accounts of Japan; Japan Statistics Bureau & Statistics Center; UK Office of National Statistics; Instituto Nacional de Estadística; Eurostat; OECD and IMF.

Exhibit 2 Ontario trails its North American peers



Note: US GDP numbers converted to Canadian dollars using 2010 PPP.

Source: Institute for Competitiveness & Prosperity analysis based on data from Statistics Canada; Ontario Ministry of Finance; Banque de données des statistiques officielles sur le Québec; US Department of Commerce, Bureau of Economic Analysis and US Census Bureau.

Even with all the economic uncertainty in the air, our message to Ontarians remains the same as it has been over the decade: we have great strengths as a province and yet we seem not to be able to achieve our full prosperity potential. We offer no silver bullets or quick fixes to propel us out of this inertia. Instead, we recommend an ongoing Prosperity Agenda that takes us in the right direction and will pay off in the long term.

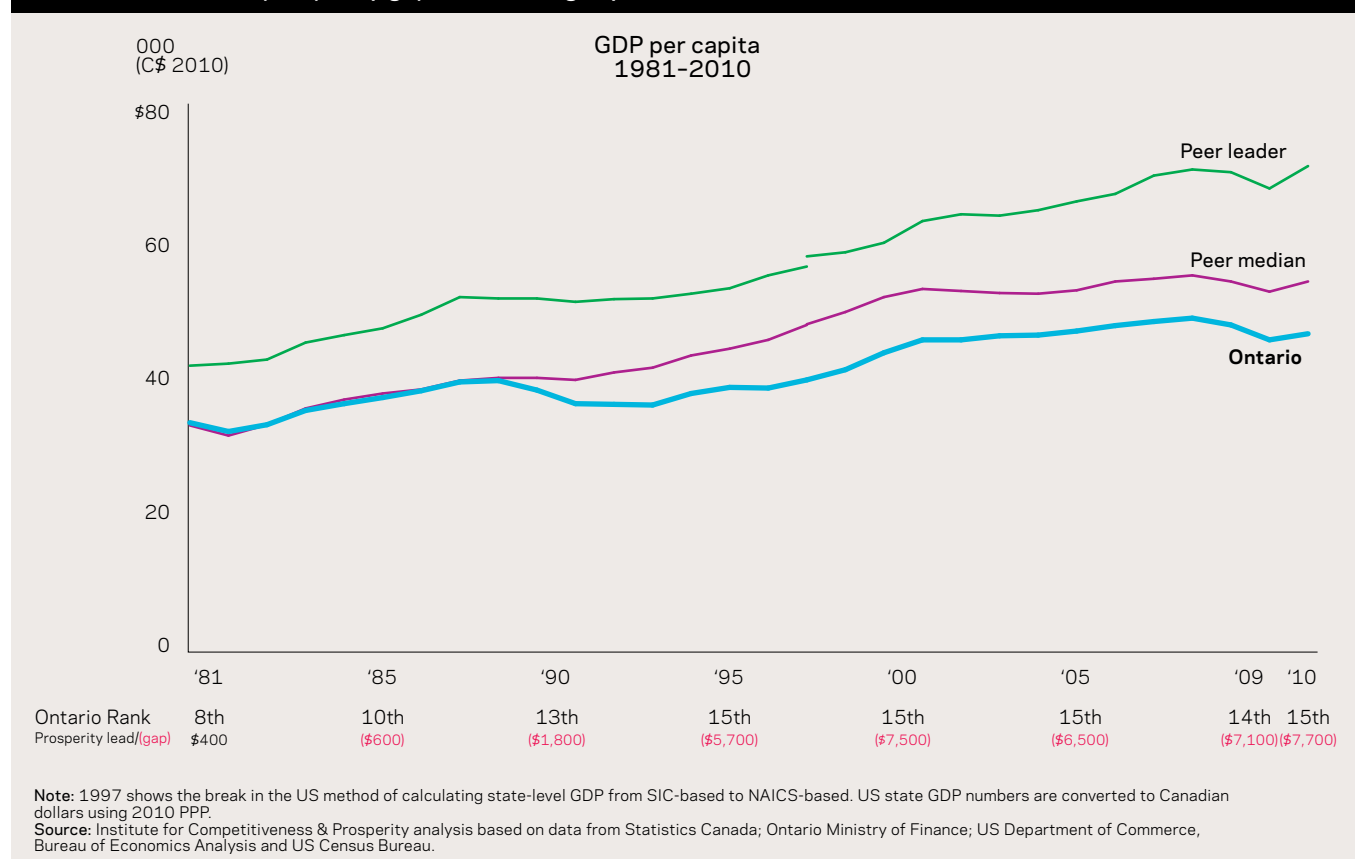
We have seen some good progress on some aspects of our Agenda in recent years. But, in many ways, our economy is standing still while other jurisdictions stay ahead of or gain on us.

Among large advanced economies, we are one of the most prosperous, outpacing most regional economies in Europe, Japan, and Australia in GDP per capita (**Exhibit 1**). Our businesses, workers, and governments generate more value from our endowment of resources than most large diverse economies around the world.

But, closer to home, in populous states and provinces in North America, Ontario ranks a dismal fifteenth out of sixteen. In 2010, Ontario trailed the median of these North American peers by \$7,700 per capita or 14.2 percent (**Exhibit 2**). (In all our analyses, unless otherwise stated we use constant 2010 dollars converted at the Canada/US purchasing power exchange rate of 1.203.)

This has changed little since 2002, when the gap was \$6,300. Back in 1981, Ontario stood above the median. But through the recession of the early 1990s, we fell behind these large US states and have not been able to rank better than fourteenth in the last decade (**Exhibit 3**).

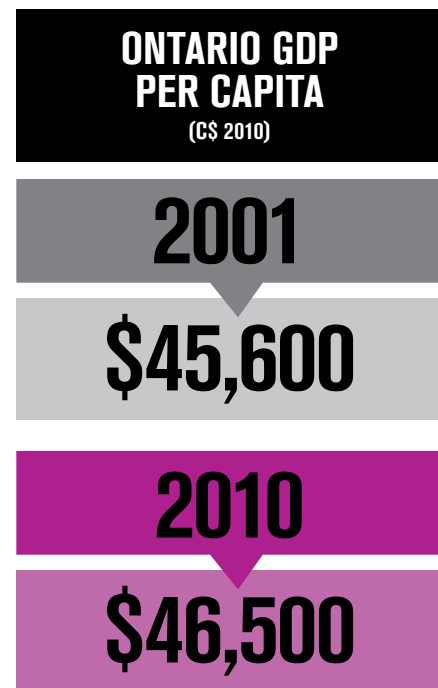
**Exhibit 3 Ontario's prosperity gap widened slightly in 2010**



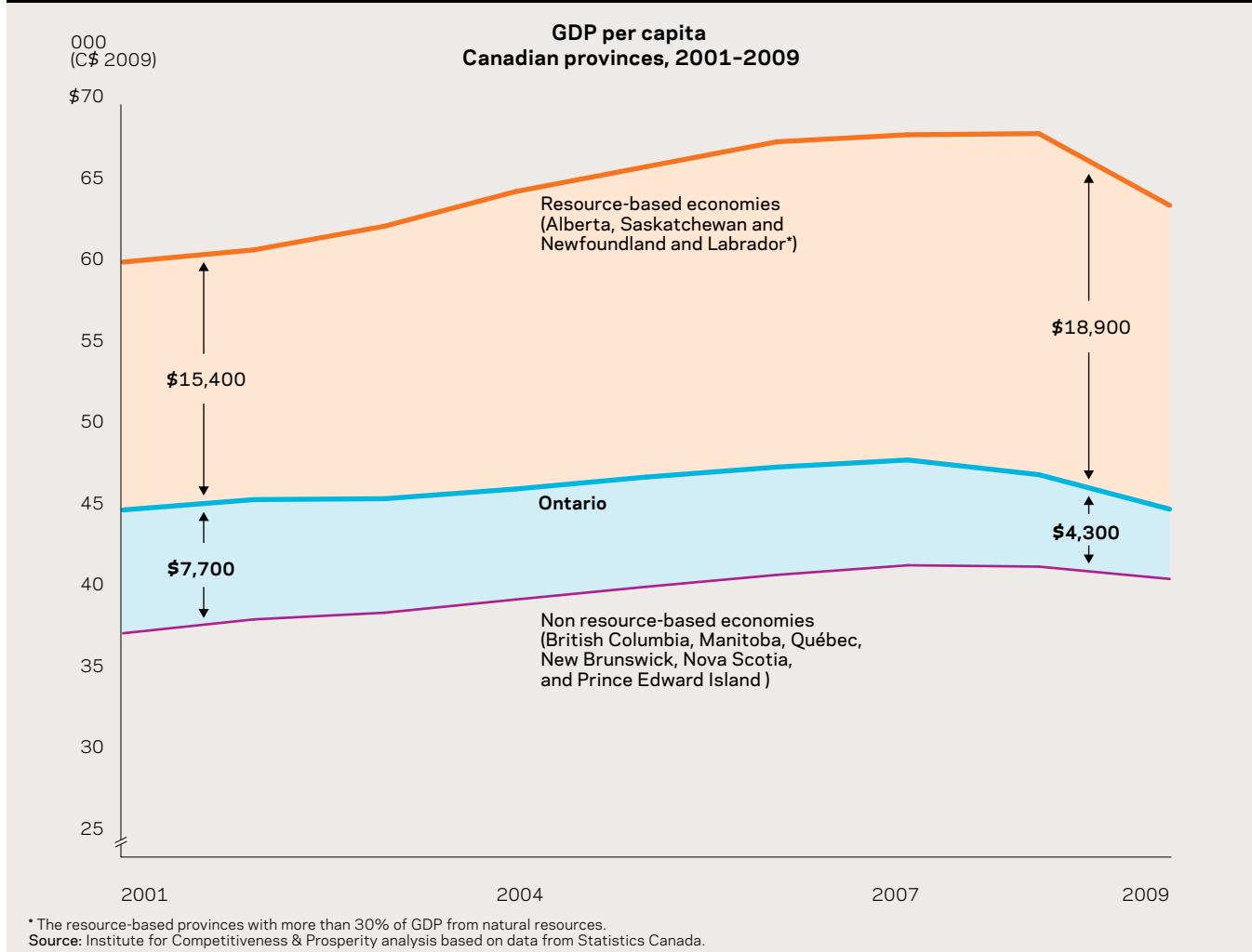
We continue to believe that Ontario's true benchmarks are other large, developed provinces, states, and regions around the world. But, to make more concrete this sense of economic drift in Ontario, it is also worth examining our standing inside Canada.

Our economic performance is falling behind that in other Canadian provinces. Against the three provinces where resource development accounts for more than 30 percent of their GDP – Alberta, Saskatchewan, and Newfoundland & Labrador – Ontario fares poorly (**Exhibit 4**). This comparison is not particularly apt, as it is hard to credit these provinces with great economic policy when they benefit significantly from the increase in world prices of oil and other commodities. However, against the other non-resource provinces, Ontario's performance has not shone either. No doubt, this is partly because our manufacturing industry has been severely hurt by the dollar and the current global downturn. But we cannot expect a turnaround in this area. So we have to build a more innovative economy – the key to thriving in the increasingly competitive global environment.

In taking stock of the past decade, we have some significant accomplishments to point to. They are more public policy accomplishments that build Ontario's capabilities, rather than private sector achievements. None will fix things quickly, but they put Ontario on the right track to build a more competitive and prosperous economy.



**Exhibit 4 Ontario's GDP performance compared to other Canadian provinces has been lackluster**



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- In our First Annual Report, we concluded that Ontario was not investing adequately in post secondary education. In that Report and in our subsequent work, we recommended that Ontario residents and its governments invest more in developing our human capital. In 2005, the provincial government introduced Reaching Higher, a \$6.2 billion increase in funding for post secondary education. These investments in our colleges and universities created more spaces for our students at undergraduate and graduate levels. We have seen a steady increase in admissions to our colleges and universities. This fall, enrollments in our universities reached an all-time high with 90,000 new students. In colleges, most recent data for the years 2009 and 2010 also indicate a record high registration. Given the importance of post secondary education in strengthening the skills of Ontarians and on local economic development, these investments will pay off.
  - Through much of our work, we have been vociferous critics of our tax system. Our focus has been on the punishingly high marginal effective tax rates on new business investment. In our Seventh Annual Report, we observed that Ontario had the highest rates of taxation on new business investment among developed economies. Our corporate income tax rates were higher than those of many of our trade partners; we had an antiquated sales tax that piled tax on top of tax as businesses invested; and we had a capital tax to punish previous business investments.

But our governments have been working at improving our tax system. In 2007, the federal government announced a stepped reduction in federal corporate income taxes – with rates falling from 22 percent in 2007 to 15 percent in 2012. Federal and provincial governments have eliminated capital taxes in Ontario. And, best of all, the provincial government converted our retail sales tax to a value added tax in 2010 and reduced corporate income taxes here in Ontario.

The net effect is that Ontario's tax regime has moved from worst among developed economies to being better than average. Again, we shouldn't expect investment to increase dramatically overnight – and the improvements are not yet fully implemented – but we can now point to our tax system as a competitive advantage.

- The Task Force has been urging the federal and provincial governments to expand international trade, an important element for improving our innovation capabilities. On the one hand, expanded trade means more export opportunities for Ontario businesses to reach larger markets to supplement our own, and to help support businesses as they grow and afford the investments in the innovation necessary to be competitive. Our businesses also benefit from the pressure exerted by more sophisticated customers from around the world.

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On the other hand, more imports put pressure on our businesses, forcing them to expand their capabilities to meet new competitive threats. Some of our businesses are stretched too far by this competition and exit, as was the experience observed in Canada after the Canada-US Free Trade Agreement of 1987.

In the past decade, Canada has negotiated several new bilateral trade deals. Currently, with the urging of Ontario and Québec, Canada is negotiating a freer trade deal with the European Union. And we are at the early stages of negotiations with India and Brazil. While the US government sends mixed signals on its desire to expand trade, Canada is openly seeking new trade relations, and Ontario has been a significant partner with the federal government in this enlightened stance.

- The Task Force has some accomplishments in ending bad public policy. In particular, we have been consistent proponents of ending special tax treatment for particular kinds of venture capital, namely Labour Sponsored Investment Funds (LSIFs). Based on the mistaken premise that Ontario's innovative startup firms need access to greater quantity of capital, regardless of its quality, the Funds offered generous tax benefits to individual "retail" investors. These investors generated a return through RRSP tax breaks. They were less interested in, and capable of, supporting specific startups with experience and specialized knowledge – as important to startups as capital. Because LSIFs did not attract sophisticated investors and suffered from other design flaws, they did not help raise the quality of venture capital – at great cost to the taxpayer. In August 2005, the provincial government announced the end of the special tax benefits for LSIFs by 2012. We encourage the incoming government to keep their demise on schedule.

These accomplishments are important steps in the right direction. But if our economy is to reach its full potential for the future prosperity of today's Ontarians and our children, we have to step up our innovative capabilities. More of our businesses have to compete globally on the basis of unique products, services, and processes.

Our prosperity gap is a productivity gap, and our productivity gap is an innovation gap. When economists observe that productivity in Canada and Ontario is lagging, they are seeing the results of a sub-standard innovation record among our businesses. Improving innovation has to be our priority for the coming decade.

**We urge the new Ontario government to embrace our 2020 Prosperity Agenda and thus achieve our innovation and prosperity potential. When the 2021 Annual Report is written, we hope that all Ontarians will look back on a decade of real accomplishment.**

## We continue to propose actions that will help Ontario realize our 2020 Prosperity Agenda.

Exhibit 5 The Task Force has set out a 2020 Prosperity Agenda to narrow our prosperity gap

<b>Goal: Raise innovation, productivity, and prosperity</b>	<b>Looking back 2001-2011</b>	<b>Looking forward 2011-2020</b>
<b>Prosperity gap</b>	Fell to 20th among 28 international and North American peers	Rank as 10th most prosperous among North American and international peers
<b>Work effort and productivity</b>	Worked more but not smarter - Ontario is a productivity laggard	Become a global leader in innovation and productivity
<b>Human capital</b>	Increased our investment in education Improved performance in attainment of post secondary degrees Progressed little in managerial capacity	Attain more master's degrees in our universities Strengthen managerial capacity
<b>Investment</b>	Lagged peers' business investment in innovative technologies or R&D Improved tax policy to support business investment Shifted balance away from education to health care	Rise to the challenge of globalization by businesses investing to raise their capabilities Introduce real innovations in federal and provincial tax policy Ensure deficits are not fought through severe cuts in education
<b>Support and pressure</b>	Completed several small trade deals Announced end to special tax treatment for Labour Sponsored Investment Funds	Focus on large-scale trade deals Pursue policies to enhance venture capital quality and identify innovation financing models

**OUR**  
**PROSPERITY**  
**GAP IS**  
**A PRODUCTIVITY**  
**GAP**





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IN CARRYING OUT ITS MANDATE to measure and monitor Ontario's competitiveness and prosperity, the Task Force has focused on Gross Domestic Product (GDP) per capita as the summary measure of success. Over the decade, we have concluded that our performance has lagged that of our peers in the United States and abroad, giving rise to a large and widening prosperity gap.

GDP is highly correlated with aggregate personal income and wages in an economy. Wage earners in Ontario receive about 55 percent of total GDP, and wages increase along with GDP. GDP is also the key driver in government revenues, so that public services can be afforded when GDP grows. As we have discussed in past reports, our lagging GDP has real negative consequences for average Ontarians. Wages, living standards, and public investments are lower than they would be if economic performance were comparable to that of our peers.

GDP also correlates with personal happiness as measured across countries by organizations like Gallup. Our own work in collaboration with the Centre for the Study of Living Standards has shown that in Canada personal income is positively correlated with reported happiness.<sup>1</sup>

GDP represents the “value added” to our endowed base of human, physical, and natural resources. As products and services are created, different people and organizations

along the way add value at every step. A sandwich bought in a restaurant begins with a farmer sowing and harvesting grain. Between the farmer and the consumer are many integrated steps, where value is added by intermediaries – both by manufacturers, like a bakery, and by service providers, like a restaurant. Value added at each stage is shared between the worker and the business owner – higher value added means higher wages and profits – and this continues until a good or service is produced and provided to a final consumer. The total value added throughout the production chain is the sum of each of the individual processes.

Understanding value added is an important step in addressing innovation and productivity issues. Companies with higher value added processes are likely to produce more innovative and more complex products – and have higher productivity. Their products and processes are also more defensible in the global market place, making the home country more competitive. The industries that were most immune to the overall turndown in manufacturing between 2002 and 2008 produced products with higher value added and drew on more creative skills in their operations.<sup>2</sup>

Value added also matters to a country or region. Essentially a country's or region's GDP is the sum of all the value added in the economy. People and companies that innovate and produce higher value added products

and services will increase the GDP of a region – and usually earn higher wages and profits for themselves.

Innovation is a key to higher value added. This is true whether it is the driver in creating better products or services without increasing costs faster than prices, or in making production processes leaner without lowering quality.

The advent of globalization has seen the movement of low value added processes to lower wage countries like China and India. Advanced economies like Ontario will not thrive by attempting to hang on to low value added activities. Rather, they must innovate relentlessly to deliver higher value added products, services, or processes – and higher GDP.

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1 Centre for the Study of Living Standards, *Does Money Matter? Determining the Happiness of Canadians*, November 2010, updated February 2011, available online: <http://www.csls.ca/reports/csls2010-09.pdf>

2 Institute for Competitiveness & Prosperity, Working Paper 14, *Trade, innovation, and prosperity*, September 2010, pp. 39-43.

## Four factors measure Ontario's prosperity gap

Ontario has a significant prosperity gap, as measured by GDP per capita. Out of sixteen North American peer jurisdictions, Ontario stands fifteenth, and the gap versus the median has been widening. To understand the reasons for this prosperity gap, we draw on the same framework we have used in our previous reports to disaggregate GDP per capita into four measurable elements (**Exhibit 6**):

- **Profile.** Out of all the people in a jurisdiction, what percentage are of working age and therefore able to contribute to the creation of products and services that add economic value and prosperity?
- **Utilization.** For all those of working age, what percentage is actually working to add to economic value and prosperity?
- **Intensity.** For all those who are employed, how many hours do they spend on the job in a year?

- **Productivity.** For each hour worked in a jurisdiction, how much economic output is created by a jurisdiction's workers?

The first three factors – profile, utilization, and intensity – add up to our work effort, or the hours worked per capita to create economic value. The fourth factor – productivity – measures how effectively we add value to resources, thereby creating economic value and prosperity.

In 2001, Ontario lagged its North American peers in both work effort and productivity. A decade later, Ontario matches peer states in work effort but lags more in productivity (**Exhibit 7**). That means our prosperity gap is now a productivity gap. And, as we'll see, our productivity gap is an innovation gap.

### Ontario has good work effort performance

Ontario continues to have a demographic profile advantage versus the peer states and Québec, an advantage in utilization, but a significant intensity gap (**Exhibit 8**).

**Profile remains an advantage for Ontario.** The percentage of the population that is of working age – aged 15 to 64 – is the demographic basis for prosperity. With more people in that age range, a higher percentage of the population can work and create economic value. In Ontario, this ratio has been stable over the short run and has had no appreciable impact on changes in our prosperity gap versus our peer states. Nevertheless, it creates an ongoing starting advantage in Ontario's prosperity.

In 2010, 69.4 percent of Ontarians were aged 15 to 64. Among the peer jurisdictions, Ontario and Québec have a higher percentage of working age population than the fourteen peer states. Relative to the 67.3 percent median of the sixteen peer jurisdictions, Ontario has a 3.0 percent potential profile advantage.<sup>3</sup> Holding all other factors constant, we calculate this advantage to be worth \$1,800 in per capita GDP.

<sup>3</sup> Calculated as 1 minus [(67.3 (Peers) / 69.4 (Ontario))] = 3.0 percent.

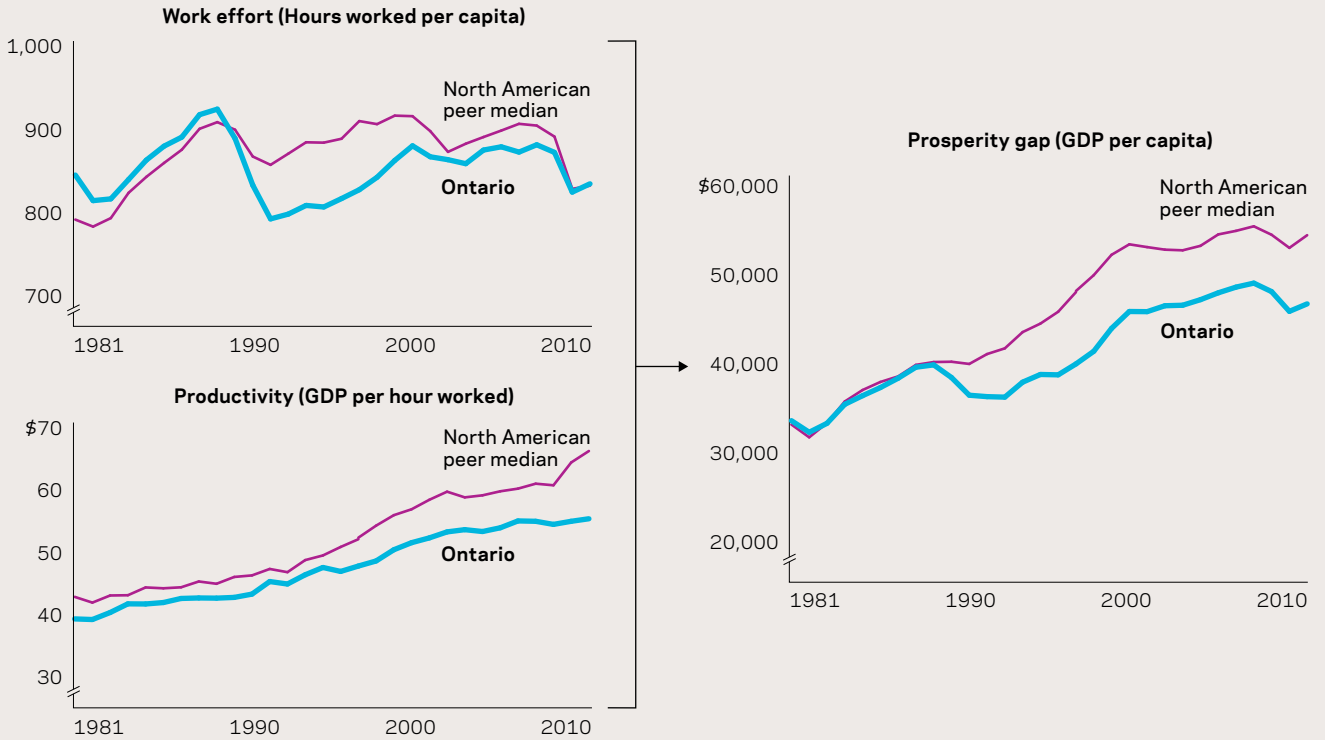
Exhibit 6 The Task Force measures four components of prosperity

Prosperity	Profile	Utilization	Intensity	Productivity
GDP per capita	$\frac{\text{Potential labour force}}{\text{Population}}$	$\frac{\text{Employed persons}}{\text{Potential labour force}}$	$\frac{\text{Hours worked}}{\text{Employed persons}}$	$\frac{\text{GDP}}{\text{Hours worked}}$
		<ul style="list-style-type: none"> <li>▪ Participation</li> <li>▪ Employment</li> </ul>		<ul style="list-style-type: none"> <li>▪ Industry mix</li> <li>▪ Cluster mix</li> <li>▪ Cluster effectiveness</li> <li>▪ Urbanization</li> <li>▪ Education</li> <li>▪ Capital investment</li> <li>▪ Productivity residual</li> </ul>

Source: Adapted from J. Baldwin, J.P. Maynard and S. Wells, "Productivity Growth in Canada and the United States," *Isuma* Vol. 1 No. 1, Spring 2000, Ottawa Policy Research Institute.

