Institute for
Competitiveness & Prosperity

Partnering for investment in Canada's prosperity

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Institute for
COMPETITIVENESS & PROSPERITY

The Institute for Competitiveness & Prosperity is an independent not-for-profit organization established in 2001 to serve as the research arm of Ontario's Task Force on Competitiveness, Productivity & Economic Progress.

The mandate of the Task Force, announced in the April 2001 Speech from the Throne, is to measure and monitor Ontario's competitiveness, productivity and economic progress compared to other provinces and US states and to report to the public on a regular basis.

It is the aspiration of the Task Force to have a significant influence in increasing Ontario's competitiveness, productivity and capacity for innovation. The Task Force believes this will help ensure continued success in the creation of good jobs, increased prosperity and a high quality of life for all Ontarians. The Task Force intends to seek breakthrough findings from their research and to propose significant innovations in public policy to stimulate businesses, governments and educational institutions to take action.

This special report on Canada's competitiveness and prosperity was prepared for the 2004 Annual Meeting of the World Economic Forum in Davos. It was made possible by support from Magna International Inc. and the Joseph L. Rotman School of Management.

We welcome your comments on this report.

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Foreword

Welcome to Davos and the 2004 Annual Meeting of the World Economic Forum. This is an important forum regarding how we can make the world safer and more prosperous. It is also an opportunity for Canadian leaders to come together to discuss the key economic issues facing our country.

In my work on Ontario's Task Force on Competitiveness, Productivity, and Economic Progress, I have seen first hand how Canadian individuals, businesses, and governments have partnered to create one of the best-performing economies in the world. Nevertheless, our work has also shown that we have a significant prosperity gap with the most successful economy in the world, the United States. This gap, measured by gross domestic product per capita, grew most significantly between 1982 and 1998. Although the gap has been narrowing since that time, it remains significant. Today, our challenge is to close this gap.

This report, *Partnering for investment in Canada's prosperity,* prepared by the Institute for Competitiveness & Prosperity, analyzes Canada's prosperity gap and recommends ways that Canada can increase its competitiveness. The report recommends that governments re-orient their spending patterns and their taxation policies; that businesses invest more in productivity enhancing machinery, equipment, and worker training; and that individuals invest more in their own education and knowledge. The Institute's work creates an opportunity for Canadians to consider together how we can address the prosperity gap.

Magna is pleased to support the Institute's effort to encourage discussion about opportunities for Canadians to partner for prosperity.

Belinda Stronach
President and Chief Executive Officer
Magna International Inc.

I am pleased to present this special report, *Partnering for investment in Canada's prosperity,* on the occasion of the 2004 Davos conference, "Partnering for Prosperity and Security." The Institute for Competitiveness & Prosperity has extended its analysis of productivity in Ontario and highlights the results of our research on understanding Canada's prosperity gap versus the United States.

We continue to take pride in the achievements of Canadians in creating one of the world's most successful economies. In fact, other than the United States, no other country of comparable or greater size and population has achieved our level of prosperity. But we also continue to urge Canadians to aspire to close the prosperity gap. Raising productivity – the ability of our people, firms, and governments to create value from our labour, intellectual, physical, and natural resources – is the key to closing this prosperity gap.

The major conclusion of this report is that Canadians are not investing adequately to increase our productivity and prosperity. In fact, we come up 15 percent short of prosperity in the United States mainly because our investments stop about 15 percent short. While Canadians have the basics in place – we invest in the right things and almost to the same level as the United States – we stop investing long before our American counterparts. This is especially true in education and integration of immigrants to develop our human capital; in machinery and equipment to build our physical capital; and in our cities and by our governments to raise human, social and physical capital.

Our research shows that attitudinal differences with the United States do not likely account for this investment gap. Instead, the source of the gap is in motivations and structures. Our disadvantage in marginal effective tax burdens, which drive motivations to invest, has widened. And our market and governance structures seem to be limiting prosperity gains. In our ongoing work, we are exploring the complexities of these structures to determine how to make them more effective in building our prosperity.

We gratefully acknowledge the funding support from the Ontario Ministry of Economic Development and Trade and the special funding for this report from Magna International Inc. and the Rotman School of Management.

We look forward to sharing and discussing our work and our findings with all Canadians. We welcome your comments and suggestions.

Roger L. Martin
Dean, Joseph L. Rotman School of Management, University of Toronto
Chairman, Institute for Competitiveness & Prosperity

Partnering for investment in Canada's prosperity

Partnering for prosperity in Canada

Canada's economy is strong, ranking among the most prosperous countries in the world. Canadians also enjoy a stable and secure environment, with a society that, while diverse, is socially cohesive, sharing fundamental values from coast to coast.

But we cannot stand still. In today's world, competitiveness is not an option. To ensure Canada's standard of living continues to rise, our economy must grow. To grow, our economy must be competitive with other jurisdictions, particularly our most significant trading partners.

Competitiveness depends on our capability to produce and sell superior products and services that customers in Canada and the rest of the world are eager to buy. Or it can come from selling our products and services at attractive prices because they are produced at lower costs with superior processes or technologies. Increased international trade and globalization have enabled firms and regions to expand their potential markets and to focus on specific products, services, and capabilities. But that means that they have to be internationally competitive in their specialization.

The Institute for Competitiveness & Prosperity has analyzed Canada's international competitiveness and identified a prosperity gap with the United States – our most significant trading partner and North American neighbour – that is widening and worrisome. To reverse this trend, Canadian individuals, businesses, and governments need to partner more effectively to generate higher prosperity from our capital, human, and natural resources. Our efforts today represent our investment for future generations.

Exhibit 1 Canada's economy outperforms most others

GDP per Capita at Purchasing Power Parity in C$ (2002)

RANK	COUNTRY	GDP per Capita at PPP
1	United States	$43,600
2	Canada	$36,800
3	Australia	$33,200
4	Netherlands	$32,600
5	Germany	$31,500
6	France	$31,300
7	United Kingdom	$30,700
8	Japan	$30,700
9	Italy	$30,600
10	Taiwan	$30,000

Source: Institute for Competitiveness & Prosperity, World Economic Forum
Note: Only countries with populations over 15 million (i.e., half of Canada's or greater)

Canada's economy is strong

In Canada, our economic strength encourages optimism about our future prospects. Our economy continues to grow and is one of the strongest in the world, leading any comparable region outside the United States (Exhibit 1). By most measures, Canada's economy is vibrant and robust. In absolute terms, Canada's economy has performed well, achieving above-average growth in economic output, eliminating government deficits, and purging the curse of inflation.

Canada continues to be one of the best places in the world to live, work, and invest. We have responded well to the challenges of globalization. Canada's exports in 2002 stood at an unprecedented level of $472 billion – more than 40 per cent of the Canada's output. Canada leads the world's top performing economies in exports as a share of the economy and on a per capita basis.

Note that throughout this report we use constant 2002 Canadian dollars using purchasing power parity conversion unless otherwise noted.

The prosperity gap hinders increases in living standards

As comforting as Canada's position may look globally, the Institute has concluded that a more relevant comparison is with the United States. We believe it provides the most appropriate benchmark for our own economic progress. Against the United States, we have a significant prosperity gap (Exhibit 2).

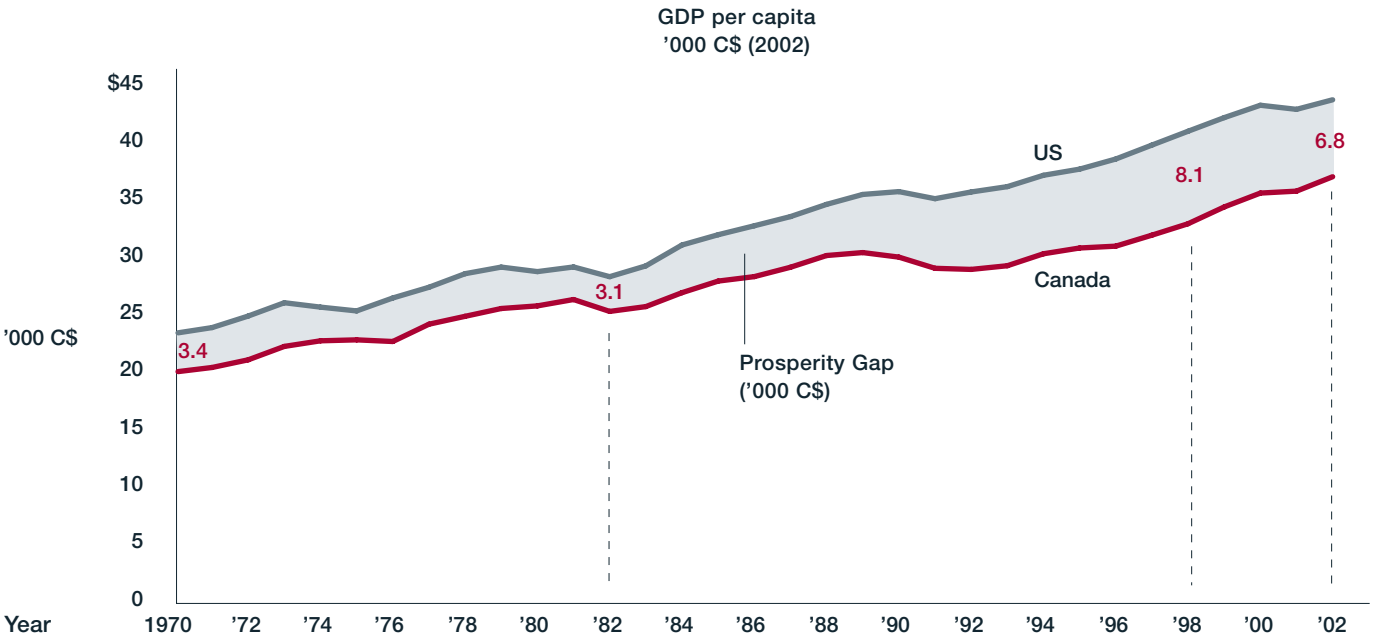
Our relatively poor prosperity ranking is worrisome not only because the gap is large, but also because it has slowly and steadily continued to widen over the past two decades. In 1982, for example, Canada was only 10.9 percent or $3,100 behind the United States. Between 1982 and 1998 the prosperity gap between Canada and the United States widened considerably – more than doubling in real dollars per capita. Since 1998 the gap has moderated somewhat to just under $6,800 in 2002.

This prosperity gap does not derive from a fundamental weakness in our economy, such as demographics, industry mix, or work force characteristics. The gap does indicate that Canadians are not deriving as much strength from our available resources as we could. We have found no reason why we should accept being a distant second to the United States.

By not realizing our full economic potential we are less able to increase our economy's capacity for future upgrades and innovations and to support higher spending in areas such as health care and education. And, without action, we will witness growing disparities in economic well-being with our neighbours to the south.

The prosperity gap matters: $6,800 in GDP per capita translates into a yearly difference in after-tax disposable income of just over $10,000 per family. If the gap were eliminated, the economic well-being of Canadians would be enhanced. Families could enjoy the additional income in many different ways, based upon 2000 Statistics Canada data on household expenditure.[1] For example, among mortgage holders the average annual mortgage payment ($9,700) could be covered entirely. Among tenants, average rent payments of $6,400 could be offset, or renters could choose to own. In addition, purchasing a car ($12,200) would be easier, many more could make significant increases to RRSP contributions, or people could significantly increase their annual charitable donations from the current level of $1,800. Further, provincial and federal governments

Exhibit 2 Canada's prosperity gap persists



Source: Statistics Canada, Cansim II, Table No. 380-0002, 510-001, 380-0017; US Bureau of Economic Analysis, Available online at: http://www.bea.gov

[1] Statistics Canada, "Spending Patterns in Canada 2000," Catalogue no. 62-202-XIE

would also benefit, collecting approximately $75 billion annually, from Canadian taxpayers without increasing rates. This additional tax revenue would enable Canada's government to address funding issues in health care, education, and social services.

In summary, Canada's economic performance has been very positive. But we can do better.

Canada's prosperity requires closing the productivity gap

Our economic progress is inextricably tied to the United States. To maintain our strong position, we have no choice but to strive to perform as well or better economically than the United States.

We think Canadians ought to aspire to narrow the prosperity gap over the next decade. This will require bold initiatives both in public policy and in private strategies.

In this report, the Institute discusses the reasons for the prosperity gap and recommends a set of initial actions for closing it. We are convinced that improving productivity is the key challenge to eliminate our prosperity gap. Our work identifies the under investment that permeates our economy as our most pressing problem. And we see that motivations and structures are important hindrances to investment for the future.

We believe that partnering for investment will help close the gap and lead to future prosperity in Canada. Governments, businesses, and individuals should explore ways to work together to enhance the long term-well being of Canadians.

