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Special Report

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TD Economics
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HIGHLIGHTS

- Canada's post-secondary education (PSE) system will play a pivotal role in enhancing our nation's standard of living.
- PSE system will face significant pressures to meet five critical demands: educate a rising share of the population, help equalize economic and social outcomes across the population, provide an important component of lifelong learning, be an engine of innovation and deliver quality education in an efficient manner.
- Estimated additional public financial resources required relative to 2009 level expected to rise from $400 million in 2010 to $2.7 billion by 2016. Additional funding required is subsequently projected to remain within a $1.4 billion to $2.7 billion range relative to the 2009 level until 2030.
- Greater number of students from traditionally under-represented groups in PSE and greater concentration of students in large urban areas will put significant funding pressures on PSE institutions.

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POST-SECONDARY EDUCATION IS A SMART ROUTE TO A BRIGHTER FUTURE FOR CANADIANS

Standard of Living and Education Linked to High Degree

Canadians are widely recognized as being well educated, but recent developments have heightened the need to raise our educational standards. Canada's global competitiveness is being challenged by the economic development of emerging economies. The future prosperity of our economy will largely be determined by improvements to its overall productivity performance and its ability to shift the allocation of productive resources to higher value–added goods and services. Such an economic transition will raise the educational requirements of the new jobs being created. Concerns are already being expressed that Canada's labour force will not be sufficiently educated and skilled to meet the educational requirements of future jobs. In order to rise to this challenge, post–secondary education (PSE) institutions will be expected to educate a greater portion of Canada's population.

Great Expectations

Among the tremendous expectations we have of our higher education system, Canada's PSE system will be expected to:

1. Educate an ever–rising percentage of the population. In the near future, the procurement of a high school diploma will increasingly be viewed as a point along the education journey rather than a destination. The allure of PSE will increasingly be the stimulant to encourage students to complete high school and lower the high school dropout rate.
2. Help equalize economic and social outcomes across the population. Canada's income distribution keeps widening and education is often the key driver. As work becomes more sophisticated, the premium for education rises as does the discount applied to earnings for those without education. Advantages are not just reaped upon graduation. The OECD finds that PSE is "associated with improving earnings and productivity differentials throughout the working life."[1] The highest rates of return always tend to be reaped by those who traditionally face inferior opportunities. Much of the rise in the PSE participation rate should come from addressing the historical under–representation of certain groups.
3. Contribute to lifelong learning. The world of work is shifting too rapidly to continue with the old model of in–classroom education that largely ends in a person's early 20s. Increasingly, workers will have to either remain in contact with higher education institutions or go back at various intervals, either to adapt to changes within a career or shift to a new career path.
4. Be an engine of innovation. Government funding of university–based research dramatically increased beginning in 1997. Canadian universities conducted 35 per cent of all R&D, more than double the OECD average (17 per cent) and surpassing the EU average (23 per cent) in 2007.[2] But this is not a simple success story. In good part, it reflects a weak R&D effort in Canadian business which

contributes to commercialization challenges.

5. Deliver against these expectations with quality and efficiency. PSE institutions have not traditionally faced the same sorts of accountabilities as some other entities. But, this will change. Against a background of severely constrained federal and provincial spending, they will be expected to more efficiently deliver quality education. This will involve addressing important issues such as the considerable annual drift in PSE budgets to maintain the "status quo"; the trend toward very large classrooms; the shift of tenured professors to research and away from teaching; and the appropriate division of functions between colleges and universities.

This paper addresses the challenges Canada's education system will face in delivering on the expectations. The focus is on PSE simply because the majority of Canadians will need to attain this level. This focus does not in any way signal a belief that earlier stages of learning are not incredibly important. Indeed, they must adequately prepare students for higher education.

FERTILE GROUND – THE OPPORTUNITIES AND CHALLENGES TO PSE

In 2004, a TD Economics Special Report entitled *Time to Wise Up on Post–Secondary Education in Canada* concluded that the country's once proud PSE system was creaking and, unless change was imminent, it would not be up to the ever–increasing demands placed upon it. In particular, PSE had fallen victim to the budget cuts of the mid–1990s, such that total real per student funding of higher education was 20 per cent lower in 2002 than it had been 22 years earlier. Over that period the United States increased its funding by 30 per cent per student. The 50 percentage point cumulative growth differential in funding gave the United States the winning hand in an era when it was increasingly being recognized that successful economies would be knowledge–based. Part of the loss in Canadian government funding of higher education was made up by rapid increases in tuition fees. But that created its own set of challenges, including higher student debt, a shift toward shorter programs and reduced access to PSE. TD Economics called for stakeholders across the country to think very hard about whether these were the directions we wanted PSE to follow.

Fortunately, there has been a period of reckoning. Governments re–invested in PSE. Tuition fee increases were restrained and modest improvements were made to student financing programs. And so far, federal and provincial governments suggest relative protection for higher education budgets as they once again enter a regime of spending restraint. These positive developments, however, do not necessarily mean Canada's PSE system is better positioned to deliver against the expectations because the bar just keeps being raised. So again, we feel compelled to point out that the strengthened Canadian PSE system still needs greater focus on the tasks at hand.

Mini Renaissance In PSE In The Late 1990s

Combined university and college enrolment in Canada remained just under 1.4 million students throughout the 1990s. It then rose to nearly 1.7 million students by 2005, reflecting the transition of the "echo boom" generation (i.e. the children of the baby boomer population) into the prime higher education years. This demographic shift has tapered off giving only slight further increases in enrolment. College data are not yet available for more recent years. University enrolment has changed little since 2005, with only Ontario and British Columbia recording significant increases and enrolment falling in some provinces, especially New Brunswick, Nova Scotia, and Newfoundland and Labrador. While enrolment has followed a flat to rising trend, total funding and the split between public and private sources has undergone dramatic swings.

How Much Have We "Wised Up"?

Funding

Time to Wise Up on Post–Secondary Education in Canada documented how PSE had been sideswiped by the expenditure cutbacks of federal and provincial governments in the mid–1990s. There was a re–commitment to the sector thereafter. In part, the increased funding reflected the shift in fiscal climate from restraint to fairly rapid growth in total program spending and most of its components. Various government statements suggest a deliberate effort to shore up PSE. One of the earlier signs came from the federal government's drive to enhance research on campuses. The 1997 Federal Budget announced that "Canada's post–secondary educational institutions and research institutions are an integral part of the "root system" which feeds the country's knowledge base. They provide scientists and researchers who are engaged in developing new ideas and new technologies. They also generate the trained graduates who will be expected to meet the demands of a more technologically– oriented marketplace. Excellence in higher education for Canadian young people and global competitiveness for Canadian companies go hand in hand."[3]

Federally funded R&D in the higher education sector

increased significantly from $793 million in 1997 to $2.5 billion in 2005 and to $2.8 billion in 2009[4] ($2.2 billion in constant 1997 dollars). The strong pace of growth resulted in higher education expenditure on R&D rising as a share of total R&D expenditure to 35 per cent in 2007.

This investment was the first step in the federal government's commitment to put education at the heart of its plan for growth and prosperity. In its 2005 *Plan for Growth and Prosperity* it noted that "[k]nowledge and creativity have become the true measures of economic potential." It ramped up the cash component for PSE under the Canada Social Transfer (CST) to the provinces by $800 million in 2008–09, $97 million in 2009–10, and $100 million in 2010–11. The cash transfer component of the CST has been legislated to subsequently increase by 3 per cent per year until the end of fiscal year 2013–14.[5] Provinces are, however, entitled to use this funding in support of PSE as well as programs for children and social programs. The extent by which this additional funding will be used in support of PSE is therefore unclear.

Meeting Rising Expectations – Access

Time to Wise Up on Post–Secondary Education in Canada called for stakeholders to think hard on the rising expectations of our PSE system. And that happened. Between 2004 and 2009, governments in seven provinces – namely British Columbia, Alberta, Saskatchewan, Ontario, New Brunswick, Nova Scotia, and Newfoundland and Labrador – commissioned task forces to review their respective PSE system. These reports shared a number of common elements. They noted the importance of having a well educated and skilled workforce in raising individuals' economic and social well–being and the economic growth of our nation in general through increased growth in productivity. In regards to student financial assistance, the task forces recognized the need to reform the existing Canada Student Loans Program. With respect to tuition fee policy, they acknowledged that PSE is both a public and private good, as well as an individual choice and that tuition was only one component of the cost associated with PSE participation.

CASH COMPONENT OF THE CANADA SOCIAL TRANSFER, MILLIONS OF DOLLARS

In Support of:	2007-08	2008-09	2009-10	2010-11
Programs for Children	1,100	1,100	1,133	1,167
Post-Secondary Education	2,435	3,235	3,332	3,432
Social Programs	6,202	6,202	6,388	6,579
Total	**9,737**	**10,537**	**10,853**	**11,178**

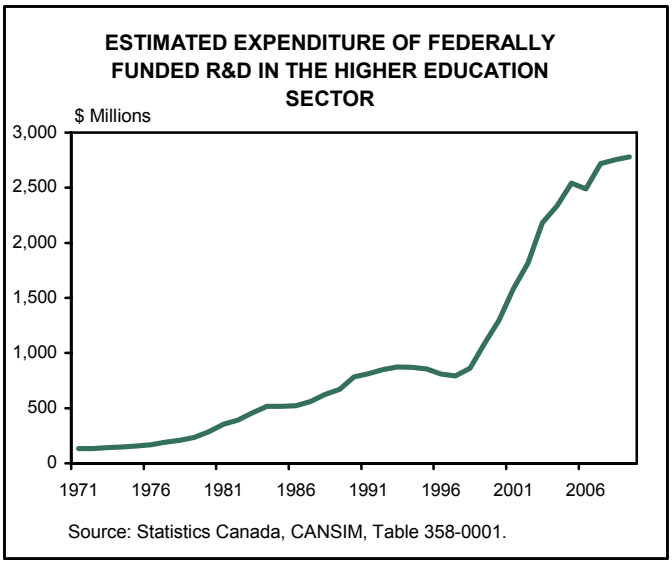
Source: Department of Finance.

Most of the task force reviews recommended increased public funding and greater and more targeted student support. The Government of Saskatchewan, as an example, stated that "[e]xcellence and opportunity mark the future of Saskatchewan's PSE system. This system is essential to improving the social and economic well–being of individuals and in developing an innovative and economically prosperous province" and that in turn "[m]eeting the economic and social demands of our province depends greatly on increasing the number of highly skilled and educated graduates from our universities, training institutions and trades programs."[6]

Without any exception, the statements made by the provincial task forces revolved around the need to provide PSE to a greater portion of the population. The most recent Federal Speech from the Throne announced that the "Government will… work hand–in–hand with Aboriginal communities and provinces and territories to reform and strengthen education, and to support student success and provide greater hope and opportunity."[7] The Ontario Speech from the Throne followed suit calling for an increase in the provincial PSE attainment rate from 62 to 70 per cent. This PSE attainment rate aspiration is based on the proportion of Canadians between the ages of 25 and 64 that is projected to have completed PSE by 2020. To facilitate the attainment of such an aspiration, the 2010 *Open Ontario Plan* further announced that every qualified Ontarian who wishes to pursue a college or university education will be offered the opportunity to do so.