**Exhibit 7 Higher productivity is needed to close Ontario's prosperity gap**

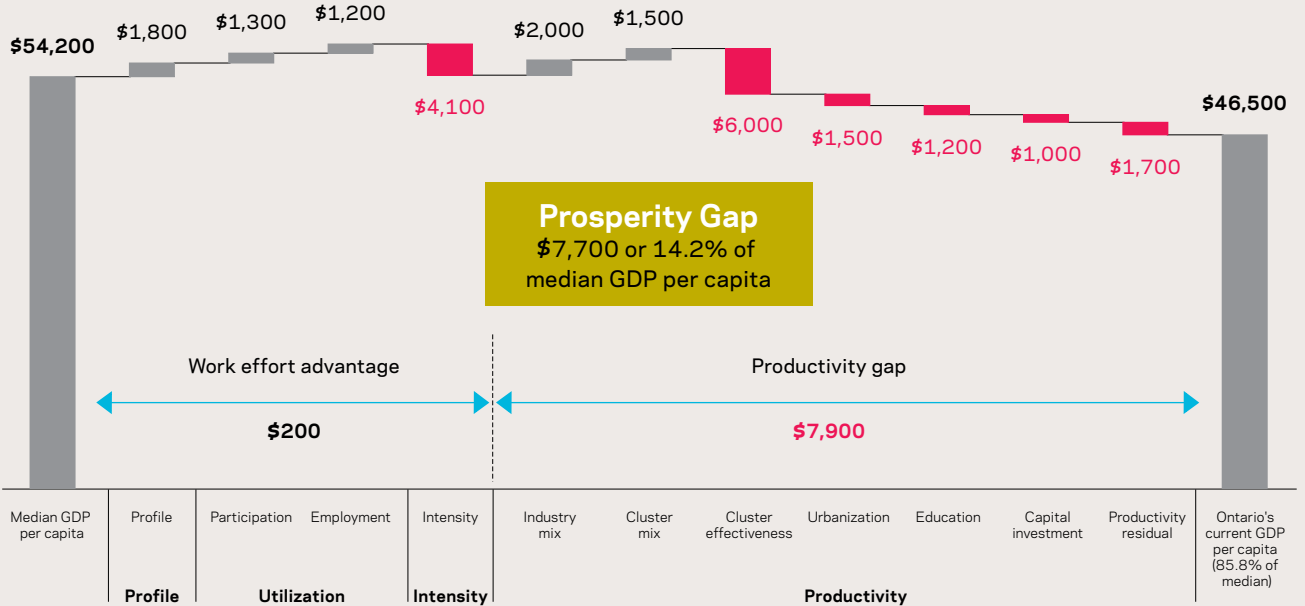
**Source of Ontario's prosperity gap with North American peers (C\$ 2010)**



Note: Currency converted at PPP = 1.203. In 1997 state GDP calculation method changed from SIC-based to NAICS-based.  
 Source: Institute for Competitiveness & Prosperity analysis based on data from Statistics Canada; US Bureau of Economic Analysis; US Bureau of Labor Statistics; US Census Bureau.

**Exhibit 8 Lagging productivity accounts for most of our prosperity gap**

**Elements of GDP per capita (C\$ 2010)**



Source: Institute for Competitiveness & Prosperity analysis based on data from Statistics Canada; Ontario Ministry of Finance; Banque de données des statistiques officielles sur le Québec; US Department of Commerce, Bureau of Economic Analysis; Bureau of Labor Statistics; US Census Bureau.

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## Over the last decade, lagging productivity has accounted for the greatest share of Ontario's prosperity gap with our peers, and in 2010 this productivity gap widened further.

Demographic projections indicate that, as in Québec, the proportion of Ontarians of working age will decline over the coming decades as baby boomers retire and are not replaced by equal numbers in subsequent generations. Still, the projections indicate that Ontario will maintain its advantage versus its peers.<sup>4</sup>

Nevertheless, Ontario will have fewer workers to create prosperity in the coming years. We estimate that by 2025 the smaller percentage of working age Ontarians will reduce GDP per capita potential by \$2,300.<sup>5</sup> We will need creative retirement solutions to address this decline in our prosperity potential.<sup>6</sup>

**Ontario has higher utilization than the peer states.** Over the past decade, Ontario has been more successful than our peer states in creating jobs. We perform well in the two factors that make up utilization – relatively high labour force participation rates and relatively low unemployment rates.

We rank fifth among the peer jurisdictions in workforce *participation*. In 2010, 65.2 percent of Ontarians fifteen years of age and older worked or sought work.<sup>7</sup> The median participation rate was 63.7 percent. The US recession hurt participation rates, as many workers just gave up looking for employment – and were not counted in the participation rate. Ontario's participation rates have also fallen during the recession. But we continue to out perform our peers. In 2010, Ontario's advantage translated into \$1,300 in GDP per capita.

In the other component of utilization, *employment*, Ontario has an advantage over our US peers – even though our own performance has been poor. In 2010, our annual unemployment rate decreased to 7.9 percent, down from 8.3 percent in 2009.<sup>8</sup> This is lower than the median rate across peer jurisdictions of 9.8 percent. In other words, on average through 2010, 92.1 percent of those Ontarians participating in the work force had full-time or part-time work, which was higher than the median performance of the peer jurisdictions, 90.2. This 1.9 percentage point advantage lifted our relative GDP per capita performance by \$1,200 in 2010.

In summary, in 2010, Ontario employed 60.1 percent of its working age population (the combined effect of a 65.2 percent participation rate and a 7.9 percent unemployment rate), ranking third among the sixteen peer jurisdictions and above the peer median of 58.1 percent. This superior performance translates into a \$2,500 utilization advantage (the combined effect of a \$1,300 participation advantage and a \$1,200 employment advantage) in GDP per capita.

**Ontario employees work fewer hours than their US counterparts – and this intensity gap remains a significant part of our prosperity gap.** While Ontario has better demographics and creates more jobs, we have a significant intensity gap – our workers are on the job fewer hours in a year than their counterparts in the peer states. In 2010, the average Ontario worker

worked 1,670 hours, while at the median of the peer states, the average employee worked 1,830 hours. This gap of 160 hours, or 4.3 weeks annually, widened slightly from 2009, when Ontario trailed the peer median by 150 hours weekly or 4.1 weeks. In 2010, our intensity gap equated to \$4,100 in GDP per capita.

Ontarians' propensity to take more weeks of vacation and to have a higher percentage of part-time work is the key driver of the intensity gap.<sup>9</sup> Another factor behind the intensity gap is the inability of part-time employees to find full-time work. This gap is felt most by several disadvantaged groups, such as high school dropouts and lone parents.

As we have seen, in the three work effort factors, Ontario has a *profile* advantage, the percentage of our population of working age, and a *utilization* advantage, the percentage of Ontario adults who are working. Still, the *intensity* gap, our lower

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4 Task Force on Competitiveness, Productivity and Economic Progress, Fourth Annual Report, *Rebalancing priorities for Ontario's prosperity*, November 2005, p. 29.

5 This comparison is between Ontario's GDP per capita in 2005 and its potential in 2025; not the difference between Ontario and its peer group.

6 Institute for Competitiveness & Prosperity, Working Paper 9, *Time on the job*, September 2006, p. 21.

7 Statistics Canada reports Ontario's participation rate to be 67.1 percent; US definitions for who qualifies for inclusion in the labour force, and therefore is included in the participation rate, differ from Canada's definitions. We use US definitions for our calculations of differences between Ontario and its US peers.

8 These unemployment rates are based on US definitions; official Canadian unemployment rates were 8.7 percent in 2010, down from 9 percent in 2009.

9 Working Paper 9, *Time on the job*, pp. 22-24.

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number of hours worked per worker, continues to be a major factor in our prosperity gap.

The net effect of these factors is a \$200 advantage versus the median of our peer jurisdictions. This relative strength in work effort is overwhelmed, however, by our poor productivity.

### **Higher productivity is needed to close Ontario's prosperity gap**

Over the last decade, lagging productivity has accounted for the greatest share of Ontario's prosperity gap with our peers, and in 2010 this productivity gap widened further. Six elements of productivity determine the impact of this key driver of our prosperity gap:

- Mix of industries overall
- Mix of clustered industries
- Productivity effectiveness of our clustered industries
- Degree of urbanization
- Educational attainment
- Capital investment

### **Industry mix contributes positively to our productivity.**

Ontario benefits from a mix of industries that is more heavily weighted toward clustered industries,<sup>10</sup> and within these clustered industries, we have a mix that is more favourable for productivity and prosperity than that in the peer states.<sup>11</sup> The geographic clustering of firms in the same and related industries increases productivity and innovation. These clustered industries typically sell to markets beyond their local region. In addition,

the presence of clustered industries in a region has a positive spillover effect, in that they typically generate opportunities for increased success of the local economy.

The other major industry type includes dispersed industries, or local industries. These industries, such as retailers and restaurants, tend only to serve their local markets and so do not realize economies of scale and are less challenged to be innovative. As a consequence, they have lower rates of productivity, innovation, and wages.

A third industry type, natural endowment industries, is located where the natural resources are found. These include forestry, mining, and agriculture. These are very small industries for both our peers and Ontario – accounting for less than 1 percent of employment in Ontario in 2010.

Fully 34.1 percent of employment in Ontario is in the 41 clustered industries versus the median of 27.7 percent in the peer jurisdictions. We estimate the potential productivity benefit from this higher percentage of clustered industries in our industry mix contributes \$2,000 per capita. This benefit is derived from a higher output than should be achieved from a better industry mix.<sup>12</sup>

### **Within clustered industries, Ontario has a beneficial mix.**

Some of the 41 clustered industries contribute more to productivity and innovation than others – so the mix of clustered industries matters. Ontario's

relative employment strength in financial services, automotive, metal manufacturing, publishing and printing, and other industries has created an attractive mix of clustered industries. Ontario's cluster mix yields a \$1,500 per capita advantage over our peers.

### **Cluster under performance is a significant part of Ontario's productivity gap.**

While Ontario has an excellent industry and cluster mix, cluster effectiveness, as measured by wages, is much lower than that in the peer states. In the same clusters, wages in Ontario firms are lower than those of their counterparts across the peer states.

Across all clustered industries, the average wage in Ontario is 14.7 percent lower than the average in the median peer state. This lower wage reflects lower productivity and innovation in our clustered industries, which in turn reduces economic performance across all industries.

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10 See [http://data.isc.hbs.edu/isc/cmp\\_overview.jsp](http://data.isc.hbs.edu/isc/cmp_overview.jsp) for a description of the three types of industries. Note: we refer to Porter's "traded industries" as "clustered industries" and his "local industries" as "dispersed industries."

11 Institute for Competitiveness & Prosperity, Working Paper 1, *A View of Ontario: Ontario's Clusters of Innovation*, April 2002, and Working Paper 5, *Strengthening structures: Upgrading specialized support and competitive pressure*, July 2004.

12 It is important to note that our measure focuses on the mix of industries only. It calculates the productivity performance we could expect in Canada if each cluster were as productive as its US counterpart. It does not measure the effectiveness of our industries in Canada.

As we discuss in our review of Ontario's innovation results, Michael Porter has observed that specialized support from excellent factor conditions, capable suppliers, and related industries pushes innovation higher in traded clusters. At the same time, more competitive pressure from sophisticated customers and vigorous rivals drives innovation. As we have discussed in the past,<sup>13</sup> our structures of specialized support and competitive pressure are inadequate relative to the experience in clusters of traded industries in the peer states. In other research, we have found that Ontario's clustered industries draw less on workers in creativity-oriented occupations than their counterparts in the peer states.<sup>14</sup> Another source of clustered industries' under performance is the smaller scale of operations in our manufacturing facilities. (See *Our manufacturers need to increase the scale of their operations.*)

If Ontario clusters were as effective as US clusters, wages would be \$14,000 per worker higher. As clustered industries account for 34.1 percent of Ontario employment and given the relationship between wages and productivity, our overall productivity would rise by 14.3 percent.<sup>15</sup> From this, we estimate the productivity loss from the lower effectiveness of our clusters to be \$6,000 per capita.

Adding together the effects of industry mix (+\$2,000), cluster mix (+\$1,500), and effectiveness (-\$6,000) Ontario's clustered industries provide a net loss of \$2,500 in GDP per capita versus the peer states.

**Relatively low urbanization is a significant contributor to our productivity and prosperity gap.** Urban centres lead to higher productivity as a result of the increased social and economic interaction of people in firms in metropolitan areas, the cost advantages of larger scale markets, and a more diversified pool of skilled labour. The interplay of these factors promotes innovation and growth in an economy.

Since fewer people live in metropolitan areas in Ontario than in the peer states, our relative productivity and prosperity potential are lower. Our analysis this year indicates that we have a \$1,500 per capita disadvantage against the peer median that is related to our lower level of urbanization.

**Lower educational attainment weakens our productivity.**

Economists agree that a better educated workforce will be more productive. Education increases workers' base level of knowledge and increases the flexibility necessary for improved job performance and ongoing skills gains. Many studies show that increased wages accrue to more highly educated individuals.<sup>16</sup> And higher wages are the result of higher productivity.<sup>17</sup> Ontario's population has, on average, a lower level of educational attainment than those living in the United States. Adjusting the mix of educational attainment in Ontario to match the US mix and holding wages constant at each attainment level, Ontario's

productivity would be higher by \$1,200 per capita. As we shall see, Ontario has narrowed this educational attainment gap over the last decade; when updated educational attainment and wage information is available from the latest census, we expect this disadvantage in GDP per capita to shrink.

**Lower capital investment**

**reduces productivity.** Ontario businesses have under invested in machinery, equipment, and software relative to their counterparts in the United States, so that the capital base that supports workers in Ontario is not as modern as that of their counterparts in the peer states.<sup>18</sup> As a result, Ontario workers are not as productive. This under investment in capital equipment lowers Ontario's productivity by \$1,000 per capita, based on our simulation of Ontario's GDP if our economy had matched the rate at which the US private sector

13 Task Force on Competitiveness, Productivity and Economic Progress, Third Annual Report, *Realizing our prosperity potential*, November 2004, pp. 40-48.

14 *Idem*, Eighth Annual Report, *Navigating through the recovery*, November 2009, pp. 27-29.

15 We have netted out the effects of Ontario's lower urbanization, our under investment in capital, and our lower educational attainment in this calculation.

16 For example, see Ana W. Ferrer and W. Craig Riddell, "The Role of Credentials in the Canadian Labour Market," *Canadian Journal of Economics*, 2002, Vol. 35, No. 4; Statistics Canada, "Education and earnings," *Perspectives on Labour and Income*, 2006, Vol. 38, No. 3; and Anil Verma, "Low Wage Service Workers" A Profile," Working Paper Series: *Ontario in the Creative Age*, Martin Prosperity Institute, March 2009.

17 Task Force on Competitiveness, Productivity and Economic Progress, Sixth Annual Report, *Path to the 2020 Prosperity Agenda*, November 2007, p. 30.

18 Capital investment results are not available at the state level. Our analysis uses US results to estimate peer state investments and compares these to Ontario.



# Our manufacturers need to increase the scale of their operations

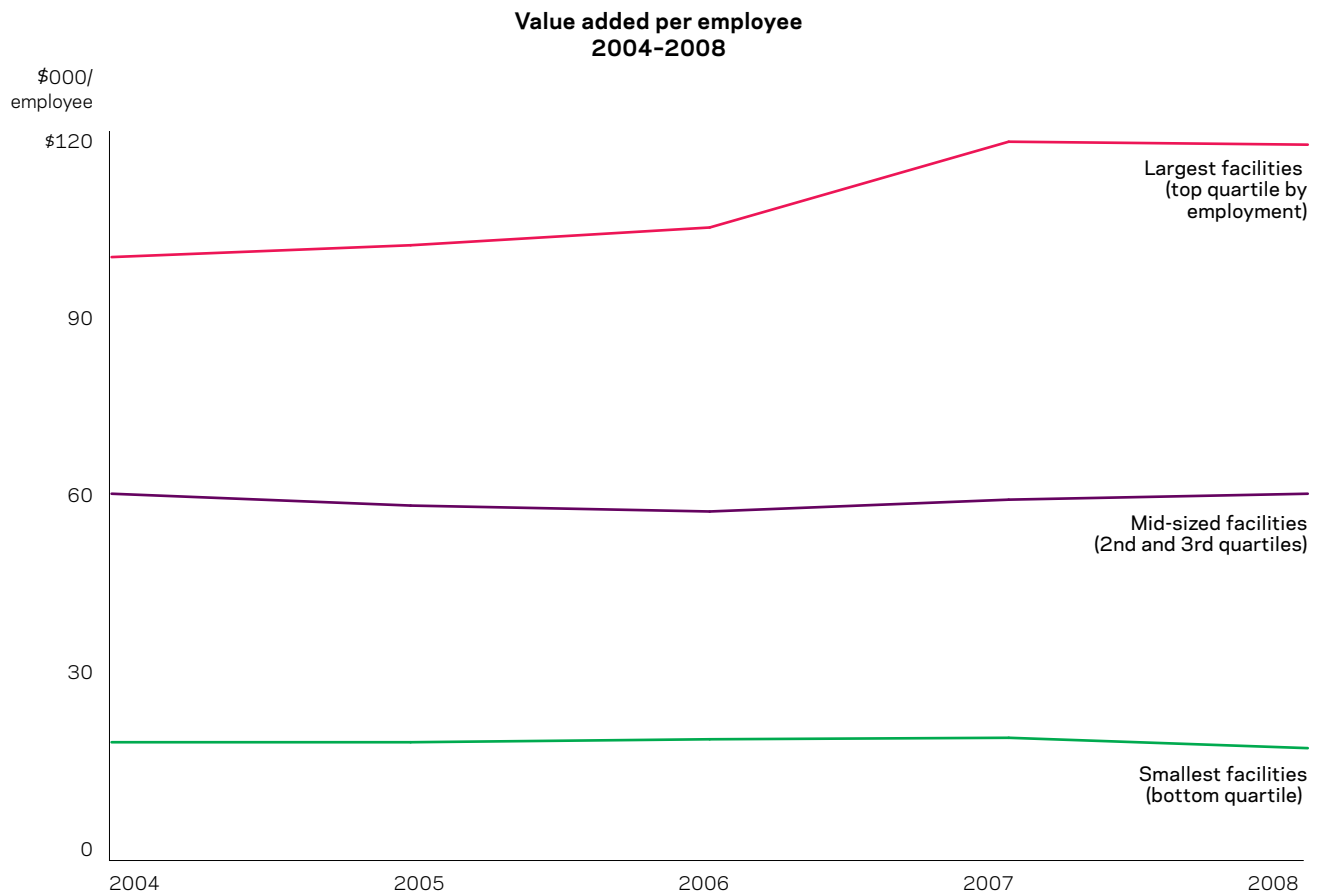
Ontario manufacturers need to increase the size of their operations, because larger facilities have more investment in technology, are more likely to support R&D investments, and are more productive.

Research by the George Morris Centre and the Institute for Competitiveness & Prosperity shows that our food processing industry could increase its productivity with bigger facilities. Food processors whose size, as defined by sales per establishment, puts them in the top quartile create twice as much value added per employee as the average sized facility (Exhibit A).

To improve the productivity and innovation in manufacturing in general – and food processing in particular – our businesses need to explore consolidation opportunities and strategies for serving larger markets. Compared with the US

food industry, our processors tend to be much smaller. From a public policy perspective, infrastructure investments, such as those in border crossings are required. And, despite Canada-US free trade, the border still matters. Food processors looking to expand production in sectors like dairy and poultry are challenged to secure access to producers with adequate quota volumes. So we also need to take a hard look at our supply management policies in agriculture, and the unintended effects these policies may have on manufacturing industries.

Exhibit A Larger food processing facilities are more productive



Source: Institute for Competitiveness & Prosperity and George Morris Centre analysis based on Statistics Canada special tabulation of data from Annual Survey of Manufactures.

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invested in machinery, equipment, and software. An important part of this capital investment gap is in purchases of information and communications technology (ICT).

**The residual is related to productivity.** We have been able to account for the impact of profile, utilization, and intensity on prosperity. We have also accounted for the effects of several elements of productivity. The \$1,700 per capita gap that remains is related to productivity on the basis of like-to-like industry mix and strength, urbanization, education, and capital intensity.

### **Productivity deficit is worsening**

Through most of the 1980s, Ontario's prosperity was close to the median of the peer states. During that period, we had a productivity and intensity disadvantage versus our peers – but our utilization advantage compensated for this. Our prosperity gap began to develop at the outset of the 1990–92 recession, driven mostly by our worsening participation and unemployment rates.

This utilization problem began to dissipate around 1997, and by 2001 it was an advantage again. However, our productivity disadvantage began to grow in 1995, and by 2005 it had more than doubled. In the current economic downturn, work effort has fallen off much more in the peer states than in Ontario, while productivity has grown faster than Ontario's.

It is difficult to project what will happen in this unusual downturn – it is quite likely that official data will be revised. But our productivity weakness is real and getting worse (see Exhibit 3), widening our prosperity gap. Sluggish productivity growth is a critical reason we are not realizing our prosperity potential. And, as we broaden our perspective beyond North America, we see that Ontario's productivity lags globally as well.

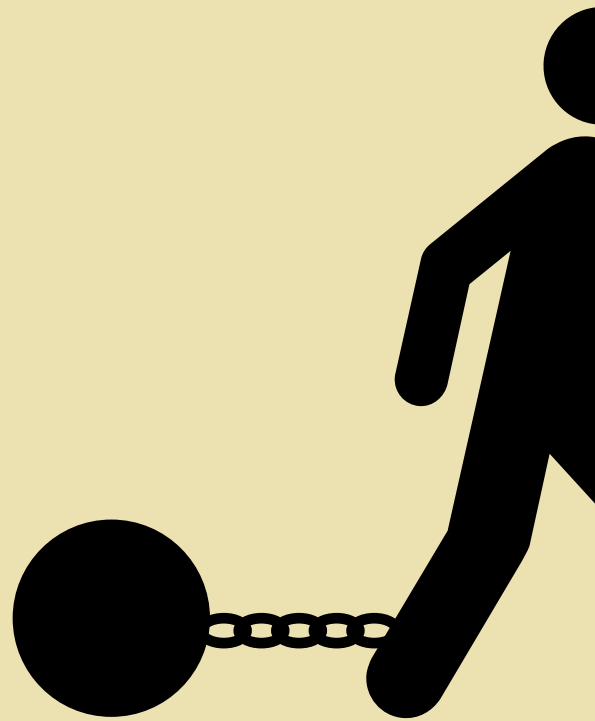
Ontarians have built one of the most globally competitive jurisdictions. Ontario's prosperity compares favourably with that in thirteen international peer regions – selected using similar criteria for identifying North American peers.<sup>19</sup> Ontario stood sixth in GDP per capita in 2010 (see Exhibit 1). However, just as we have found in comparisons with North American peers, we trail the median of our international peers in productivity (see Exhibit 14). We work more than those outside North America, but we are less successful at adding economic value in the hours we work. These international comparisons again indicate that lagging productivity remains Ontario's problem to solve.