Improving productivity is the key challenge to eliminate our prosperity gap

The Institute has conducted intensive analyses to develop new insights into the explanations of the differences in performance between Canada and the US. We argue that Gross Domestic Product (GDP) per capita is the key measure of economic progress, review the elements that drive its growth, and show that strengthening productivity has the most potential for improving our standard of living.

GDP per capita is the best measure of economic progress and prosperity

We concur with most economic observers that GDP per capita is the best measure of how an economy is performing over time and against its peers. GDP per capita measures the output of an economy, or the "value added." We can think of this as the value created in the conversion of the country's natural, labour, and capital resources into products and services that consumers buy here and around the world. GDP captures costs of inputs and value of outputs. To the extent that we offer better or more innovative products and services that command higher prices, our GDP increases. Similarly, to the extent that we generate increasing demand for attractively priced products by using our inputs more productively, our GDP increases.

Another important reason for choosing GDP per capita as our measure of prosperity is that it allows us to benchmark our progress against most other countries around the world. It is the most commonly reported statistic at national and regional levels. Some observers prefer other measures of prosperity such as National Income, Personal Income, or Personal Disposable Income. Given that GDP correlates very closely with these measures and is generally accepted around the world, we chose GDP per capita as our measure of economic prosperity.

Four elements drive GDP per capita

We have shown that Canada lags the US and that our prosperity gap has grown over the last two decades. To understand the reasons for this performance trend, we have built on the framework developed by John Baldwin and others at Statistics Canada to disaggregate GDP per capita into measurable elements (Exhibit 3):

- **Profile** – the proportion of Canada's total population who are of working age to contribute to our economic performance
- **Utilization** – the proportion of the working-aged population who actually look for and find employment
- **Intensity** – the amount of time those who do work are actually working
- **Productivity** – the success in translating working hours into products and services of value to customers in Canada and around the world.

To gain further insight into these elements, we sub-divide two of them further.

We examine two sub-elements of *utilization* – the rate at which working-age Canadians participate in the labour force by being employed or seeking employment, and the proportion of labour force participants who are successful in finding employment.

We examine six sub-elements of *productivity:*

- the mix of our industries into traded clusters, local industries, and natural resources;
- the sub-industries that make up our clusters of traded industries;
- the degree to which our population lives in urban centres;
- the educational attainment of our population and its impact on productivity
- the degree to which physical capital supports the productivity of workers
- the effectiveness with which we generate value based on the platform created by all of the other sub-elements – that is, the residual difference.

Exhibit 3 Institute assesses four elements of prosperity

Prosperity		Profile		Utilization		Intensity		Productivity
GDP Per Capita	=	Potential labour force / Population	X	Jobs / Potential labour force	X	Hours Worked / Jobs	X	GDP / Hours Worked
				• Participation • Employment				• Cluster mix • Cluster content • Urbanization • Education • Capital Investment • Effectiveness

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

Productivity has the largest impact on prosperity gap

The most significant contributor to the prosperity gap is productivity (Exhibit 4).

Profile, Utilization, and Intensity have a limited impact on the prosperity gap

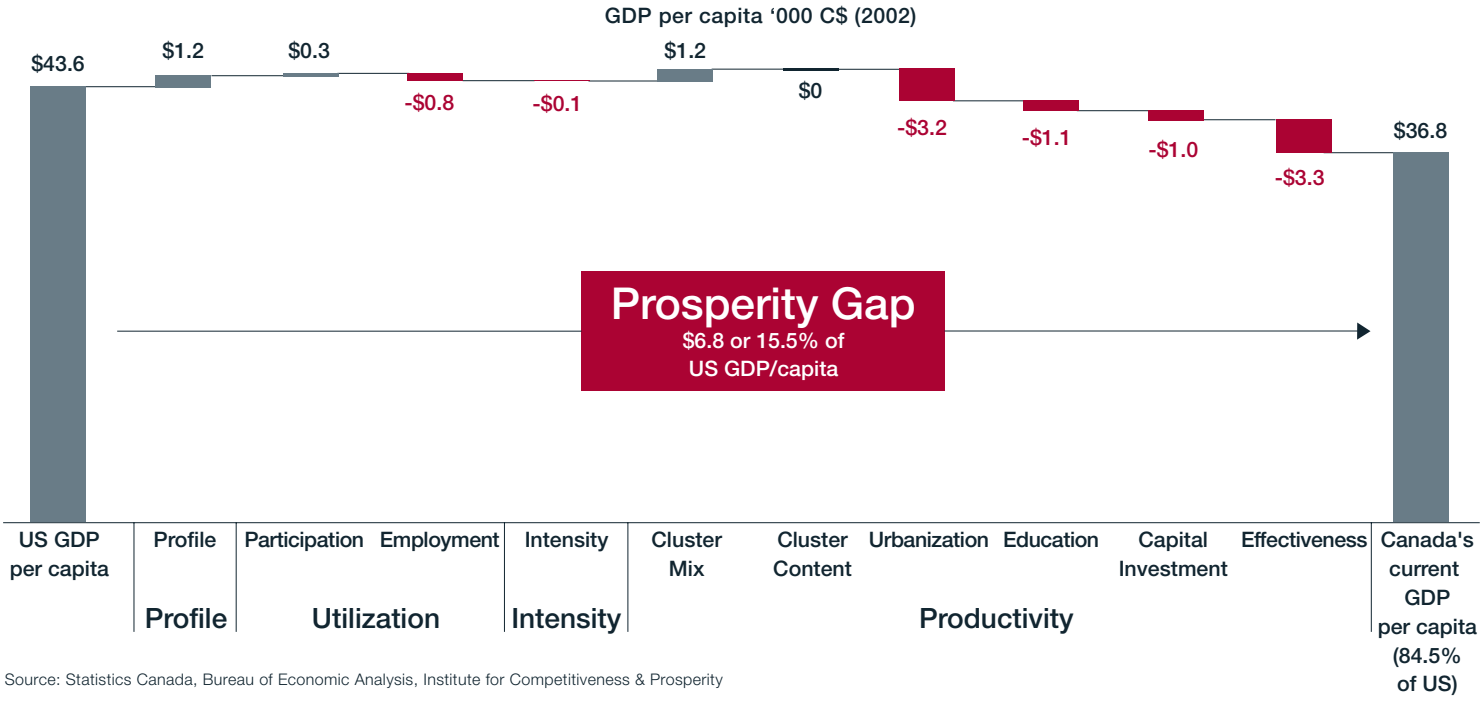
Canada's economy is strengthened relative to that of the US by a slightly higher proportion of our population who are of working age (67.4 percent of Canada's population is between ages 16 and 64 compared to 65.2 percent in the US). Canada's demographic **profile** represents an advantage relative to the US; if demographic profile were the only factor in economic performance Canada's GDP per capita would be about $1,200 higher than that in the US.

Utilization of the working age population is a slight disadvantage for Canada. Canada has nearly the same percentage of its working-aged population seeking work (67.1 percent) compared to the US (66.6 percent). This equates to a $300 per capita prosperity advantage for Canada. However, Canada's economy continues to be slightly less capable of creating jobs for its residents seeking work (a 92.3 percent employment rate versus 94.2 percent in the US in 2002). This under performance in employment accounts for $800 of the prosperity gap. The net effect of these two results is under performance of about $500 in GDP per capita.

For most of the last twenty years, official statistics report that Canadians have worked fewer hours than Americans. Based on 2002 results of Canada-US intensity difference (34.1 hours worked per week in Canada versus 34.2 hours in the US), we can attribute $100 per capita of the prosperity gap to this factor.

Taken together, profile, utilization, and intensity actually enhance our GDP per capita comparison with the US. They continue to represent limited potential for closing the prosperity gap.

Exhibit 4 Productivity drives Canada's prosperity gap with the US



Source: Statistics Canada, Bureau of Economic Analysis, Institute for Competitiveness & Prosperity

Productivity is the key driver of the prosperity gap

Productivity accounts for the largest share of our prosperity gap with the US. In analyzing productivity we have assessed six sub-elements.

Cluster mix and cluster content in Canada contribute positively to our productivity. In previous work, we identified the importance of clusters of traded industries to an economy's productivity, innovation, and standard of living.[2] Professor Michael Porter of the Institute for Strategy and Competitiveness, Harvard Business School has identified the contribution of clusters of traded industries to regional and national economies. Traded industries are those that are concentrated in specific geographic areas and sell to markets beyond their local region. Porter identifies two other types of industries: local industries, which are present in most geographic areas and primarily serve their local markets; and natural resource industries, which are located primarily on the basis of resource endowments.

Porter also identifies clustering patterns among traded industries using the correlation of industry employment across geographic areas (Exhibit 5). Industries that are highly correlated constitute clusters.[3] Within clusters, groups of industries with a particularly strong correlation are identified as sub-clusters. For example, the Information Technology cluster comprises five sub-clusters: computers, peripherals, electronic components and assemblies, communications services, and software.

Exhibit 5 Traded industries are grouped into 41 clusters

Upstream Materials and Products	Industrial and Supporting Functions	Final Consumption Goods and Services
Metals and Materials	**Multiple Business**	**Food/Beverages**
Construction Materials	Education and Knowledge Creation	Agricultural Products
Metal Manufacturing	Business Services	Processed Food
Forest Products	Heavy Machinery	Fishing and Fishing Products
Forest Products	Financial Services	**Housing/Household**
Petroleum/Chemicals	Motor Driven Products	Building Fixtures, Equipment & Services
Oil and Gas Products and Services	Prefabricated Enclosures	Lighting and Electrical Equipment
Chemical Products	Production Technology	Furniture
Plastics	Analytical Instruments	**Textiles/Apparel**
Semiconductors/Computer	Heavy Construction Services	Textiles
Information Technology	**Transportation and Logistics**	Apparel
	Automotive	Leather and Related Products
	Distribution Services	Footwear
	Transportation and Logistics	Sporting, Recreational and Children's Goods
	Power	**Health Care**
	Power Generation and Transmission	Medical devices
	Office	Biopharmaceuticals
	Publishing and Printing	**Personal**
	Telecommunications	Jewelry and Precious Metals
	Communications Equipment	Tobacco
	Defense	**Entertainment**
	Aerospace Engines	Entertainment
	Aerospace Vehicle and Defense	Hospitality and Tourism

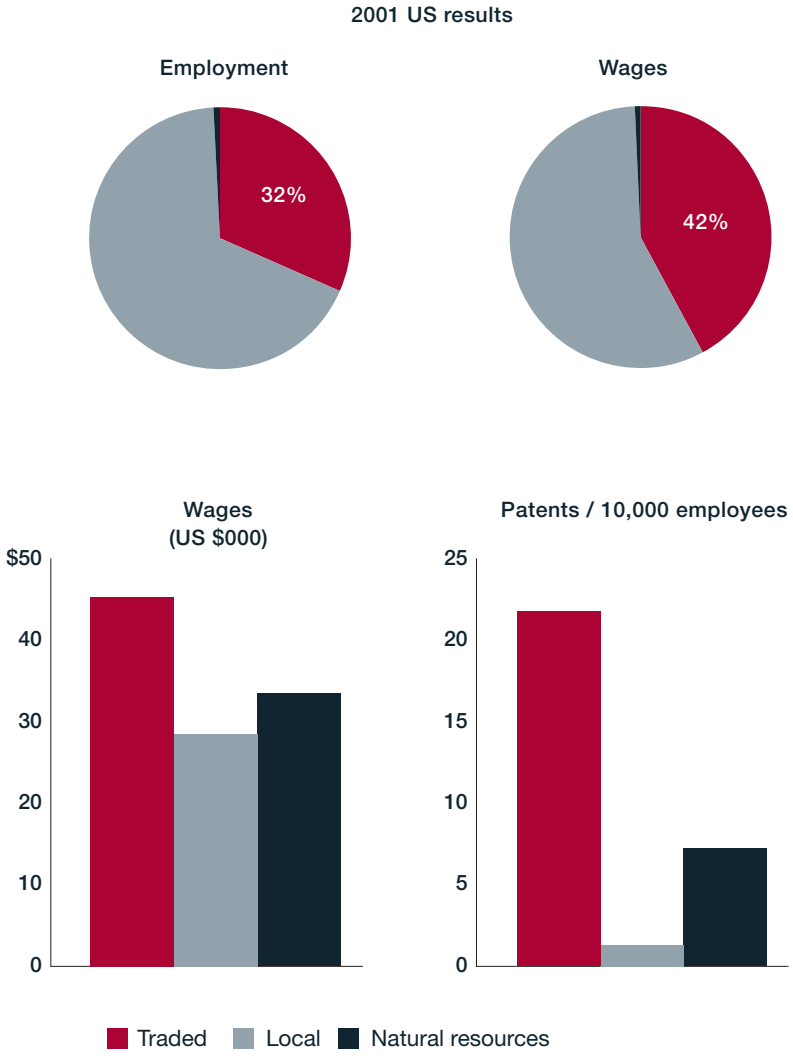
Source: Porter, Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School

[2] Institute for Competitiveness & Prosperity, *A View of Ontario: Ontario's Clusters of Innovation,* April 2002, pp. 18-20, 26-27
[3] For more information on the Cluster Mapping Project, see the Institute for Strategy and Competitiveness Web site: http://www.isc.hbs.edu

Traded clusters provide opportunities for growth and utilization that surpass those in the local economy. Further research by Porter has shown that clusters of traded industries increase productivity (as represented by wages) and innovation (Exhibit 6).