The lofty aspirations governments expressed for PSE have, to some degree, been met by increases in funding in recent years. Unfortunately, historical data are not available

ESTIMATED EXPENDITURE OF FEDERALLY FUNDED R&D IN THE HIGHER EDUCATION SECTOR



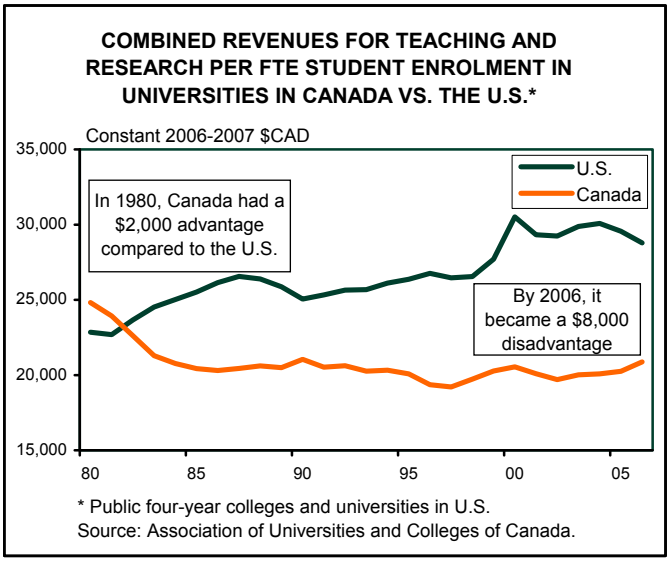
Source: Statistics Canada, CANSIM, Table 358-0001.

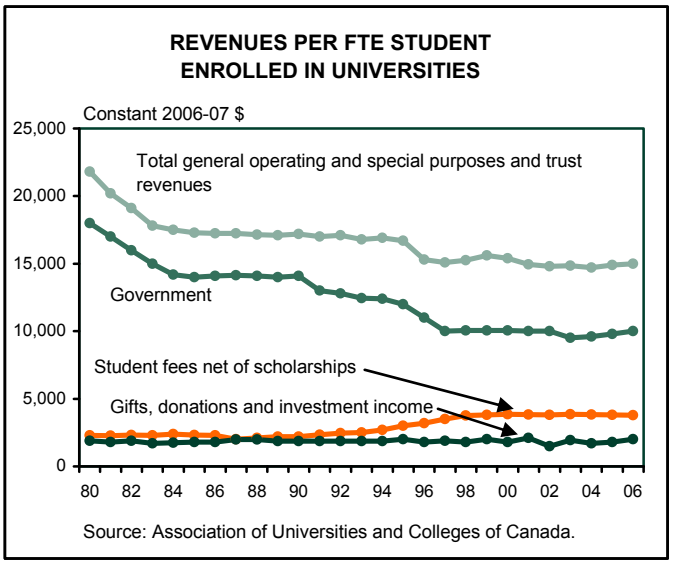
for total funding of colleges on a full–time equivalent (FTE) basis that would be comparable to the data available for universities. The information below, consequently, refers to universities specifically. We begin the examination in 1980 when the revenues universities received were $24,824 per FTE in 2006 dollars. On this constant dollar basis, per FTE funding fell to $20,297 by 1986 and then recovered slightly by 1990 to $21,043.[8] The era of fiscal restraint of the 1990s hit PSE funding hard, taking per student revenues down to a low point of $19,211 in 1997. By 2002, the last year of data available when TD Economics published the earlier paper *Time to Wise Up on Post–Secondary Education in Canada*, there had been a slight recovery to $19,695. Still, that left total real per FTE funding 20.7 per cent below the 1980 level. Over the subsequent years, real revenues rose at an annual average rate of 1.5 per cent to attain $20,876 in 2006. This level is comparable to total real funding at the beginning of the 1990s before the fiscal restraint hit and represents a cumulative increase of $1,665 per FTE or 8.7 per cent relative to the funding trough of 1997. Still, the 2006 real per FTE funding was down $3,948 or 15.9 per cent relative to 1980. It should be noted that this decline in real per FTE student funding understates the effective tightening of budgets for two reasons. First, as discussed later in our report, there is evidence that PSE costs have risen at a much faster pace than the economy–wide inflation rate. Second, there has been a shift toward graduate education which is more expensive than undergraduate studies.

While comparable college funding data are not available on a pan–Canadian basis, Clark et al. (2009) provide real per FTE funding data for Ontario colleges. They show that in 2007–08 real per student funding was virtually the same as it had been in 1987. Funding was significantly cut in the mid–1990s, remained flat at that lower level through 2002–2003 and then recovered in more recent years.

Americans Have The Education Edge

In 1980, Canadian university funding had been $2,000 higher per FTE than American funding. However, with a drop of more than 20 per cent in Canadian funds by 2002 and an increase of 30 per cent in the United States, the Canadian advantage had turned into a Canadian shortfall of $9,548 by 2002. With increases in Canadian funding thereafter, and a slight decline in the United States, the gap narrowed slightly to $8,000 in 2006. The Association of Universities and Colleges of Canada (AUCC) attributes the American "resource advantage" for giving the Americans an edge in the quality of the educational experience for students, as





the additional funds are being invested towards faculty and academic support (such as student support services, libraries, research and public services). In the broader OECD context, Canada does fare well, however. Data produced by the OECD on expenditure per student on core PSE services, ancillary services and R&D (measured per FTE student in U.S. dollars at purchasing power parity) show that Canada ranks second highest, at almost double the OECD average and only slightly behind the U.S.

In contrast to public funding, tuitions and the associated revenue to universities rose sharply from 1980. The nominal all–provinces average tuition fee for an undergraduate degree steadily rose from $702 in 1980 to $1,464 in 1990 to $3,447 in 2000 and to an estimated $4,917 in 2009. This translated into average annual growth rates of 7.7 per cent in the 1980s and 9.0 per cent in the 1990s. The average

growth rate from 2000 and 2009 was a more subdued 3.6 per cent. Tuition fees increased at an annual average rate of 6.8 per cent from 1980 to 2009, roughly doubling the average Consumer Price Index (CPI) increase of 3.6 per cent.

PSE Revenues Shift Toward Tuition Income

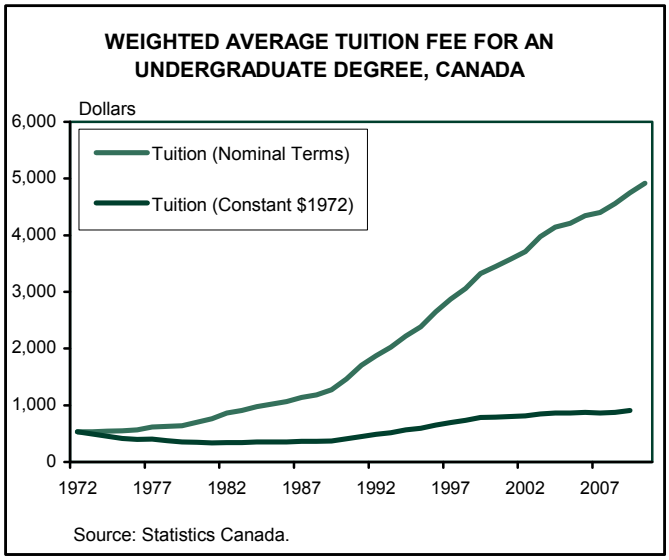
Over most of the period since 1980, the restraint on public spending and the rapid increases in tuition fees dramatically shifted the balance of overall university funding in favour of tuition. Between 1980 and 2005, tuition income rose as a portion of overall university operating revenue from 13.0 per cent to 36.2 per cent, whereas the provincial government funding share declined from 83.9 per cent to 56.7 per cent. With increases in real per FTE government funding in recent years and slower increases in tuitions, there has been a slight rebalancing so that in 2007, tuition income comprised 34.2 per cent of overall operating revenue and public funding comprised 57.1 per cent.

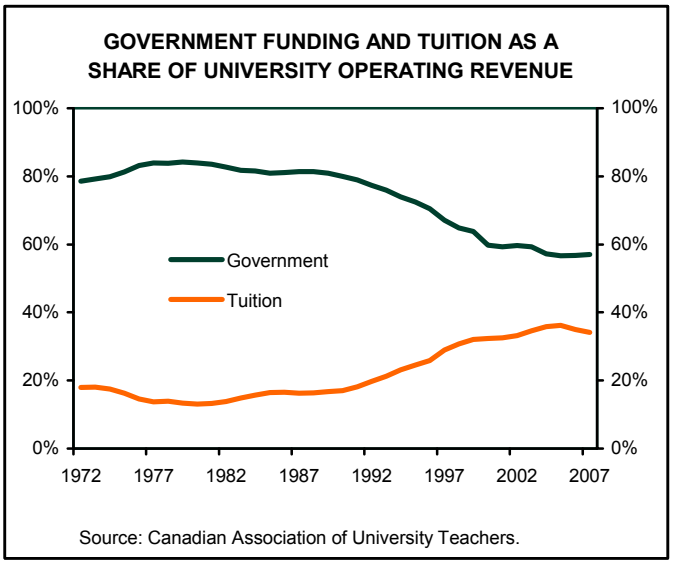
Going forward, governments are likely to initiate sharper hikes in tuition fees as they struggle to provide adequate financial resources for rising health, retirement and public debt expenditures. The significant private return to PSE does justify such an initiative. Tuition fee hikes, however, should not be initiated before further improvements are made to the existing student financial support system such that they do not compromise access to PSE, particularly for the traditionally under–represented groups.

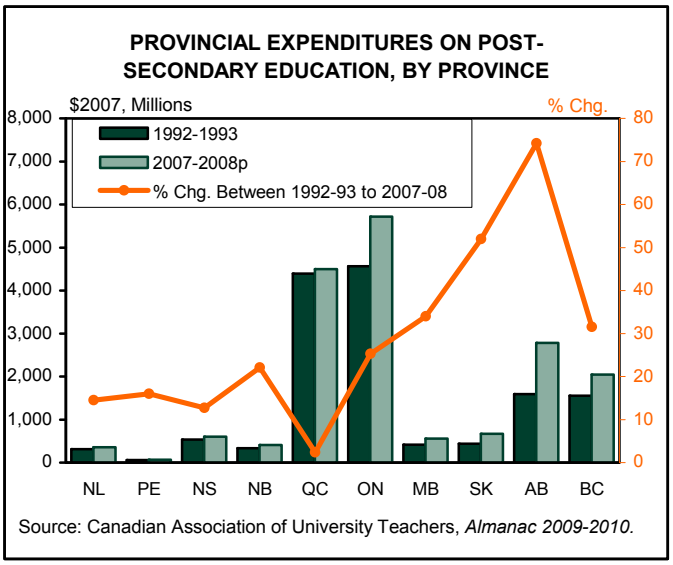
Amongst the OECD countries, Canada has one of the lowest public share contributions to total PSE funding at 19.2 percentage points below the average in 2006.