**Our current challenge is to recover from the recession and to build our full prosperity potential for the benefit of all Ontarians. But for the long term, higher productivity is critical to our success. And improving our productivity means improving our innovation performance.**

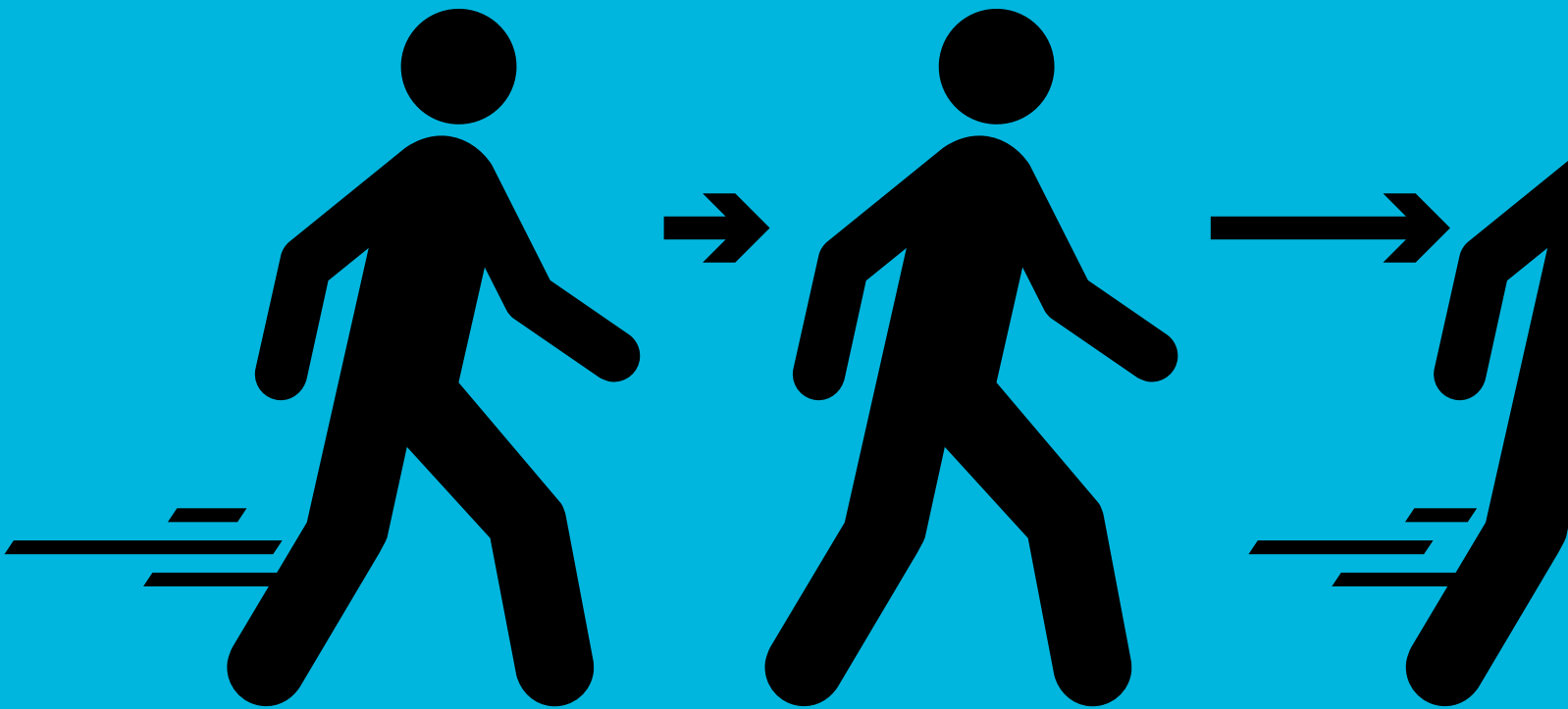
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<sup>19</sup> Task Force on Competitiveness, Productivity and Economic Progress, Ninth Annual Report, *Today's innovation tomorrow's prosperity*, November 2010, pp. 27-28.





# A TEN-YEAR RETROSPECTIVE AND OUTLOOK FOR THE FUTURE



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AS WE DELIVER OUR TENTH ANNUAL REPORT to the public of Ontario, we consider progress and accomplishments in several areas. Overall, we have to be disappointed in the lack of progress of our competitiveness and prosperity. As we have shown, Ontario trails our North American peers significantly in GDP per capita and this gap has widened through the decade. Against our international peers, we continue to out perform, but our lead is shrinking. To understand what has happened and offer an outlook for the future, we look at four major factors in our prosperity performance.

- We begin by detailing our progress in the two key drivers of prosperity – **work effort and productivity**. In both North American and international comparisons, Ontario performs very well in work effort – we excel at creating jobs for our people. But we trail both sets of counterparts in productivity. Productivity measures our ability to develop innovative processes and to create and market new products and services. We are laggards among our peers, and the gap is widening.

As we look back and look ahead, we focus on the various elements that affect our innovation and productivity:

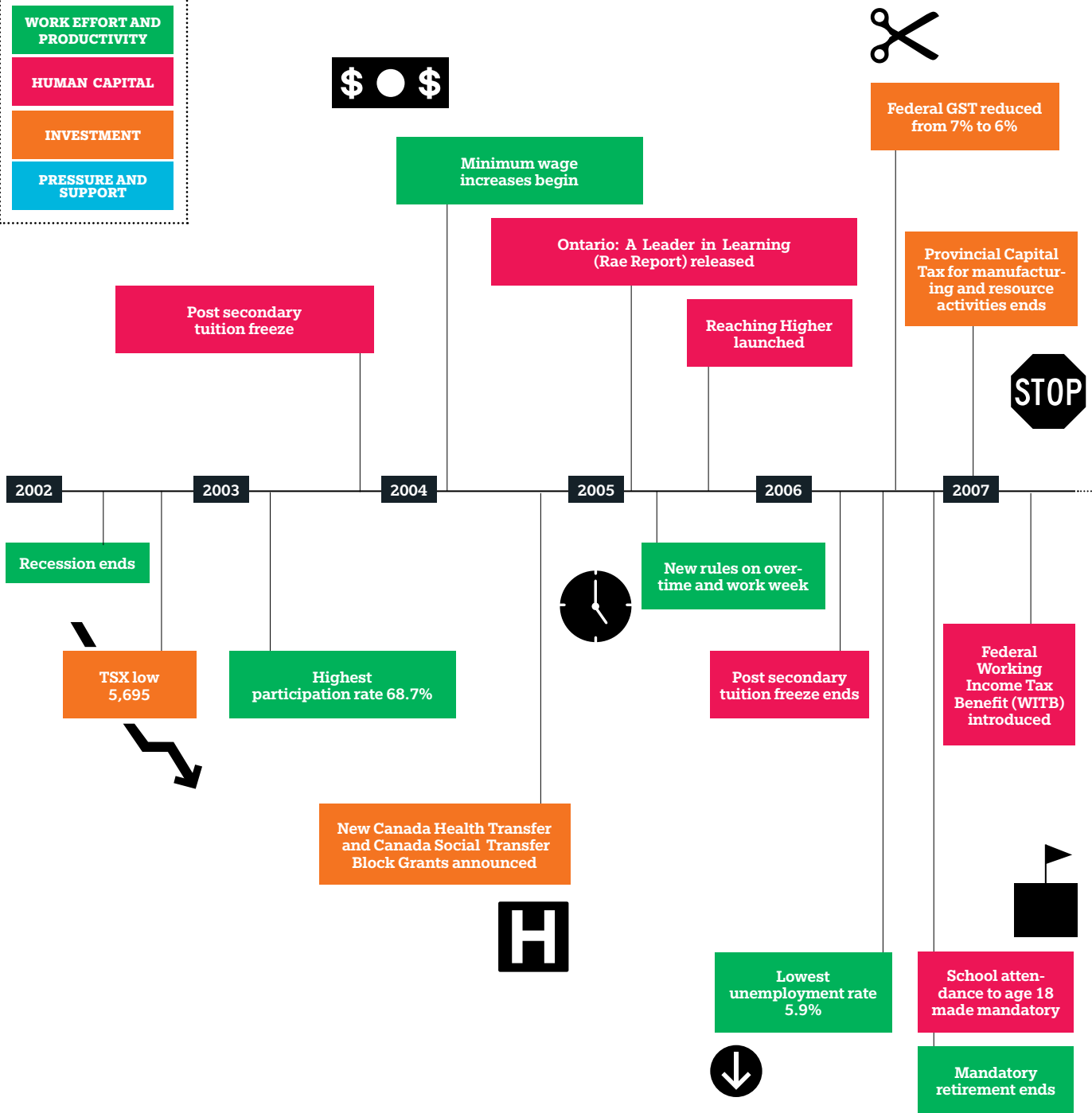
- We examine progress in building the capabilities of our **human capital**, assessing them overall and among managers. We also review our progress in reducing poverty
- We assess the extent to which we have made **investments** in our people and businesses to achieve greater productivity and innovation
- We review important parts of the **support and pressure** in our economy that lead to more innovation.

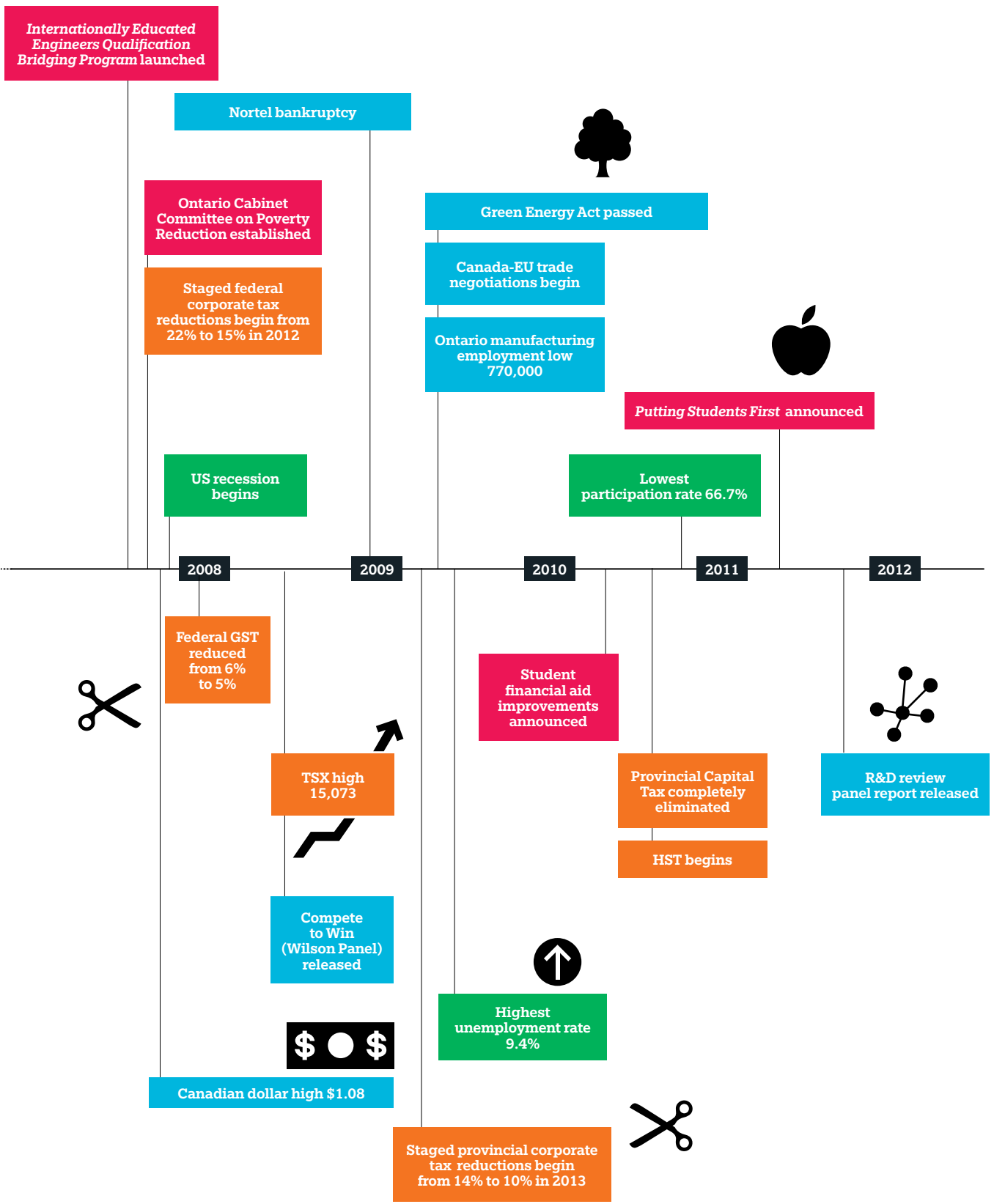
**As we review progress on our 2020 Prosperity Agenda, it is clear that there is no one magic solution hiding in the following pages – no silver bullet that will single handedly close our prosperity gap. Rather, we have work to do in many areas – from investing in our people, to developing innovative business strategies, to tax reform, and to expanded international trade. So long as our political and business leaders and all Ontarians have a determination to achieve our full prosperity potential and to work together on many fronts, we are confident in our outlook for Ontario.**

# WHAT HAPPENED IN ONTARIO IN THE PAST DECADE?

**KEY**

- WORK EFFORT AND PRODUCTIVITY
- HUMAN CAPITAL
- INVESTMENT
- PRESSURE AND SUPPORT





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# WORK EFFORT AND PRODUCTIVITY

Ontario's prosperity growth needs to come from productivity growth

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TWO FACTORS DRIVE ONTARIO'S PROSPERITY:

- **Work effort**, how much work Ontarians are doing, expressed in hours worked per capita, and
- **Productivity**, how much value we create when working, expressed as GDP per hour worked.

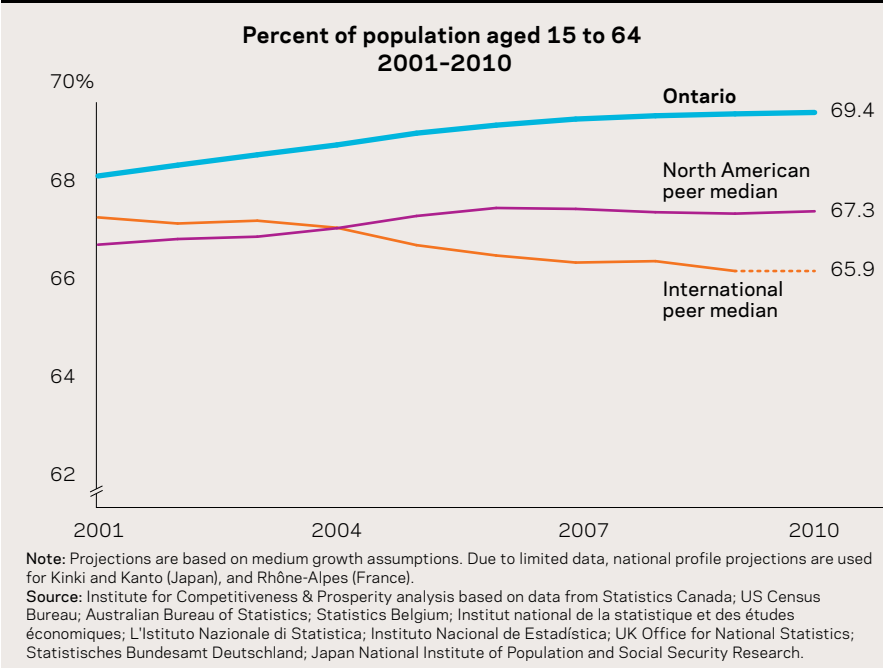
Ontarians excel in the first factor – generating work hours per capita. We start with an excellent demographic base, as the percentage of our population that is of working age is the highest among our peers. We are very successful in creating jobs for our working age population, and each worker works more hours than our counterparts outside of North America, although we trail US workers. The net effect is that Ontarians are among world leaders in work effort.

Our prosperity challenge is driven by the second factor, our trailing productivity. It is the major factor behind our prosperity gap. Productivity growth comes from finding smarter ways to compete – through new operating efficiencies and new products and services. That means that innovation and productivity performance are nearly synonymous – and are the keys to our future prosperity

Productivity growth has no limits. Our work effort may become constrained over time by our demographics. But our ability to become more productive and prosperous will depend on translating our imagination and ingenuity into economic competitiveness and success in the global economy.

# Ontario's demographics are an advantage

Exhibit 9 Ontario has a demographic advantage over our peers



## PROFILE: A LOOK AHEAD

	2010	2020
<b>ONTARIO</b>	<b>69.4 %</b>	<b>66.1 %</b>
<b>NORTH AMERICAN PEER MEDIAN</b>	<b>67.3 %</b>	<b>64.4 %</b>
<b>INTERNATIONAL PEER MEDIAN</b>	<b>65.9 %</b>	<b>64.3 %</b>

### Why profile matters

Profile is the starting point in determining our prosperity potential. Demographic “profile” refers to the percentage of the population that is of working age. Currently defined as between ages 15 and 64, it is clear that the upper age limit will likely rise as life expectancy increases and options for later retirement expand.

To the extent that a society has more working age people, it also has more “human capital” able to contribute to prosperity through work and support activities. Here in North America, we take this factor for granted, as we have benefited from the baby boomers being of working age. However, countries like Japan and those in continental Europe are feeling the effects of an aging population - with fewer young people available to work and more elderly people requiring social and health care assistance.

### How Ontario performs

Ontario has a very advantageous demographic profile (Exhibit 9). We have a higher percentage of our population between the ages of 15 and 64 than all our North American and international peers.

### Outlook for 2020

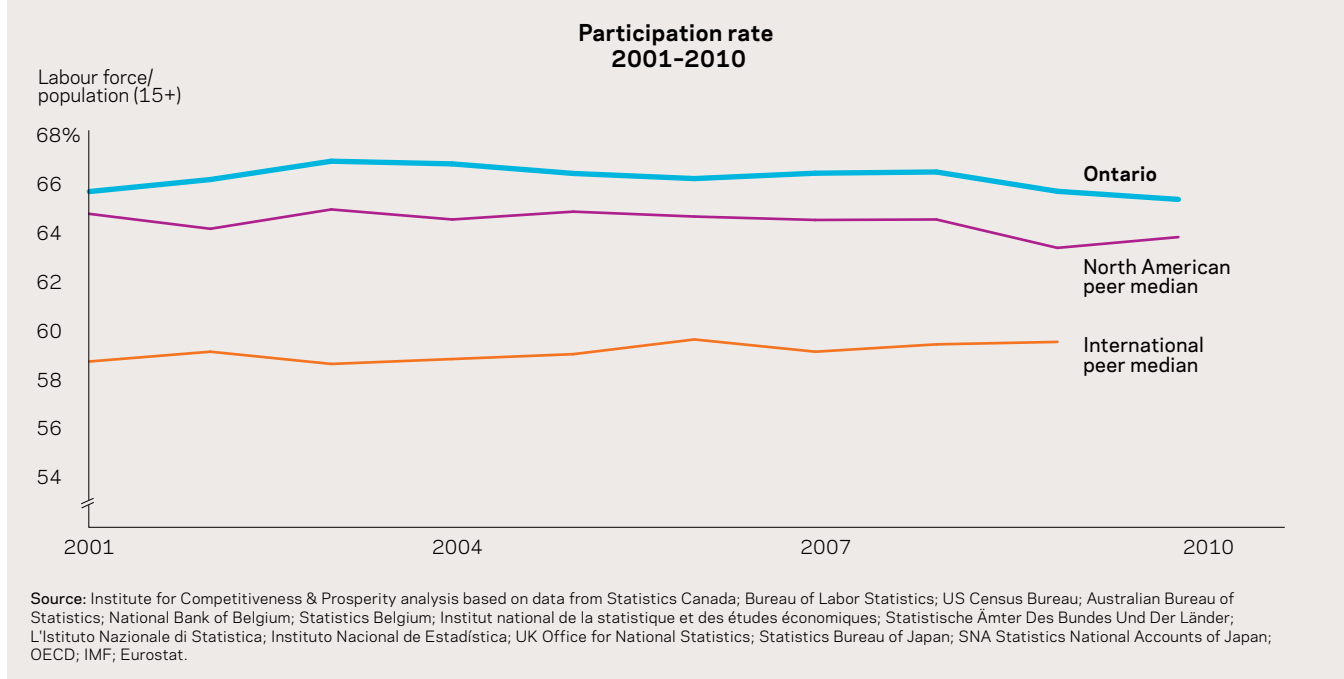
On this factor, we can predict with much more safety how the next few decades will turn out, as the key variables - current age distribution, mortality rates, and fertility rates - are either set or change very slowly. Based on projections done by Statistics Canada, we show that Ontario’s demographic profile will worsen as the percentage of our population that is of working age turns down. On the positive side, we will not be disadvantaged as a result of this, because other jurisdictions will fare worse than us.

Immigration has and will continue to benefit our demographic profile. But we need to make sure that we do a better job of integrating new arrivals into our economic mainstream.

The projections also point to the importance of enabling our older workers to stay in the labour force longer - if they wish. We will benefit from more workers, and we are at the point where older workers are more active and healthier than in the past. We need their experience and judgment.

## Ontario has high labour force participation rates

Exhibit 10 Ontario has a higher participation rate than peers



### Why participation rates matter

Participation rates are the next building block for economic progress. To the extent working age people decide to look for work and “participate” in the labour force, our economic output will increase. The participation rate includes those who are successfully employed and those who are actively looking for work – the unemployed. Those of working age who are not actively looking for work are not included in the participation rate. Nor are they counted as unemployed.

Working age adults can choose not to participate in the labour force for several reasons – they are raising children, attending school, or are physically unable to work. Consequently, the participation rate in a developed economy typically does not exceed 70 percent of adults.

Robust participation rates indicate the willingness of Ontarians to work as well as their confidence that there is a job out there for them. In some sense, participation rates are as much an effect of economic progress as well as a cause. When jobs are aplenty and employers are paying more to attract

workers, people not in the labour force may be enticed to enter it. When jobs are scarce, many simply give up.

### How Ontario has performed

Our participation rate is a real strength for Ontario (Exhibit 10). In 2010, it generated a \$1,300 advantage for Ontario versus its peer states. Over the last decade, our advantage versus US peers has widened slightly.

Few, if any, economically advanced jurisdictions around the world match Ontario's participation rates. International peers trail us, because women have not engaged in the work force to the same extent as here, and younger less skilled adults have given up.

One disturbing phenomenon, particularly in the UK, is the rise of NEETs – young people who are not in education, employment or training. Long-term status as a NEET can be quite worrisome, potentially leading to being in a permanent underclass. Anecdotally, social observers see NEETs as some of the serious contributors to the UK riots this past summer. We understand Statistics Canada is tracking this

phenomenon in Canada, and we encourage them in their efforts.

### Outlook for 2020

We don't foresee, nor do we suggest, any dramatic increases in our overall participation rates. But there are some groups in our society who are under represented in the work force – most significantly, persons with disabilities and Aboriginal people. Current policy in Ontario is encouraging work places and public places to be more accessible. But our Aboriginal population is still not fully attached to the labour force. We need to address this economic and social problem. Nevertheless, even with significant increases in the participation rates of these and other disadvantaged groups, the overall participation rate will likely be stable.



## Unemployment rates trended down through much of the last decade; until the current economic downturn

### Why unemployment matters

The unemployment rate measures how many of those wanting to work are unable to contribute to the creation of economic value. Many see it as the key signal of our economic progress. It is certainly correlated with GDP output, but it is only one measure, and the potential for significant overall prosperity gains from lowering unemployment is typically limited. An unemployment rate of 5 percent means that 95 percent of the labour force is working. A one percentage point reduction is indeed a 20 percent improvement. However, it is an increase in jobs holders from 95 percent to 96 percent – an increase of just over 1 percent.

But policy exclusively focused on “job creation” can be very costly with few results. Much of the public expenditure on attracting large job creators to North American states and provinces has failed to achieve the desired result and, when successful, has cost about \$75,000 per new job.<sup>20</sup>

One priority has to be on reducing unemployment among groups who face

a high risk of living in poverty – high school dropouts, recent immigrants, single mothers, persons with disabilities, Aboriginal people, and unattached individuals aged 45-64. They are more likely to be unemployed and when unemployed are much more likely to be poor.<sup>21</sup> The federal government’s Working Income Tax Benefit is a step in the right direction – supplementing the earnings of low skilled workers. It provides them an incentive to take on a job that may be low paying, but helps them accumulate skills.<sup>22</sup> Wage insurance, which can help older workers get back into the labour force, is worth considering.<sup>23</sup>

### How Ontario has performed

From a high of 6.6 percent in 2002, unemployment steadily declined to 5.6 percent in 2006 (**Exhibit 11**). Over the same period, it fell faster in the North American peer states, but turned up dramatically after 2007. Currently, our unemployment is below our North American peers for the third consecutive year.

International peers currently have

lower unemployment than Ontario. But far fewer people are in the work forces in those countries than here.

### Outlook for 2020

We have no reason to expect Ontario’s unemployment rate to be a significant positive or negative factor versus our peers in achieving prosperity. Our challenge is to build a robust economy that invests capital and employs people, thereby raising our living standards. Where special public policy is required is in assisting at-risk groups secure the skills necessary for gaining employment.