In addition, the presence of traded clusters in a region has a spillover effect in that they typically generate opportunities for increased success of the local economy. The "tide" of traded clusters raises the prosperity level for both local and traded industries, and everyone benefits.

Exhibit 6 Clusters of traded industries drive productivity and innovation



Drawing on Porter's methodology, the Institute has determined that fully 37.6 percent of employment in Canada is in clusters of traded industries versus 31.6 percent in the US. It turns out that, within the traded clusters, our mix is remarkably similar to that in the US (Exhibit 7). That is to say, our mix of traded versus local clusters and weighting across traded clusters would be expected to produce a $1,200 higher GDP per capita, other things being equal.[4]

Sub-clusters make up each cluster of traded industries.[5] As with clusters, there are wage and productivity differences across sub-clusters. One of the issues being discussed by business analysts and economists is "hollowing out." Some observers believe that Canada is losing the high value-added component of its industries, as head offices and decision-makers relocate outside the country. As we analyze the sub-clusters that make up our clusters of traded industries and compare these with the mix in the US, we conclude that the impact of **cluster content** on GDP per capita is essentially the same in the US and Canada.

Relatively low urbanization is a significant contributor to the prosperity gap. The Institute has synthesized current research by Canadian and other urban geographers and economists[6] that linked urbanization, innovation, learning, and urban policy. We found that the increased social and economic interaction of people and firms, the cost advantages of larger-scale markets, and a diversified pool of skilled labour all improve productivity in urban areas.[7] The interplay of these factors promotes innovation and growth in an economy.

Exhibit 7 Canada has a similar mix of clusters to the United States

* US Statistics – 1999, Canadian Statistics – 2000

Source: Canadian Business Patterns; Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School

[4] It is important to note that our measure focuses on the mix of clusters only. It estimates the productivity performance we could expect in Canada if each cluster were as productive as its US counterpart.
[5] Institute for Competitiveness & Prosperity, *A View of Ontario's Clusters of Innovation,* April 2002, pp. 18-20
[6] *Ibid.* and Institute for Competitiveness and Prosperity, *Missing opportunities: Ontario's urban prosperity gap,* June 2003
[7] *Missing opportunities: Ontario's urban prosperity gap*

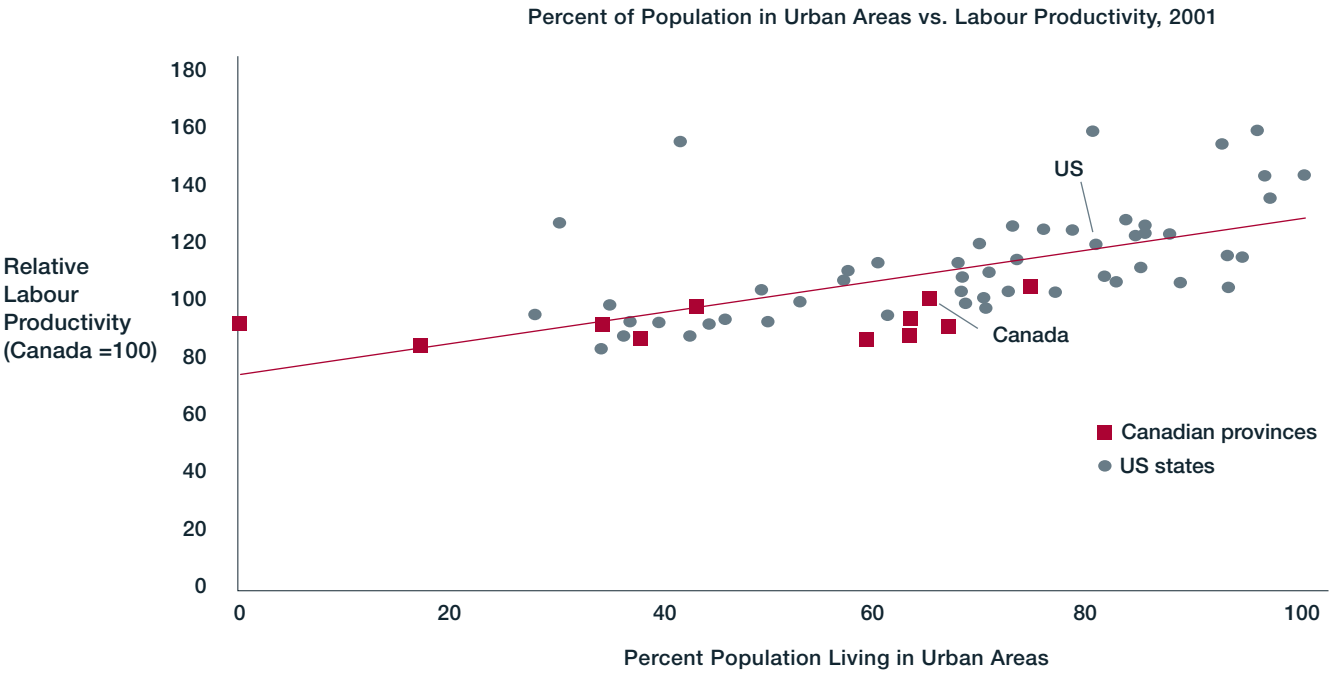
Canada's lower degree of urbanization hurts our productivity compared to the US.

City regions of reasonable size are increasingly important drivers of economic activity. Three factors interact to improve productivity in urban areas:

- **Network effects drive innovation.** Close proximity of people and firms increases the frequency and quality of social and economic interactions, which spur innovation. This innovation strengthens and promotes the growth of the cluster, which draws more firms and people, which produces greater interaction, and so on.
- **Scale reduces unit costs.** Unit costs fall as the local markets grow in size. With a strong cost position from a larger local base, firms can supply other cities and regions.
- **"Thick" labour markets benefit workers and firms.** Cities have a greater concentration and variety of skilled personnel. Firms locate in urban areas to draw on diversified pools of skilled labour. Likewise, individuals have a form of "labour market insurance" when they live in a city where there is more than a single employer.[8]

There is a positive relationship between degree of urbanization and the labour productivity of 60 jurisdictions in North America (Exhibit 8). Urbanization is defined as the percentage of their population living in city areas of greater than 50,000 people. For Canada it includes our 43 largest cities ranging in size from Toronto to Lethbridge. Our analysis indicates that we have a $3,200 per capita disadvantage against the US. This makes low urbanization the largest negative contributor to Canada's productivity gap.

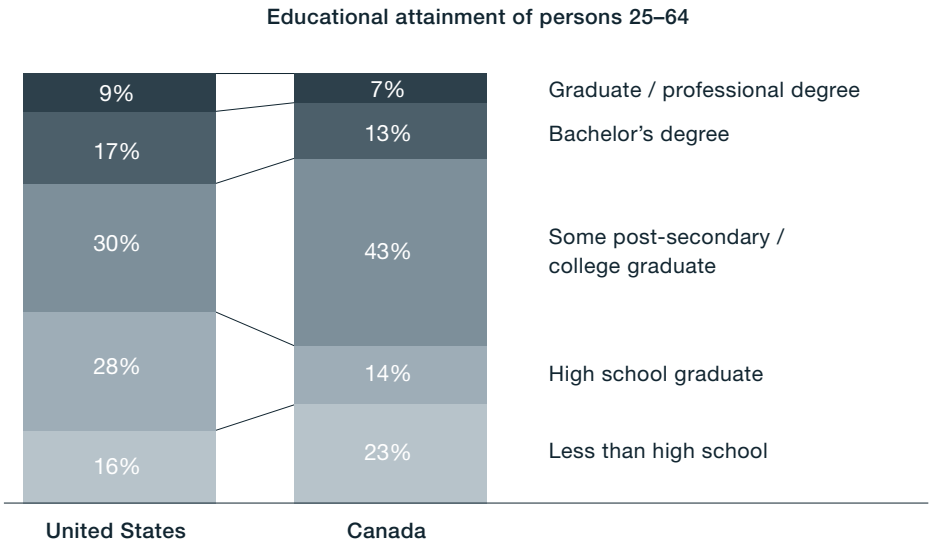
Exhibit 8 Urbanization drives productivity



Source: Statistics Canada, CANSIM, table 051-0014, 051-0001, 384-0002, 282-0002
Statistical Abstract of the United States: 2000. Available online at: http://www.census.gov/prod/www/statistical-abstract-us.html
US Bureau of Labour Statistics, State Employment. Available online at: http://data.bls.gov/labjava/outside.jsp?survey=la
US Bureau of Economic Analysis, Gross State Product. Available online at: http://www.bea.gov/bea/newsrel/gsp0503.xls
US - MSAs; Canada - CMA (adjusted to equate to US MSA definition)

[8] E. Glaeser, "Demand for Density? The Functions of the City in the 21st Century," *The Brookings Review,* Summer 2000, Vol. 18, No. 3

Exhibit 9 Canada trails the US in educational attainment



Source: Statistics Canada, US Census Bureau

Lower educational achievement weakens our productivity. Most economists agree that the level of education attained across the workforce is an important determinant of the "quality" of an economy's human capital. Our analyses reinforce the positive correlation between productivity and wages.[9] Economic studies also show repeatedly that individuals' earnings increase with their level of education.[10] In fact, the best single predictor of personal income is level of educational attainment.

Canada's under performance in educational attainment, mainly at post-secondary levels (Exhibit 9) translates into a negative impact on GDP per capita of $1,100 per capita.

Capital under investment is a drag on productivity growth. In our work in Ontario, we have identified under investment in machinery and equipment in Ontario compared to levels in US peer states as an issue.[11] This under investment slowly erodes the relative strength – levels and renewals – of our capital stock compared to that in the US. This erosion in turn reduces the productivity of our labour and hence our prosperity. For Canada, we estimate this under investment to be worth about $1,000 per capita in lost productivity and prosperity. Later, we discuss further this under investment and its possible causes, including the higher tax burden on capital.

The remaining gap of $3,300 relates to lower effectiveness. 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 gap that remains is related to productivity on the basis of like-to-like cluster mix, urbanization, education and capital intensity. In sum, Canada is less effective than the US in converting our natural, physical and human resources into goods and services.

Productivity gains count

Productivity gains count not only because they would reduce the dominant portion of the prosperity gap; looking at the road ahead, productivity increases would also provide the greatest leverage for a higher, sustainable GDP per capita. Productivity is the only element that can improve in the short-run and grow indefinitely. This can be achieved if our attitudes towards competitiveness, our investments, our motivations to work and hire, and our market and institutional structures combine to lead to the innovation and upgrading that will raise our productivity to US levels and eliminate the prosperity gap.

The Institute has sought explanations for the prosperity gap and for ways to close it. We have looked at differences in attitudes to competitiveness and entrepreneurship. We have deepened our understanding of consumption-investment tradeoffs, examined the impact of tax policies on motivations, and considered how market and governance structures affect our productivity.

Our main conclusion in this report is that Canadian individuals, businesses, and governments are not investing enough of today's wealth for tomorrow's prosperity. To close the prosperity gap with the US, we need to partner to reverse the widening pattern of under investment that limits our potential for productivity gains.

Throughout this report, we elaborate on this key theme and our insights into steps Canadians can take in partnering for prosperity.

[9] Task Force on Competitiveness, Productivity and Economic Progress, *Closing the prosperity gap,* November 2002, p. 27
[10] For a literature review of the rates of returns to education and results of their own calculations, see Vaillancourt and Bourdeau-Primeau in "The Returns to University Education in Canada, 1990 and 1995", in Laidler, D. (ed.) *Renovating the Ivory Tower: Canadian Universities and the Knowledge Economy.* C.D. Howe Institute Policy Study No.27
[11] *Closing the prosperity gap,* p. 36 and *Investing for prosperity,* p. 25

Canada under invests for tomorrow's prosperity

Canada's under investment permeates our economy

Canada's capacity for innovation and upgrading is built on an integrated set of four factors in the AIMS analytical approach (Exhibit 10):

- **Attitudes** towards competitiveness, growth, and global excellence
- **Investments** in education, machinery, research and development, and commercialization
- **Motivations** for hiring, working, and upgrading as a result of tax policies and government policies and programs
- **Structures** of markets and institutions that encourage and assist upgrading and innovation

As we review our research findings to date, we see that under investment is the key driver of our prosperity gap.

A competitive rate of investment in human capital and physical capital strengthens our capability for innovation and productivity enhancement. But Canadians invest less per capita than our American counterparts and this results in the prosperity shortfall between us and the US.