Big Provincial Funding Differences

The funding of PSE at the national level disguises many of the features that are unique to each province. Real provincial government transfers to colleges and universities per FTE student enrolment ranged from $9,718 in Ontario to $22,469 in Alberta in 2007–2008. For a significant part of the 1993–1994 to 2007–2008 period, the province of Saskatchewan allocated the greatest amount of public resources per FTE student enrolment in PSE. The provinces of Ontario, Quebec and Nova Scotia on the other hand, allocated significantly less than the all–provinces average. The provinces of British Columbia and Prince Edward Island experienced the greatest deterioration in funding relative to other provinces throughout this period. Revenue from student fees has risen at an average annual rate of growth in the 1980s across the provinces from a low of 9.2 per cent in Quebec to a high of 14.5 per cent in British Columbia. In the 1990s, they ranged between 7.8 per cent in Manitoba





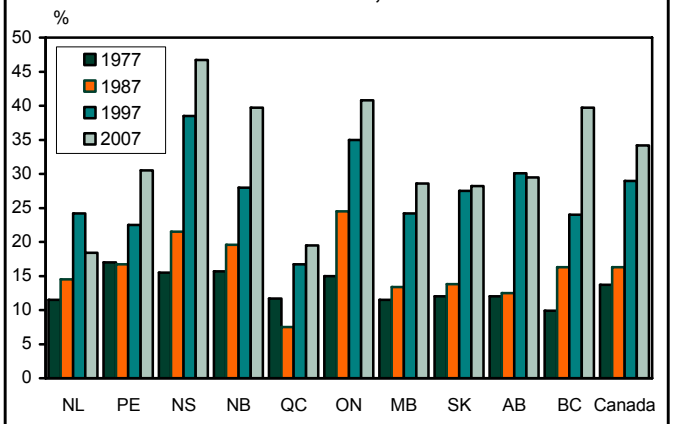


to 11.9 per cent in Alberta. Since 2000, they have ranged between 2.1 per cent in Newfoundland and Labrador to 19.9 per cent in British Columbia.[9] The share of tuition fees as a percentage of university operating revenue displayed a discernible variability in 2007 ranging between 18.4 per cent in Newfoundland and Labrador to 46.7 per cent in Nova Scotia. Newfoundland and Labrador's share was closely followed by Quebec at 19.5 per cent. The shares of British Columbia, the Prairie provinces and Prince Edward Island came closest to the all–provinces weighted average share of 34.2 per cent. Nova Scotia, Ontario and British Columbia had a relatively greater reliance on tuition income.

A Larger And More Effective PSE Sector Fits The Economic Times/Building For The Future

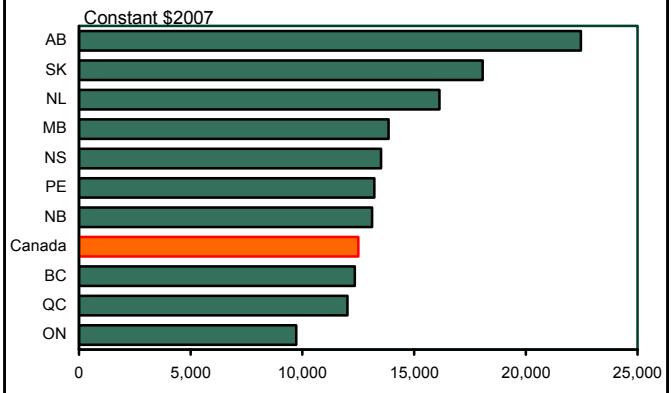
Over the last two decades, a growing number of Canadians have acquired PSE. Between 1990 and 2010, the share

TUITION AS A PERCENTAGE OF UNIVERSITY OPERATING REVENUE, BY PROVINCE



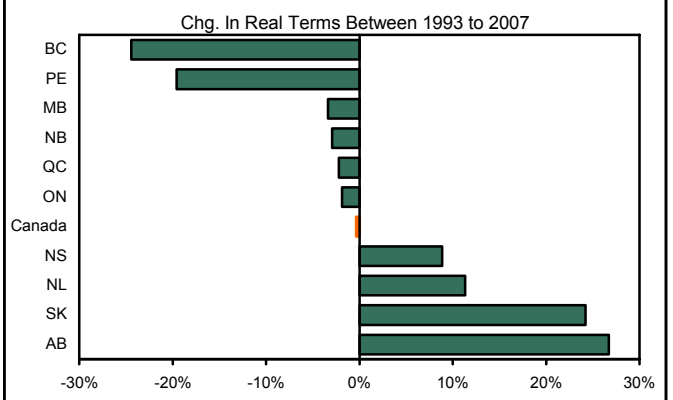
Source: Canadian Association of University Teachers, *Almanac 2009-2010.*

PROVINCIAL GOVERNMENT TRANSFERS TO COLLEGES AND UNIVERSITIES PER FTE STUDENT ENROLMENT, 2007



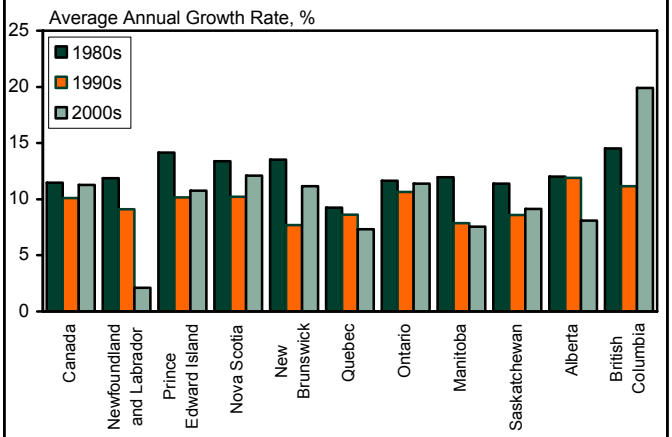
Source: Canadian Association of University Teachers, *Almanac 2009-2010*.

CHANGE IN PROVINCIAL GOVERNMENT TRANSFERS TO COLLEGES AND UNIVERSITIES PER FTE STUDENT ENROLMENT



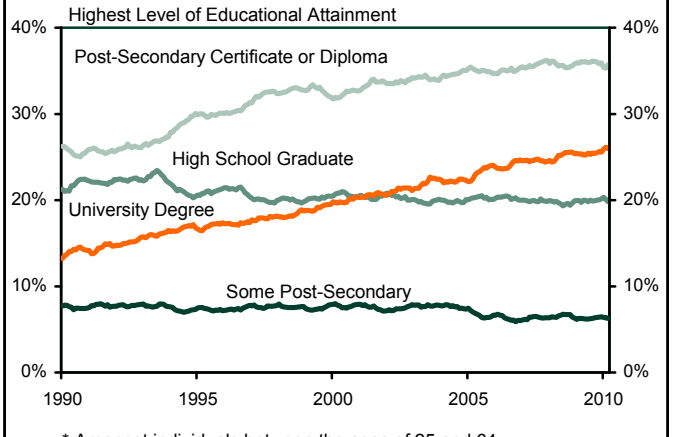
Source: Canadian Association of University Teachers, *Almanac 2009-2010.*

GOVERNMENT REVENUE FROM STUDENT FEES*



* Tuition and other fees; Statistics Canada, CANSIM, Table 487-0007.

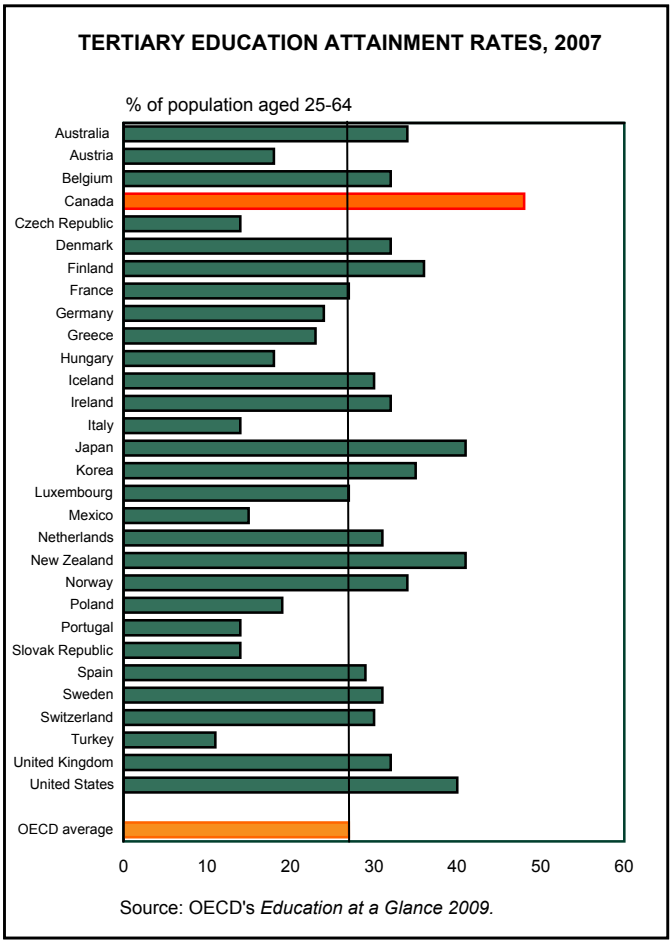
EDUCATIONAL ATTAINMENT RATES*

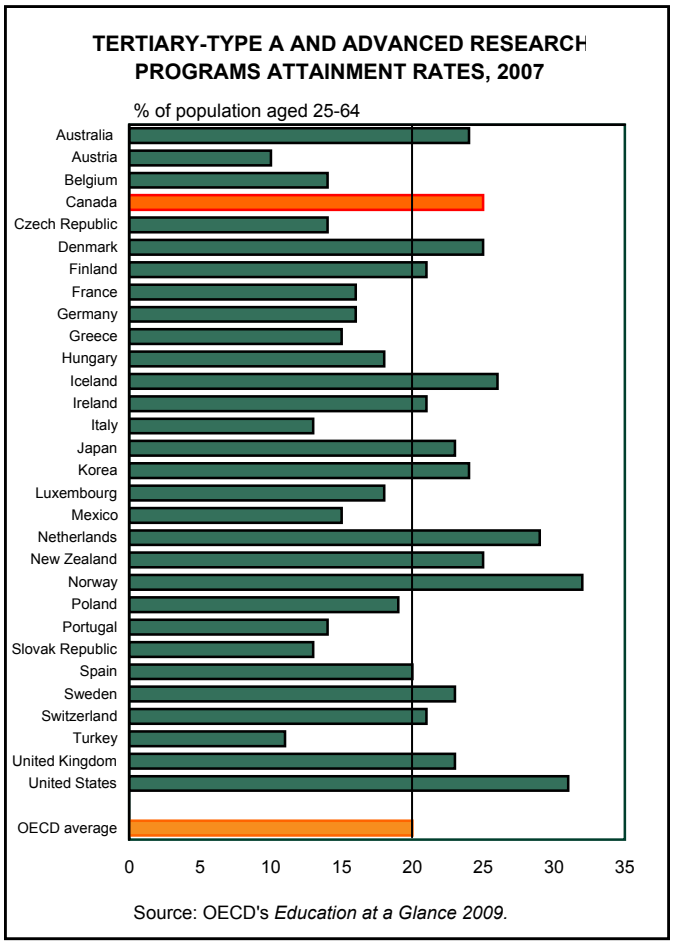


* Amongst individuals between the ages of 25 and 64.
Source: Statistics Canada, CANSIM, Table 282-0003.