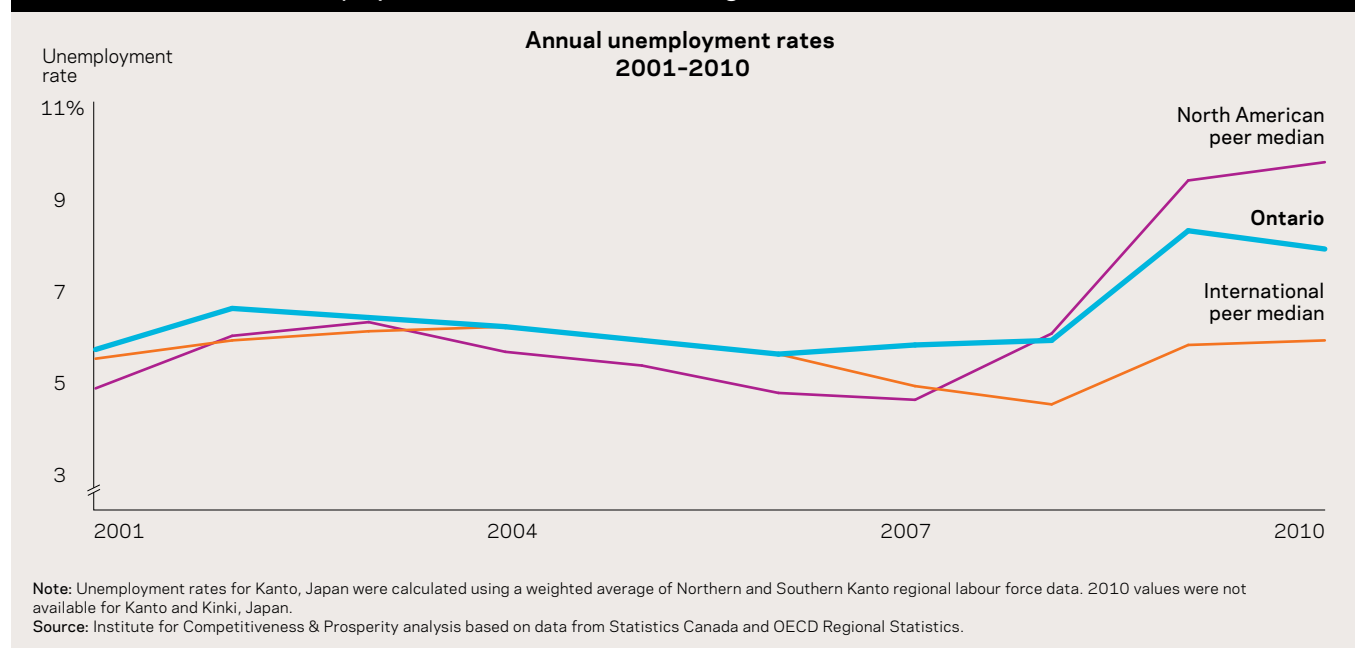
20 Ninth Annual Report, *Today’s innovation, tomorrow’s prosperity*, pp. 41-43.

21 *Ibid.*, pp. 23-25.

22 Institute for Competitiveness & Prosperity and Open Policy Ontario, *Time for a “Made in Ontario” Working Income Tax Benefit*, September 2009.

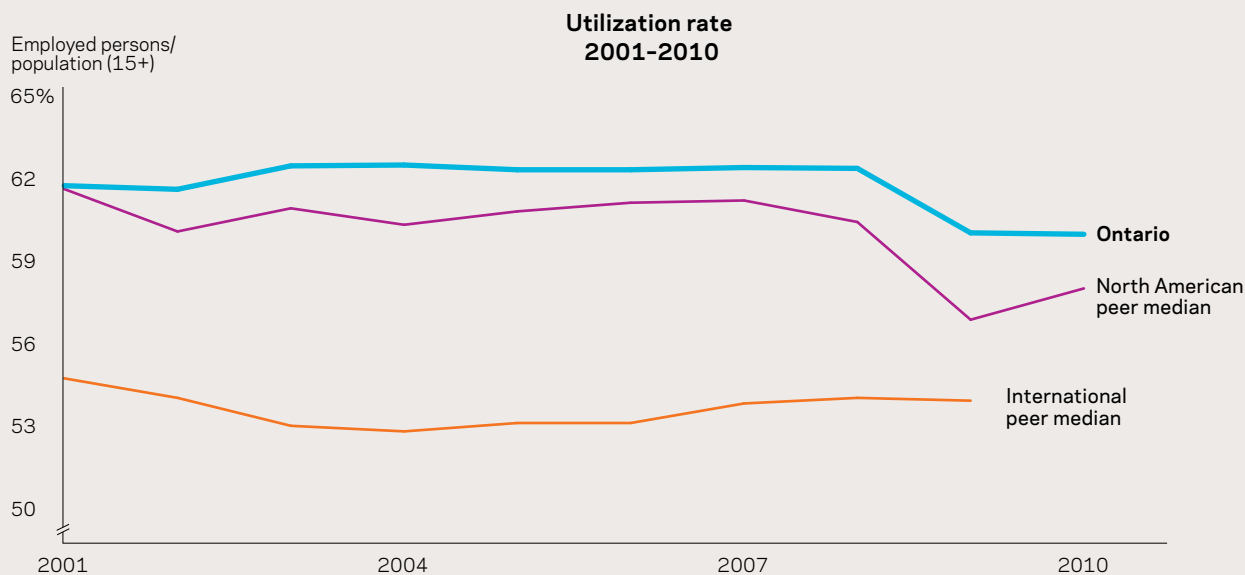
23 Institute for Competitiveness & Prosperity, *Report on Canada 2011, Canada’s innovation imperative*, June 2011, pp. 59-60.

Exhibit 11 Ontario’s unemployment rate fell and then rose again in the recession



## Ontario is a leader in employing its people

Exhibit 12 Ontario leads its peers in utilization of its working age population



Source: Institute for Competitiveness & Prosperity analysis based on data from Statistics Canada; Bureau of Labor Statistics; US Census Bureau; Australian Bureau of Statistics; National Bank of Belgium; Statistics Belgium; Institut national de la statistique et des études économiques; Statistische Ämter Des Bundes Und Der Länder; L'Istituto Nazionale di Statistica; Instituto Nacional de Estadística; UK Office for National Statistics; Statistics Bureau of Japan; SNA Statistics National Accounts of Japan; OECD; IMF; Eurostat.

### Why the utilization rate matters

The utilization rate<sup>24</sup> measures how many of our adult population are employed and contributing to economic value creation. It combines the previous two factors – participation and unemployment. It represents the degree to which Ontarians want to work and the ability of our employers to create jobs.

### How Ontario has performed

Ontario has had a utilization advantage over our North American peers in every year except 2001. Our propensity to create jobs has provided an average benefit of about \$1,500 in GDP per capita versus North American peers. In the current downturn, our utilization rate fell from 62.4 percent in 2008 to 60.1 percent in 2009 and changed little in 2010 (Exhibit 12).

The US decline was more severe between 2008 and 2009, but the utilization rate turned up slightly in 2010. Ontario continues to hold a solid utilization advantage over its North American peers.

Against international peers our

utilization advantage has been even more pronounced – typically 7 to 9 percentage points each year through the last decade.

### Outlook for 2020

This is a relatively bright spot in Ontario's economic performance. But our workers are not as productive as those in other places. Most of our improvement recommendations are, and will continue to be, in the area of productivity. Our challenge is to improve productivity without excluding lower skilled workers in our work force, as is the case internationally. Our aspiration is to have high employment and high productivity. We need to continue to work at finding ways to open up job opportunities for our at-risk citizens so that they are contributing to and benefiting from our prosperity growth.

<sup>24</sup> Our utilization rate is generally known among economists as the "employment rate."

Our ability to create jobs has been a bright spot in Ontario's economic performance.

## Ontario still has a significant intensity gap versus our North American peers

### Why intensity matters

Intensity is the final step in measuring work effort, capturing how many hours workers are on the job. It is affected by different factors that often work in opposite directions and can be difficult to interpret. When workers want more leisure – choosing shorter work days or longer vacations – intensity measures peoples’ preferences. In most developed economies, workers opt for more leisure, and the hours they work decline over time. That is not an economic problem needing a solution.

However, lower intensity may be the result of the economy creating more part-time jobs than full-time jobs, and many workers are not able to work as many hours as they wish. Or government regulation may have unnecessarily restricted hours worked by individuals wanting to put in many work hours.

### How Ontario has performed

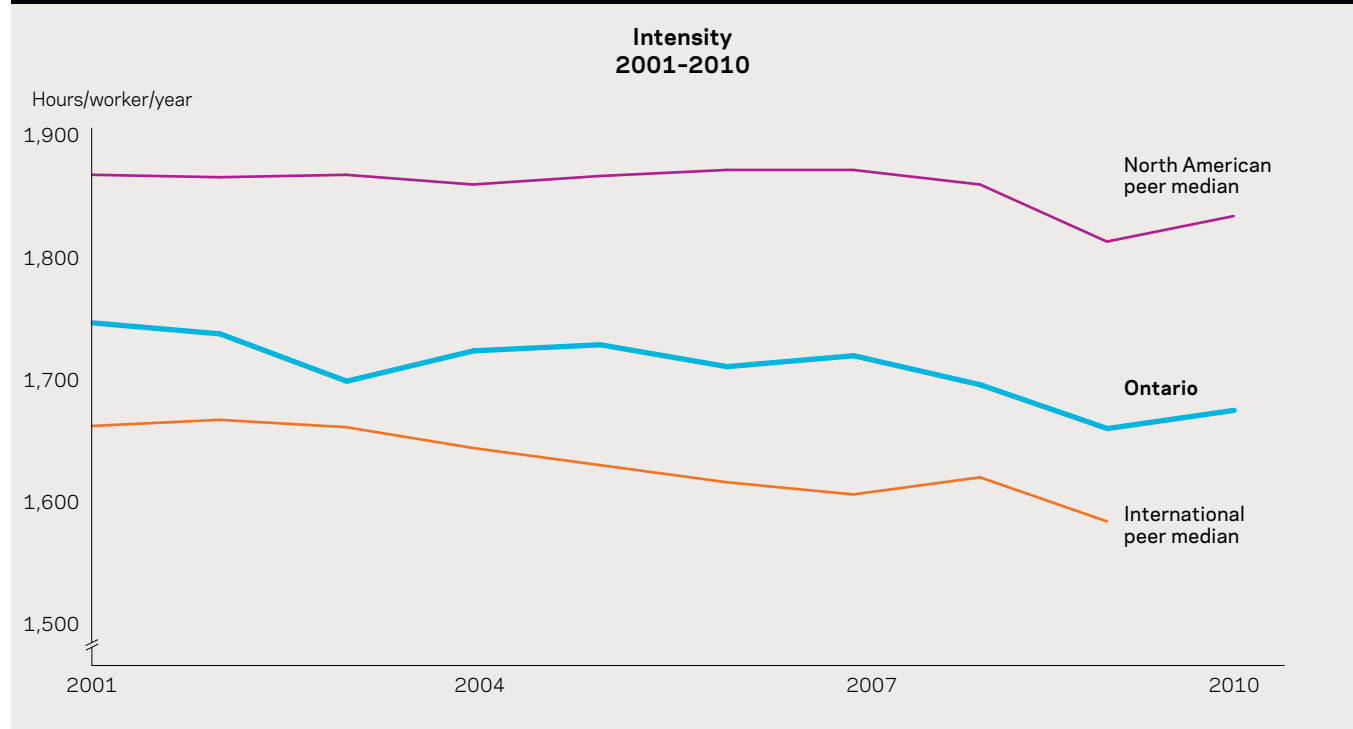
Ontario workers are on the job much less than their North American peers, and this gap has widened slightly even during the current US economic turmoil (**Exhibit 13**). On average, Ontario workers work 160 fewer hours or 4.3 weeks less than their counterparts in US peer states. The main source of this intensity gap is in vacations; our workers, especially those earning higher incomes, have a higher propensity to take vacations lasting at least a week, and this accounts for 54 percent of the intensity gap. The other major part of our intensity gap is our higher incidence of part-time work, particularly involuntary part-time. More of our part-timers want to work full-time, but cannot find full-time jobs. Finally, a smaller percentage of our workers report working long work weeks – more than 50 hours on average.

By contrast, Ontarians work more hours than their international peers. While we do not have access to the same level of detail in hours worked to analyze these differences, previous research points to higher regulatory strictures and cultural differences to explain the greater preference for leisure, especially in Europe.

### Outlook for 2020

It is difficult to identify a desired path for intensity. We certainly do not propose that we close our prosperity gap by reducing our vacations and working longer days. But we do think it is important for our economic development to provide full-time work to all who want it.

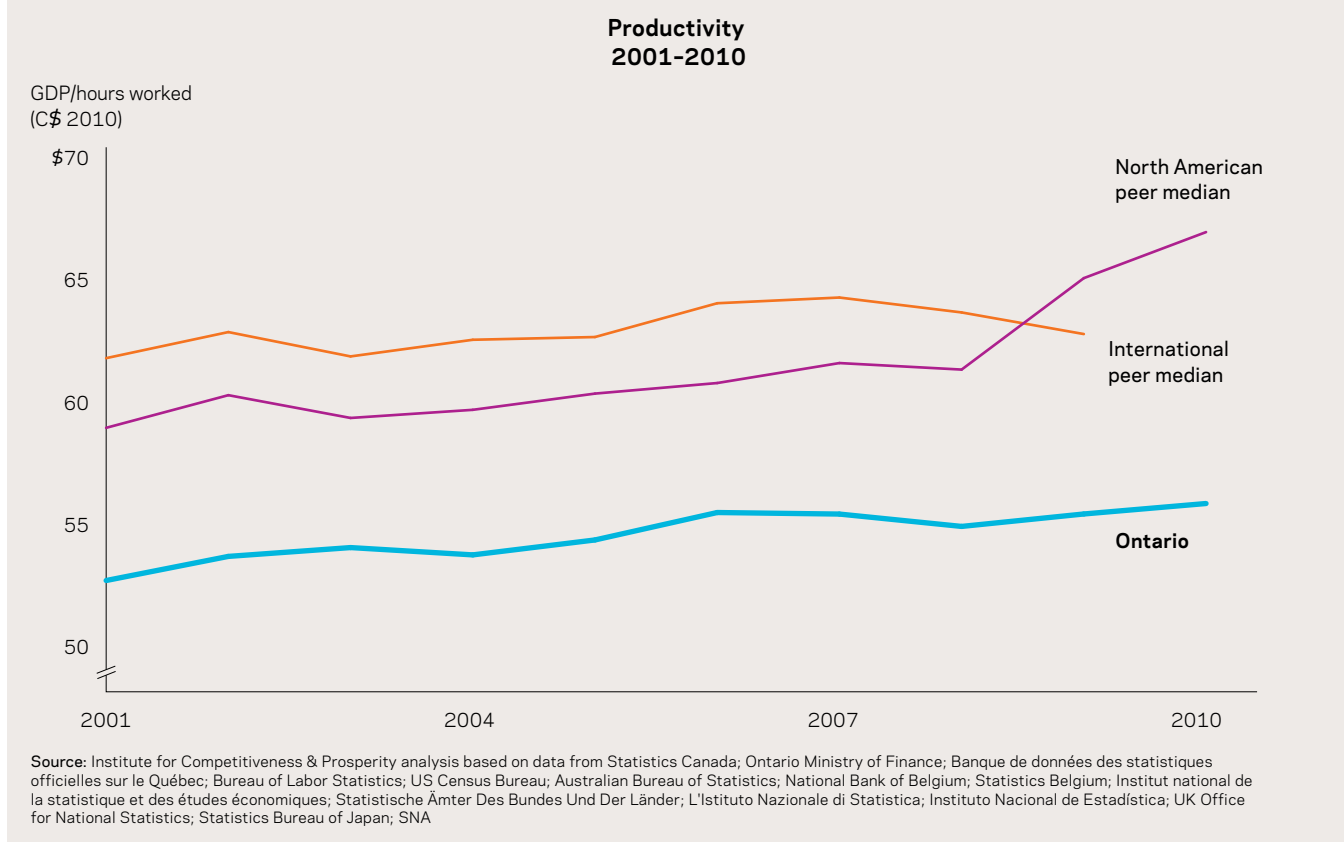
Exhibit 13 Ontario workers are on the job less than North American peers, but more than their international peers



**Note:** Because of limited data on hours worked national figures are used for Lombardia, New South Wales, Vlaams Gewest, South East, and Rhône-Alpes.  
**Source:** Institute for Competitiveness & Prosperity analysis based on data from Statistics Canada; Bureau of Labor Statistics; US Census Bureau; Australian Bureau of Statistics; National Bank of Belgium; Statistics Belgium; Institut national de la statistique et des études économiques; Statistische Ämter Des Bundes Und Der Länder; L'Istituto Nazionale di Statistica; Instituto Nacional de Estadística; UK Office for National Statistics; Statistics Bureau of Japan; SNA Statistics National Accounts of Japan; OECD; IMF; Eurostat.

## Productivity continues to be our main prosperity challenge

Exhibit 14 Ontario has a persistent and significant productivity gap



### Why productivity matters

Productivity measures the value added in our economy by the number of hours worked to result in a GDP per hour worked. While expressed in terms of labour hours, productivity is a summary measure of the strength of our business strategies in creating innovative products and services, the capabilities of our workers in applying skills and knowledge in the workplace, the quality of our infrastructure, and other factors.

Nobel laureate, Paul Krugman concluded that, "Productivity isn't everything, but in the long run it is almost everything. A country's ability to improve its standard of living over time depends almost entirely on its ability to raise its output per worker."<sup>25</sup> The factors that drive work effort – profile, employment, and intensity – have limits. The percentage of the population that is of working age doesn't get too far past

68 percent in developed economies; only a finite percentage of adults work, certainly not more than 100 percent; and there are only 24 hours in a day. But productivity has no upper limit. It is the key driver of prosperity growth.

Productivity is important because it is synonymous with innovation. Productivity growth is the result of improved products and services or processes which are innovations.

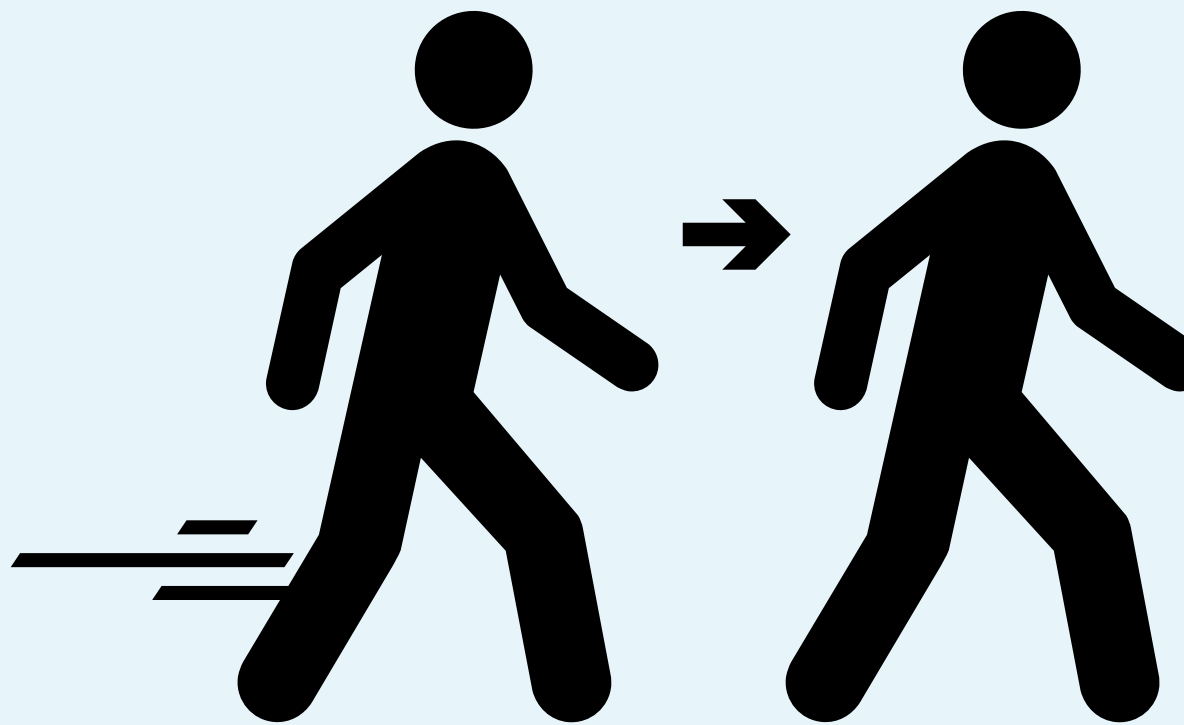
### How Ontario has performed

Since our first annual report we have identified productivity as the most important economic issue facing Ontario. We are laggards versus our North American and international counterparts and our relative performance has not improved over the decade (Exhibit 14).

### Outlook for 2020

Since our work effort will likely decline in the coming years because of changing demographics and other factors, we need to improve our productivity. If we assume that Ontario maintains its work effort advantage over our North American and international peers to 2020 and that we need faster productivity growth to close the prosperity gap, then we need productivity to grow at an annual rate of 2.1 percent from 2011 to 2020. This is a tall order as our annual growth rate since 2001 has been 0.2 percent. This will require ongoing improvement in our human capital through more education, innovative strategies from our businesses, including more investment in R&D and technology, and ongoing improvements in our tax system – all of which we discuss in this Report.

<sup>25</sup> Paul Krugman (1997) *The Age of Diminishing Expectations*, Third Edition, Cambridge: The MIT Press.



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# HUMAN CAPITAL

Our innovation performance depends heavily on our people and their capabilities

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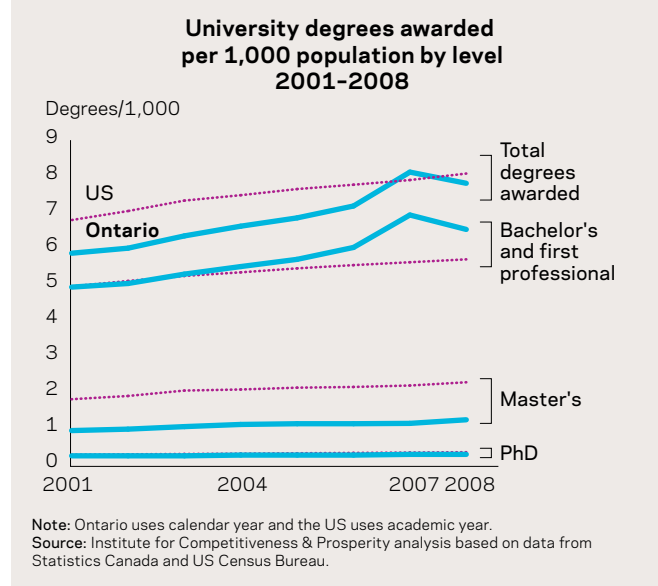
ONTARIO WILL BE GLOBALLY COMPETITIVE TO THE EXTENT THAT its people have sophisticated skills that enable them to be innovative workers, managers, and customers. These skills and capabilities are often referred to as “human capital.” Like physical capital, human capital requires investments – typically in education and in work experience – and provides a return through higher productivity and wages. Increasing the development of these skills – or increasing our human capital – will help the province close its prosperity gap. It will also reduce the incidence of poverty. As we review progress over the last decade, we see that:

- We are making progress on raising the number of people with degrees – a critical factor for competing on the basis of innovation
- The incidence of individuals without a high school diploma is falling
- The costs of being under educated, such as higher unemployment and other poverty measures, are increasing – especially in the current economic turmoil
- The educational attainment of our management cadre is increasing, but only slowly; we still trail our US counterparts significantly
- We still have too many Ontarians living in poverty through lack of education and higher unemployment, but at least the proportion is not increasing.

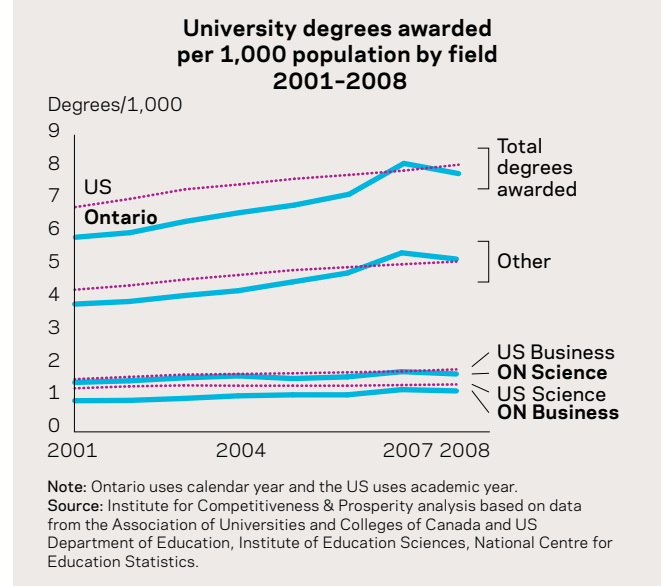
**Much of the responsibility for increasing our level of human capital lies with governments and their investments. But individuals are responsible for enhancing their lifelong skills, and businesses are an important participant in the improvement process.**

## Ontario has awarded more post secondary degrees over the decade

**Exhibit 15** Ontario has made good progress in awarding bachelor's degrees, but still trails at the master's level



**Exhibit 16** Ontario continues to trail in awarding business degrees



### Why degree attainment matters

Over the years, our work has shown that post secondary education is an important element of our innovation, productivity, and prosperity progress – for individuals, firms, and jurisdictions. More education directly correlates with higher lifetime earnings and lower unemployment. International research by the OECD shows a positive and significant relationship between years of schooling and per capita growth in output. A more educated management cadre is associated with stronger management capabilities. And there is a strong correlation between labour force quality and per capita economic growth rates. To the extent we have a highly educated workforce, Ontario will thrive as globalization advances.