Initially, we invest in much the same way as they do. But then we stop investing for the long term and instead increase our current consumption, while US individuals, firms, and governments keep right on investing. In fact, we do all the basics – and do them well. But, as the investment requirements become higher and more demanding, we tend to shy away. The net result is that, in the balance between investment and consumption, Canadian spending is weighted more toward consumption than that in the US, where a higher percentage of total spending is invested. This is true for Canadian individuals, Canadian businesses, and Canadian governments.

Relative to our counterparts in the US, we under invest in five important areas. If Canadians do not break out of this pattern and continue to be out invested, we run the risk of falling further and further behind – to the point where we cannot catch up and be competitive.

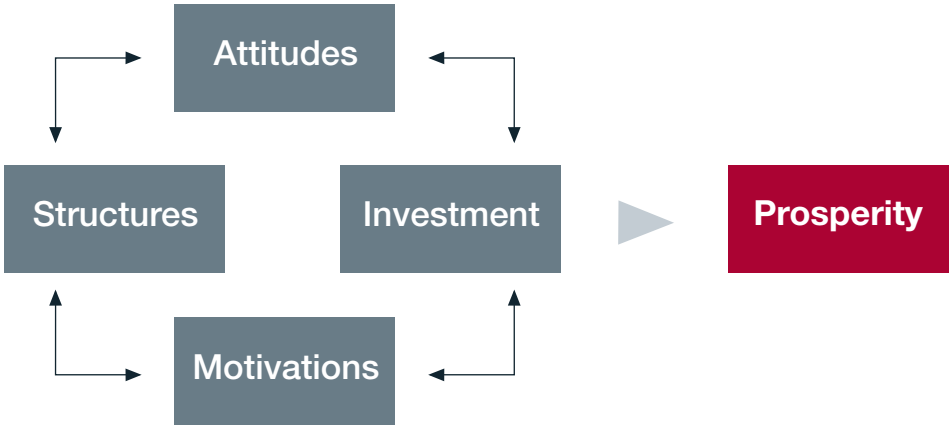
Investment in education lags the US

Investment in education affects productivity and prosperity throughout our society. Most researchers who have analyzed Canada's and Ontario's productivity challenge conclude that education is an important part of the solution. A more educated and better trained labour force creates more value. The best advice parents can give their children is to stay in school. Every extra year of school and each additional degree raise income prospects for individuals.[12] While the economic returns from each level of education are higher in the US than in Canada, the data indicate significantly higher earnings from advanced education in both countries.

For businesses, the increased availability of skilled workers, researchers, and managers is a critical benefit of post-secondary education. For all of us, the ideas that spill out of colleges and universities improve and create products, services, and processes and lead to new companies and whole new industries.

Our review of Canada's investment in education shows that we under invest relative to the US and that this under investment is more pronounced as we move through the educational system. Our analysis includes funding by governments, individuals (students and donors), and others, except as noted. On a per capita basis,[13] Canadians invest competitively in public primary and secondary schools (85 percent of US rates) and in colleges (90 percent). But university spending is at a much lower rate – 50 percent of US spending per capita.

Exhibit 10 AIMS drives prosperity



Source: Institute for Competitiveness & Prosperity

[12] See *Investing for prosperity,* November 2003, p. 20 for an estimate of the returns to education by level of education
[13] Quebec's spending is excluded at all levels because of the significant structural differences due to its CEGEP system

On a per student basis, the spending disparities widen in public primary and secondary schools (81 percent of US rates) and colleges (86 percent), since Canada has proportionately more of its population enrolled as students in these levels. In effect, higher per capita investments do not go as far at the level of spending per student. At the university level, because of our lower participation rate, the spending gap narrows on a per student basis but is still only 63 percent of the US rate (Exhibit 11). Because Quebec's secondary and post-secondary system is so different from systems in the rest of Canada and the US we have excluded their expenditures.[14]

Primary and secondary education investment shows mixed results

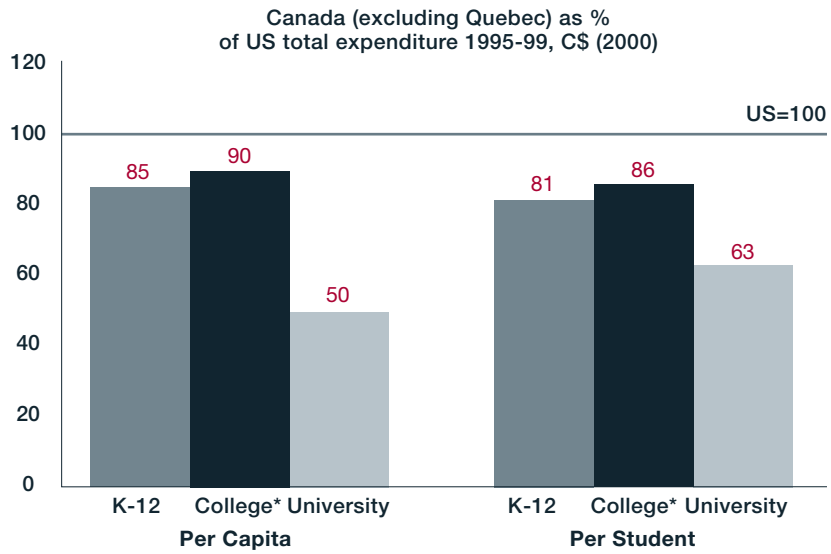
It is difficult to be definitive on whether Canada's relative under investment in K-12 education is worrisome. The results achieved by students in Canada's primary and secondary school systems are better than those achieved by their US counterparts. According to OECD data, the ratio of high school graduates to the relevant age group in 2000 was 78 percent in Canada versus 74 percent in the US. Through the 1990s, Ontario's rank in the percentage of Grade 9 students who ultimately graduate on time has been in the upper half of its peer group of US states and has been improving.

Canada's students also perform well on standardized tests. Their results are generally among the highest in the world and exceed those of students in the US.[15] In addition, the disparity of results across schools is significantly lower in Canada than in the US, indicating our success at providing a better quality education for a broader range of students.

Conversely, while Canada performs well at graduating students on time, the Institute is concerned about whether post-secondary students' aspirations are competitive with those of US students. Our concern about students' aspirations is highlighted in findings from a recent report by the Canada Millennium Scholarship Foundation[16] reporting that 50 percent of Canadian students, who score in the top 40 percent on standard achievement tests, including PISA, do not attend post-secondary programs. These findings reinforce our view that Canadians need to be more successful in encouraging high school graduates to pursue a post-secondary degree, especially since the study uncovered that it was students' attitudes – and not financial barriers – that dissuaded them from attaining higher levels of education.

In fact, tuition fees are not a major deterrent to students considering pursuing post-secondary education. A recent Statistics Canada study shows that over the past decade, the post-secondary participation rate gap between the students from low- and high-income families has actually narrowed. Further, when high school graduates were asked the main reason for their decision not to go to go on to college or university, 77 percent of respondents listed a non-financial reason.[17]

Exhibit 11 Canada's spending lags the US's at all levels of education



* Note: Ontario results within national data were adjusted according to Ontario Ministry of Training, Colleges and Universities results.
Source: Statistics Canada, Ministry of Training, Colleges and Universities; National Center of Education Statistics – Digest of Education Statistics

[14] If Quebec data were included, Canada's spending relative to the US on a per capita basis would 81 percent (K-12), 118 percent (College) and 51 percent (University). On a per student basis the results are 82 percent (K-12), 93 percent (College) and 63 percent (University).
[15] See *Investing for Prosperity,* p. 22 and *Missing opportunities: Ontario's urban prosperity gap,* p. 28
[16] Canada Millennium Scholarship Foundation, "Ready or Not? Literacy Skills and Post-Secondary Education," September 2003.

Post-secondary education investments show important weaknesses

Investments in post-secondary education in Canada have grown at a moderate rate since 1995, but have not gained ground relative to investments made in public and private post-secondary institutions in the US.

A major difference in the educational strategy of Canada and the US is the diversity of public and private universities and colleges there. This diversity creates the opportunity for higher levels of private funding in institutions, which has led to substantially higher levels of investment on a per student basis as well as a proportion of GDP. While Canada may be investing at close to competitive levels when only public institutions are considered, our lack of private universities has constrained investment in this critical prosperity driver. At the college level of post-secondary education, over the 1995-99 period, Canada (outside of Quebec) invested at 90 percent of the US rate on a per capita basis and 86 percent of the US rate on a per student basis.

At the university level, the difference becomes more pronounced as investment per capita and per student are dramatically below US levels. Per capita, the US out invested Canada by a margin of 2 to 1. On average between 1995 and 1999, the US invested $875 per capita in universities, while Canada invested only $436.[18] This gap narrowed somewhat on a per student basis, because Canada has fewer people attending university as a percentage of its population. The result is that, over the 1995-99 period, Canadian universities spent a total of $19,600[19] per student annually, while US universities spent $31,200 per student[20] – a yearly difference of $11,600 per student. Combining tuition[21] and government funding,[22] the differences between Canada and the United States are not large, accounting for a quarter of the difference in per student spending.

The major difference is in the additional revenues to US public and private universities from private gifts, donations, and endowment income and from other revenue generating activities. Private donors invest at a much higher rate in US schools than in Canadian schools. These investments increased capacity to spend at US public schools by $2,000 per student, and by $9,400 per student at private schools, or $4,600 across the two systems. Canadian data for donations by private individuals and endowment income are not available, but they are believed to be relatively modest in comparison. On average, endowment assets in the US per full-time student are $186,000 at private universities and $20,000 at public universities. The average endowment for Canadian universities is under $8,000.[23]

The other source for US universities is their access to a wider range of related revenue-generating activities (in hospitals and other operations) totaling $5,900 per student in the US versus $1,000[24] in Canada.

Attainment of degrees in Canada lags US

We have seen that a smaller percentage of Canadians have university degrees than Americans. Most recently available information for the latter half of the 1990s indicates that we are not closing this gap. In degrees conferred per 1,000 population Canada trailed the US – 5.02 versus 6.20 in the 1997-98 academic year. At the bachelor's level the gap was much smaller – 4.16 in Canada versus 4.42 in the US. At the Ph D level the difference was almost non existent – 0.13 versus 0.17. The largest source of the attainment gap is at the master's degree.

In Canada, 0.73 master's degrees were granted per 1,000 population, less than half the 1.61 rate achieved in the US (Exhibit 12).

[17] Canada Millennium Scholarship Foundation, "Why Don't They Go On? Factors Affecting the Decisions of Canadian Youth Not to Pursue Post-Secondary Education," 2001.
[18] Operating and capital expenditures, excluding ancillary enterprises (e.g., bookstores, athletics, residences)
[19] Including Quebec
[20] In US public universities (64.7 percent of students) the per-student spending is $28, 200 and in private universities (35.3 percent of students) the spending is $36, 500. Note that results include capital and operating spending, but exclude ancillary expenditures (e.g., residences, dining halls, and athletics).
[21] Average tuition at US public universities in 1999-2000 was $5,600 and at private universities it was $17,800 (current Canadian dollars) – the weighted average was$11,500; Canadian tuition was $4,200
[22] Government revenue was $14,400 per student at public universities and $6,100 at private universities – the weighted average was $9,900; in Canada government revenues per student were $14,400.
[23] Based on survey results of four-year colleges and universities in the US and universities in Alberta, Ontario, and Quebec conducted by US-based National Association of College and University Business Officers.
[24] Including gifts, donations and endowments

Our US counterparts out invest us at the bachelor's level and the investment gap widens along the upper education spectrum, especially at the level of "terminal master's" – the final degree for the vast majority of its holders before they enter the economy and contribute to enhancing productivity. In sum, Canada invests substantially less in post-secondary education than the US and this under investment reduces our productivity and prosperity.

Canada also trails in productivity-enhancing capital investments

Another critical area of investment is the acquisition of new physical assets or the refurbishment of existing ones. This capital investment – in machinery and equipment and in structures – enables workers to be more productive, giving them newer and better tools to do their work. Innovation and upgrading are typically embedded in new investment. The machinery and equipment component includes new innovative technology and software – a key driver of productivity growth.