of the population aged 25 to 64 with a PSE certificate or diploma as their highest level of educational attainment rose from 26 to 36 per cent, representing a 10 percentage point increase. Over the same period, the share of the population in the same age cohort with a university degree rose from 13 to 26 per cent, representing a 13 percentage point increase.[10]

Canada already has a high PSE attainment rate by international standards. In 2007, 48 per cent of the population aged 25–64 had attained tertiary education (post–secondary education which excludes trades and registered apprenticeship programs). This placed Canada at the top of the rankings amongst OECD countries. It is in part related to the strong presence of colleges in Canada, but also the non–comparability of data produced by the OECD and Statistics Canada. Statistics Canada defines the PSE sector somewhat more broadly than the OECD to include CEGEP degrees in Quebec. However, our recent performance in university attainments is worrisome. Stripping away college attainments from the overall PSE attainment rate, Canada placed just 11th amongst OECD countries for tertiary–type A and advanced research programs (bachelor's and master's level in Canada) amongst the 25–34 age cohort.[11] Canadian colleges are, however, fulfilling a vital role of providing a skilled labour force and, as such, the appropriate benchmark should be the overall PSE attainment rate.





The Need For Higher Achievement

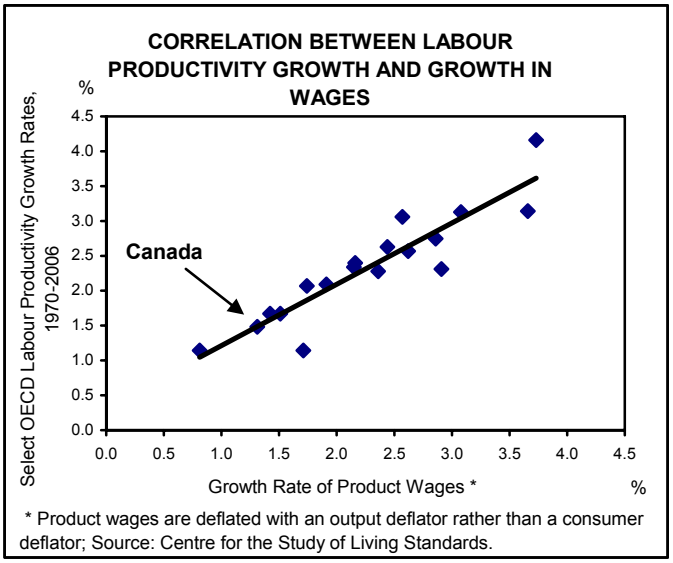
Canadians should be proud of the education system that has enabled such a large portion of the population to receive higher education. But the system will need to become even stronger if Canada is to post future gains in standard of living in the context of an increasingly competitive global economy. The world economy is shifting at blinding speed with emerging economies comprising a growing share of the world economy: from one third in 1987, to about a half last year, to a projected two thirds of the world economy by 2027 based on TD Economics' projections. Such strong growth will expand our country's potential to export to emerging economies, but will simultaneously present great challenges as Canadian producers strive to maintain their global competitiveness. Relative to the developed economies, emerging economies are characterized as having a comparative advantage in terms of lower prevailing wages, but a comparative disadvantage in terms of lower produc-

tivity. This has allowed Canada to compete with emerging economies despite having higher wages. But in recent years, the productivity growth of emerging countries has outpaced that of the developed economies, weakening the developed economies' comparative advantage. Moreover, emerging economies are not remaining in low value–added industries. If Canada is unsuccessful at sustaining its comparative advantage in terms of higher productivity, wages will be forced down toward the much lower standards of the emerging economies.

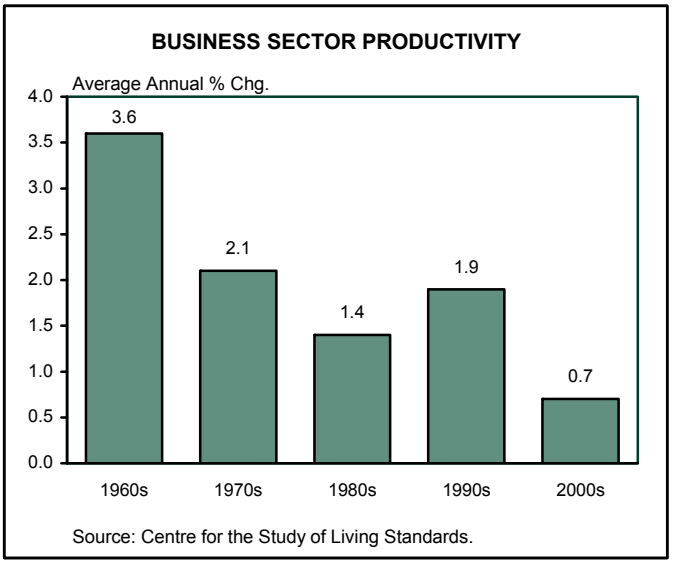
Dark Clouds On The Productivity Front

It is widely recognized that raising the educational requirements of our labour force will need to be a greater priority in the coming decades. An economy confronted with weak labour force growth should raise its productivity growth to continue to compete successfully. Unfortunately, recent developments are ominous. Canada's productivity growth has been declining from 3.6 per cent in the 1960s, to 1.9 per cent in the 1990s, to 0.7 per cent over the most recent decade.[12] Such dismal productivity growth is mainly explained by a declining growth in human capital and a decline in the contribution of intangibles (i.e. soft skills) in recent decades. This would perhaps be acceptable if Canada had good company in this deteriorating performance, but this has not been the case. For most of the 1960s and 1970s, Canada had the fourth highest level of productivity in the world. Since 1980, Canada's poor productivity growth performance relative to other countries has taken Canada's standing on the level of productivity down to 15th in 2009.[13]

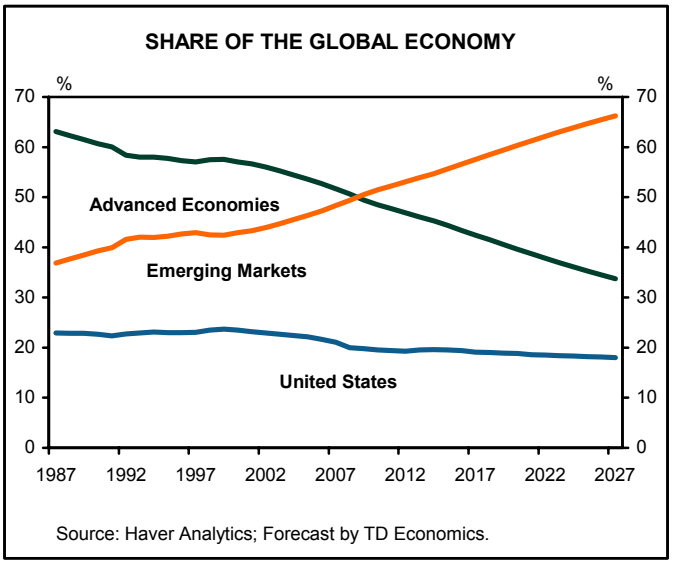
The reasons for Canada's weak productivity record are not well understood. Indeed, Canada has implemented many of the reforms that were predicted to raise productivity. That



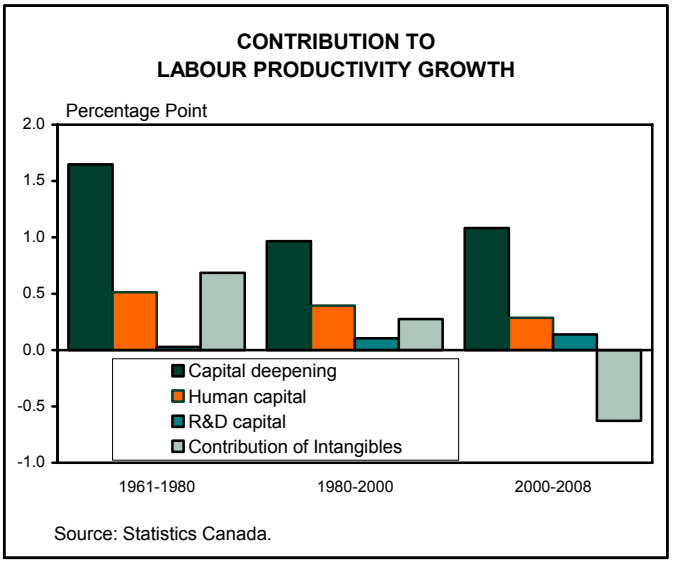
* Product wages are deflated with an output deflator rather than a consumer deflator; Source: Centre for the Study of Living Standards.



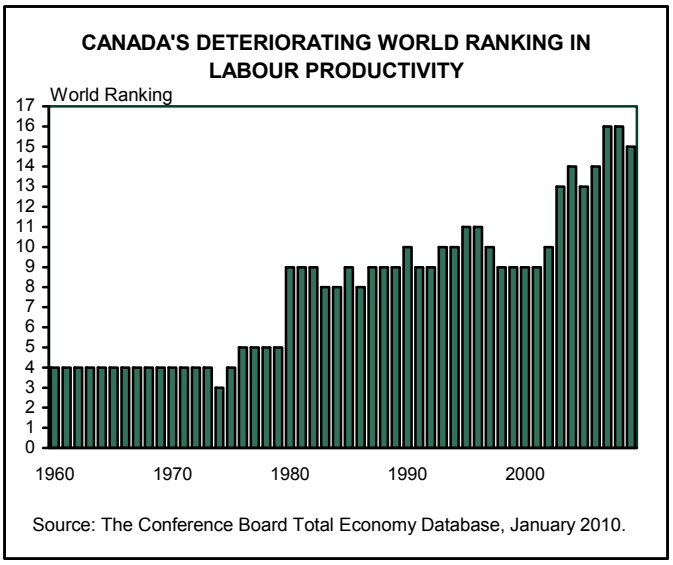
Source: Centre for the Study of Living Standards.