### How Ontario has performed

In our First Annual Report, we noted that Ontario produced slightly more bachelor's degrees annually than the United States. But, at the master's level, our graduation rate trailed considerably. Since then, Ontario has opened up a 1.5 percent lead in the rate at which we graduate students at the bachelor's and

first professional degree level - 6.4 degrees per 1,000 population in Ontario versus 5.6 in the United States (**Exhibit 15**). However, our gap at the master's level has widened, with the US rate about doubling our annual rate per capita. At the PhD level, we continue to trail, but the number of degrees awarded at this level is very low.

In sum, we have almost eliminated the gap in post secondary degrees awarded over the last decade. In fact, in 2007 with the double cohort we had more graduates per capita than the United States. That's the good news. The bad news is that the widening master's gap is a hindrance, because master's degree holders earn an 11 percent premium over bachelor's degree holders – indicating that the degree contributes more to our productivity and innovation performance.<sup>26</sup>

Reviewing the results by field of study, we see that business continues to be the source of Ontario's gap versus the United States. (**Exhibit 16**) Given that our business managers are less well educated irrespective of field of study, this gap is likely limiting our prosperity.

### Outlook for 2020

Our young people have made excellent progress in achieving university degrees, and this will translate into prosperity gains in the future for Ontario through better educated workers, managers, entrepreneurs, and customers. We should continue to invest in post secondary education and redouble our efforts at reducing barriers for lower income families – to achieve an even bigger advantage at the bachelor's level. We also need to convince more of these graduates to continue in graduate studies and ensure adequate funding to support this. Increased investments in graduate education through Reaching Higher will help achieve this.

University administrators need to respond to the desire of incoming students to pursue business studies. Our previous research has shown that entry standards in Ontario universities are higher for business undergraduate degrees than for the sciences and humanities.<sup>27</sup>

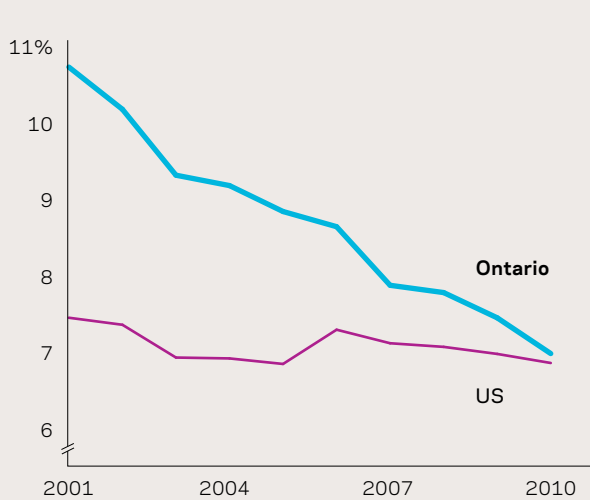
<sup>26</sup> Institute for Competitiveness & Prosperity, Fifth Annual Report, *Agenda for our prosperity*, November 2006, p. 36.

<sup>27</sup> Institute for Competitiveness & Prosperity, *Canada's Systematic Under Investment in the Education of Managers*, January 2011, slide 5, available at [http://www.competeprosper.ca/images/uploads/Manager\\_Education\\_RLM\\_240111.pdf](http://www.competeprosper.ca/images/uploads/Manager_Education_RLM_240111.pdf)

## Fewer Ontarians are high school dropouts

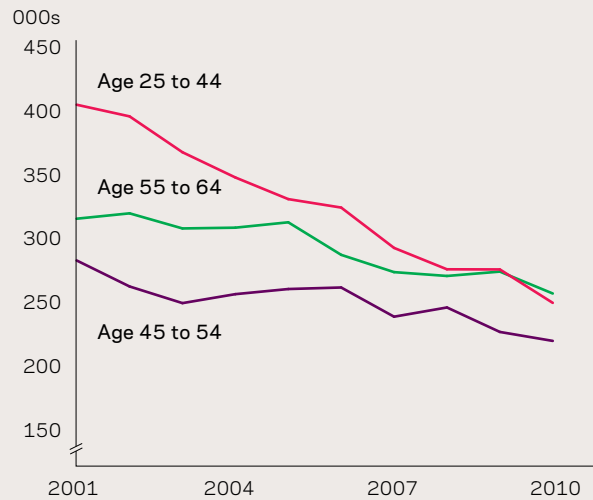
Exhibit 17 Fewer Ontarians lack a high school diploma

Population age 25-64 without a high school diploma, Ontario and United States 2001-2010



Source: Institute for Competitiveness & Prosperity analysis based on data from Statistics Canada and US Census Bureau.

Working age population without a high school diploma Ontario, 2001-2010



Source: Institute for Competitiveness & Prosperity analysis based on data from Statistics Canada.

### Why high school diplomas matter

In the era of globalization, when developing economies are moving toward competing on the basis of innovation, education becomes more important. So those Ontarians without a base level of education are increasingly vulnerable. Entering the work force without a high school diploma is a ticket to poverty.

The Institute's research has shown that adults without a high school diploma have a 12 percent chance of earning an income below the Low Income Cut-Off. Combined with other factors associated with poverty – being a recent immigrant, a single parent, an Aboriginal person, or an unattached individual between the ages of 45 and 64 – lack of a high school diploma increases the odds of living in poverty dramatically.<sup>28</sup> Elsewhere in this Annual Report, we show how those without high school diplomas are much more likely to be unemployed, especially in this current downturn.

Our modern economy values

intellectual skills and this will only intensify. A high school diploma is not an adequate education; but it is a first step to gaining other valuable skills.

### How Ontario has performed

Lack of a high school diploma has been a real area of weakness in human capital for the province – and an important factor in the \$1,200 per capita cost to our prosperity. Compared to our counterparts in the United States, more of our population lacks a high school diploma, although this difference is shrinking (Exhibit 17).

Today, fewer working age Ontarians lack a high school diploma. This is partly because older workers who are less likely to have a high school diploma are retiring. But it's also because more of our younger people are now earning a high school diploma. So we are gradually upgrading our human capital.

### Outlook for 2020

In 2006 the Ontario government required our youth to stay in school until age 18. Measures like this plus other approaches that keep our youth in school – and that encourage them to reach higher – will help improve our human capital and therefore our innovation and prosperity. More important, progress on this front fights poverty.

<sup>28</sup> Task Force on Competitiveness, Productivity and Economic Progress, Ninth Annual Report, *Today's innovation, tomorrow's prosperity*, November 2010, pp. 23-25.



## Unemployment is still most severe among those with least education

### Why unemployment matters

Increasing our human capital is an important part of achieving our 2020 Prosperity Agenda. Researchers and academics have various ways of measuring human capital. The highest level of education achieved is one. Others include years of work experience or achievement on standardized tests like the International Adult Literacy Survey (IALS). None is perfect, but educational attainment is generally seen as an acceptable proxy.

Regardless of acceptance of this measure, it is clear that higher education brings societal and personal benefits. We have seen in our own work the impact on earnings from educational attainment.<sup>29</sup> In research done through collaboration with the Centre for the Study of Living Standards, the Institute found that greater educational attainment increased factors that improved subjective well being or personal happiness.<sup>30</sup> We have seen the impact of low educational attainment on the risk of poverty.<sup>31</sup>

Ontario's businesses have to compete globally on the basis of innovation and creativity. These were important factors in determining which of our

manufacturing industries were most vulnerable to the sector's decline which occurred largely as a result of the strengthened Canadian dollar.<sup>32</sup> Globalization is raising both the premium for higher educational attainment and the earnings deficit for lower educational attainment.

### How Ontario has performed

Ontarians have increased their educational attainment over the past decade. This is clearly a good thing, because the impact of more education has become more pronounced in the past decade (**Exhibit 18**) – especially in the current economic downturn. In 2010, unemployment rates for those without a high school diploma averaged 11.5 percent, compared with 7.0 percent for those with a bachelor's degree and 5.0 percent for those with advanced degrees.

While the current downturn has raised unemployment rates for all groups defined by education level, the negative impact for high school dropouts is now more dramatic than earlier in the decade.

### Outlook for 2020

The demand premium for creative and

innovative workers will only increase in the coming years. Jobs with requirements for higher analytical and communications intelligence simply pay more. Jobs with higher physical skills requirements pay less. We need to stay on the path, in fact accelerate our trajectory, that provides educational opportunities for young Ontarians to continue their education – as far as their capabilities will take them. For our older, less skilled workers, we need to identify creative solutions, like wage insurance,<sup>33</sup> to deal with long-term unemployment and to upgrade current retraining approaches that are ineffective.<sup>34</sup> (See *Consider wage insurance to help older displaced workers*.)

29 Report on Canada 2011, *Canada's innovation imperative*, pp. 34-36; and Annual Report 8, *Navigating through the recovery*, pp. 42-43.

30 Centre for the Study of Living Standards, *Does Money Matter? Determining the Happiness of Canadians*, November 2010, updated February 2011, available online: <http://www.csls.ca/reports/csls2010-09.pdf>

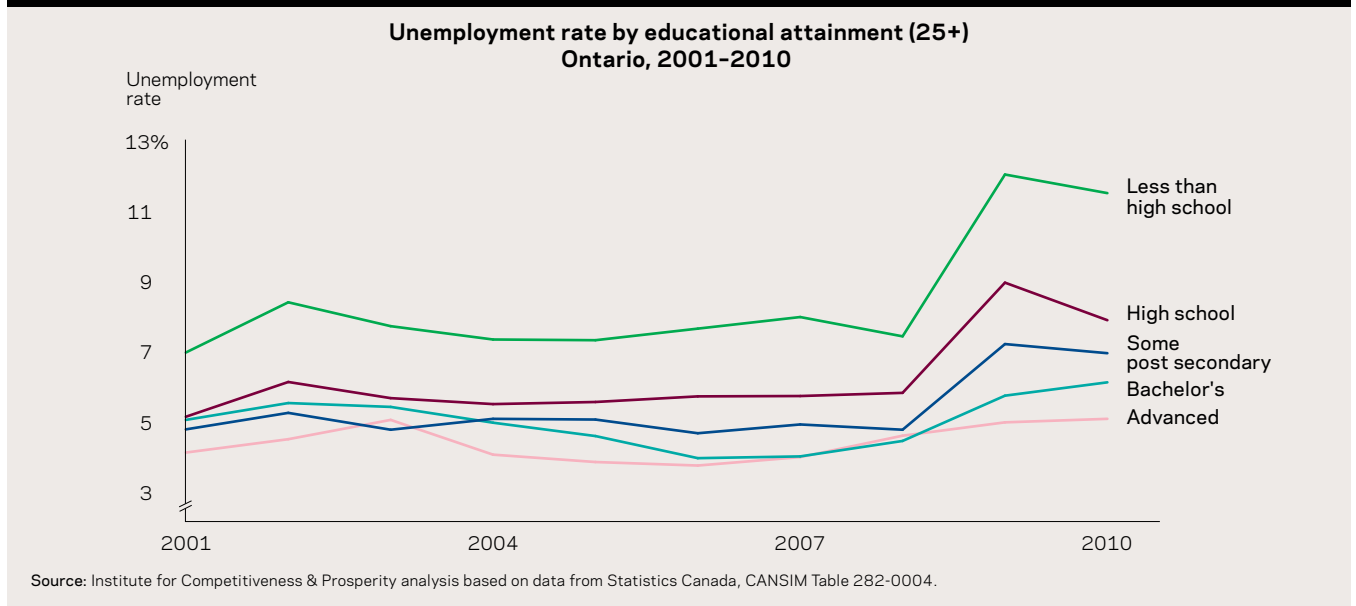
31 Institute for Competitiveness & Prosperity, Working Paper 10, *Prosperity, inequality, and poverty*, September 2007, pp. 31-33.

32 Institute for Competitiveness & Prosperity, Working Paper 14, *Trade, innovation, and prosperity*, September 2010, pp. 39-40.

33 For further reading, please refer to Exhibit B in the Report on Canada 2011, *Canada's innovation imperative*.

34 Report on Canada 2011, *Canada's innovation imperative*, p. 59.

Exhibit 18 Unemployment rates are higher for those with less education



# Consider wage insurance to help older displaced workers

Displaced workers face enormous difficulties in attempting to re-enter the workforce.

A recent study by University of Ottawa economists Ross Finnie and David Gray shows that the older the laid off worker, the greater the subsequent earnings loss (Exhibit B). Workers older than 50 face much more severe challenges than their younger counterparts.

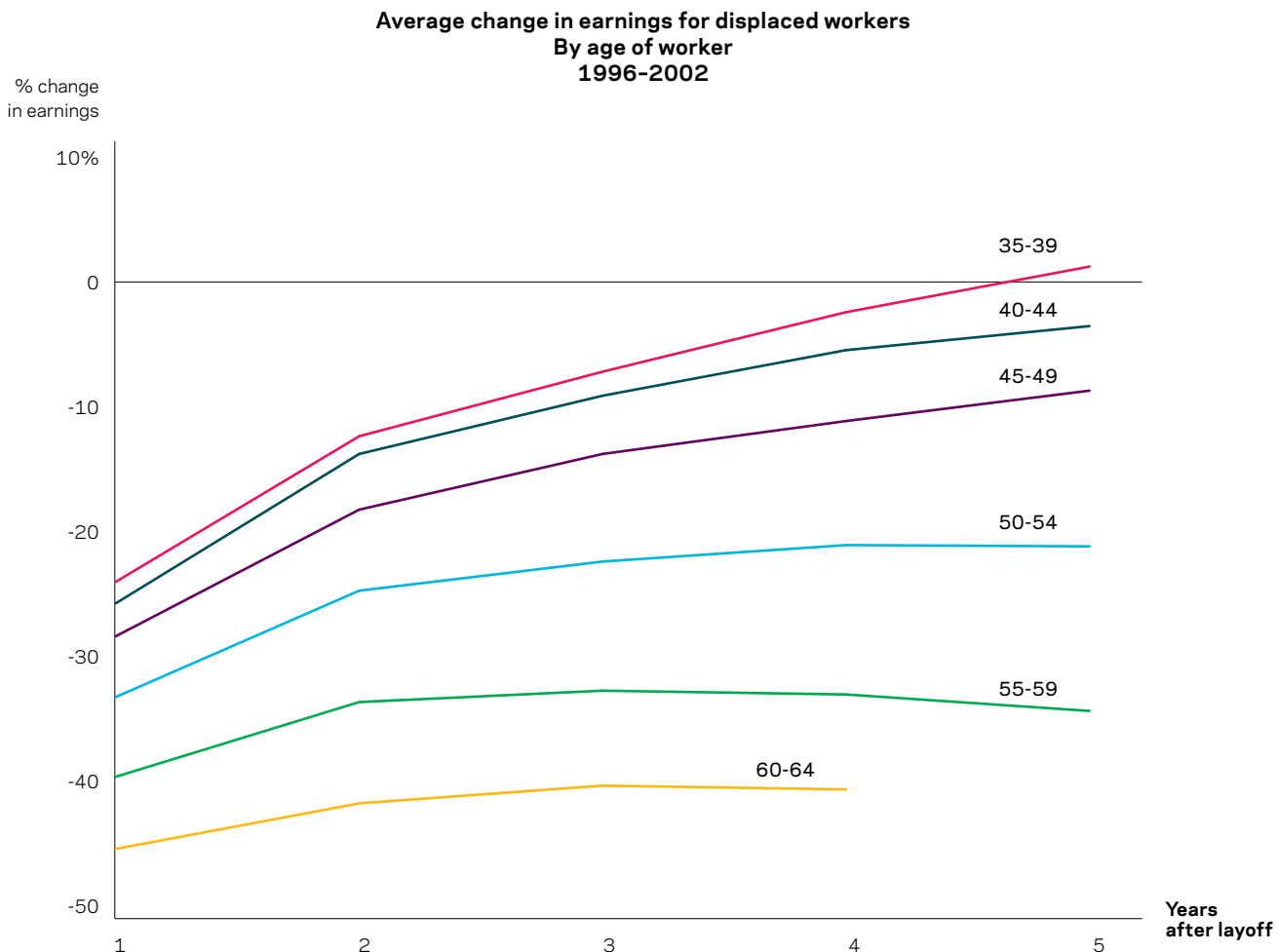
Unfortunately, there is no sure plan to help these displaced workers. Retraining is the panacea most often promoted. But definitive results are hard to come by.

Wage insurance could be a useful approach to supplement existing programs for workers transitioning to lower paid work – which unfortunately may be inevitable for older

displaced workers. When workers laid off from a long tenure job take on a lower paying job, wage insurance could cover half the earnings difference for a period of about two years. The benefit could be capped at \$10,000 annually to ensure targeting at lower- and middle-income workers. The coverage rate and period and the benefit cap could be adjusted up or down.

Wage insurance could be an effective way of helping older laid off workers get back on track more quickly. But it is by no means a proven policy. We encourage governments to investigate it further.

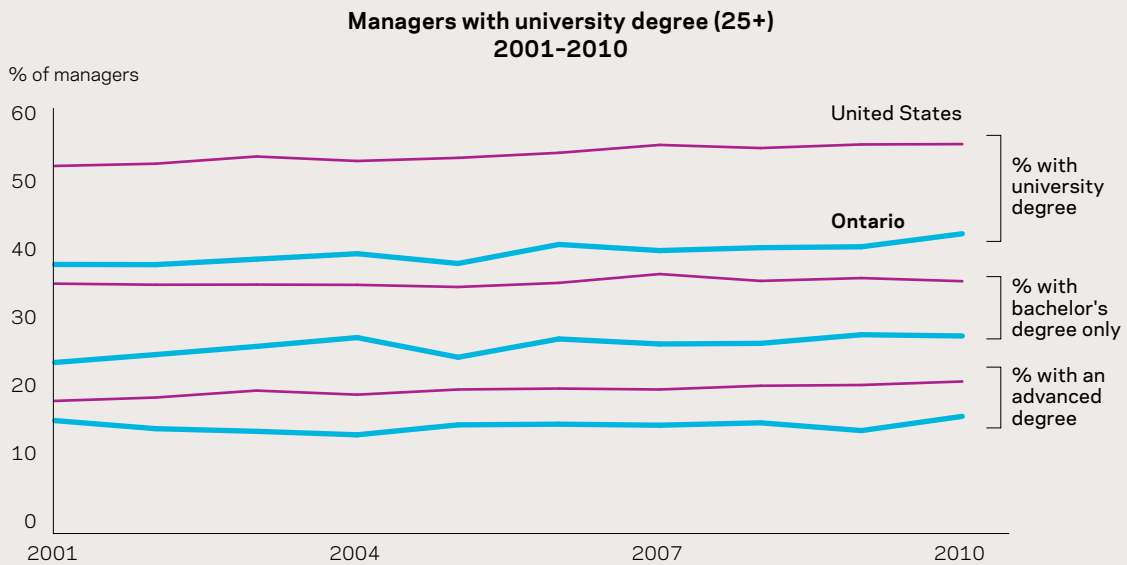
Exhibit B Older workers are most severely affected by layoffs



Source: Ross Finnie and David Gray, "Labour-Force Participation of Older Displaced Workers in Canada," IRPP Study, No. 15, February 2011, Table 5.

## Managers' educational gap has closed slightly

Exhibit 19 Ontario's managerial education gap has closed slightly



Source: Institute for Competitiveness & Prosperity analysis based on data from Statistics Canada and Bureau of Labor Statistics, Current Population Survey.

### Why managers' education matters

Management capability is an important element in improving our innovation and productivity performance. Strong management is important for sizing up competitive challenges and threats, assessing consumer behaviour for business opportunities, putting in place the necessary resources and capabilities, and building skills and talents in the organization. Our framework for improving innovation comprises both support for and pressure on business, and managers are critical in both these areas. In support of innovation, effective managers create the conditions for achieving the innovative initiatives they envision for their organizations. Capable managers also create pressure for innovation by insisting that their businesses and suppliers are increasingly sophisticated and by making their firms' rivals uncomfortable through aggressive competition. Capable managers are effective partners to scientists and engineers, helping to focus their efforts on business strategies and to see opportunities in new unanticipated discoveries.

Research by the Institute and others

points to the importance of management excellence. Advances in management techniques, such as just-in-time inventory or management by objectives, have propelled productivity growth in the United States.<sup>35</sup> And Canada's successful tech startups found that one of the biggest hurdles they faced in competing with their US competitors was finding capable managers.<sup>36</sup>

The Institute also measured the quality of Canadian management in manufacturing and retailing compared to that of their counterparts in other countries. While Canada's performance was solid, the research showed how the quality of management improved as the percentage of an organization's management team had university degrees.

### How Ontario performs

The lower educational attainment of our managers is a competitive disadvantage for Ontario. As we have shown in the past, a lower percentage of our managers have university education and a higher percentage only have a high school diploma.<sup>37</sup> We have closed the educational attainment gap

slightly over the last decade (Exhibit 19). The percentage of our managers with a university degree increased from 37 in 2000 to 42 in 2010. In the United States, this percentage rose from 51 percent to 55 percent. So the gap has fallen by one percentage point, from 14 to 13 percentage points.

### Outlook for 2020

We are moving in the right direction, but at glacial speed. This is an important deficit we have with our US counterparts. Our businesses need to look critically at their human resource strategies in their management ranks. Our firms and our province cannot expect to realize their full innovation potential without a highly capable management cadre.

35 Institute for Competitiveness & Prosperity, Working Paper 12, *Management matters*, March 2009, pp. 15-16.

36 The Strategic Counsel, *Assessing the Experience of Successful Innovative Firms in Ontario*, September 2004, pp. 10, a report sponsored by the Institute for Competitiveness & Prosperity available at <http://www.competeprosper.ca/images/uploads/InnovationInterviewStudyRep.pdf>

37 Institute for Competitiveness & Prosperity, *Canada's Systematic Under Investment in the Education of Managers*, January 2011, slide 7, available at [http://www.competeprosper.ca/images/uploads/Manager\\_Education\\_RLM\\_240111.pdf](http://www.competeprosper.ca/images/uploads/Manager_Education_RLM_240111.pdf)

# Ontario's poverty rate is unchanged

## Why LICO matters

The Low Income Cut-Off, or LICO, is a measure developed by Statistics Canada. It defines the income level at which individuals or families spend 20 percentage points or more of their income on food, shelter, and clothing than the average family of similar size. While Statistics Canada does not identify LICO (or any other measure) as a cut-off for poverty, we think it a useful benchmark for determining the exclusion of Ontarians from participating in and contributing to wealth creation in our economy.

LICO can be measured across individuals and families<sup>38</sup> and on a before-tax and after-tax basis.<sup>39</sup> Because of the progressivity of our tax system, the percentage of individuals and families earning below LICO, after tax, is lower than the percentage before tax.

## How Ontario has performed

The percentage of Ontarians below LICO has held fairly steady over the last decade (Exhibit 20). Across all four measures, the percentage increased very gradually during the first half of the decade, but was below the rates experienced during most of the 1990s. The percentage earning below LICO fell gradually from 2004 to 2007. As the economic turmoil began in 2007, the percentage of Ontarians living below LICO turned up. Still, the rates did not increase to the same extent as they did in the 1990s and during the downturn of the early 1980s.

Poverty is not distributed evenly across our population. Specific groups are much more likely to have incomes below LICO – high school dropouts, recent immigrants, single parents, persons with disabilities, Aboriginal people, and unattached individuals, aged 45–64. To increase their incomes

they need to strengthen their attachment to the labour force and to enhance their skills through education.