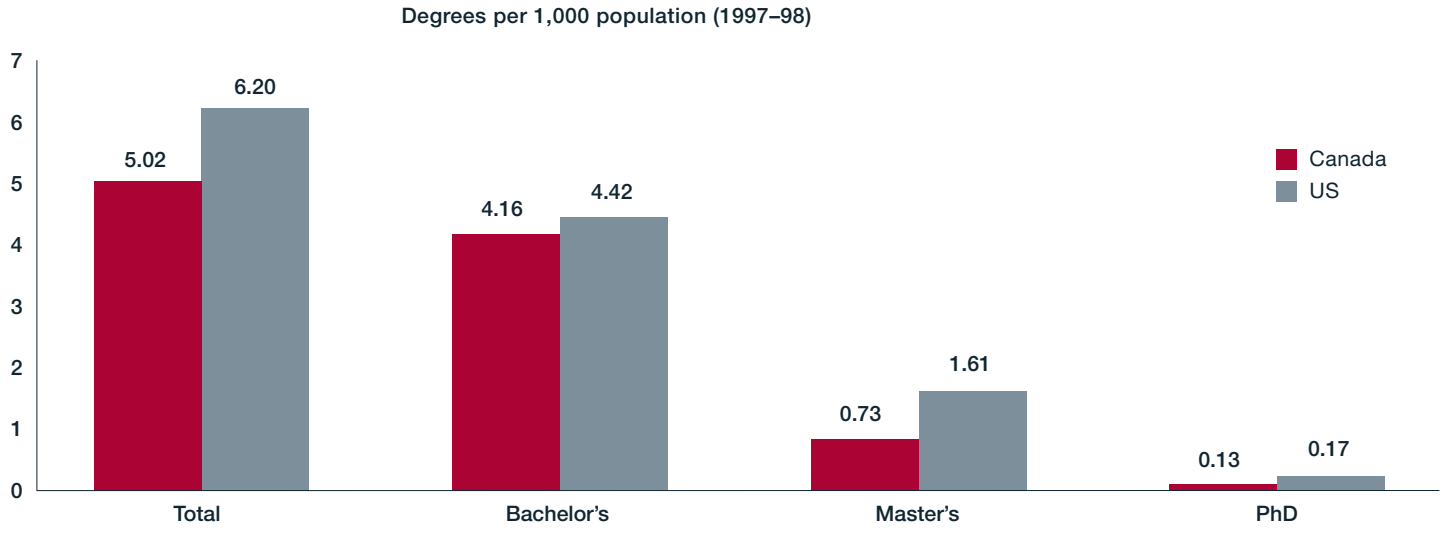
Examples of machinery and equipment investment include a company building a new factory assembly line or retooling an existing one, a bakery buying a new oven, or a government agency buying new computers for an airport. In 2002, 61.5 percent of all new capital investment in Canada was in machinery and equipment, up from 43.6 percent in 1981. Structural investment comprises non-residential infrastructure – including the building of a new factory or a warehouse, and engineering construction investment such as highways, railways, and bridges.

There is a positive and statistically significant relationship between investment in machinery and equipment and growth in GDP per worker – our standard measure of productivity.[25] The correlation between productivity and investment "holds over long historical periods, as well as in recent ones, in both developed and developing countries."[26] Infrastructure investment, while adding to productivity, is considered by economists to have less impact than machinery and equipment investment.

Canada's private sector has consistently under invested in machinery and equipment compared to US counterparts

The private sector in Canada accounts for just over 84 percent of all capital investment, and 91 percent of machinery and equipment investment. Canada's private sector investment dropped from 16.1 percent of GDP in 1981 to 12.8 percent in 2001. In machinery and equipment, private sector investment

Exhibit 12 University degree attainment is higher in the US than in Canada



Source: Statistics Canada (2002) Educational databases, data commissioned by the Institute for Competitiveness & Prosperity; CANSIM II Table 051-001, (population); US Department of Education, National Center of Education Statistics, Digest of Education Statistics 2001, Tables 255-7; US Census Bureau, Census 2000; Institute for Competitiveness & Prosperity

[25] J. Bradford Delong, Lawrence H. Summers, "Equipment Investment and Economic Growth" 1995. Source: http://www.j-bradford-delong.net/pdf_files/QJE_Equipment.pdf
[26] R. Harris, "Determinants of Canadian Productivity Growth: Issues and Prospects", Discussion Paper # 8, Industry Canada, 1999

has been consistently lower in Canada than in the US (Exhibit 13). Since 1981, Canada's private sector has trailed the US in machinery and equipment investment by an average of 12.0 percent in dollars per GDP. If just the past decade is examined, the gap is even larger – an average of 16.1 percent. This annual investment gap has a strong cumulative effect. Over the twenty-year period, if the US private sector machinery and equipment rate were matched, Canada's capital stock would have been almost $75 billion dollars higher. Canada's private sector continues to fall behind in this important driver of business growth.

Canada's private sector has out invested the US in structures, but this slight lead narrowed from 2.8 percent of GDP in 1981 to 1.5 percent in 2001.

Public sector capital investment in Canada is falling behind US levels

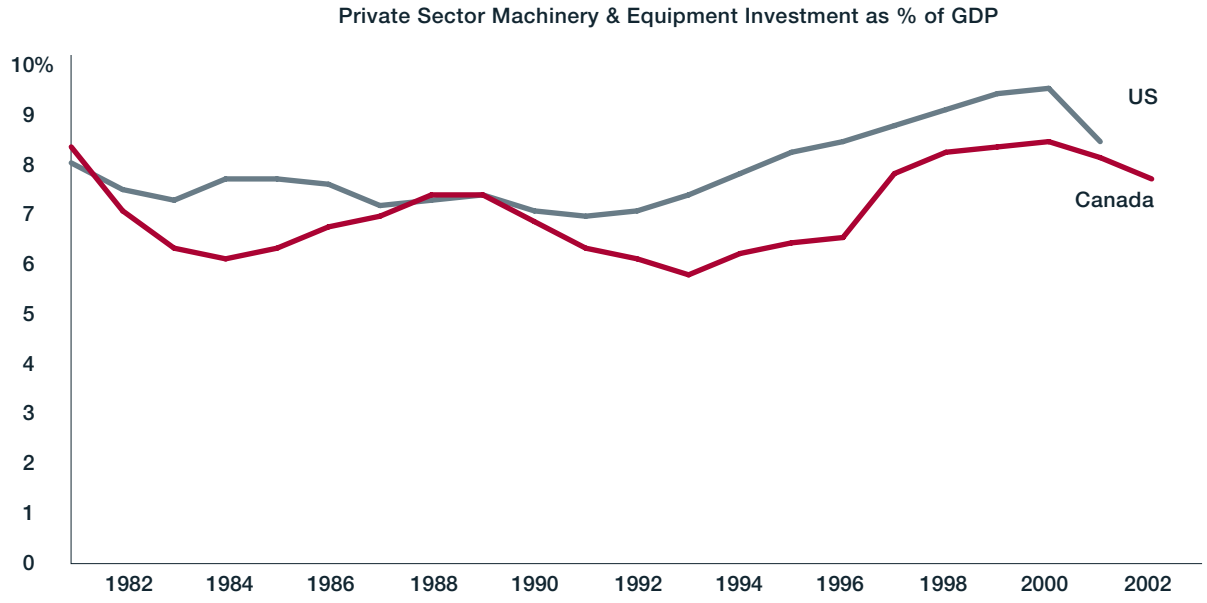
While a smaller part of total investment, public sector capital investment is still an effective driver of growth in an economy. For most of the past two decades, Canada's public sector out invested the US public sector,[27] but since 1996 it has fallen behind.

Public sector structural investment in Canada, between 1981 and 1995, held a slight advantage over the US. Since 1995, we have seen the US spend about 14 percent more per dollar of GDP. As of 2001, Canada's public sector invested 1.6 percent of its GDP on structural capital, while the comparable US investment was slightly above 1.8 percent. For machinery and equipment, governments in Canada invested slightly more than those in the US between 1981 and 1995. In 1981, Canada's public sector investment stood at 0.6 percent of GDP, while in the US it was 0.5 percent. In 1995, the US caught up to Canada, with both having an investment rate of 0.8 percent of GDP. Since then, while our investment rate has remained flat at 0.8 percent of GDP in 2001, the US rate has increased to 0.9 percent or about 14 percent more in dollars per GDP.

Under investment is costly

We estimate that under investment in machinery and equipment costs Canadians nearly $1,000 in lost GDP per capita. GDP growth is driven by growth in labour hours (which are driven by profile, utilization, and intensity) and growth in productivity. One of the key factors driving productivity is the amount invested in machinery and equipment. If Canada's private sector had kept pace with the US machinery and equipment investment since 1981, our total investment

Exhibit 13 Canada's capital investment trailed the US in the last decade



Source: Statistics Canada; most recent US Department of Commerce and Bureau of Economic Analysis Data; Institute for Competitiveness & Propserity Analysis

[27] US military expenditures are excluded from public sector investments.

would now be 4.3 percent higher, and we estimate that this higher level of investment would have raised productivity and prosperity by just under $1,000 per capita.

The impact of our lower capital investment rate could be much higher. The approach just described looks only at private sector under investment in machinery and equipment since 1981 because of limitations in access to reliable comparative data. Another approach is to look at the overall level of capital invested per labour hour versus the US and to estimate growth in GDP per capita if we were to match US results.

Using a method developed by Andrew Sharpe[28] at the Centre for the Study of Living Standards, we estimate that if we invested at the same level per labour hour as the US, the labour productivity gap would decrease by 30 percent based on 2001 data, translating to an increase of about $2,200 in GDP per person.

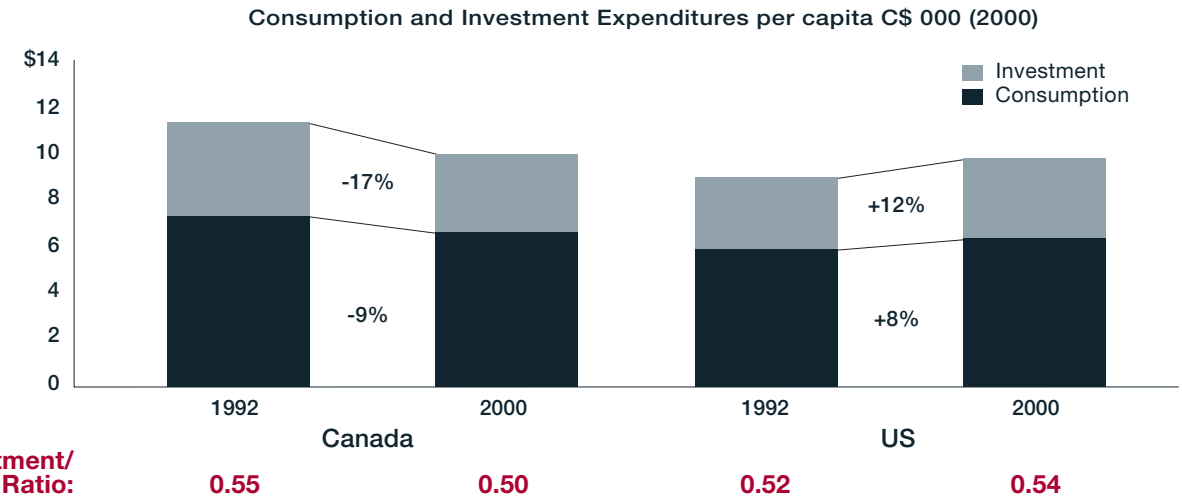
Why is Canada's capital investment lower? A 2002 study published in the International Productivity Monitor[29] offers two possible reasons for Canada's poor performance versus the US in manufacturing investment: the lower cost of labour, and the higher cost of importing equipment. The study found that, between 1994 and 2000, the cost of labour relative to capital increased by 1.7 per cent per year in Canada compared with 4.6 per cent in the US. At the same time, the Canadian dollar depreciated significantly, increasing the price of imported equipment. This gave Canadian firms less incentive to increase their capital investment compared to their American counterparts, and made the cost of investment higher. We also discuss later the added de-motivating impact of Canada's higher tax burden on capital.

Spending by governments in Canada has shifted from investment to consumption over the last decade

Government expenditure is a critical contributor to upgrading and innovation. We recognize that governments also have an important role in consumption expenditures that help secure an adequate quality of life for all Canadians. We think it is important, however, that governments achieve an appropriate balance between consuming current prosperity and investing for future prosperity. We do not prescribe the exact balance between the two – but relative to the US, governments in Canada have shifted away from investment expenditures towards consumption.

Governments at all levels in Canada and in the US direct approximately 30 per cent of their total spending to a combination of debt service, basic government administration, environment, and protection. In allocating the remaining 70 per cent, a tradeoff between consumption and investment occurs. To compare trends in how governments in Canada and the US made this tradeoff, we classified government expenditure by consumption (e.g., health care and social services) and investment (e.g., education, trans-

Exhibit 14 Governments in Canada have shifted spending from investment to consumption



Source: Institute for Competitiveness & Prosperity based on data from Statistics Canada, Public Sector Statistics 2000–2001 (table 2.2); US Census Bureau, Statistical Abstract of the United States: 2001, 121st edition (table 463); Institute for Competitiveness & Prosperity analysis

[28] Andrew Sharpe, "Why are Americans More Productive Than Canadians?" 2003, Centre for the Study of Living Standards (CSLS).
[29] J. Bernstein, R. Harris, A. Sharpe; "Explaining the Widening Canada-US Productivity Gap in Manufacturing," International Productivity Monitor #5, 2002.

portation, communication, and housing). In 1992, our governments in Canada spent 55 cents on investment for every dollar of consumption spending similar to the experience in the US at 52 cents for every dollar of consumption spending (Exhibit 14). By 2000, this ratio dropped to 50 cents in Canada, while it rose to 54 cents in the US. On a per capita basis, since 1992, governments in both Canada and the US have sustained relatively the same level of consumption expenditure. However, governments in Canada reduced public investment expenditure, while in the US governments chose to increase per capita investment spending.