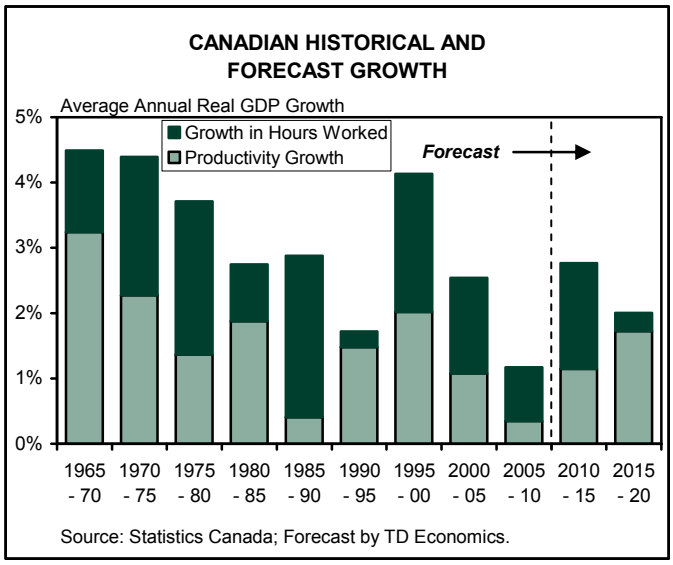


Source: Haver Analytics; Forecast by TD Economics.



Source: Statistics Canada.





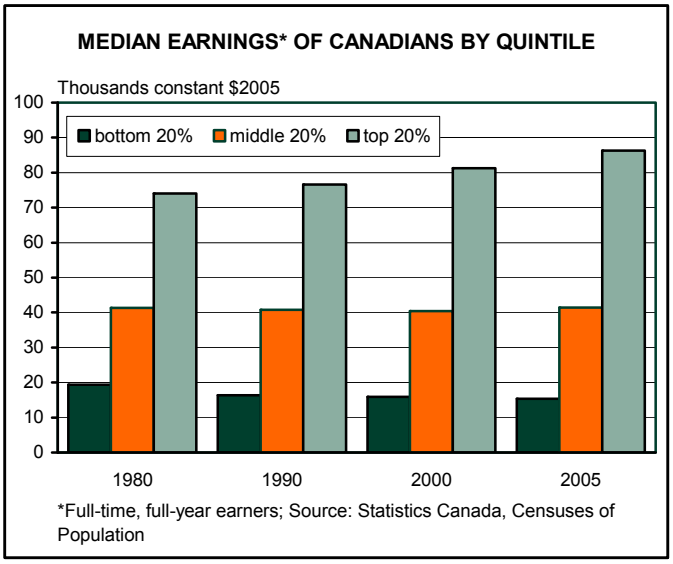
includes free trade, replacing the antiquated federal sales tax with a value–added tax, harmonizing some of the provincial sales tax regimes with the federal tax, driving down the marginal effective tax rate on capital and, as documented earlier in this paper, raising the education standards of Canadian workers. One could suggest that such strategies have not yet demonstrated a strong pay–off and that they should not be further pursued. However, it may just be that there are long lags before productivity responds. To twist a fairly common saying, "if you don't think higher education raises productivity, then try ignorance". In the absence of a better understanding of what drives Canada's disappointing productivity performance, we should continue with strategies that make eminent sense. And in a knowledge–based era where we must move up the value–added curve, raising the standards further on education certainly does make sense.

Our productivity growth performance also remains weak relative to our main trading partner. Over the last decade, the U.S. output per hours worked advanced by 2.2 per cent – or triple Canada's rate. A projection of Canada's labour force and productivity growth rates leads TD Economics to forecast a status quo long–term potential economic growth rate that is slightly less than 2 per cent per year over the next decade, and even this anemic rate of growth will require a recovery in productivity growth from that recorded over the past decade.

Standard Of Living Stagnating

As a result of poor productivity growth in the past, the standard of living of the average Canadian has remained stagnant on an absolute basis and declined on a relative basis. Median real earnings in Canada have not advanced since 1980. While there were meagre gains in average real earnings, these gains have only been enjoyed by the select few at the very top of the income distribution. The median real earnings of individuals within the lowest income quintile have actually been falling. Moreover, Canada is slipping lower in the international living standard benchmarks. Canada's per capita Gross Domestic Product (GDP) expressed in purchasing power parity terms (PPP), which ranked 5th highest for the most part of the 1980s and the 1990s, has slipped to 11th highest in 2008, the most recent data available.[14]

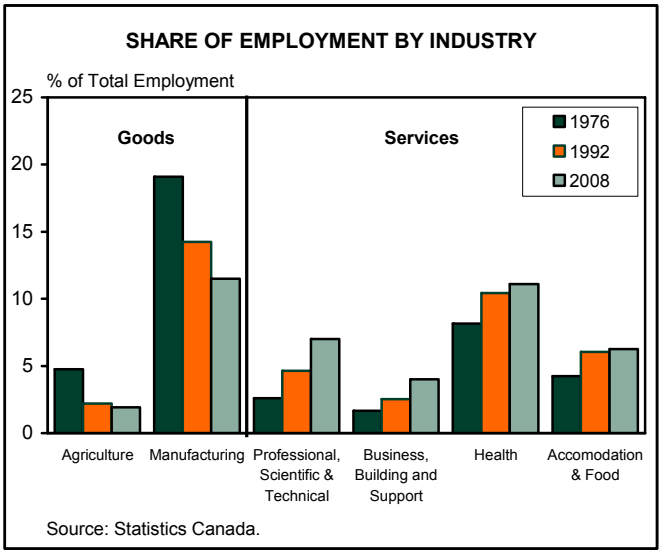
In response to the rising competition from emerging economies, the developed economies have experienced a macroeconomic shift in the allocation of productive resources in their respective economies. Resources have shifted from the goods–producing sectors to the services–

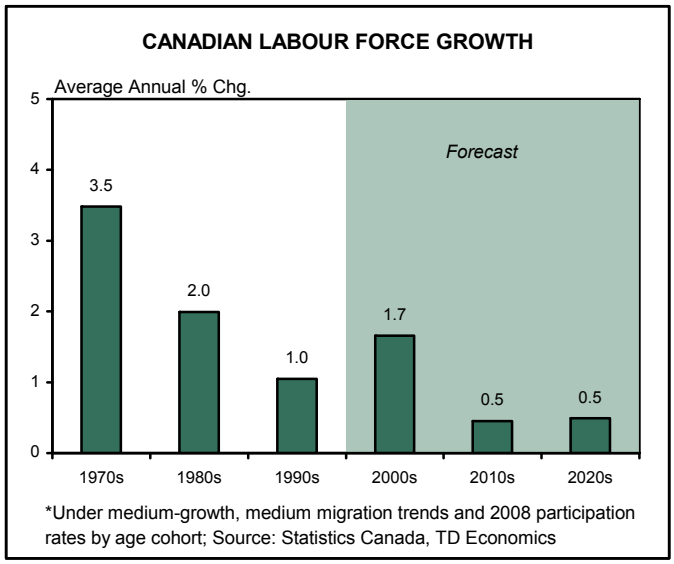


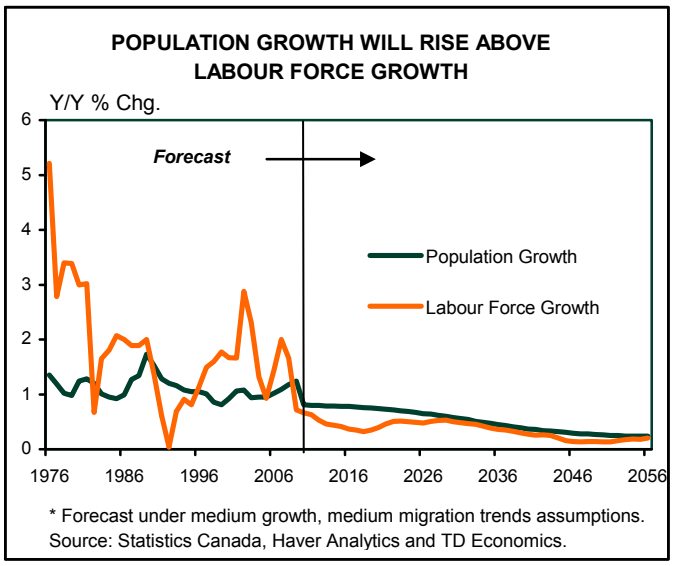
producing sectors. There has also been shifts within the goods–producing and services–producing sectors, away from the low productivity, low–value added industries to higher productivity and greater value–added activities.

Demographic Warning Bells

In the coming years, greater attention will be turned towards maximizing productivity given the fact that another driver of economic growth, i.e. labour force growth, will be dismal. In particular, labour force growth will slow relative to population growth. Over the next two decades, the average annual growth rate in our labour force is projected to be 0.5 per cent per year according to TD Economics and population growth to be 0.7 per cent according to Statistics Canada.[15] Hence, unless productivity improves, there will be downward pressure on the pace of advance in output or income per capita. All of this means that the dependency rate will rise. Fewer individuals will consequently be producing goods and services and generating earned income relative to expansion to the population that consumes resources.







One of the statistical measures used to represent such a phenomenon is known as the total demographic dependency ratio, which measures the size of dependents relative to the size of the working–age population. There are two groups of dependents in society: the youth population (composed of individuals between the ages of 0 to 19) and the senior population (composed of individuals aged 65 and over). The working–age population is characterized by the population between the ages of 20 to 64. The total demographic dependency ratio is expressed as the combination of the youth and senior populations relative to the working–age population.

Canada's total demographic dependency ratio is projected to grow at a substantive rate over the coming two decades and is subsequently projected to grow at a more subdued pace over the later two decades. This pattern of growth is entirely attributable to the rise in the demographic dependency ratio of the senior population which is projected to rise from 22.1 to 41.9 per 100 working–age individuals between 2009 and 2032 and 41.9 to 49.7 per 100 working–age individuals between 2032 and 2056. The sharp rise in the total demographic dependency ratio will lower per capita output and income growth, but keep sustained pressure on certain public services, such as health care and pensions, that must be financed from this income.

A More Highly Educated Population Can Raise Productivity And Living Standards

The key to raising Canadians' standard of living will be

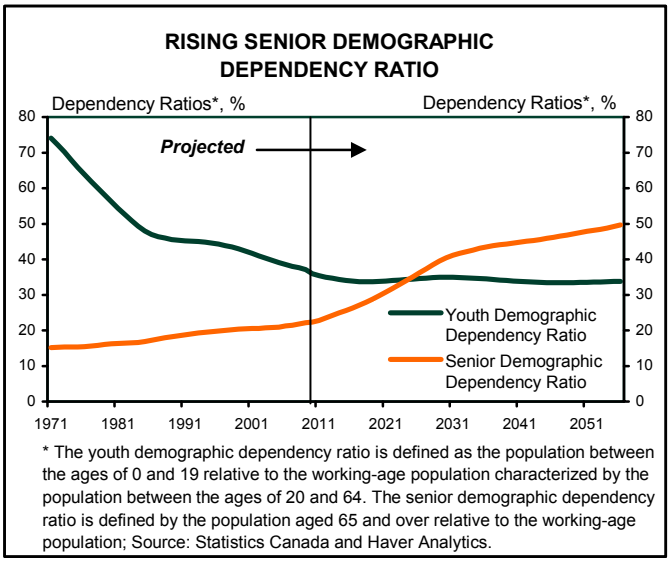
turning around the declining growth rate in productivity in virtually all economic activities. As well, it will entail moving up the value–added curve toward higher productivity activities in goods and services. Only by driving up productivity will Canada be able to maintain higher real wages than those paid in many other countries where there has historically been much lower productivity.