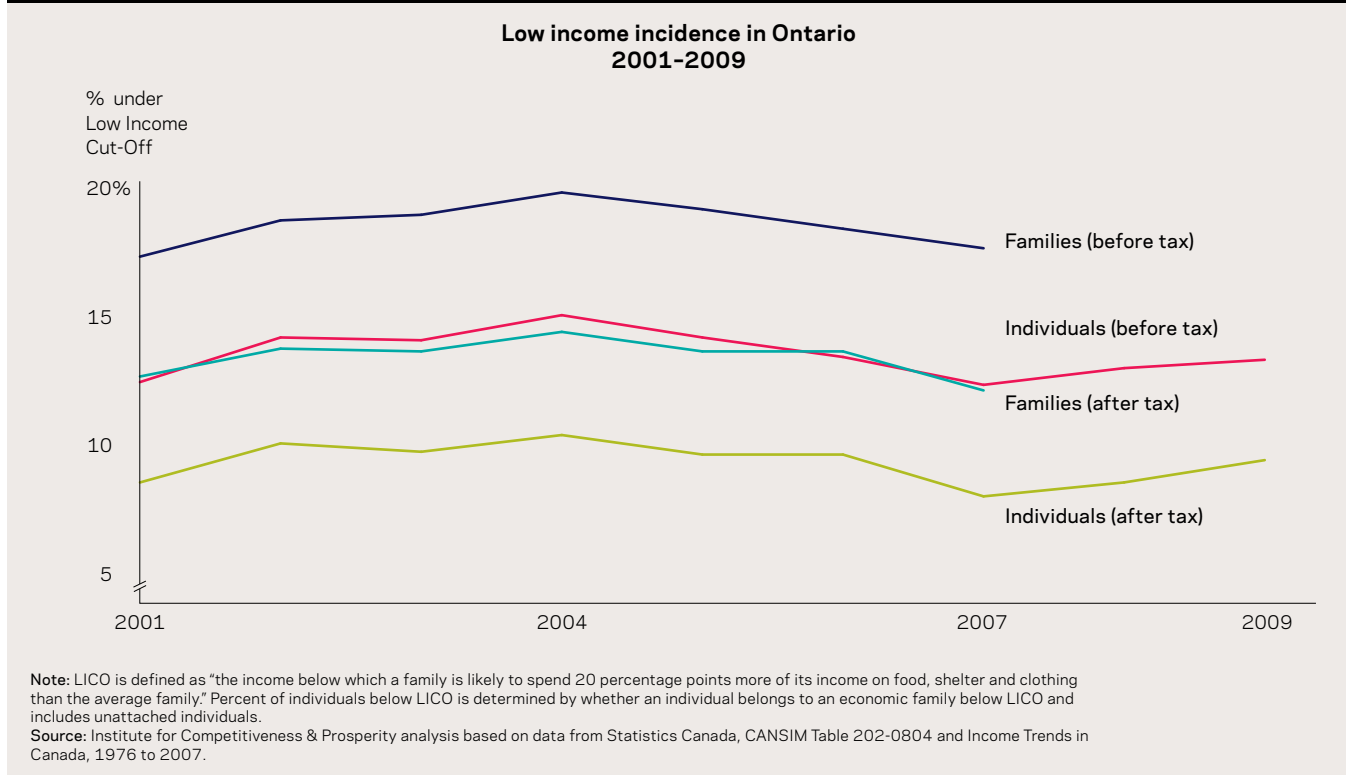
## Outlook for 2020

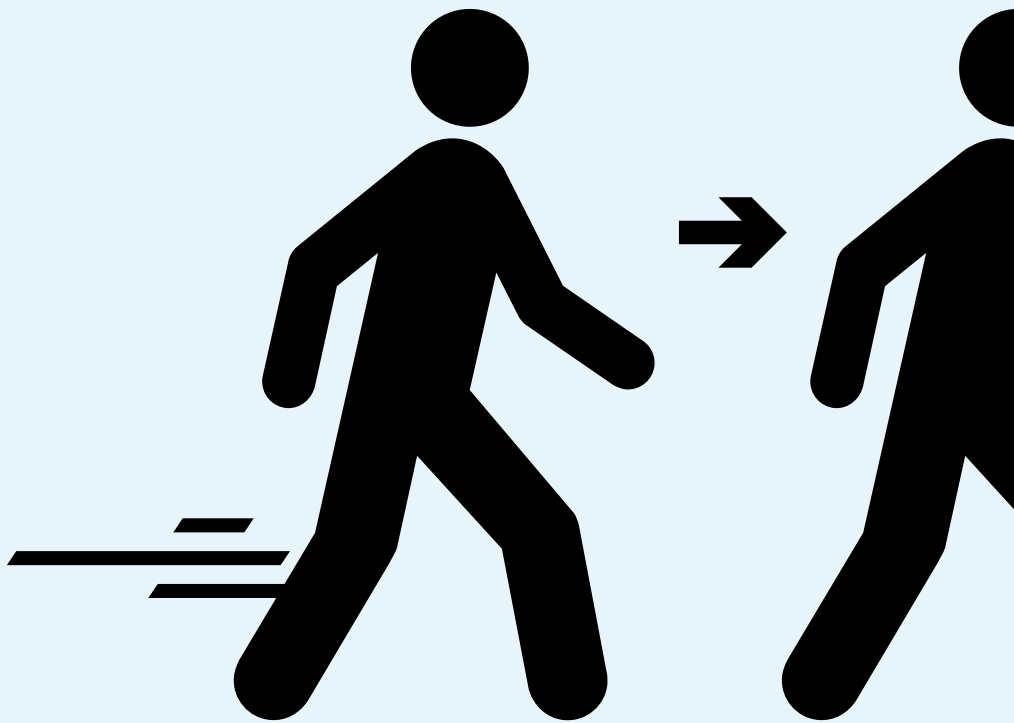
If we can address the poverty challenges for specific groups, we will move forward on our 2020 Prosperity Agenda. Reducing poverty is the result of drawing on more Ontarians in contributing to our GDP. To do this, we need to enhance educational attainment for our citizens by increasing access to post secondary education, supplementing the earnings of lower skilled workers by improving programs like the Working Income Tax Benefit, and finding effective ways to retrain workers who lose their jobs.

38 Unattached individuals are also counted as families.

39 Transfer payments are counted as income in both before- and after-tax measures.

Exhibit 20 The incidence of Ontarians living in poverty has not changed much





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# INVESTMENTS

Investments are the lifeblood of innovation and prosperity; Ontario businesses and governments need to invest more

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PROSPERITY IS DRIVEN BY PRODUCTIVITY, and productivity is driven by innovation. Much innovation is the result of creative insights and well thought through strategies. But much innovation is enabled by investment in human and physical capital.

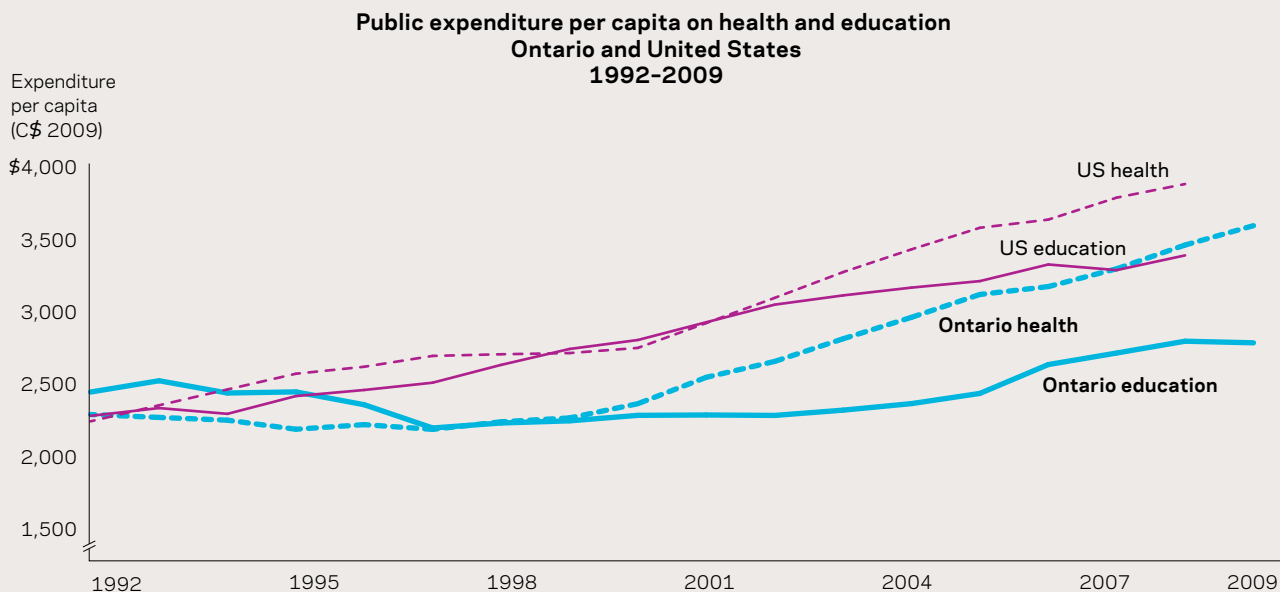
In our past reports, we have found Ontario businesses and governments wanting in their investment in our innovation capabilities. Our look back over the decade indicates lagging investment on several fronts:

- Our **public expenditures** have tilted toward the consumption of current prosperity, such as for health care, and away from investments in future prosperity, such as education
- Businesses in Ontario invest less in **sophisticated technology** than their North American counterparts
- Our growing investments in **public R&D** have not translated into growth in business R&D
- Ontario's lagging **patents** signal trailing innovation
- Our previously high **taxation of new business** investment has contributed to this lower investment, but we now have a tax advantage internationally.

Our governments and businesses face tough spending decisions in these volatile economic times. As they assess tradeoffs, we encourage them to place a priority on investments in our innovation capability to realize our prosperity potential in the coming decade.

## Public expenditures need a better balance of spending on consumption and investment

Exhibit 21 In Ontario, public investment in education trails health care spending significantly



**Notes:** US health spending includes workers' compensation, medical benefit outlays and excludes administrative and other costs; Ontario health spending includes all workers' compensation. Values deflated using GDP deflators. US dollars converted to Canadian dollars at 2009 PPP.  
**Source:** Institute for Competitiveness & Prosperity analysis based on data from Statistics Canada, Consolidated Government Revenue and Expenditures (CANSIM Table 385-0001); US Census Bureau, State and Local Government Finances; Office of Management and Budget, Historical Tables; National Academy of Social Insurance, *Workers' Compensation: Benefits, Coverage, and Costs*, 2008.

### Why balancing health care and education spending matters

Broadly speaking, public expenditures can be broken into two fundamental buckets: investment in building future prosperity, and consumption of current prosperity. Education is a prime example of investing in future prosperity, while most health care spending is consumption of current prosperity. We do not conclude that education is preferable to health care spending. Both are critical responsibilities of government. But it is instructive to assess patterns of expenditure to determine if we are shifting the balance (Exhibit 21).

### How Ontario has performed

As federal and provincial governments at both levels tackled deficits in the 1990s, they cut real per capita spending on education, an investment, at a much faster rate than that on health care spending, which is consumption. By 1998, governments in Ontario were spending more on health

care than on education. This gap widened considerably as health care spending per capita increased at an annual trend line real rate of 4.7 percent between 1998 and 2009, while education spending increased only 2.4 percent annually. Last year, per capita public spending on health care outpaced spending on education by 29 percent; a decade ago, spending was about the same for both.

Contrast Canada's response to the 1990-93 economic downturn with that of the United States, which admittedly entered that recession in better fiscal shape than Canada. US governments did not need to engage in the dramatic deficit fighting seen in Canada. State systems, such as education, therefore did not experience the kind of shock that Canadian education experienced. Over the same period, health care spending by governments in the United States did grow faster than for education.

We do not point to the US as a paragon of fiscal intelligence and responsibility; our only point is that governments

cannot forsake investments for the long term as they tackle deficits.

### Outlook for 2020

It is encouraging to note that public spending on education in Ontario has turned up in recent years, led by the investments of the Ontario government in post secondary education.

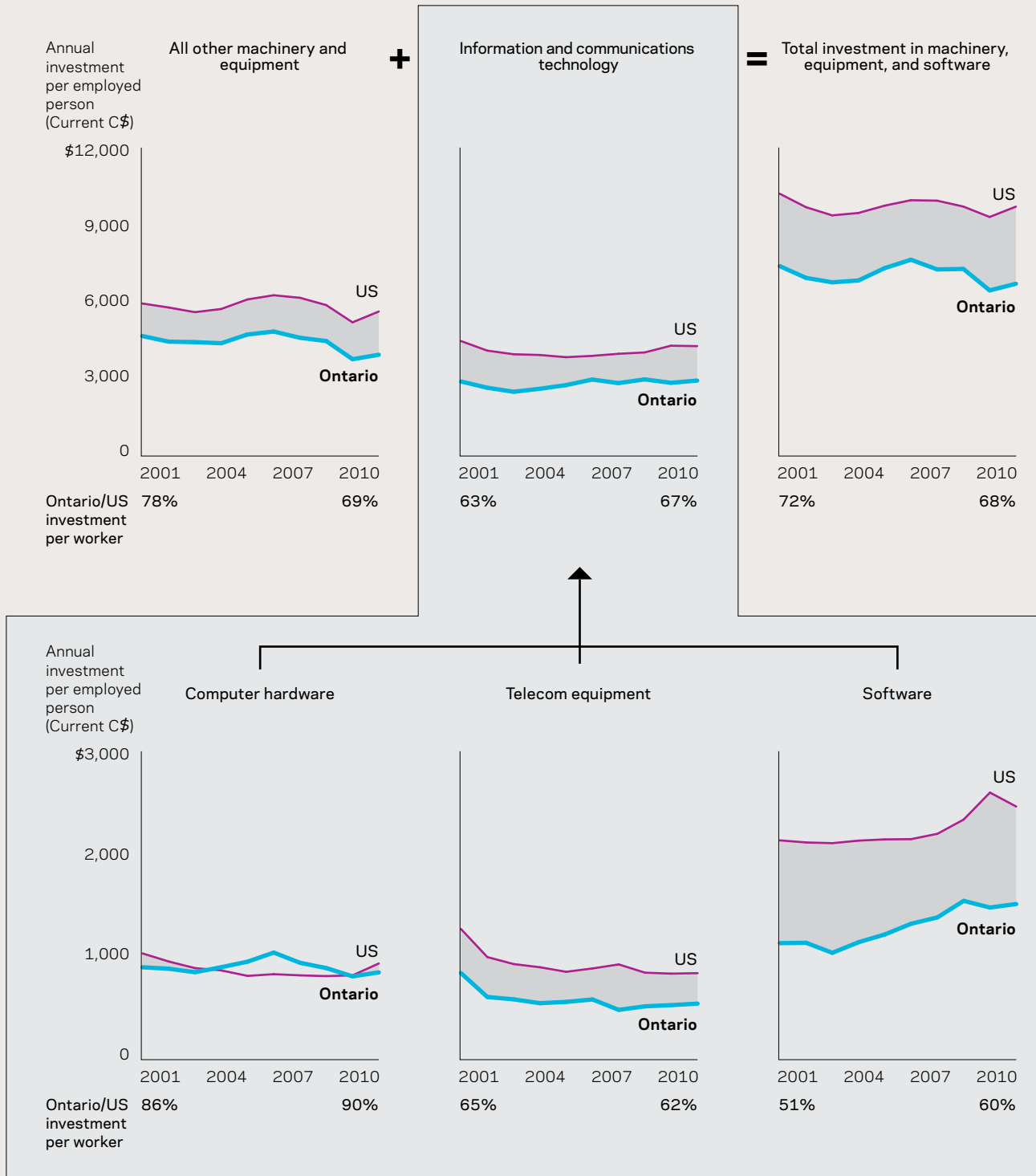
While constant dollar per capita public investments in education increased slightly, at a rate of 0.8 percent annually between 1997 and 2003, this annual growth rate increased to 3.6 percent between 2003 and 2009. In the United States, the annual growth in constant dollar public expenditure on education was 1.7 percent between 2003 and 2008.

Still, much remains to be done, as the gap to be closed on education spending remains considerable – at \$600 per capita in 2008. As federal and provincial governments turn their attention to the massive deficits they have generated in the past two years, they need to ensure that spending cuts are made appropriately with innovation in mind.

# Our businesses continue to lag in technology investments

Exhibit 22 Our businesses lag their US counterparts in productivity enhancing investments

## Private sector machinery, equipment, and software investment 2001-2010



Note: US dollars converted to Canadian dollars using PPP for M&E. The 2010 PPP for M&E is estimated based on CAD/USD exchange rates.  
 Source: Institute for Competitiveness & Prosperity analysis based on data from Statistics Canada (special tabulations); Labour Force Survey (CANSIM Table 282-0002); US Department of Commerce, Bureau of Economic Analysis; US Bureau of Labor Statistics, Current Population Survey; CSLS Database of Information and Communication Technology (ICT) Investment and Capital Stock Trends: Canada vs United States, available online: <http://www.csls.ca/data/ict.asp>



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# Businesses need strategies based on innovation; technology investments provide support for these strategies

## Why business investment matters

Investments by businesses in machinery, equipment, and software make their workers more productive. Such investments that are made are typically allocated to Information and Communications Technology (ICT) and to all other traditional categories, such as transportation equipment and factory equipment. ICT accounts for about 40 percent of investment in machinery, equipment, and software.

Investment in ICT enhances productivity at three levels.<sup>40</sup> At the most basic level, equipping staff with computers and software increases firm and national productivity. At the second level, connecting computers in networks and drawing on more technologies can drive productivity even higher. But the most significant benefit of ICT adoption can be that it enables profound transformation of businesses through changes in business processes or organizational design or both.

## How Ontario has performed

On a per worker basis, US businesses out invest Ontario businesses in machinery and equipment (**Exhibit 22**).

For traditional machinery and equipment, the gap between Ontario and its US counterparts<sup>41</sup> has traditionally been lower but has been widening over the past decade. In 2010, for every dollar invested by US businesses in traditional machinery and equipment per worker, Ontario businesses invest 69 cents.

In the more sophisticated area of machinery and equipment, ICT, our lag is about the same and has been

consistent over the decade. In 2010, the Ontario-US gap in ICT investment per worker was \$1,375; Ontario businesses invested at the rate of 67 cents for every dollar invested by their US counterparts.

Further exploration of ICT expenditures reveals that the major source of our investment gap is in the area of software, with a smaller gap in computer hardware and telecommunications equipment. It appears that Ontario businesses have a higher propensity to purchase hardware, which tends more to be off-the-shelf, than to acquire software, which can be customized to specific business processes. This is one more example of our businesses attenuating their investment profile. We invest in the basics, but lag in the more sophisticated elements that are part of our innovative strategies.

We conclude that the lack of investment in ICT throughout the decade can be attributed to factors identified in research in other areas – lack of competitive pressure to spur Canadian businesses to adopt technology, less adequate management capabilities to discern the benefits of technology and to capitalize on them, and higher taxation on business investment.

## Outlook for 2020

Ontario's significant tax reform will eliminate the tax disadvantage. And opening up trade with Europe and developing economies will increase the support and pressure for investment. Greater competitive pressure and a more capable management cadre will help improve our performance in this important area.

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40 Roger Martin and James Milway, *Enhancing the Productivity of Small and Medium Enterprises through Greater Adoption of Information and Communication Technology*, Information and Communication Technology Council, Ottawa, March 2007, available online: [http://www.ictc-ctic.ca/uploadedFiles/Labour\\_Market\\_Intelligence/Trends/Other\\_Trends/Report\\_Items/12-Enhancing%20the%20Productivity%20of%20SMEs.pdf](http://www.ictc-ctic.ca/uploadedFiles/Labour_Market_Intelligence/Trends/Other_Trends/Report_Items/12-Enhancing%20the%20Productivity%20of%20SMEs.pdf)

41 State-level information is unavailable.

## Business R&D investment has lagged peers' spending

### Why R&D matters

R&D comprises basic research, applied research, and experimental development. It is distinguished from other pursuits, such as design, market research, or quality control, in that it is ultimately concerned with the production of original knowledge, processes, or products.<sup>42</sup>

Economists have gathered significant evidence of the positive relationship between R&D and productivity and have produced substantial proof that R&D investment is a key driver of long-term prosperity. In addition, R&D investment has been shown to have a positive relationship with patenting, another measure often used as a proxy for innovative activity.<sup>43</sup>

### How Ontario has performed

As a percentage of GDP, Ontario's R&D investment lags our peers' spending. A closer examination of Ontario's R&D investment indicates that our gap is in the area of private sector business R&D, not in publicly funded higher education and government R&D

(Exhibit 23). Clearly, our increased public expenditure for R&D has not led to increases in R&D by business.

This gap had been closing during the dot-com boom, led by Nortel, but since then, it has opened up again. The demise of Nortel does not account for all of the increase in the gap in business R&D. In 2001, Nortel's Ontario R&D accounted for 1.1 percent of GDP and all other Ontario businesses accounted for 0.6 percent – for a total of 1.7 percent. Nortel's importance to Ontario's R&D declined through the decade. By 2007, when Nortel's R&D was 0.3 percent of GDP, Ontario's other businesses investment in R&D had increased to 1.1 percent of GDP. So, Ontario's businesses have picked up just over half of the R&D spending lost as Nortel declined.

### Outlook for 2020

One of the obstacles to business R&D has been the high marginal effective tax rates on business investment. Despite the generous tax treatment for R&D in Canada, businesses faced very

high taxes on new business investment – the kind that would be required to benefit from R&D success. This mismatch held back business R&D;<sup>44</sup> with the significant improvement in our tax policy, we should see more business R&D in the future.

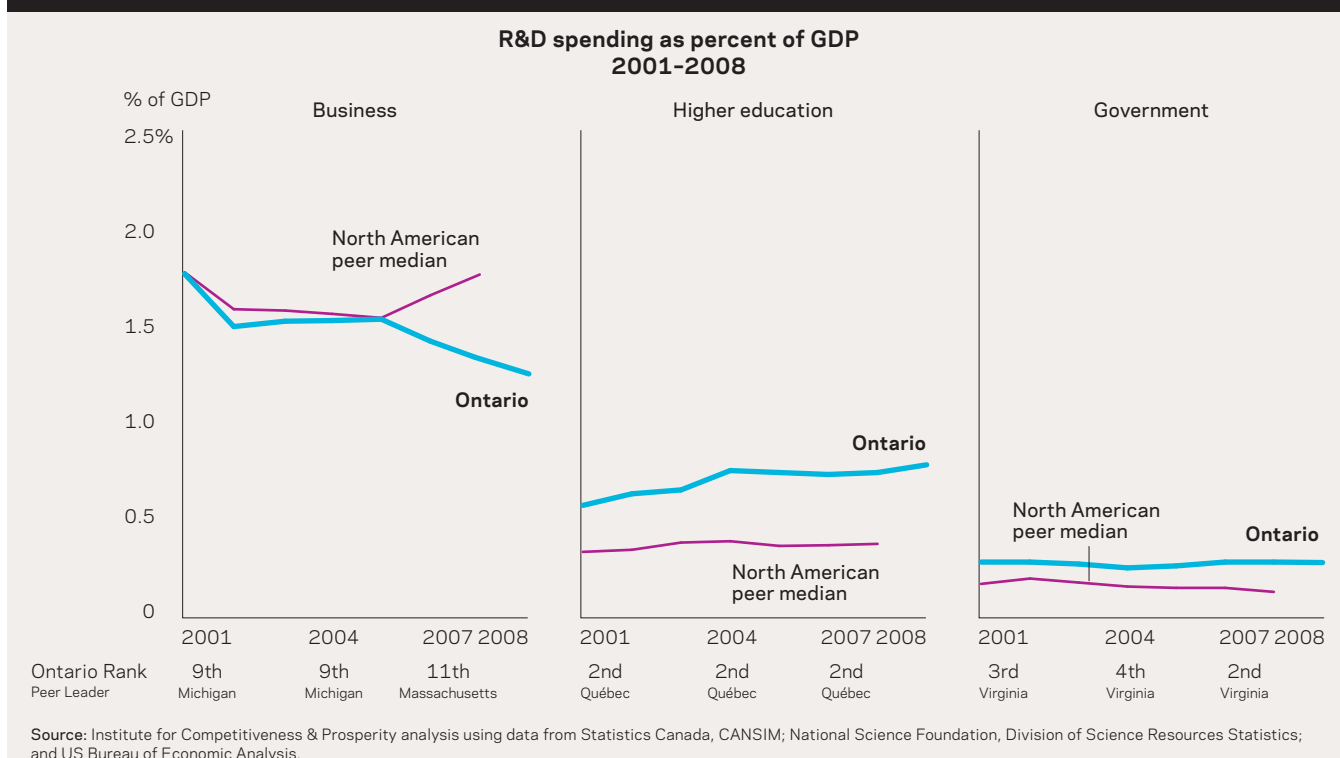
The recently released Expert Panel report of the "Review of Federal Support to Research and Development" recommends a sharper focus on business innovation in our national policies to support R&D, simplification of the Scientific Research and Exploration Development tax credit, and greater use of government procurement to drive business innovation. We encourage stakeholders in Ontario's prosperity to engage in deliberation and debate over the panel's recommendations.

42 OECD, *Frascati Manual*, 1992, p. 29.

43 Zvi Griliches, Ariel Pakes and Bronwyn Hall, *The Value of Patents as Indicators of Inventive Activity*, NBER Working Paper No. 2083, 1988, p. 3.