Through the 1990s, government spending as a percentage of GDP declined in Canada and the US. In Canada, government spending fell from 55.9 percent of GDP to 40.1 percent in 2000, while in the US the decline was from 37.9 percent to 33.8 percent. On a per capita basis, the US actually increased spending by governments, while in Canada per capita spending fell over the 1992-2000 period. Higher prosperity in the US allowed their governments to have lower tax rates than Canada and still spend more per capita in consumption, investment, and other areas.

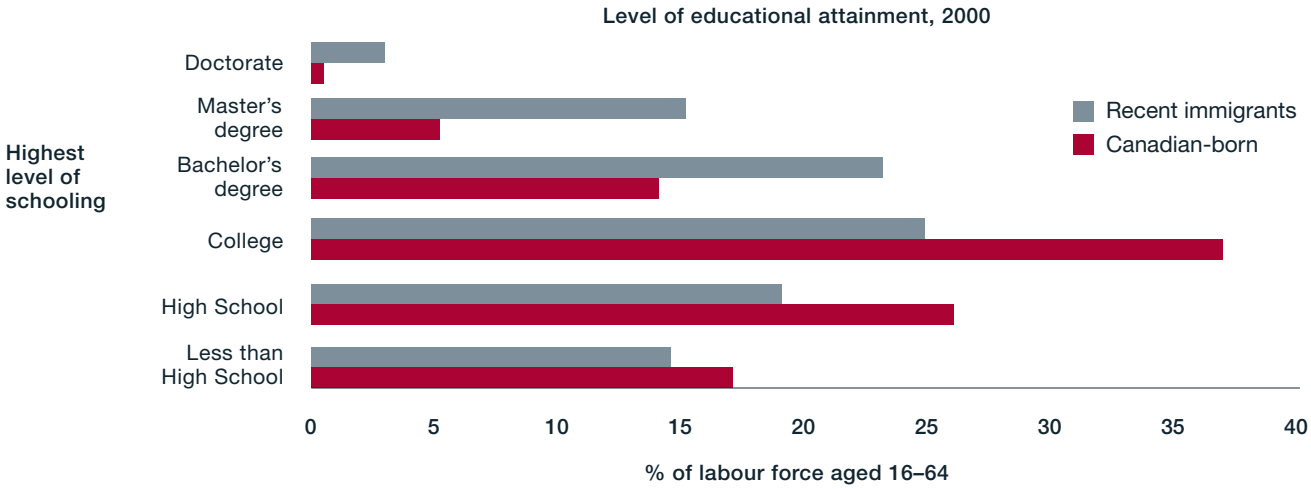
Without addressing this under investment, it is unlikely that Canada will be able to make substantial progress in raising our productivity.

Under investment in immigrant integration limits our competitive advantage

Canada has an important competitive advantage over the US – the arrival of more and more highly skilled immigrants. Statistics Canada data indicate that over 60 percent of recent immigrants are trained as professionals or in skilled trades, admitted to Canada in large part for their levels of educational attainment and skills. This is a result of Canada's competitive immigration strategy. Results from the 2001 census indicate the growing importance of immigration to our population. Overall, 18.4 percent of Canada's residents were born outside Canada. A third of residents within metro areas are immigrants (in the Toronto Census Metropolitan Area, 43.4 percent). According to Human Resources Development Canada,[30] fully 71 percent of our labour force growth in Canada was from immigration in the period 1991 to 1996, with immigrants expected to contribute 100 percent of labour force growth by 2011. More than half – 55 percent – of all new immigrants choose to reside in Ontario, mainly in our cities. Research conducted by Richard Florida and Meric Gertler,[31] found two key features of Canada's cities – the relatively high proportion of immigrants and the relatively low proportion of university degree holders. Ironically, we are not capitalizing on the strength in immigration to overcome our talent deficit.

Immigration raises our educational attainment levels (Exhibit 15). A higher percentage of immigrants than Canadian-born individuals have post-secondary education. The latest Statistics Canada data reveal that in 2000, 44 percent of recent immigrants in the workforce held a university degree compared

Exhibit 15 Immigration increases educational achievement in Canada's workforce



Note: Recent immigrants arrived in the previous five years and the sample consists of individuals aged 16-64, who worked at least 40 weeks and with positive earnings
Source: Statistics Canada, "Will they ever converge? Earnings of immigrant and Canadian-born workers over the last twp decades," 2003.

[30] Denton, Feaver, and Spencer, *Immigration Labour Force and the Age Structure,* Human Resources Development Canada, 1999
[31] Richard Florida and Meric Gertler "Competing on Creativity: Placing Ontario's Cities in North American Context," December 2002, available on Institute's Web site, www.competeprosper.ca This report includes results for Canadian cities outside Ontario.

to only 19 percent of native-born Canadians. In contrast, immigration to the US brings down their educational achievement average.

Educated immigrants to Canada counteract the "brain drain" of Canadian educated people to the US by a margin of four to one.[32] Yet Canadians are missing out on this potential "brain gain" opportunity as many immigrants have difficulty entering the professions and careers they once held. According to data from Status of Women Canada, just over half of foreign-trained professionals are working in professions or trades three years after immigrating. A 1996 study concluded that in Toronto "immigrants settle for jobs in the accommodation, food and beverage sector because entry costs are low, skill requirements are minimal, and other job opportunities are not available to them."[33]

More recent information indicates this pattern has not improved. Based on 2001 census data, the earnings of recent immigrants relative to those of the Canadian-born have deteriorated sharply. In 2000, the ratio of employment earnings of immigrants one year after landing and Canadian born workers stood at 61.8 percent. For immigrants who had been here ten years the ratio was 83.5 percent.[34] These results have deteriorated sharply, compared to the progress of earlier immigrant cohorts in the 1980s and early 1990s who gained closer parity more quickly. They tell us that immigrants are now taking longer to integrate into the Canadian economy. Other work by Human Resources Development Canada and Statistics Canada indicates this gap exists mainly among university-educated immigrants.[35] Overall, this earnings gap points to a productivity gap between immigrants and native-born Canadians that needs to be closed.
One difficulty in capturing the full potential of immigrants is that employers and accrediting bodies are often unable to assess prior learning effectively. Consequently, immigrants often find that their educational credentials are undervalued or not recognized at all. Accreditation can be a lengthy and costly process, too often resulting in immigrants having to re-study their trained profession. Instead, to support themselves and their families, many take jobs for which they are over-qualified; the immigrant doctor or engineer taxi driver is increasingly commonplace.

As a result, we are forgoing opportunities to enjoy the true economic value of immigration. For example, The Maytree Foundation has pointed out the high investment already made in other countries to train physicians – seven years' post-secondary education and two years' training in hospitals – can save well over $100,000 for government treasuries. They argue that a key barrier to realizing this economic potential is the overly strict credential standards imposed by provincial licensing bodies. And The Conference Board of Canada has estimated that, if the problem were eliminated for immigrants and others, overall Canadian income would be between $4.1 and $5.9 billion higher.[36] This improvement would be the result of lowering unemployment and underemployment as we add between 33,000 and 83,000 post-secondary credential holders to the ranks of Canada's skilled workers. This earnings gap represents a missed economic opportunity for all of Canada, as well as increased social costs from higher incidences of poverty and greater dependence on social services.

But we are beginning to see success stories. The Ontario Ministry of Training Colleges and Universities is committed to helping skilled newcomers reach their full potential in the provincial economy without duplicating education and experience gained outside Canada. Bridging programs are part of this. For example, The University of Toronto's Faculty of Pharmacy, with provincial funding, has implemented its International Pharmacy Graduate (IPG) Program as a means of assisting foreign-trained pharmacists to meet Canadian standards of practice in a timely manner. Creating Access to Regulated Employment for Nurses (CARE) is another pilot bridging project funded by the Ontario government to assist internationally trained nurses gain access to the profession in Ontario.

Governments, educational institutions, licensing bodies, and the professions need to partner together to develop more programs like these to close skill gaps. This is increasingly important given that numerous studies have shown that the first job immigrants hold after immigrating can trap them in positions of underemployment.

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[32] Andrew Brouwer, *Immigrants need not apply,* Caledon Institute of Social Policy
[33] CERIS – Toronto & Metropolis, *Immigrants' Economic Status in Toronto: Rethinking Settlement and Integration Strategies,* 2002.
[34] Statistics Canada, 2001 Census: analysis series – *Earnings of Canadians: Making a living in the new economy.*
[35] Human Resources Development Canada, *Immigrant Occupational Skill Outcomes and the Role of Region-of-Origin-Specific Human Capital;* Statistics Canada, *Earnings of Canadians: Making a living in the new economy,* 2001.
[36] Michael Bloom & Michael Grant, *Brain Gain, The Economic Benefits of Recognizing Learning and Learning Credentials in Canada,* The Conference Board of Canada, 2001.

Under investment in our city regions contributes to the prosperity gap

Low urbanization, through its negative impact on productivity, accounts for a significant part of the productivity gap. Three factors interact to increase productivity in urban areas: network effects that drive innovation, larger scale that reduces unit costs, and thick labour markets that benefit workers and firms. Because of this strong relationship, the Institute investigated urban prosperity further[37] and confirmed the continuing importance of urbanization to the prosperity gap.

One of the most surprising findings from these investigations is that in Ontario its prosperity gap versus its peers is in the city regions, not the rural areas. GDP per capita in Ontario's metro areas in 2000 was 12.8 percent lower than metro areas in a peer group of 14 US states. Outside metro areas Ontario's GDP per capita was actually 3.0 percent higher than the non-metro areas in the peer states. This finding is likely consistent with results for Canada versus the US.

On the one hand, Canada's urban areas have a strong foundation for innovation and prosperity.[38] Our cities have the advantages of attracting educated immigrants and fostering an environment for the "creative class," both of which are required for a vibrant urban economy. But, on the other hand, our urban residents had lower educational attainment than those in the US. The Institute's research indicates this lower educational attainment contributes to our lower productivity and prosperity.

The Institute's research also identified barriers to urban prosperity in some of the key fiscal and governance structures. Canada's metro voters are under represented in the House of Commons, tilting decision making away from urban perspectives that could encourage higher productivity. Furthermore, municipal governance structures are inadequate to support a significant expansion of taxing and spending authority – which might improve prosperity by putting government power closer to the people.

Canadians – individuals, businesses, and governments – are under investing relative to our US counterparts. Further examination of the other elements of AIMS offers explanations about why this gap exists.

[37] *Missing opportunities: Ontario's urban prosperity gap,* June 2003.
[38] Florida and Gertler "Competing on Creativity" 2002, available on Institute's Web site: www.competeprosper.ca

Motivations and structures hinder investment for the future

Motivations and Structures appear to drive our under investment behaviour

In the last year, the Institute conducted major surveys to test the hypothesis that Ontarians' attitudes to business and entrepreneurship are the significant cause of under investment and our prosperity gap. In fact, our research indicates that attitudinal differences between Ontarians and peer state residents are minimal and not a significant roadblock to prosperity. We believe this conclusion would hold across the country.

Next we look at other research we conducted, using the AIMS analytical approach that points to other factors that likely explain the under investment pattern: our motivations, as represented by marginal effective tax rates, and market and governance structures.

Minimal attitudinal differences are not a significant roadblock to our prosperity

Attitudes that lead to high aspirations, self-confidence, the desire to succeed, the entrepreneurial spirit, and creativity are important drivers of economic success. In 2003 the Institute conducted research into attitudes among the general public and business community in Ontario and 11 of the states in its peer group.[39] The Institute concluded that attitudinal differences between the public and business in Ontario and the peer states are not significant roadblocks to closing the prosperity gap. In contrast to commonly held perceptions, we differ very little from our counterparts in how we view business and business leaders, risk and success, and competition and competitiveness.