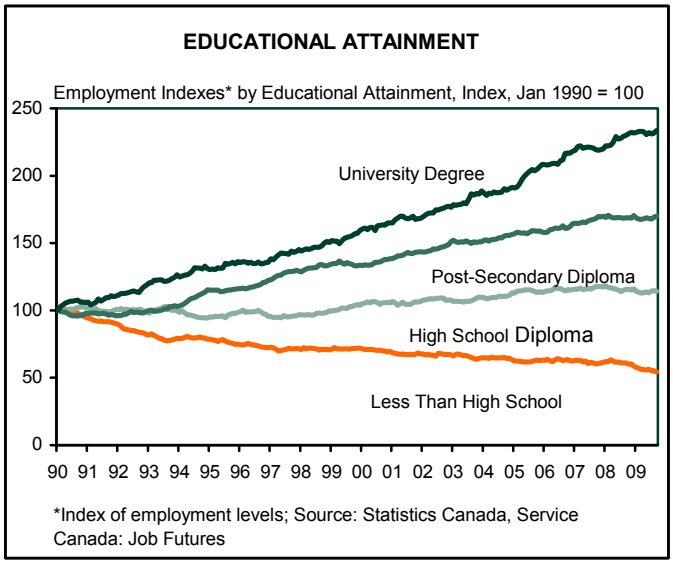
A more highly educated and skilled labour force can raise overall productivity and facilitate the required shift into higher productivity areas of goods and services production. The influence can be through two channels, namely human capital and what economists' call "intangibles", i.e. managerial and entrepreneurial skills, ambition, ability to effectively use the efforts of the workforce, innovation, etc. It may at first seem odd to put a lot of emphasis on PSE when, as indicated above, it has been relatively strong up to now. But as in any strategy, one should not just concentrate on strengthening weaknesses, but simultaneously strive to further exploit strengths. And the future shifts in the industrial composition of our economy induced by a move up the value–added curve will require strengthened PSE.

Concerns That The Demand For Skilled Labour May Outstrip The Supply

The notion of future jobs requiring higher education and skill levels is generally embraced. Indeed, numerous recent studies project that the demand for skilled labour will outpace the supply, leading to widespread shortages in skilled workers.[16] Future labour force imbalances are best depicted through the title of Rick Miner's report: *People Without Jobs, Jobs Without People*. These imbalances are generally assessed through independent projections of changes in employment (i.e. the demand) and labour force (i.e. the supply), which are then used to evaluate the relative unemployment rates by broad skill levels.

Projections of persistent skilled labour shortages do not usually factor in the various adjustment mechanisms that would close the gap between demand and supply. In the short run, employment and the labour force may be relatively sticky so labour market imbalances may lead to wage increases. Higher real wages would act to curb labour demand while strengthening labour supply. Faced with the prospect of labour shortages and rising real wages as a consequence, employers could over time react through any or a combination of the following responses: 1) substitute capital for labour inputs; 2) shift production to other markets; 3) retain older workers; 4) recruit from non–traditional pools (with willingness to invest further in on–the–job training); and/or 5) make greater use of under–represented workers. The





effective supply of skilled labour could be bolstered by PSE institutions educating a larger number of individuals and that would be particularly effective in bridging a demand–supply imbalance if the graduates were in fields where labour demand is growing. Policy responses may be required to facilitate this adjustment, particularly to increase PSE and labour force participation of under–represented groups – such as Aboriginal people, recent immigrants, women in certain occupations, older workers (who may seek bridge employment but are often not provided with this flexibility or pension rules render such possibility unattractive) and children from lower–income families.

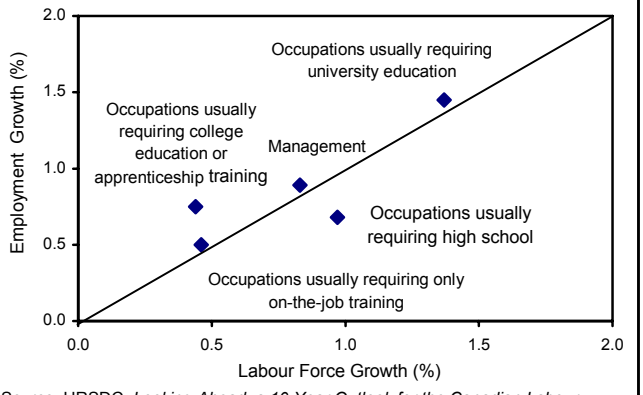
Some studies suggest that our economy is already being challenged by a shortage of skilled labour. Andrew Ramlo of the Urban Futures Institute in Vancouver finds that this has resulted in wages rising substantially faster in some sectors relative to others, causing individuals in some sectors

to reorient themselves, potentially draining other sectors of the economy. According to Brethour and Scoffield (2006), such shortage may result in a generalized labour shortage. HRSDC's *Looking–Ahead Report* (2006)[17] suggests that while there is limited evidence of imbalances between the broad skill levels sought by employers and the availability of qualified labour, there are instances of imbalances at a more detailed occupational level, rendering some occupations in a position of excess demand or supply at the national level. One of the most compelling statements in this regards was made in the 1997 Federal Speech from the Throne in which it was announced that "[t]he Government finds it unacceptable that thousands of jobs are going unfilled in high–growth sectors of our economy at the same time as young Canadians are unemployed. The Government will work with the provinces, universities and colleges, the high–tech industry and other rapidly growing sectors to better forecast the number and types of jobs that will be available and to develop a plan for ensuring that people are appropriately educated to fill them."

PSE WILL NEED TO EDUCATE MORE CANADIANS

If Canada is to maintain, or better yet raise, the standard of living of its population in both absolute and relative terms, it will need to increase the educational requirements of its labour market. According to HRSDC's *Looking–Ahead Report (2006 with updated data)*, increased economic activity will create some 1.4 million new non–student jobs over the 2009–2018 period. Moreover, the study finds that approximately 74 per cent of this expansion in labour demand will be in occupations usually requiring PSE or be in the management group by 2018.[18] Over the same period, they project that some 3.9 million existing positions will become vacant by the retiring population of baby boomers,

PROJECTED ANNUAL GROWTH OF THE NON-STUDENT LABOUR FORCE AND EMPLOYMENT, BY BROAD SKILL LEVEL, 2009-2018



Source: HRSDC, *Looking-Ahead: a 10-Year Outlook for the Canadian Labour Market (2006-2015)* , Canadian Occupational Projection System (with updated data).

JOB OPENINGS BY BROAD SKILL LEVEL, 2009-2018

Skill Level (Occupation)	Expansion demand (non-student)		Replacement Demand		Share
	Level (000s)	Rate (AAGR[1])	Level (000s)	Rate (AR[2])	
Total	1,380.7	0.8%	3,888.6	2.5%	100.0%
Skill Level[3]					
Management	140.5	0.9%	449.1	2.9%	11.2%
Occupations usually requiring:					
university education	446.6	1.5%	747.9	2.6%	22.7%
college education or apprenticeship training	429.1	0.8%	1,305.5	2.4%	32.9%
high school diploma	282.8	0.6%	1,064.0	2.4%	25.6%
only on-the-job training	81.6	0.5%	322.1	2.1%	7.7%

[1] AAGR: average annual growth rate.

[2] AR: the annual replacement rate corresponds to the ratio of the average level of replacement demand over the projection period to the employment level in the base year (2008).

[3] Skill levels are based on the 2006 NOC Matrix, in which occupations are grouped according to the education and training normally required.

Source: Human Resources and Skills Development Canada, *Looking-Ahead: a 10-Year Outlook for the Canadian Labour Market (2006-2015)*, Canadian Occupational Projection System (with updated data).

with annual average retirement rates being most significant in occupations usually requiring PSE or in the management group. The expansion of labour demand and retirements will consequently result in about two–thirds of job openings between 2009 and 2018 in occupations usually requiring PSE credentials or which will be in the management group. This is largely explained by the anticipated continued shift from physical– and routine–service occupations to more creativity–oriented occupations.[19]

The results of this study suggest that there is congruence between projections of the education requirements of new jobs and the aspirations being laid out by governments in terms of participation rates (as an example, Ontario's most recent Speech from the Throne).

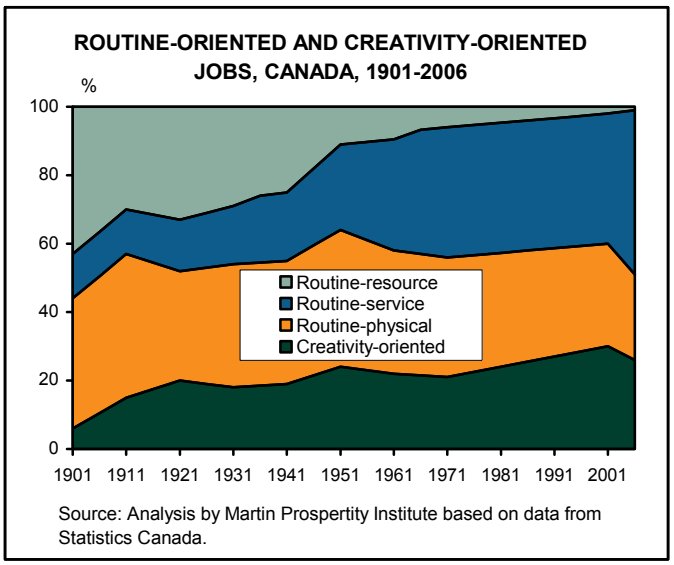
In aggregate, if the aspirations of Canadian governments to educate a larger portion of the population are realized, then there will likely be a sufficient quantity of educated workers to meet the requirements of future jobs. This does not of course guarantee a matching of labour demand and supply at all times or across all occupations. Even in the midst of claims of skilled labour shortages, there are many

individuals working in jobs with requirements that are less stringent than their qualifications, commonly referred to as a vertical mismatch. Education may be increasingly becoming necessary for a good job, but it is not necessarily sufficient. According to Boudarbat et al. (2009), about one in three university graduates is in an occupation that is not closely related to his or her education. A study conducted by Statistics Canada in 2010[20] reveals that a significant portion of Canadians are not reaping the economic benefits of higher education. The results of Statistics Canada's Survey of Labour and Income Dynamics conducted in 2006 revealed that amongst the population between the ages of 25 and 64, 23.1 per cent and 17.9 per cent of college and university graduates, respectively earned less than half of the national median employment earnings in 2006 (i.e. less than $16,917). For all earners, the two predominant reasons for earning less than half the national median employment earnings were that either working was not their main activity for the year or that they were self–employed. The results of this survey, therefore, suggest that the nature of the labour market attachment accounts for much of the variability in earnings amongst educated individuals. More importantly, they reveal the possible existence of an underutilization of the educated worforce. According to the OECD's 2008 *Education at a Glance*, Canada ranked highest amongst peer countries in the percentage of university and college graduates between the ages of 25 and 64 with earnings at, or less than half of the national median employment income.