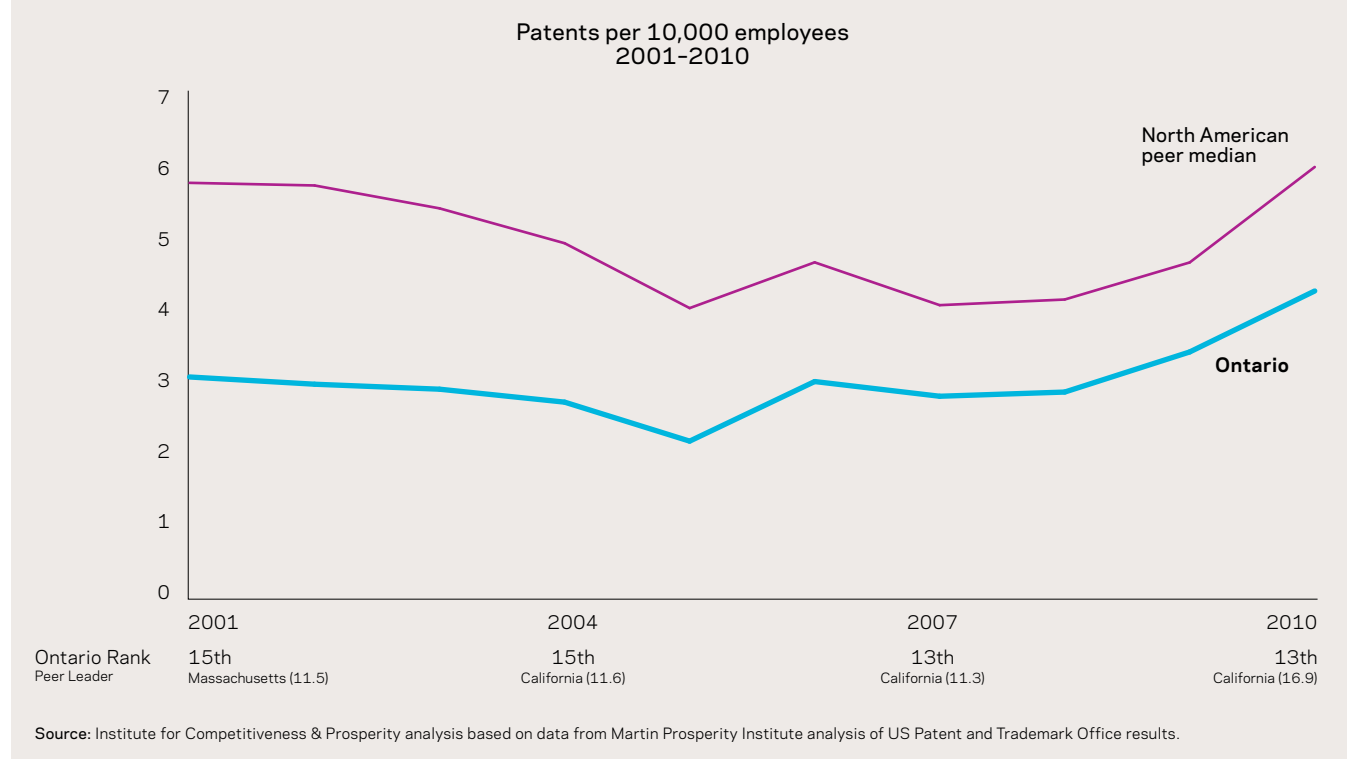
44 Kenneth J. McKenzie (2006), "Giving with One Hand, Taking Away with the Other," C.D. Howe Institute, *Commentary*, No. 240.

Exhibit 23 Ontario's businesses trail in R&D investments



## Ontario's lagging patents signal trailing innovation

Exhibit 24 Ontario businesses lag in patent creation



### Why patents matter

A key measure of innovative capacity and processes is patenting. While it is important to note that not all innovative activity is captured by patents – for example, in management process improvements or in software – many academics who study innovation agree that patenting is a solid measure of a nation's or region's innovative output.<sup>45</sup>

R&D by businesses and patent output are closely linked. Generally, more dollars spent by businesses on R&D lead to more patents.<sup>46</sup>

A patent grants exclusive commercial use of a newly invented device. According to Trajtenberg, "For a patent to be granted, the innovation must be non-trivial, meaning that it would not appear obvious to a skilled practitioner of the relevant technology, and it must be useful, meaning that it has potential commercial value."<sup>47</sup>

US patent data are a good indicator for Canadians because "patents are often sought first and foremost in the United States, where the standards for

patentability are more stringent than those in most European countries."<sup>48</sup>

In addition, because of its size and economic strength, the US market represents a significant potential market for a typical patent.

### How Ontario has performed

Ontarians are simply not innovating at the same pace as their competitors. Patent data indicate that Ontario trails the median output of the peer states, though the gap has narrowed (Exhibit 24). Ontario has consistently ranked near the bottom of the peer states in patent output, and has been well below the peer leader over the past decade. In other work done by the Institute, we found that, in all but six clustered industries, Ontario trails the peer states in patent creation.

### Outlook for 2020

By itself, the lower patent output by our businesses is not proof that Ontario is an innovation laggard and an increase will not by itself deliver a prosperity surge. But, coupled with growth in R&D investment, technology spending, and more manager education, more patents would be an important signal that our businesses are competing more on the basis of innovation and that we should see productivity, wages, and prosperity grow at an above average rate.

45 See Michael Porter, "The Economic Performance of Regions," *Regional Studies*, Vol. 37, No. 6-7, 2003, p. 551 and note 9, p. 572 for a review of the academic work in using patents as a measure of innovative capacity.

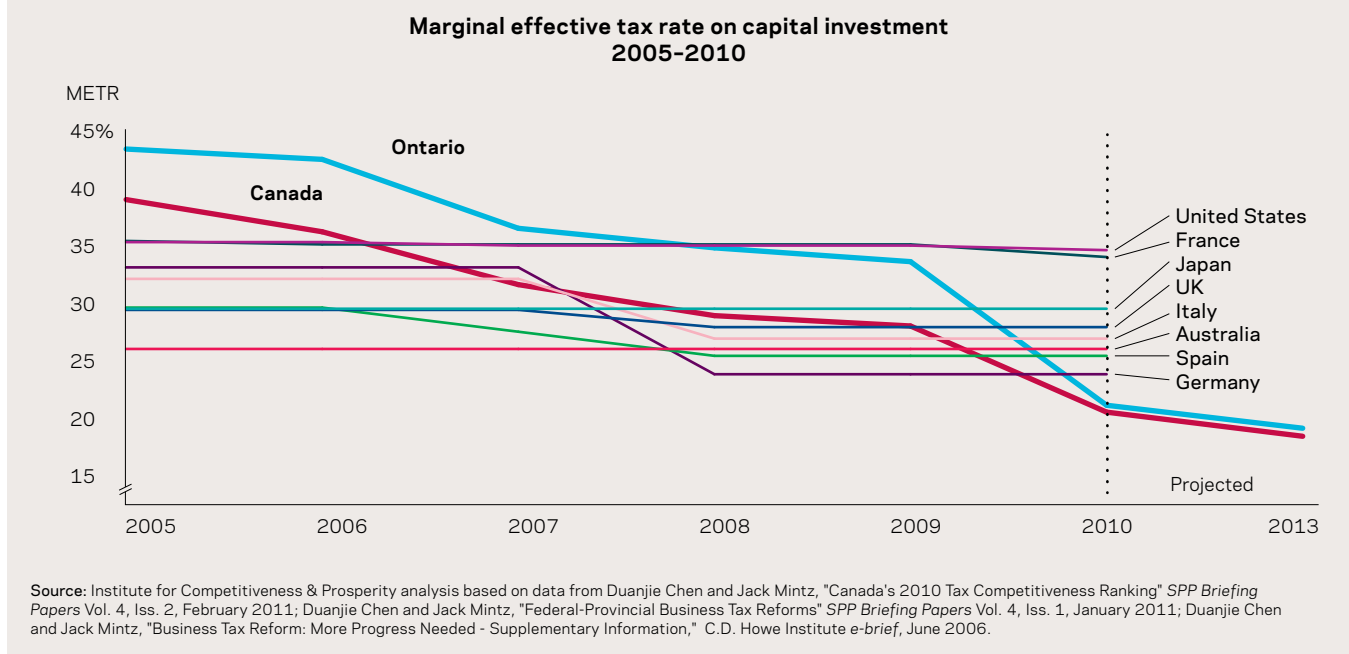
46 Report on Canada 2011, *Canada's innovation imperative*, p. 40.

47 Manuel Trajtenberg, "Is Canada Missing the Technology Boat? Evidence from Patent Data," paper presented at Centre for the Study of Living Standards – Industry Canada Conference on Canada in the 21st Century: A Time for Vision, September 1999, p. 5.

48 *Ibid.*, p. 4.

## Ontario's taxes on new business investment are now among the lowest

Exhibit 25 Ontario is now a low tax jurisdiction for business investments



### Why METR matters

As we have seen, our businesses invest less per worker than their counterparts in the peer states. This matters because our workers and businesses could create more value if they were supported by the most advanced software and equipment. In turn, this would lead to more competitive businesses and higher wages.

Much research has been done to show that new business investments increase when taxes on them fall.<sup>49</sup> While recent research by CAW economist Jim Stanford concludes that tax rates have had no direct statistically significant impact on business investment, it is fair to say that the consensus among economists is that lowering taxes on new business investment will increase it.

The best measure of the tax rate is the marginal effective tax rate (METR) on new business investment. This captures the total tax impact of the next dollar invested by business – in buildings, equipment, and technology, for example. It accounts for the taxes on future profits that the investment will generate, the capital taxes on the

assets once in place, and sales taxes paid on the purchases for the investment. METR is total taxes as a percentage of the pre tax income generated by the marginal dollar of new business investment.

### How Ontario has performed

Until recently, Ontario has been a high tax jurisdiction as measured by METR. Based on combined federal and provincial rates, corporate income tax rates were relatively high. Capital taxes were imposed on our businesses' assets. A provincial sales tax was collected on many items purchased by businesses when they made investments. In 2005, the METR on business investment in Ontario stood at 43.4 per cent – higher than in the rest of Canada and all the countries where our peer regions are located (**Exhibit 25**).

Ontario is now a low tax jurisdiction for business investments.

But since 2007, our federal and provincial governments have been reducing corporate income tax rates. They have been eliminating the destructive capital tax, so that it is now

gone. A significant improvement also came about when Ontario's government replaced the retail sales tax with a value added tax, which means that businesses no longer pay tax on goods purchased as part of their investments.

In 2010, Ontario's METR on new business investment was lower than that in all the countries where our peer regions are located. And our rates will go lower still.

### Outlook for 2020

Reductions in our METR on business investment have been one of the most promising developments over the last decade. According to international tax expert, Jack Mintz, these improvements should stimulate new investment in Ontario by \$47 billion, which will create an estimated 591,000 net new jobs and increase labour income by nearly 9 percent.<sup>50</sup>

<sup>49</sup> Task Force on Competitiveness, Productivity and Economic Progress, Seventh Annual Report, *Leaning into the Wind*, November 2008, pp. 39-41.

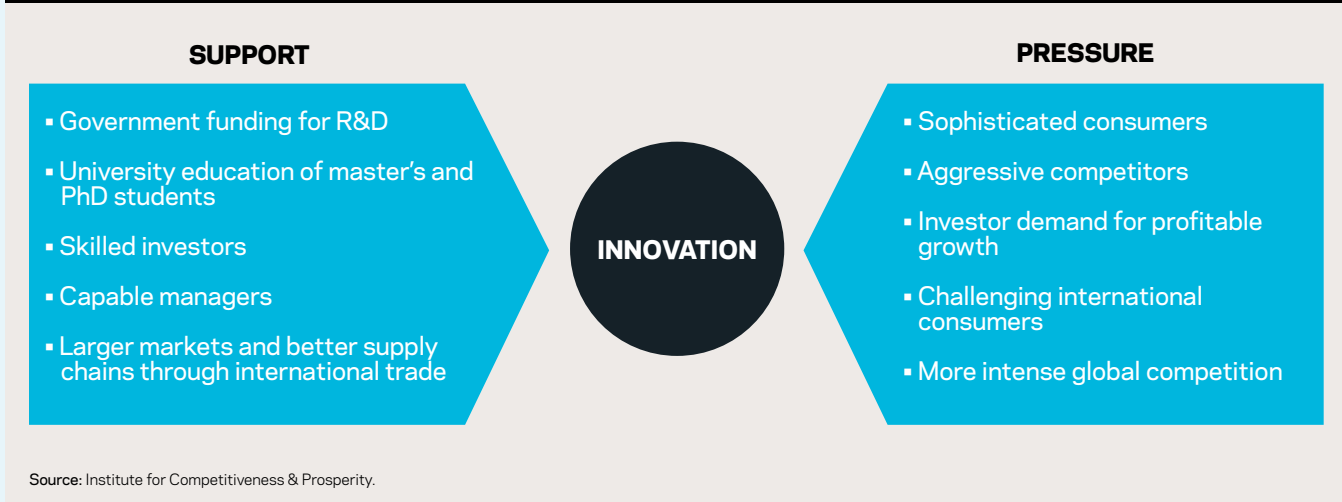
<sup>50</sup> Jack Mintz, "Ontario's Bold Move to Create Jobs and Growth," *SPP Communiqué*, School of Public Policy, University of Alberta, November 2009.



# SUPPORT AND PRESSURE

Public policy needs to drive both support and pressure to enhance our innovation performance

Exhibit 26 Support and pressure drive innovation



We draw on the framework of support and pressure to assess our innovation results and make recommendations for the future (**Exhibit 26**). **Support** refers to the conditions that provide a foundation of assistance to all firms and individuals as they develop and compete. **Pressure** comes from aggressive and capable competitors who threaten complacency and from sophisticated customers who demand innovative goods and services at low prices.

Our key findings over the decade are that we have improvement opportunities in several elements that affect support and pressure:

- We have an excellent base of clustered industries in Ontario, but we need to increase their innovation and productivity performance
- Fewer Ontarians live in metropolitan areas, and this limits the support and pressure for innovation
- The quantity of our venture capital has been declining, but we conclude that the bigger opportunity is in increasing the quality of our venture capital
- The federal government has negotiated several trade deals over the last decade – a positive step for support and pressure – but the focus needs to shift to bigger deals
- While we have many more global leaders in Ontario than 1985, we have had a net loss in the past decade

**Public innovation policy needs to consider both support and pressure. Among the relevant areas, we see more international trade as a major opportunity on both sides of the framework.**

# Ontario's employment advantage in clustered industries has not delivered higher productivity

## Why clustered industries matter

Harvard's strategy professor, Michael Porter has identified three types of industry groups in the United States. The Institute has adapted his approach to Canada.

Most industries, accounting for 65.1 percent of employment, are dispersed geographically on the basis of population. Examples of these dispersed – or local, as Porter calls them – industries are retail outlets and restaurants. Firms in these industries typically compete locally and are less exposed to competition from other cities, regions, or countries. As a result they are less innovative, as measured by patents, and pay lower wages.

The next group is clustered, or traded, industries. These industries are not found everywhere but instead gather in specific cities or regions. They depend on their survival by selling to consumers across the country and around the world. These 41 identified clustered industries, like automotive manufacturing (in parts of southern Ontario), financial services (in the Toronto region), and bio-pharmaceutical (in Toronto and Montreal), are geographically concentrated

because they require economies of scale or specialized skills or both. Since they compete outside their locality, they are forced to become more innovative and productive. Hence they pay higher wages.

Porter's third group of industries are natural resource endowed industries – like forestry or farming. Their location depends entirely on where the natural resource is found. These account for only 0.8 percent of employment in Ontario.

Having a higher percentage of employees in clustered industries gives a jurisdiction an advantage in innovation, productivity, and prosperity. In a city region, the higher wages paid in clustered industries pulls along the wages paid in dispersed, local industries.<sup>51</sup> Clustered industries are more likely to employ people working in creativity-oriented occupations – Richard Florida's creative class.

## How Ontario has performed

Ontario has an advantage over the peer states, in that 34.1 percent of our workers are employed in clustered industries, compared to only 27.7 percent at the median of our peer states (Exhibit 27). This advantage has

held steady over the last decade, although the percentages have fallen slightly for both Ontario and the peer states over the decade.

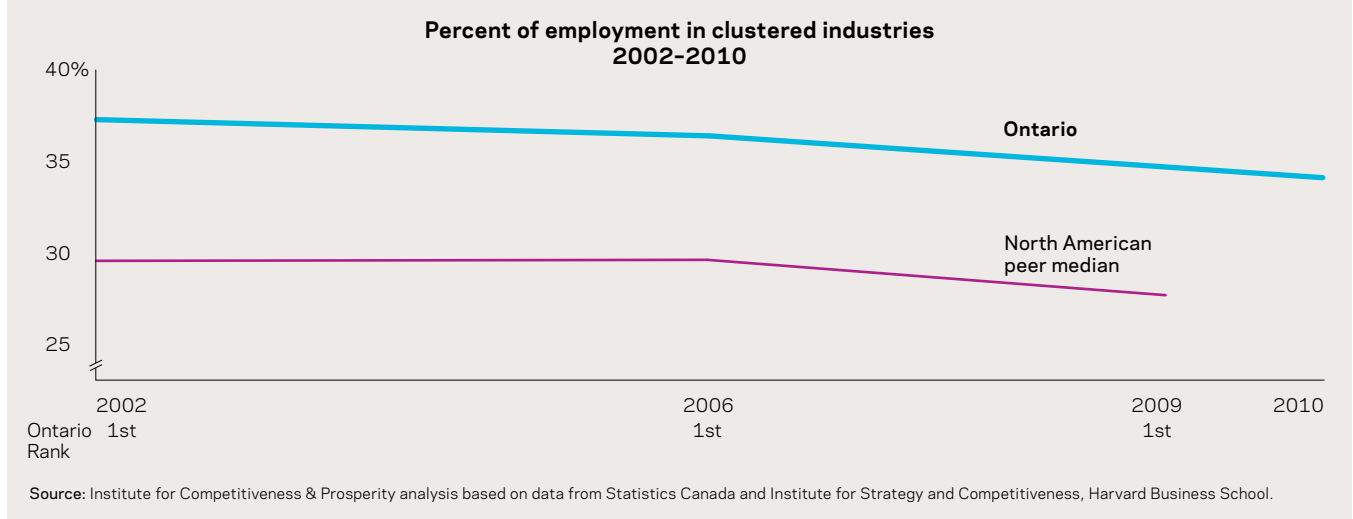
The challenge we face in Ontario as we have discussed earlier in this report, is to gain more advantage from this good industry mix. This advantageous mix should drive our productivity and innovation above the peer states. But we do not compete effectively in these industries and trail on these measures in most clustered industries.

## Outlook for 2020

Our industry mix advantage is not likely to decline in the coming years. If we are to realize our prosperity advantage, our clustered industries need to be more innovative and deliver higher productivity.

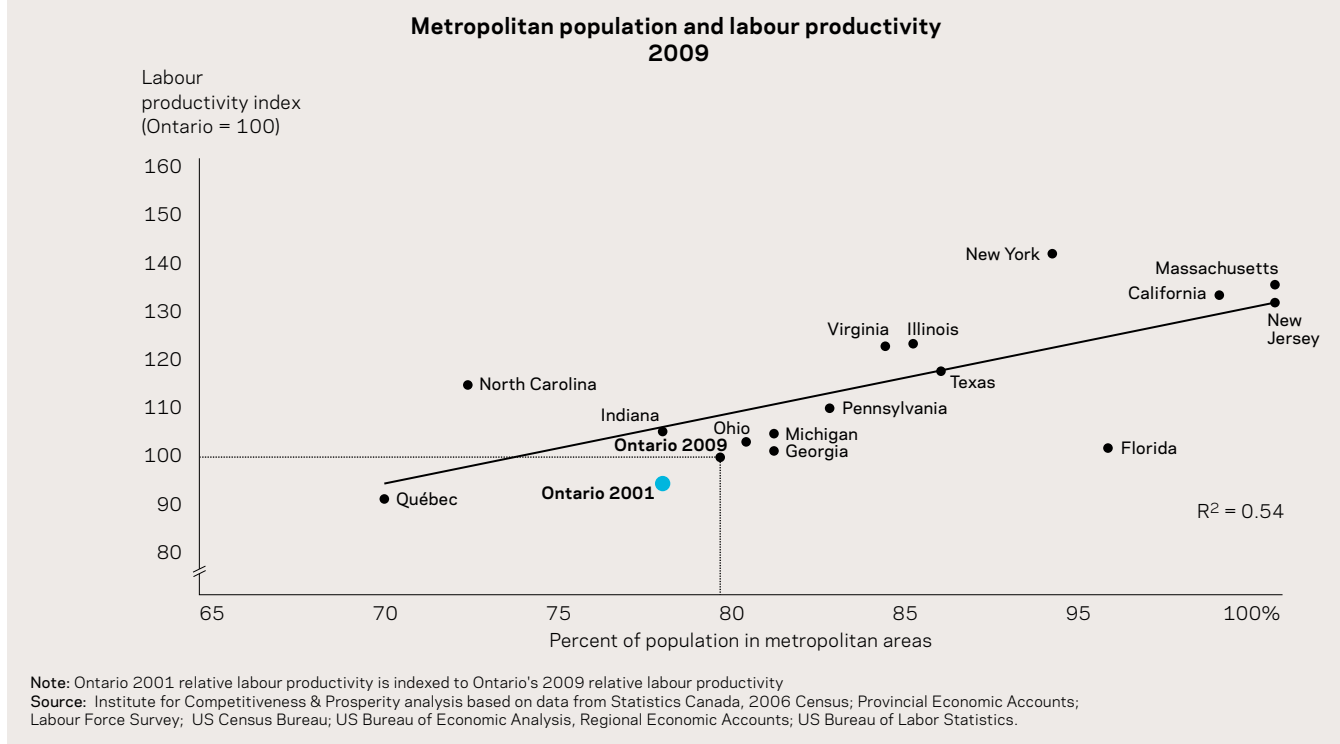
51 Working Paper 5, *Strengthening structures: Upgrading specialized support and competitive pressure*, pp. 20-21.

Exhibit 27 Ontario has a higher share of its workers in clustered industries



# Ontario's lower rate of metropolitan development hampers our productivity

Exhibit 28 Ontario's lower percentage of population in metropolitan areas reduces its productivity



## Why urbanization matters

When more people live in cities, there is higher economic growth, for several reasons:

- Cities are centres of economic activity. The 681 metropolitan areas with more than 500,000 people account for about 25 percent of the world's population but nearly 60 percent of economic activity.<sup>52</sup>
- Cities are more productive. As far back as Adam Smith in 1776, economists have theorized that firms and workers are more productive in larger cities. Recent research confirms this.<sup>53</sup>
- Cities support new ideas. The interaction of highly skilled people, competitive businesses, and sophisticated institutions found in cities spurs innovation.<sup>54</sup>
- Cities are centres of knowledge and creativity. Richard Florida observed that innovative people choose to live in areas with the high level of cultural diversity that only cities can offer.<sup>55</sup> Others have concluded that urban density is critical for knowledge

spillovers and innovation<sup>56</sup> and that new patent applications are more likely to cite geographically proximate patents.<sup>57</sup>

## How Ontario performs

One measure of urbanization is the percentage of people living in metropolitan areas – regional agglomerations of an urban core and surrounding suburbs. The Toronto Census Metropolitan Area, for example, as defined by Statistics Canada, encompasses the City of Toronto and municipalities stretching west to Oakville, north to Lake Simcoe, and east to Ajax. Across states and provinces, greater productivity is associated with a higher share of people living in metropolitan areas and Ontario has lagged through the decade (Exhibit 28). We estimate that this lag costs us \$1,500 per capita in productivity and prosperity.

## Outlook for 2020

Where we live and work is a choice Ontarians have made – one that we have no desire to change. But the trend for people to move to urban areas is

one that is inevitable, and our provincial and municipal governments need to ensure we are making adequate investments in infrastructure to facilitate this move and support growing urban populations.

52 Richard Florida, Charlotta Mellander, and Tim Gulden, "Global Metropolis: The Role of Cities and Metropolitan Areas in the Global Economy," Martin Prosperity Institute Working Paper, March 2009, p. 10.

53 See for example Pierre-Philippe Combes et al., "The Productivity Advantages of Large Cities: Distinguishing Agglomeration from Firm Selection," CEPR Discussion Paper No. DP7191, March 2009: 1, and Edward L. Glaeser, "Why humanity loves and needs cities," *New York Times*, 13 April 2010, <<http://economix.blogs.nytimes.com/2010/04/13/why-humanity-loves-and-needs-cities/>> (accessed July 15, 2010).

54 See for example Gerald A. Carlino et al., "Urban Density and the Rate of Invention," *Journal of Urban Economics*, Vol. 61, No. 3, May 2007, pp. 389-419; Edward L. Glaeser, "Why humanity loves and needs cities;" and Jane Jacobs (1969), *The Economy of Cities*, New York: Random House.

55 Richard Florida, *Technology and Tolerance: The Importance of Diversity to High-Technology Growth*, Center on Urban and Metropolitan Policy, Pittsburgh 2001.