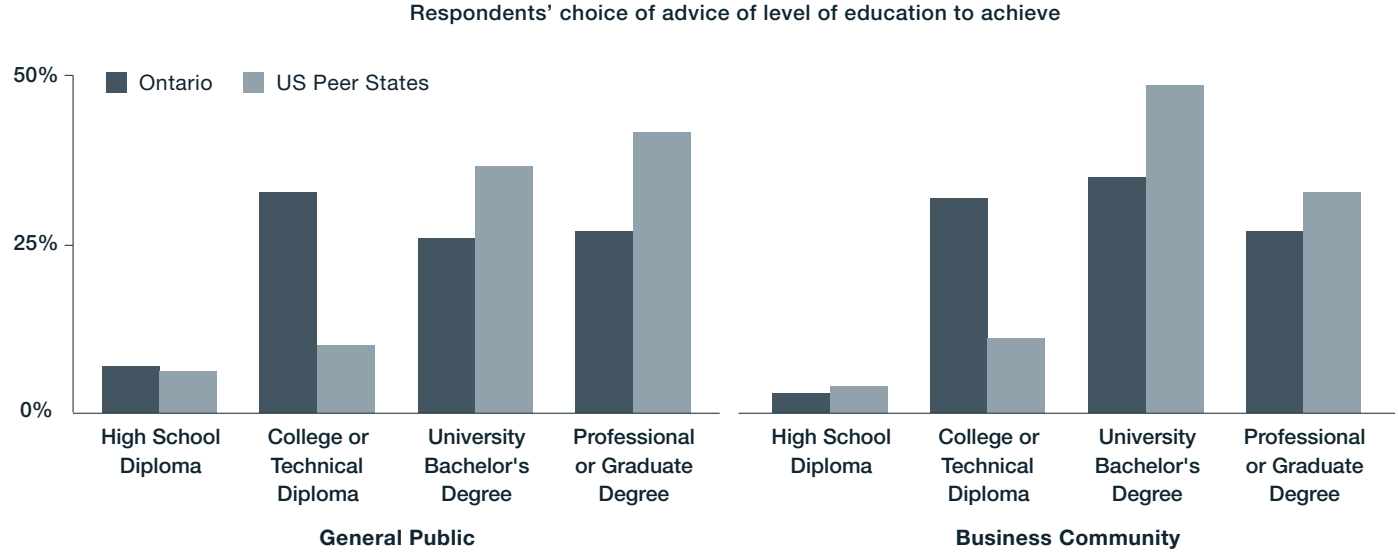
While the survey results are for Ontario and some of the larger US states, there is nothing to suggest that results would be dramatically different between English Canada and the US overall.[40] With this caveat, survey results indicate that, across numerous dimensions, attitudes among the general population and business people in Canada and the US are very similar.

Few, if any, differences exist in the way the general public views business and business leaders. Attitudes towards risk and success are very similar among the public and business people. And there is little difference in attitudes towards competition and factors of competitiveness.

The survey did identify two important differences in attitudes: we are less likely to recommend post-secondary education to our high school graduates; and we are more likely to recognize and welcome the economic benefits of immigration.

Importantly, Ontarians are more likely to recommend a college diploma as the highest level of education to achieve; their counterparts in the peer group are more likely to recommend a bachelor's or graduate degree (Exhibit 16). These attitudinal differences matter, given the importance of post-secondary education, specifically at higher degree levels, to personal income and overall

Exhibit 16 Americans place more value on university education



Source: Institute for Competitiveness & Propserity Analysis

[39] *Striking similarities: Attitudes and the prosperity gap,* Sept. 2003

[40] Ontario represents 38 percent of Canada's population and the 11 peer states represent 39 percent of the US population. In addition, results for urbanized areas versus rural areas are similar – projecting from more urbanized Ontario and peer states to less urbanized Canada and the US is probably safe.

productivity. The lower educational aspiration undermines our potential for increasing GDP per capita and other prosperity gains.

This is one of the most significant findings in the attitudinal research. It is consistent with other research findings on educational aspirations. It is likely an important contributing factor to our educational under attainment, which accounts for about $1,100 of our prosperity gap.

If attitudes do not explain this under investment, then what might? How can Canada raise productivity to close the prosperity gap?

Governments need to address the widening disadvantage in Canada's effective tax burden – a critical aspect of motivations

Governments face a balancing act in creating the fiscal environment for competitiveness and prosperity. Government investment expenditures in areas such as infrastructure and education can help establish the foundation for businesses and individuals to increase productivity. The appropriate level of consumption expenditures is an important determinant of our quality of life. These expenditures also reduce the cost of doing business, as governments take on some of these expenditures from individuals and businesses.

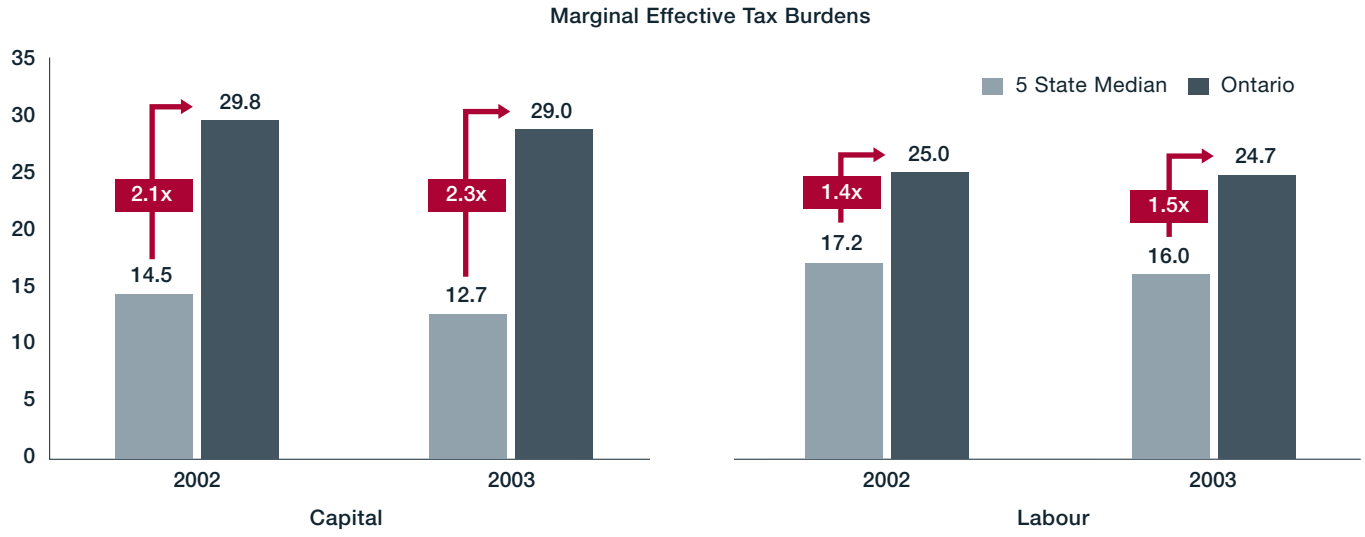
At the same time, taxes that are necessary to fund these expenditures can act as de-motivators to work, investment, and entrepreneurship. Governments need to balance expenditures and taxes on an ongoing basis to ensure competitiveness and to make sure that citizens are receiving an adequate level of services. Given our 12 percent shortfall in investment, the challenge is also to trade off spending on current consumption against long-term capital investment.

One means of assessing this tradeoff, especially as it relates to competitiveness, is to calculate marginal effective tax burdens on labour and capital. This approach calculates the effective impact of taxation on the cost of doing business by taking into account all the taxes paid, net of public subsidies, on all factors used in producing goods and services. The approach takes taxes as a cost of doing business, based on the assumption that business will consider these costs as one of the factors in investment location decisions.

Canada has a widening tax disadvantage versus the US

International tax expert Jack Mintz has concluded that Canada had a significant tax disadvantage versus the US, particularly on capital (Exhibit 17).[41] Given the importance of taxes on motivations and of the change in tax policies in Canada and the US since his original analysis, the Institute engaged Mintz and Duanjie Chen,[42] to track changes in tax burdens in Canada, as represented by Ontario, and the US as represented by five states – California, Georgia, Illinois,

Exhibit 17 Ontario's tax disadvantage widened in 2003



Note: US ranges are as follows: Tax on Capital, 2002: 12.9%–18%, 2003: 11.4%–16.3%; Taxes on Labour, 2002: 16.1%–20.6%, 2003: 15%–19.8%
Source: Duanjie Chen & Jack Mintz, Assessing Ontario's Fiscal Competitiveness, Available at: www.competeprosper.ca

[41] Jack Mintz, *Most Favored Nation: Building a Framework for Smart Economic Policy,* C.D. Howe Institute Policy Study No. 36, 2001
[42] Their report, *Assessing Ontario's Fiscal Competitiveness,* is available on the Institute's Web site, www.competeprosper.ca

Massachusetts, and Michigan. While the analysis is at the provincial and state levels, it includes federal taxes and so is representative of the national situations.

They conclude that "Ontario's fiscal position relative to similar US jurisdictions competing for jobs and capital is not at all competitive." Their work indicates that today's effective tax burden on all costs is 25.4 percent, 10.4 percentage points above the median of 15.0 percent in the five states. This difference has grown from 9.6 percentage points in 2002, when Ontario's rate was 25.9 percent and the median of the five states was 16.3 percent.

This increase is the result primarily of a widening gap on taxes on capital during 2003, but also in taxes on labour. Marginal effective taxes on capital in Ontario are 29.0 percent – more than twice as high as the median rate of the fives states analyzed. The gap is higher than in 2002. Taxes on labour are 24.7 percent, about 50 percent higher than the median in the five states. As with taxes on capital, the gap widened in 2003.

Far from "a race to the bottom," as some observers describe tax reductions in Canada and Ontario, we still have meaningfully higher marginal effective tax rates than leading highly industrialized US states. More important, the gap is widening.

Why is the effective tax burden on capital so high?

Taxation on capital is particularly important to productivity as it affects investment in upgrading and innovation. Drawing on the results of this study and other work they have done,[43] Mintz and Chen conclude that, "Ontario is a distinctly poor environment in North America for capital investments."

Their conclusion that effective tax burdens on capital are above US rates is counter-intuitive, given that the statutory tax rate for large corporations is 36.6 percent in Ontario, which is below the average rate of 39.5 percent in the US. However, concentrating on statutory rates masks many other subtle but important factors including:

- The US provides a more generous deduction for capital cost allowances (depreciation), sharply reducing the after-tax cost of investments in machinery and equipment
- The US provides bonus depreciation for capital investments that reduces the effective tax rate on capital by almost 4 percentage points
- The US treatment of inventory costs results in lower tax rates than in Canada[44]
- Capital taxes are much higher in Ontario compared to those in the US; only Massachusetts has a capital tax among the five states analyzed
- Sales taxes on capital goods in the US tend to be somewhat lower than in Canada for most industries.

Surprisingly, other factors play a minor role in explaining differences in effective taxes.

- While provincial and federal tax credits for research and development are more generous in Canada, much of that advantage is offset by US research grants to businesses, particularly in the transportation and communications industries
- Infrastructure spending by governments on transportation and communication networks that improve the productivity of businesses (and excludes government buildings) is actually higher in the US than in Canada

Why is the effective tax burden on labour so high?

Labour accounts for almost 80 percent of costs in our economy and so differences in taxes on labour are important to the overall cost of taxes. Mintz and Chen identify three factors.

First, personal taxes are higher in Ontario than in the five states, both on average and at the top marginal rates. The average personal income tax rate in Ontario across all workers and industries is 29.4 percent, between 5 and 9 percentage points higher than in the five peer states.[45]

Second, federal and provincial sales and excise taxes are more than twice the rate of sales taxes in the five US states analyzed. Since Ontario workers must cover these costs when they consume goods and services, their effective wages are lowered or businesses are forced to pay higher wages.

Third, employer payroll taxes, net of benefits, particularly federal employment insurance and Ontario's Education and Health Tax, are higher than in the US. Essentially, Canadian programs take in more revenue than they spend in benefits and are in effect higher taxes than in the US.

Offsetting these higher taxes are the higher health and education expenditures by the Ontario and federal governments. Publicly funded healthcare benefits are significantly higher for workers in Ontario. Mintz and Chen calculate that the health subsidy for an Ontario manufacturing worker earning $60,000 is close to $3,000 annually. Nevertheless, the higher health care subsidy in

[43] D. Chen and J. Mintz, *Taxing Investments: On the Right Track, But at Snail's Pace,* C.D. Howe Institute, Backgrounder No.27

[44] The US tax code permits inventory costs to be written off using the last-in-first-out (LIFO) method while Canada permits the first-in-first-out (FIFO) method. LIFO results in higher costs for tax purposes and thus lower taxes when inflation exists, even in mild form. FIFO is advantageous in times of deflation.

[45] Tax analysts also look to the highest marginal personal income tax rate as a measure of tax competitiveness. The top rate in Massachusetts is 38.3 percent (taking into account deductibility of state taxes against federal taxes) on income above US $312,000. Ontario's top tax rate is close to 47 percent applied to income above US$70,000.

Ontario is insufficient to offset the disadvantage in the effective tax rate on labour costs.

Potential tax reforms could improve motivations – and productivity

Mintz and Chen conclude by identifying and assessing possible tax reforms. Recognizing the limited fiscal room to maneuver, they focus on reforms that reduce marginal effective tax rates with the least possible tax revenue reduction.

Rethinking taxation strategy in Canada is one important way to begin to explore opportunities to increase investment and close the prosperity gap. Another way is to consider encouraging changes in market and governance structures that are holding us back.