Efforts should be made to enhance the efficiency of labour markets to minimize such friction. It should be realized that even when this does occur, there is value generated by these individuals' education. They may not always remain in the job beneath their qualifications, but may be able to use it as a springboard to something better aligned with their training. They may also be able to redefine the job and inject value–added that was not previously contemplated. Career advancement requires skill sets beyond those acquired through formal schooling so all is not lost if there is a weak association between the fields studied and the nature of early jobs.

Finally, these individuals will likely enjoy a number of the personal benefits generated by education and elicit some of the broader social returns such as better health and greater civil engagement.

Canada is not alone, of course, in facing the need for higher participation rates. At the international level, the OECD has noted that rising skill demands have made the attainment of a PSE qualification a minimum requirement



for successfully entering the workforce and a basis for further participation in lifelong learning.

PSE Participation Rates Must Grow

Two opposing drivers will determine the number of individuals enrolled in PSE over the next two decades. One is the decline in the population in the 17–29 age cohort. The other is the potential rise in PSE participation rates. According to Statistics Canada, the echo boom population began entering the 17–29 age cohort in 2003 and based on its 2007 demographic projections, it will result in some 211,000 individuals being added to this cohort between 2006 and 2012/2013, at which point the population is expected to peak. This population is subsequently projected to shrink by 400,000 between 2013 and 2028.[21] Projections relating to participation rates, on the other hand, are far less predictable than population projections. One might hence advance various assumptions in regards to participation rates to project the overall impact on PSE enrolment.

In 2007, Statistics Canada conducted projections on post–secondary enrolment up to 2030–2031 under three PSE participation rate scenarios. One of these scenarios (Scenario 2) comes relatively close to matching: 1) participation rate aspirations recently laid out by governments; and 2) the education requirements in projected future job creation. We will focus on this particular scenario to illustrate the potential future pressures on enrolment and hence funding. This scenario assumed that the participation rate continues to rise through 2016–17 at the pace observed between 1990–91 to 2005–06 and then flattens at that level thereafter. Under this scenario, enrolment was expected to steadily rise by approximately 270,000 between 2006–2007

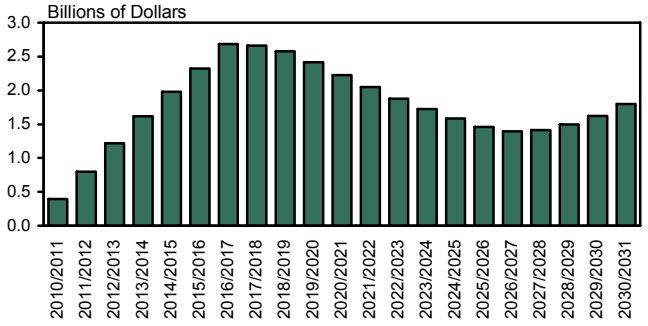
and 2016–2017 and slowly decline thereafter, but remain well–above the level attained during the reference period until the end of the forecast horizon.

If PSE enrolment rises in line with Statistics Canada's projections under Scenario 2, additional public funding will be required to sustain the rise in demand over the next two decades at the pan–Canadian level. The projected additional public funding required relative to the 2009 base year may effectively be obtained by relying on Statistics Canada's enrolment projections under Scenario 2 and the Canadian Association of Universities Teachers (CAUT) estimates of provincial government transfers to colleges and universities per FTE student enrolment. Projected increases in enrolment relative to the 2009 base year is estimated by subtracting Statistics Canada's projected enrolment in our forecast horizon by the 2009 level of enrolment. Peak enrolment, which is expected to be attained in 2016, will bring an additional 165,000 students in the PSE system relative to the 2009 level of enrolment.

The projected provincial government transfers to colleges and universities per FTE student enrolment was based on the most recent CAUT estimate (i.e. $12,500 in 2007) which is subsequently inflated at an annual average rate of 3 per cent per year (being one percentage point faster than the projected increase in the average rate of the CPI). The additional funding required is obtained by multiplying the projected additional enrolment by the projected provincial government transfers to colleges and universities per FTE student enrolment. According to our estimates, the additional public financial resources required relative to 2009 spending are expected to rise from approximately $400 million in 2010 to $2.7 billion by 2016 and to thereafter fluctuate, but remain within a $1.4 to $2.7 billion range until 2030.

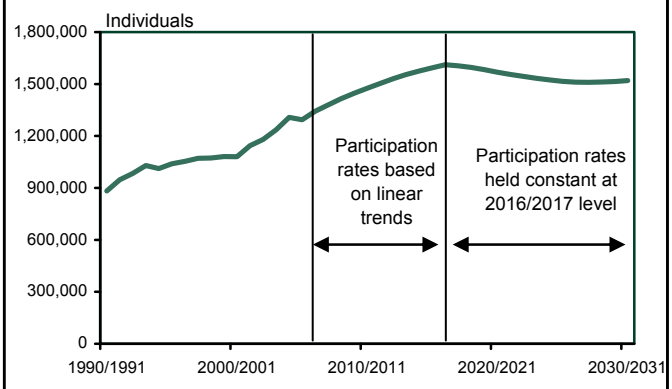
Our projections suggest that the public funding of PSE institutions should rise well beyond 2016 despite the expected decline in enrolment past 2016. Inflationary pressures on the PSE system, which are projected to be 3 per cent per year, are consequently expected to be the dominating factor in driving public funding growth. Over the next two decades, we project the required public funding of PSE institutions to grow at an annual rate of between 4 to 5 per cent until 2016 and a more subdued average annual rate of 2.6 per cent between 2017 to 2030. These projections, however, may very well underestimate the growth in public funding required for two reasons. First, a growing number of students from traditionally under–represented groups will be participating in PSE. These individuals are expected to require greater pedagogical support that is tailored to their specific needs.

PROJECTED ADDITIONAL PUBLIC FUNDING REQUIRED FOR TEACHING IN COLLEGES AND UNIVERSTIES RELATIVE TO 2009*



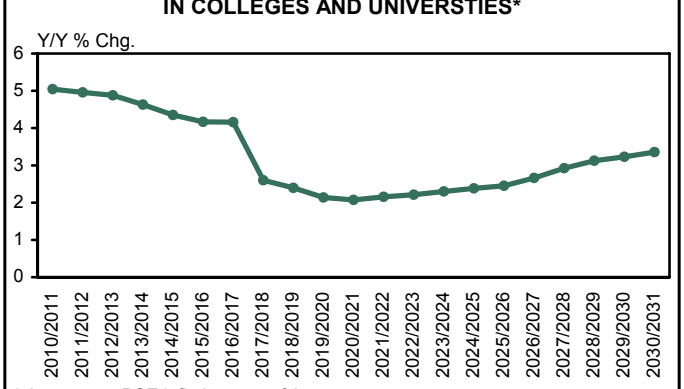
* Assumes a PSE inflation cost of 3 per cent per year.
Forecast by TD Economics based on numbers produced in the CAUT Almanac 2009-2010 and Statistics Canada's enrolment projections (under scenario 2).

PROJECTED FULL-TIME POST-SECONDARY ENROLMENT TO 2030/2031, CANADA*



* Under scenario 2 which assumes that the participation rate will continue to rise through 2016-17 at the pace observed between 1990-91 to 2005-06 and will flatten at that level thereafter; Source: Statistics Canada.

PROJECTED GROWTH IN PUBLIC FUNDING REQUIRED FOR TEACHING IN COLLEGES AND UNIVERSTIES*



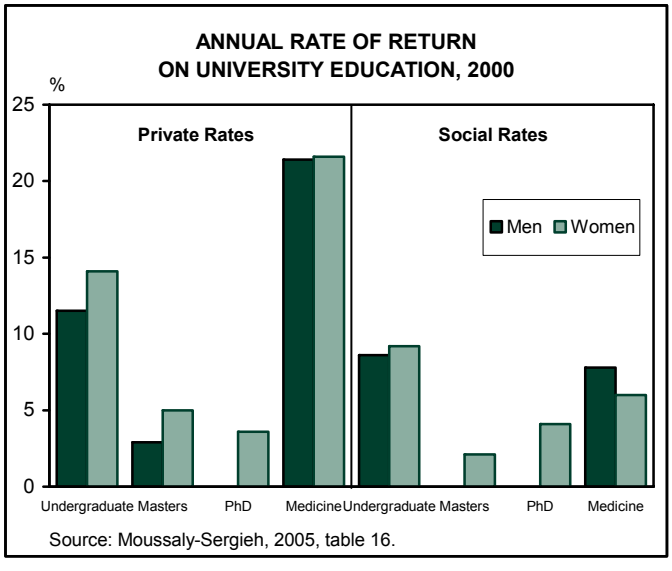
* Assumes a PSE inflation cost of 3 per cent per year.
Forecast by TD Economics based on numbers produced in the CAUT Almanac 2009-2010 and Statistics Canada's enrolment projections (under scenario 2).

Second, provinces will generally experience a rise in enrolment in large urban areas as the population of immigrants, which tends to have a high PSE participation rate, establishes itself in larger cities. PSE institutions located in large urban areas will consequently be challenged by further capital and human resources constraints. One of the prime examples is PSE institutions located in the Greater Toronto Area (GTA). In this respect, Finnie and Mueller (2009) conclude that "[e]ither capacity will have to be expanded or we risk seeing a "crowding out" of non–immigrant youth by more recent citizens, which could cause undesirable tensions".[22]

At the provincial level, growth in enrolment, and therefore growth in public funding, can be expected to vary noticeably from one province to the other. A provincial breakdown of enrolment projections is unfortunately not available through Statistics Canada. In Ontario, the Government of Ontario commissioned the Council of Ontario Universities (COU) to conduct university enrolment projections. In 2009, the COU projected a rise in full–time undergraduate university students of between 42,000 to 58,000 between 2009–10 to 2015–16.[23] This projection may seem low given Statistics Canada's projections and the likelihood that with its large PSE sector and more favourable youth demographics due to immigration, Ontario would account for at least half of the Canadian enrolment increases. One should remember, however, that the definitional difference in enrolment universes makes this figure downward biased relative to Statistics Canada's projections at the national level. Further, while not conclusive due to the scant information available on the methodology used in the projections conducted in Ontario, these projections may not be consistent with achieving a PSE attainment rate of 70 per cent by 2020 and, hence, the enrolment increases needed may have to be larger than anticipated.