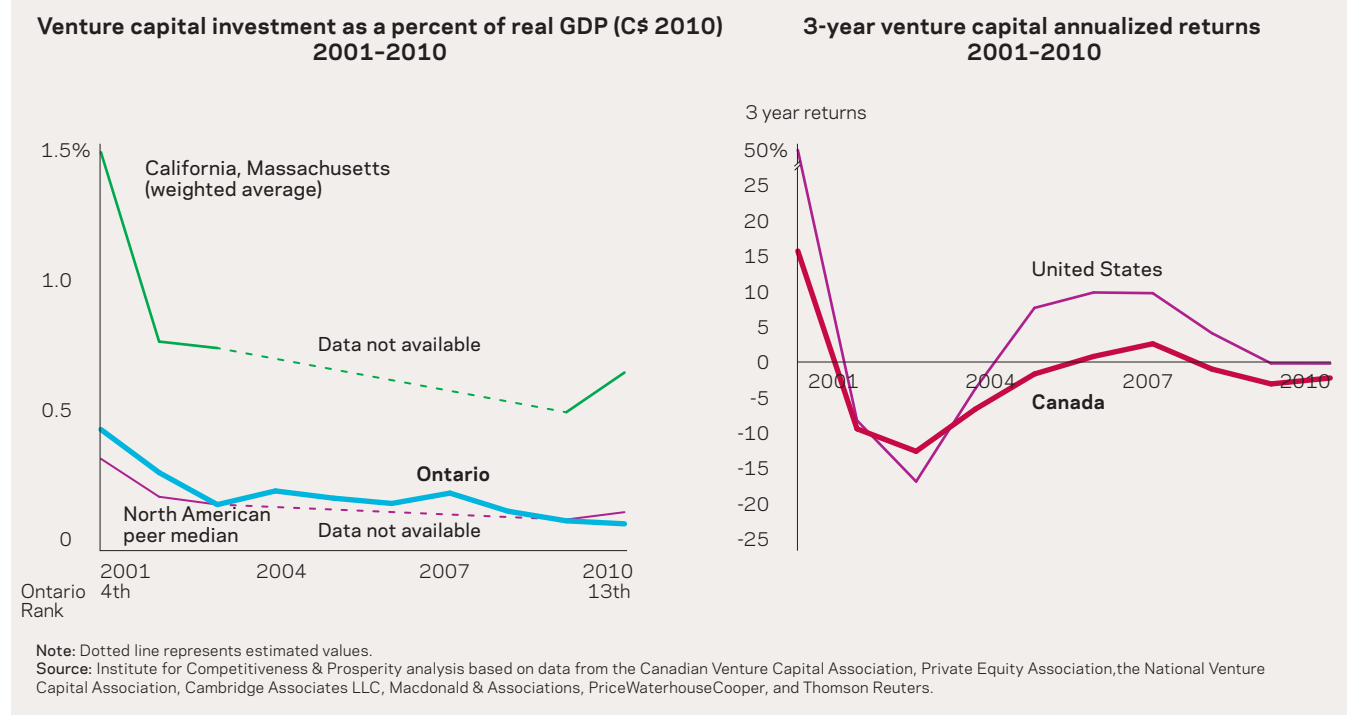
56 David A. Wolfe and Allison Bramwell, "Innovation, Creativity and Governance: Social Dynamics of Economic Performance in City Regions," *Innovation: Management, Policy & Practice* 10, December 2008, pp. 170-182.

57 Adam B. Jaffe et al., "Geographic Localization of Knowledge Spillovers as Evidenced by Patent Citations," *Quarterly Journal of Economics*, Vol. 108, No. 3, August 1993.



## Quality of venture capital still needs to be improved

Exhibit 29 Venture capital investment in Ontario trails US leaders' quantity and quality



### Why venture capital matters

Venture capital is an important source of funds for our entrepreneurial firms as they expand. Specialist investment managers raise funds for pools of capital from pension funds, large investment portfolios, corporations, and high net worth individuals. These venture capitalists seek out promising young firms, which typically focus on innovation through technology. In addition to providing startup capital to facilitate growth, the venture capitalist usually provides expertise on management and on the technology or relevant markets.

The support of funds, expertise, and knowledge has been very important to the development of high growth firms that have driven innovation and productivity. Firms like Apple, Google, and Research in Motion are just a few of the world's leading firms that were financed by venture capital in their formative years.

A healthy venture capital market with a high quantity and quality of funds is an important foundation for innovation and prosperity.

### How Ontario has performed

Whether or not Ontario has had an adequate amount of venture capital is ambiguous. On the one hand, venture capital funds as a percentage of GDP in Ontario are at the median of the experience of the sixteen North American peer jurisdictions (Exhibit 29). On the other hand, we trail the leaders in venture capital investment, California and Massachusetts, quite considerably. In addition, the amount of available venture capital in Ontario has fallen significantly over the past few years.

On the quality of our venture capital, the results are unambiguous – we have generated dismal returns for investors since 2002. An important contributor to this poor record has been public policy which has used special tax support for individuals investing in Labour Sponsored Investment Funds. This policy has helped raise venture capital funds, but the quality has been lacking.<sup>58</sup>

### Outlook for 2020

While venture capital has been an important element in creating innovative companies, it may be that the traditional model is broken. The “lean startup model” may be more appropriate. This approach challenges managers receiving funds to operate by their bootstraps and find ways to scale up their business model to profitability much faster than is currently typical. Opportunities may exist for the provincial government, in partnership with business schools and organizations like MaRS in Toronto, to learn more about the concept of lean startups and identify ways for it to gain traction in Ontario.

<sup>58</sup> Seventh Annual Report, *Leaning into the wind*, p. 45.

## We have negotiated many small trade deals; we should move to some bigger deals

Exhibit 30 Canada has negotiated or is in the process of negotiating several trade deals

CANADIAN FREE TRADE AGREEMENTS SIGNED SINCE 2001	
Country	Two-way merchandise trade as a percent of total trade volume, 2010
Costa Rica (2002)	<0.1%
Peru (2009)	0.3
European Free Trade Association* (2009)	1.6
Colombia (2010)	0.2
Jordan (2010)	<0.1
Panama (tabled in House of Commons)	<0.1
PENDING TRADE AGREEMENTS	
South Korea (13th round of trade negotiations)	1.2%
Central American Four** (12th round)	0.1
European Union (9th round)	10.3
Singapore (8th round)	0.2
Honduras (3rd round)	<0.1
India (3rd round)	0.5
Ukraine (3rd round)	<0.1
Caribbean Community*** (3rd round)	0.3
Morocco (1st round)	<0.1
Dominican Republic (1st round)	<0.1
Turkey (public consultation)	0.2

\* includes Liechtenstein, Norway, Iceland, and Switzerland

\*\* includes Honduras, Guatemala, Nicaragua, and El Salvador

\*\*\* includes Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Saint Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago

Source: Institute for Competitiveness & Prosperity analysis based on data from the Department of Foreign Affairs and International Trade, Industry Canada, and Statistics Canada.

### Why trade matters

Expanding trade adds support and pressure to drive innovation by Ontario's businesses.

On the support side, the greater market size for our businesses means that expensive R&D and technology investments for innovation can pay off. Access to suppliers that are globally competitive provides support for our firms to develop better supply chains and enhance their product and service offering.

On the pressure side, exposure to foreign competition in our domestic and foreign markets challenges our firms to perform better. A broader range of customers outside Canada heightens the pressure for more innovative, sophisticated products and services. Research by economists Philippe Aghion and Peter Howitt shows that more access to foreign markets supports domestic innovators by increasing their potential

market and pressures domestic innovators to innovate more.<sup>59</sup>

Undoubtedly, foreign competition, through trade, has its downside. University of Toronto economics professor and Task Force member Dan Trefler analyzed the impact of the 1989 Canada-US Free Trade Agreement and concluded, however, that its net effect was positive.<sup>60</sup> While increased pressure caused many Canadian plants to contract or close – costing about 100,000 jobs – most of the displaced workers found jobs in export-oriented plants, so that unemployment rates did not rise, and wages did not fall.

The benefits of the Agreement were far larger. Expansion into the United States by our more productive firms raised average Canadian productivity by an astounding 8 percent. The agreement also led many Canadian firms to engage in productivity-enhancing activities:

developing new products and processes, adopting advanced manufacturing technologies, and investing in worker training. The result was an additional productivity increase of 5 percent in the typical Canadian plant – for a total productivity gain of 13 percent. This is a remarkable achievement.

### How Ontario has performed

In the past decade, Canada has signed several free trade agreements and is in the process of negotiating more (Exhibit 30). This is encouraging, especially in light of the current global economic downturn and a tendency toward protectionism. Most of the trade deals, however, have not been with major economies. Other than the current negotiations, none of the partners represents more than 2 percent of our trade flows – with the exception of the Canada-European Union negotiations. Recently, Prime Minister Harper appointed Scotiabank CEO, Rick Waugh, to head up a Canada-Brazil forum of business leaders. This initiative is a long way from reaching a trade agreement – and there will be many hurdles to clear – but it is a step in the right direction.

### Outlook for 2020

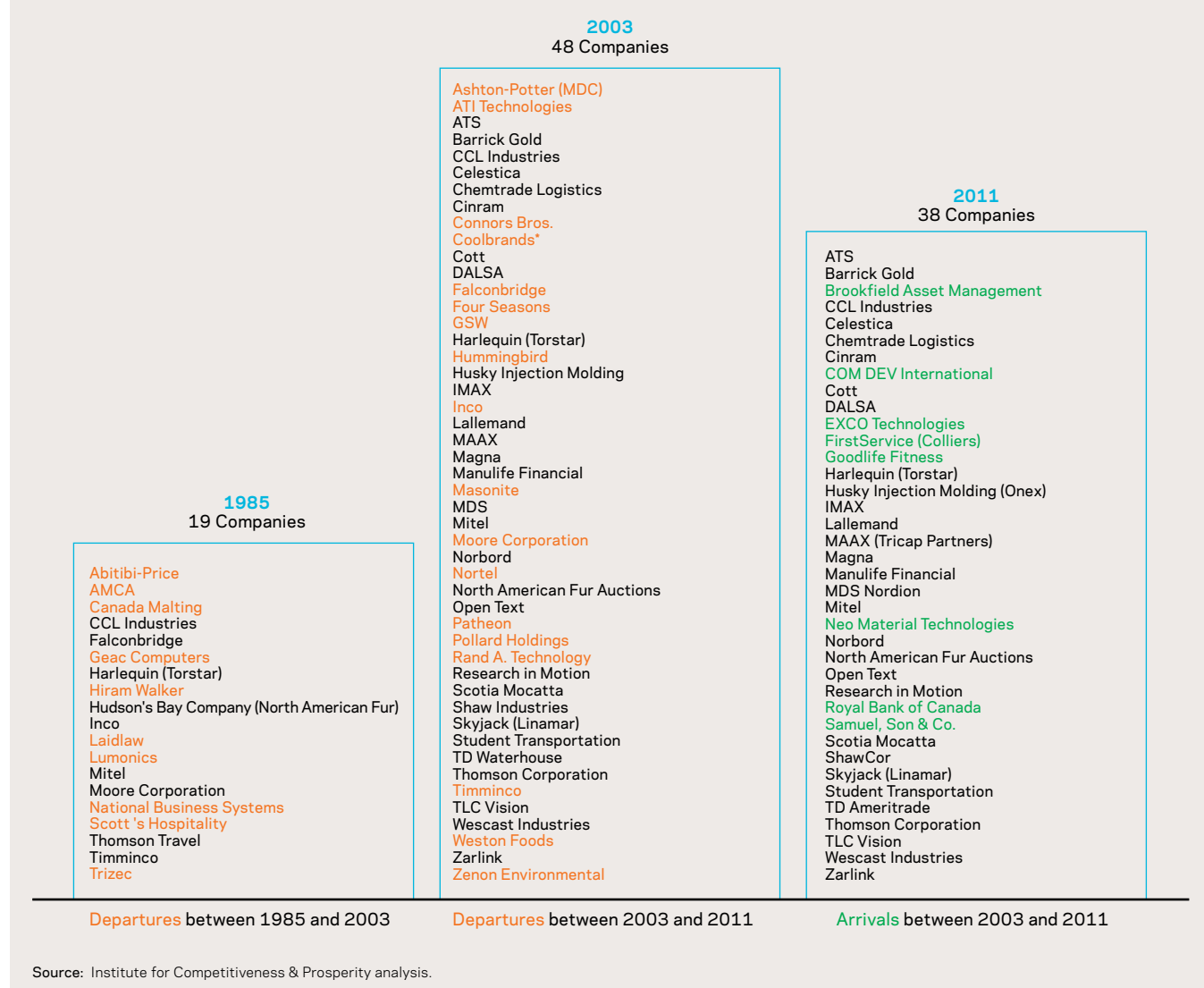
Canada should turn its attention to negotiating larger trade deals, such as the Canada-EU one currently under way. The Ontario government played a key role in persuading the federal government to launch these negotiations. We encourage both governments to push ahead on possible bilateral agreements with the BRIC countries, especially China and India. At the same time, we need to keep the friendly pressure on our US neighbours to discourage paying heed to domestic protectionist voices.

<sup>59</sup> Philippe Aghion and Peter Howitt, *The Economics of Growth*. Cambridge: MIT Press, 2009.

<sup>60</sup> See Daniel Trefler, "The Long and Short of the Canada-U.S. Free Trade Agreement," *American Economic Review*, Vol. 94, No. 3, September 2004, pp. 870-89; Alla Lileeva and Daniel Trefler, "Improved Access to Foreign Markets Raises Plant-Level Productivity... for Some Plants," *Quarterly Journal of Economics*, Vol. 125, No. 3, August 2010, pp. 877-921.

## Ontario lost global leaders through the decade

Exhibit 31 Ontario has gained Global Leaders since 1985, but has lost ten since 2003



### Why global leaders matter

Our global leaders – Canadian-based firms with revenues greater than \$100 million and standing fifth or better in their global product or service markets – are important elements for our innovation capacity. Global leaders are vanguards for other companies in our economy, pointing to strategies of success and serving as models to which our smaller firms can aspire.

Global leaders are exceptionally well managed – comparable to the best in the world.

### How Ontario has performed

A recurring theme in economic policy

discussions is that Canada is being hollowed out by foreign takeovers of our great companies. The evidence is very slim. We have many more global leaders today than back in 1985.

But in Ontario, the number of global leaders has been falling in the past decade. While we have many more than in 1985 (Exhibit 31), we have experienced a net loss of 10 global leaders in Ontario since 2003. This is the result of losing 18 and adding 8 between 2003 and 2011. Of the 18 losses, 10 were foreign takeovers, such as Inco and Falconbridge; 5 firms were displaced from global leadership, such as Coolbrands and Rand Technologies; 2

moved out of the province – Patheon to the US and Pollard to Manitoba; and one was taken over by another Canadian global leader – Hummingbird, acquired by Open Text.

### Outlook for 2020

The fact that Canada is maintaining its global leader count while Ontario is falling back indicates that our province is at some risk of declining in economic importance inside Canada. We are confident that ongoing investments in human capital and tax reform will make Ontario a place where successful firms can thrive and achieve global leadership.

# ACTIONS FOR INNOVATION AND PROSPERITY



**2020**

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OVER THE PAST DECADE, WE HAVE BEEN PLEASED that our recommendations to fulfill our prosperity potential have found their way into public policy discussions. Most notably, we think the province is on the right track with its investments in post secondary education, its improvements in tax policy, and the growing recognition of the true nature of innovation. Clearly, more remains to be done to achieve our 2020 Prosperity Agenda – in public policy and by our business leaders. For the next decade, we propose several actions to put Ontario on the right track to leadership in innovation, productivity, and prosperity.

## Work effort and productivity

### **Encourage productivity and innovation to enable Ontario to become a prosperity leader in 2020**

**Remain determined to close the prosperity gap by making Ontario a productivity and innovation leader.** Ontarians do not have an attitude deficit in our will to win, our desire for innovation, or our recognition of the benefits of risk taking. Our real challenge is to master the conditions and the context in which we compete globally. Public policy needs to encourage innovation and competition through our taxation, regulatory environment, and our openness to international trade and investment.

As worries increase about a continued economic weakness and financial instability, Ontario and Canada have to lead the world in fighting protectionist sentiments that focus on maintaining the status quo. Instead, Canadians need to be open to innovation as a way of life in our businesses and governments.

These are first steps in making Ontario a productivity leader, not a laggard. The balance of our recommendations should complete this journey.

## Human capital

### **Make Ontario a leading centre for talent and skills**

**Continue investments in educating people for Ontario's competitiveness.** Our federal and provincial governments face a critical balancing act. Current deficits are unsustainable, and spending has to be reined in. As governments consider their spending priorities, we urge that they continue to place post secondary education high on the list. Our funding priorities remain the same: increasing the number of master's degrees attained; expanding access to our universities, especially for youth from demographic groups who tend to participate less than others in post secondary education; and improving the student experience in our universities.

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## Businesses, governments, and individuals need to step up investments in their capabilities for innovation.

We have to avoid the mistakes we made in the mid-1990s when we faced similar pressures to control spending. Back then, the government curtailed spending on both health care and education. But in the ensuing recovery, when deficits disappeared, health care spending was put back on track, while education spending flat lined. If Ontario is to be an economy that is competing on creativity and innovation, our workers and managers need the skills and knowledge to thrive, which come from robust educational opportunities.

**Lower marginal effective tax rates for low-income Ontarians.** The Working Income Tax Benefit (WITB) is a potentially effective approach to fighting poverty in Ontario. A refundable tax credit for low-income earners, it is designed to supplement low earnings from employment, encouraging them to break out of welfare by seeking more work and to “make work pay.” However, the current WITB program is not doing the job as well as it could. This is because its current nominal design does not integrate well with other social assistance programs. Though the federal government has extended an invitation for their provincial counterparts to modify the design of the WITB to suit their welfare programs, only Québec, British Columbia, and Nunavut have done so. In Ontario, the WITB could be redesigned to promote more hours worked; currently the design promotes part-time work by low-income earners.

Ontario should strengthen incentives for more hours worked and co-ordinate better with its other social assistance structures. This would be a step in the right direction to help the working poor overcome the welfare wall and achieve full-time employment. We urge the Commission for the Review of Social Assistance to explore this in their research and deliberations.

**Consider wage insurance for assisting older displaced workers.** Even without expanded trade agreements, globalization threatens our older workers with unemployment. The evidence indicates that this group of workers has the most difficulty with reengaging in the workforce. We need to investigate ways of helping these workers; current retraining approaches do not seem to work. We encourage federal and provincial policy makers to deepen their understanding of how wage insurance might help them. This could be an important part of a redesign of the Employment Insurance program.

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## Investment

### **Encourage businesses, governments, and individuals to step up to the challenge of investing in our innovative capabilities**

**Increase business investment in research and development and in information and communications technology.** Our businesses have fallen behind in their investments that support the capacity for innovation. We challenge business leaders to invest in technology, and especially software, from Canada and around the world that can help their top and bottom lines – which in turn will improve our province’s productivity and prosperity. Our businesses trail their US counterparts significantly in software investments – the most sophisticated element of technology. We intend to explore this issue further in future research. The stronger Canadian dollar helps our businesses close our technology gap with our US peers; the significant improvements in our tax structure will also be beneficial. We encourage businesses, industry associations, and academics to engage fully in discussing the recommendations recently released by the Expert Review Panel on Research and Development to the Government of Canada. Governments can certainly help establish the context for investments in innovation, but this is primarily the responsibility of a competitive and capable business sector.

**Pursue breakthrough tax policy innovations.** The reductions in corporate tax rates, elimination of the capital tax, and the conversion of our retail sales tax to a value added tax harmonized with the federal GST have made Ontario a better-than-average jurisdiction for taxation on business investment. But these improvements merely adopt current practices among most developed economies. Ontario and Canada have been laggards in developing innovative tax policy. Not since 1974, with the decision to index marginal income tax brackets, have we implemented tax policy that has not already been adopted elsewhere first. It is time for Canada to be a tax policy innovator – and Ontario can take the lead. We should explore several ideas – corporate taxation on the basis of cash flow, elimination of the corporate tax, and a personal tax system based on consumption, not income.

**Consider a carbon tax.** To achieve reductions in carbon emissions and help build green industries, a carbon tax best strikes the balance between efficiency and effectiveness. It is not politically popular, to say the least. But it has several merits and should not be dismissed from the debate. A cap and trade system has advantages, especially because it focuses on the quantity of carbon emissions desired. However, it has significant implementation challenges. For example, it would be difficult to establish initial allowances and governments would have to deal with arguments for special treatment by various industries.

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## Support and Pressure

### **Gear public policy toward more specialized support and higher competitive pressure for innovation**

**Balance our public innovation strategies.** Our public innovation policy emphasizes the hard sciences and does not adequately recognize the importance of innovation in business and management processes. Our competitiveness and prosperity are built on a solid base of excellence in the sciences. Though leading high technology firms are founded by science and engineering graduates, successful innovation requires a balance of science and other management skills. This combination is important to achieve a successful transition from startup to thriving businesses. Governments and universities need to explore ways of increasing management education as a way of improving our capacity for innovation.

**Continue to encourage federal efforts to expand international free trade agreements and ensure we have the physical and social infrastructure to enable these agreements.** We are encouraged by the number of trade deals that our federal government has signed in the past decade and where negotiations are under way. We are hopeful that the current negotiations to expand trade between Canada and the European Union will lead to a signed free trade deal in 2012. It is already one of our important trade partners, and negotiations should be aimed at expanding this relationship further.

Ontario and Canada need to ensure that our staff resources required for trade negotiations are deployed in the most effective ways. While we are encouraged by the many trade deals we have signed or are negotiating, we urge both levels of government to make the large developing economies – India, China, and Brazil – priorities for expanded trade.

We need to recognize that more trade benefits not only our exporters through access to larger markets, but also our consumers and all our businesses, which must rise to the challenge of added pressure from stiffer competition. As part of this, we need to invest in our border infrastructure to ensure goods move as efficiently as possible. We also need to investigate ways of helping our workers who are displaced by increased trade. Current retraining approaches do not seem to work. Other approaches like wage insurance might be more helpful.



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**Explore policy options to improve venture capital structures.** One major challenge in Canada has been to improve the quality of our venture capital. Eliminating structures like the tax credits for Labour Sponsored Investment Funds, as is underway in Ontario, will certainly help. But we need to recognize that the current venture capital model is broken – in Canada as well as the United States. Returns to investors have been inadequate for nearly a decade. In some sense, venture capital needs to return to its roots – small investments – to help new firms bootstrap to success. Two trends – lean start-ups and microfunding – may point the way to the future of venture capital. Public policy needs to take account of these changes and ensure we are not simply promoting a tired model of venture capital financing.

**Review policies and programs on incentives to attract businesses to Ontario.** We want more world-class firms investing here. However, the research indicates that targeted government incentives to attract such investments are not often successful in increasing prosperity in a jurisdiction. As the provincial government looks to reduce spending in areas of low payoff, this is worth considering. At the very least, they ought to understand more deeply how well previous targeted incentives have delivered long-term prosperity to Ontario.

**Keep the friendly pressure on our US neighbours to resist protectionist impulses.** Federal and provincial governments need to be in constant contact with their US counterparts. Our business and labour leaders have excellent contacts with US leaders through ownership and affiliation. It is in their interest to persuade their counterparts that protectionism is unhealthy on both sides of the border.

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## Previous Publications

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### **Institute for Competitiveness & Prosperity**

#### **Working Papers**

- WORKING PAPER 1 – *A View of Ontario: Ontario's Clusters of Innovation*, April 2002
- WORKING PAPER 2 – *Measuring Ontario's Prosperity: Developing an Economic Indicator System*, August 2002
- WORKING PAPER 3 – *Missing opportunities: Ontario's urban prosperity gap*, June 2003
- WORKING PAPER 4 – *Striking similarities: Attitudes and Ontario's prosperity gap*, September 2003
- WORKING PAPER 5 – *Strengthening Structures: Upgrading specialized support and competitive pressure*, July 2004
- WORKING PAPER 6 – *Reinventing innovation and commercialization policy in Ontario*, October 2004
- WORKING PAPER 7 – *Taxing smarter for prosperity*, March 2005
- WORKING PAPER 8 – *Fixing fiscal federalism*, October 2005
- WORKING PAPER 9 – *Time on the job: Intensity and Ontario's prosperity gap*, September 2006
- WORKING PAPER 10 – *Prosperity, inequality and poverty*, September 2007
- WORKING PAPER 11 – *Flourishing in the global competitiveness game*, September 2008
- WORKING PAPER 12 – *Management matters*, March 2009
- WORKING PAPER 13 – *Management matters in retail*, March 2010
- WORKING PAPER 14 – *Trade, innovation, and prosperity*, September 2010

#### **Reports on Canada**

- Partnering for investment in Canada's prosperity*, January 2004
- Realizing Canada's prosperity potential*, January 2005
- Rebalancing priorities for Canada's prosperity*, March 2006
- Agenda for Canada's Prosperity*, March 2007
- Setting our sights on Canada's 2020 Prosperity Agenda*, April 2008
- Opportunity in the turmoil*, April 2009
- Beyond the recovery*, June 2010
- Canada's innovation imperative*, June 2011

#### **Task Force on Competitiveness, Productivity and Economic Progress**

- FIRST ANNUAL REPORT – *Closing the prosperity gap*, November 2002
- SECOND ANNUAL REPORT – *Investing for prosperity*, November 2003
- THIRD ANNUAL REPORT – *Realizing our prosperity potential*, November 2004
- FOURTH ANNUAL REPORT – *Rebalancing priorities for prosperity*, November 2005
- FIFTH ANNUAL REPORT – *Agenda for our prosperity*, November 2006
- SIXTH ANNUAL REPORT – *Path to the 2020 prosperity agenda*, November 2007
- SEVENTH ANNUAL REPORT – *Leaning into the wind*, November 2008
- EIGHTH ANNUAL REPORT – *Navigating through the recovery*, November 2009
- NINTH ANNUAL REPORT – *Today's innovation, tomorrow's prosperity*, November 2010

Should you wish to obtain a copy of one of the previous publications, please visit [www.competeprosper.ca](http://www.competeprosper.ca) for an electronic version or contact the Institute for Competitiveness & Prosperity directly for a hard copy. To learn more about

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## How to Contact Us

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