New market and governance structures can support investments for innovation and upgrading

The under investment trap appears to be a significant challenge for Canada in closing the prosperity gap. We have seen that the de-motivating feature of uncompetitive taxes continues to be a part of the explanation of this under investment. In this section, we turn to structures – the final element of AIMS – to understand their effects on productivity and to explore the opportunities they may offer for innovation and upgrading.

In the past year, we completed a thorough assessment of public governance structures and their impact on urban prosperity. We conclude that these structures did not contribute adequately to urban Canada's overall productivity and prosperity. Our work in the area of market structures is less complete, but we are hypothesizing that they may not enhance our capacity to innovate and upgrade. And, while our attitudes are consistent with aspirations for world-class productivity and prosperity, our clusters of traded industries may not be as vibrant as those in the US.

Fiscal and governance structural elements hamper prosperity gains

Urban prosperity is negatively affected by public structures in two ways.[46]

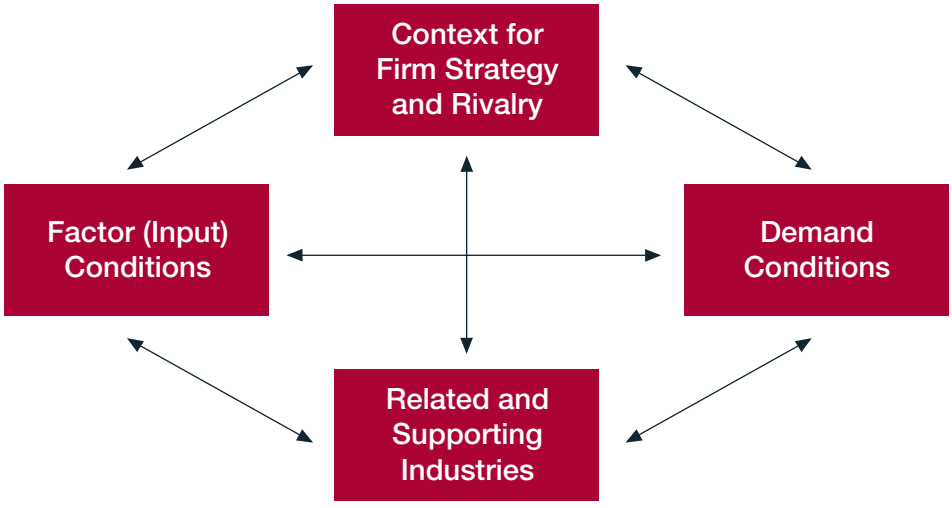
First, Canada's fiscal framework transfers resources from "have-provinces" to other parts of the country at about double the rate experienced in the US. One of our concerns is that these transfers do not seem to be having a significant impact in reducing regional disparities in the Canadian federation. While it may be unrealistic to assume that change can be effected here, we can at least understand that these transfers are a cost to Canada's prosperity. We should seek opportunities for innovation in Canada's fiscal framework that preserve the concept of sharing inside the federation and strengthen both national and regional prosperity.

Second, our political governance structures inadequately represent urban voters. In the federal legislature, if rural and urban voters had equal representation, urban voters would have 16 more of the 301 seats in the House of Commons. The average city region seat has 98,512 voters, while the average rural seat has 80,112 voters (based on 1991 census). As with Canada's fiscal framework, we acknowledge that change is unlikely in the near term. We can only observe that, by inadequately representing our urban areas – the source of prosperity and productivity – representation in our current political structure is not likely contributing as fully as possible to Canada's productivity and prosperity.

Clusters of traded industries may be under performing

Earlier in this report we concluded that a higher share of Canada's employment was in clusters of traded industries versus the US . We discussed how the mix of clusters represents an advantage for Canada. What's becoming clearer now is that the quality of our clusters may mean that they may not be contributing to Canada's productivity and prosperity as much as they could.

Exhibit 18 Cluster strength is the result of 4 interrelated factors



Source: Porter, Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School

[46] *Missing opportunities,* pp 36-40.

Work done by Michael Porter's Harvard-based Institute for Strategy and Competitiveness indicates that the main differentiator between successful and unsuccessful clusters is the "context for firm rivalry and strategy" (Exhibit 18). The most vibrant clusters are the ones that have greater competitive intensity. At the other extreme, the factor that had the least impact on a cluster's vibrancy was "factor conditions." Nearly all clusters are in place because of factor conditions; but success will not be guaranteed by strong input factors. As Porter has said on many occasions, it is how companies compete not where or in what industry.[47]

As we think about the interplay between competitive intensity and attitudes, it becomes clearer that, while attitudes may be similar in Canada and in the US, the results are radically different because they are held in different competitive environments. An example from the sports world illustrates the point. A young person growing up in the US may be a talented hockey player and have healthy attitudes about winning and team play, along with personal aspirations to play in the National Hockey League. He and his parents may have invested in the best available equipment and his desire may motivate him to practise and train intensely.

Nevertheless, an equally talented young person in Canada with the same healthy attitudes, the right level of investment in equipment, and the same motivation to train and practise has a better chance of getting to the NHL. Why? From his earliest days of playing he will be exposed to tougher competition, more advanced equipment, more opportunities to gain ice time to play and practise, better-organized leagues, and a system that develops the more talented players. Coaching is better in Canada. While both boys are playing the same game and are highly competitive in their respective leagues, the intensity of the competition they each face is quite different. That's why many young hockey players from the US and Europe come to play in one of Canada's junior leagues as a way to hone their skills and "prove" themselves for the NHL.

Some observers conclude that, despite free trade agreements, some of Canada's leading industries, such as financial services, telecommunications, and transportation, continue to be overly protected from international competition. They believe that greater openness to foreign competition would strengthen some of Canada's important clusters of traded industries.

Both motivations and structures are contributing to our under investment pattern in Canada. Opportunities for tax reform need to be explored to heighten motivations to invest. And, in addition to under performing clusters, other structures may be impeding prosperity. Structural barriers to access to capital for young, growing firms may be a reason for under investment in Canada. In addition, structural barriers may be hampering efforts to commercialize new research and development findings. These obstacles need to be removed so all Canadians can invest for prosperity.

[47] See for example, "Clusters of Innovation: Regional Foundations of US Competitiveness," available through the Institute for Strategy and Competitiveness Web site, www.isc.hbs.edu

Partnering for Investment

All stakeholders in Canada's economic future need to examine their own strategies and actions to ensure that we are making appropriate investments for future prosperity. Governments at all levels need to lead the charge by re-orienting their own spending and by developing policies that drive additional investment in physical and human capital. Businesses need to invest, especially in the machinery, equipment and software that will increase productivity. Individuals and families have to increase the investment in their own human capital and well-being.

Through a stronger sense of partnership between all stakeholders, we can take the strides necessary to close the prosperity gap. As important first steps, the Institute recommends the following set of actions for Canadians.

Heighten aspirations across Canada

We recommend that Canadians heighten aspirations. The first and probably most important change required is to set a higher standard for our economic progress – we want to be a leader not laggard within North America.

For this to become a reality, all Canadians have to raise their sights. Individuals must raise their aspirations for personal upgrading of their skills and capabilities through increased formal education and life-long training. Canadian firms must raise their aspirations from competing locally, provincially, or nationally to competing globally against the best in the world. Finally, governments at all levels in Canada must raise their aspirations to achieve an invigorating environment that encourages citizens and firms to upgrade and innovate and that compares favourably with the environment of the US. And we need to celebrate the winners who have set and met high aspirations. Without raised expectations, it is doubtful that Canada can enhance its relative prosperity.

Canadians need to encourage students to invest in their higher education

Although our K-12 educational achievements compare favourably with those of our US counterparts, more of our high school graduates should pursue post-secondary education and especially graduate degrees. Since those with higher levels of education earn more over their lifetimes and our economy benefits more from their labours, we are losing out on the potential of those who fall short of their educational potential.

Currently, Canadians are less likely than their US counterparts to encourage young people to pursue further education. Compared to the US, Canada is close in the number of bachelor's degrees conferred per 1,000 population. But at the master's level the US leads dramatically. Our US counterparts continue the investment farther along the higher education spectrum than do Canadians, especially at the level of "terminal masters" – the final degree for the vast majority of its holders before they enter the economy to enhance productivity. The US also outproduces Canada in conferring PhDs, though by a substantially lower margin than at the master's level. Raising our educational aspirations is an important way to increase productivity.

For individuals, we recommend that they develop a commitment to life-long learning to enhance their own skills and update their capabilities. Nothing improves life-time earnings as much as education. We also encourage graduates at every level to contribute more generously to their alma maters to help finance their ongoing development. Finally, we encourage current students to recognize that supporting the freezing of regulated tuitions, while attractive for them in the shortrun, helps guarantee the long-run underfunding of higher education.

We encourage firms to continue partnerships with their employees to participate in ongoing formal training and education programs and to include educational institutions – especially the most dramatically under funded undergraduate and graduate programs – in their charitable donations.

For governments, we recommend that a long-term strategy be developed to raise Canadians' investments in post-secondary education. We encourage provincial governments to recognize that, by historically maintaining a government monopoly on university education and strictly regulating most tuition levels, they have been primarily responsible for producing an investment level in higher education that is half that of our US competitors. A long-term strategy for higher education in the provinces should explore a sustainable approach to provincial funding, consider the role of tuition deregulation, and continue to foster the development of a diversity of post-secondary institutions. The strategy should ensure that the solutions take into account the role of individuals, firms, and other private organizations in improving our investments in higher education.

Canada needs to invest in processes for integrating immigrants more effectively into our economy

Canada is becoming the home for many highly educated immigrants. We observed, however, that a large number are underemployed or even unemployed. The result is that we are forgoing their potential to contribute more to our economic well being. Some programs are successfully integrating immigrants into Canadian professions and employment.

We encourage individuals to continue supporting the not-for-profit sector in developing the breadth and depth of programs and processes for settling recent arrivals into our economy and communities. We encourage employers to continue exploring innovative approaches to reaching out to the talent inherent in our recent immigrants and to work closely with accrediting organizations to ensure policies and practices are up to date. We encourage governments to continue their co-operation in developing settlement programs and policies.

Canadian stakeholders need to take initiatives to address the chronic under investment by businesses in machinery and equipment

Capital investment is a major contributor to GDP growth. But both private and public sector investment in machinery and equipment and infrastructure in Canada now lag capital spending in the US. We estimate that our under investment costs Canadians $1,000 in lost GDP per capita every year. The clear answer is for business and governments to raise their investment especially in machinery and equipment to add to the productive capacity of Canada's economy.

Provincial and federal governments need to rethink our tax system to encourage investment

To increase our competitiveness, Canada must continue to reduce taxes, especially taxes on capital. In 2002, we identified the disadvantage in marginal effective tax burdens in Ontario versus a group of US states and showed how this affected Ontarians' motivations to invest. Our latest research indicates that the disadvantage widened in 2003. The Institute is not recommending specific tax measures – it is simply urging our governments to recognize that taxes represent a disadvantage for Canada's competitiveness that can be overcome by developing innovative solutions in our tax regimes.

Canadians need to ensure market structures support break out investment

Our work during the year identified governance and market structures that impeded prosperity growth. Canadians need to determine the negative impact of market structures on productivity and prosperity and how that can be reversed. One hypothesis for our under investment may be that our market structures are not stimulating the competitive intensity that forces the innovation and upgrading necessary to enable Canadian companies to thrive in the world arena.

For Canada to continue to prosper, all Canadians must participate in a partnership to invest more than ever before to raise our productivity and competitiveness in the global arena. That way, we can close the prosperity gap and enjoy the economic well being that comes from our place as one of the leading economies in the world.

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Previous Publications

Institute for Competitiveness & Prosperity:

Working Paper No. 1 – *A View of Ontario: Ontario's Clusters of Innovation* – April 2002

Working Paper No. 2 – *Measuring Ontario's Prosperity: Developing an Economic Indicator System* – August 2002

Working Paper No. 3 – *Missing opportunities: Ontario's urban prosperity gap* – June 2003

Working Paper No. 4 – *Striking similarities: Attitudes and Ontario's prosperity gap* – September 2003

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

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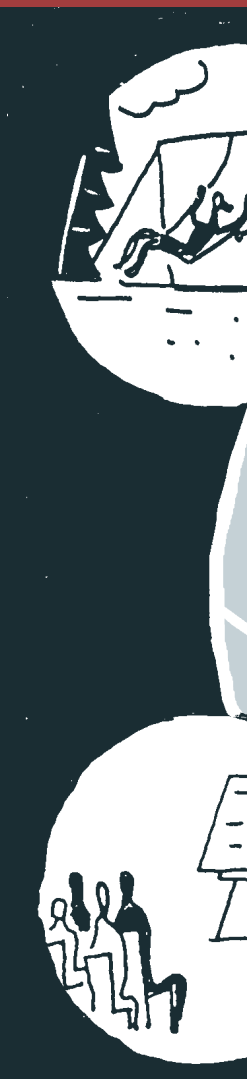

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