According to Statistics Canada's population projections, the population in the 17 to 29 age cohort will continue to grow in the provinces of Alberta, Manitoba and Ontario until 2012, 2013 and 2018, respectively. If participation rates in these provinces are at a minimum maintained, this will result in growth in enrolment. For the remaining provinces, the single driver of growth in enrolment will be potentially derived from rises in participation rates. The Atlantic provinces, which will most noticeably experience a considerable fall in the population within the 17 to 29 age cohort, will likely experience a decline in enrolment, unless participation rates are significantly raised through a net inflow of students from the rest of Canada and the rest of the world. In general, we are surprised and disconcerted by the lack of recent analytical work done on the likely future course of PSE enrolment. This should be an integral part of planning. It needs to be done carefully at the national, provincial and sub–provincial levels.

The discussion has generally revolved up to now on the future targets in PSE enrolment needed to meet the rising educational requirements of our labour force. The ability to meet these targets will ultimately be determined by students' propensity to attend PSE, which will, in turn, be determined by the current and anticipated socio–economic environment in which students live in. Students should be cognizant of the increasing education content of jobs. They should also be mindful of the many monetary and non–monetary benefits to pursuing PSE. The data in this regard are quite stark and compelling. According to Moussaly–Sergieh (2005), the annual private rate of return of an undergraduate degree relative to a high school diploma acquired in 2000 is estimated to be 11.5 per cent for men and 14.1 per cent for women. The results of this study are in line with other studies such as Hansen (2006) who finds that the private rate of return to an undergraduate university degree across all fields averaged 11 per cent in 2001 for both men and women. There are, unfortunately, no comparable studies on the private rate of return to a college degree. The financial benefits to a college degree (the calculations cannot be considered rates of return because they do not net out costs) have, however, been calculated by Boothby and Drewes (2006). Boothby and Drewes (2006) find that the percentage earnings premia to a college degree (i.e. the percentage difference in weekly earnings between college and high school completers) obtained in 2000 was 19.3 per cent for men and 20.2 per cent for women. In comparison, they find that the percentage earnings premia to an undergraduate degree obtained



Source: Moussaly-Sergieh, 2005, table 16.

in 2000 was 52.4 per cent for men and 60.6 per cent for women. There is, however, no proportional relationship between the percentage earnings premia of a college and an undergraduate degree because the costs pertaining to the latter are significantly higher than the former.

As the demand for skilled labour rises through time and the supply of labour attempts to meet the rise in demand, it would be reasonable to presume that a premium will be applied above and beyond the private rate of return calculated by Moussaly–Sergieh (2005) for 2000. If such expectations occur, this will lead to a further widening of income disparities in our society.

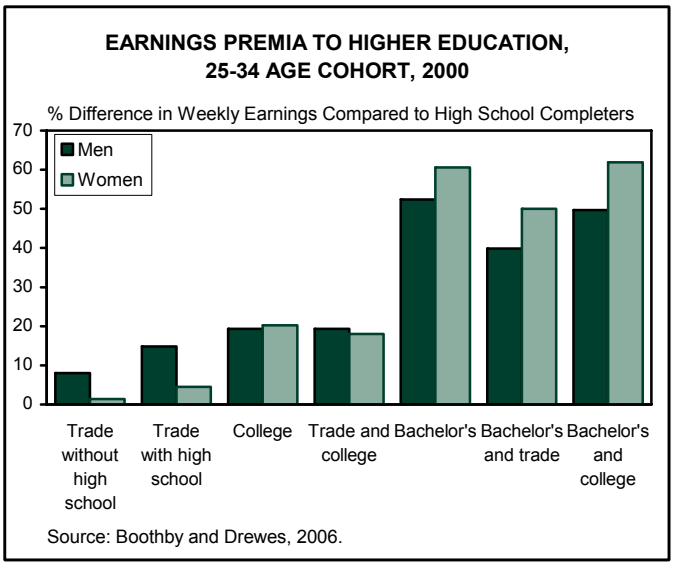
Beyond the private rate of return to PSE, the procurement of a PSE degree holds significant positive externalities and the social rate of return to PSE must not be overlooked. As estimated by Moussaly–Sergieh (2005), the annual social rate of return to an undergraduate degree acquired in 2000 is 8.6 per cent for men and 9.2 per cent for women. Numerous studies show that individuals who have a high propensity to invest in PSE are more likely to engage in other forward–looking behaviour (for example, be more concerned and aware about health, take less risk, etc.), have more social cohesion, be less involved in criminal activities and have higher participation rates in both classroom and on–the–job training. These positive externalities should in turn serve as a basis for allocating an adequate amount of financial resources to PSE.

PSE WILL NEED TO EQUALIZE ECONOMIC AND SOCIAL OUTCOMES ACROSS THE POPULATION

Build It For Many But Not All Will Come

Statistics on access to PSE show that it is highly unequally distributed across various socio–economic groups with marginalized groups posting significantly lower participation rates on average relative to other groups. If governments seek to increase enrolment, their intervention should be targeted towards those individuals who are at risk of not attending PSE. According to Berger et al. (2007), the "most obvious solution is to look to those currently under–represented in higher education – low–income Canadians, Aboriginal youth and those whose parents lack post–secondary credentials."[24] Statistics demonstrate that PSE participation rates vary noticeably across various socio–economic profiles with demography, family and high school engagement (general, academic and social) representing some of the most influential factors.

Cycle 4 of Statistics Canada's Youth in Transition Survey

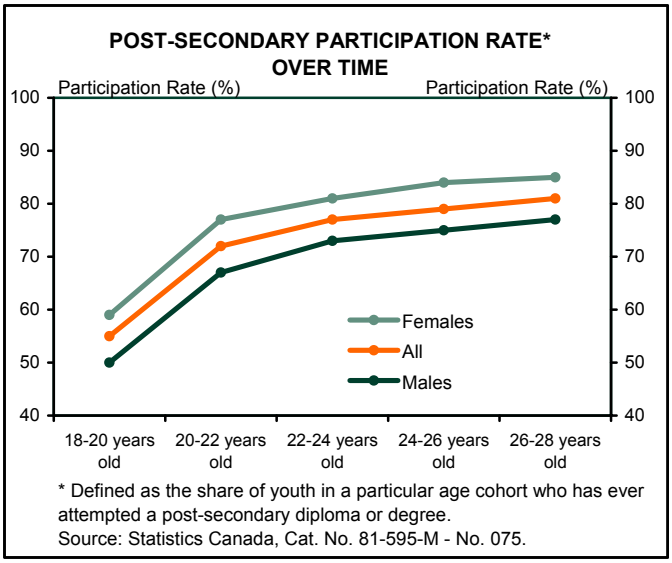


conducted in December 2005 established insightful results on the participation rates of the 24 to 26 age cohort by socio–economic characteristic.[25] This Survey's measure of PSE participation rate is defined as the share of youth in that particular age cohort who has ever attempted a PSE diploma or degree. Under this definition, the overall participation rate for the 24 to 26 age cohort was 79 per cent. Visible minority groups had a participation rate of 87 per cent relative to 78 per cent for the non–visible minority groups; Aboriginal students had a participation rate of 61 per cent relative to 80 per cent for non–Aboriginal people; individuals living in urban areas had a participation rate of 82 per cent relative to 65 per cent for those living in rural areas; women had a participation rate of 85 per cent relative to 74 per cent for men; students living with both parents had a participation rate of 83 per cent relative to 71 per cent for those who were not living with both parents; students with parents having some PSE had a participation rate of more than 80 per cent relative to less than 70 per cent for those with parents having less than PSE; students whose parents value PSE had a participation rate of 84 per cent relative to 48 per cent for those whose parents did not value PSE; individuals who were very engaged in high school had a participation rate of 90 per cent relative to 61 per cent for those who were not engaged in high school; and finally individuals with a high school grade average of between 90 per cent to 100 per cent had a participation rate of 94 per cent relative to 34 per cent for those with high school grade average of 59 per cent or less.

A study by King et al. (2009) commissioned by the Colleges of Ontario added some further insights on the socio–economic profile of individuals who were most and

least likely to attend PSE. They found that individuals whose spoken language at home differed from French or English were less likely to enrol in PSE, with great variability across the various ethnic groups. For example, students who mainly spoke Chinese, Korean, South– and East–Asian languages at home were most likely to complete a high school degree and attend PSE, while students who mainly spoke Spanish and Portuguese at home were least likely to do so.

The socio–economic profile of individuals not only affects their likelihood to participate in PSE, but also determines whether they are most likely to attend college or university. According to Clark et al. (2009), Aboriginal students in Ontario are almost as likely as non–Aboriginal students to hold a college diploma or certificate, but only one–third as likely to hold a university degree. In 2006, young individuals between the ages of 25 and 34 with immigrant parents were 50 per cent more likely to attend and



* Defined as the share of youth in a particular age cohort who has ever attempted a post-secondary diploma or degree.
Source: Statistics Canada, Cat. No. 81-595-M - No. 075.

POST-SECONDARY PARTICIPATION OF YOUNG ADULTS AGED 24 TO 26 IN DECEMBER 2005, BY SELECTED DEMOGRAPHIC CHARACTERISTICS

	Share of total population	Participation rate	Type of institution attended			Type of university program	
		Attended post-secondary education	Attended other post-secondary institution	Attended college/ CEGEP	Attended university	Bachelor's	Graduate students
	per cent	per cent	per cent	per cent	per cent	per cent	per cent
All		79	17	33	50	87	13
Demographic factors							
Visible minority							
Visible minority	12	87	11	27	62	87	13[E]
Not a visible minority	88	78	17	34	49	86	14
Type of community							
Rural	22	65	20	40	40	90	10[E]
Urban	77	82	16	32	52	86	14
Gender							
Men	51	74	18	33	49	88	12
Wonen	49	85	15	33	52	86	14
Province							
Newfoundland and Labrador	2	83	19	23	58	94	6[E]
Prince Edward Island	1	75	18[E]	25[E]	57	95	F
Nova Scotia	3	81	11	31	58	89	11[E]
New Brunswick	2	78	17	32	52	91	9
Quebec	25	79	14	38	48	79	21
Ontario	36	83	9	40	51	89	11
Manitoba	4	72	15	24	61	93	7[E]
Saskatchewan	3	76	26	16	58	87	F
Alberta	11	71	28	24	48	91	9
British Columbia	13	80	33	20	47	87	13[E]
Canada	100	79	17	33	50	87	13

[E] Use with caution.

F Too unreliable to be published.
Source: Statistics Canada, *Participation in Post-Secondary Education: Graduates, Continuers and Drop Outs, Results from YITS Cycle 4*, Cat. No. 81-595-MIE - No. 059.

complete a university education relative to the children of Canada–born parents. Drolet (2005) finds that the highest and lowest income categories have comparable participation rates for college, but that the college participation rate for individuals from the lowest income category is almost 50 per cent greater than their university participation rate. This finding suggests that colleges have an important role to play in offering under–represented groups of individuals an equitable access to their institutions. Students who are under–represented in universities may enter the PSE system through colleges, but may wish at a later date to continue their studies in a university setting. In this respect, Clark et al. (2009) argue that despite the fact that colleges and universities have different entrance requirements, these institutions should work hand–in–hand to facilitate credit recognition and allow students to transition more easily between these two types of institutions (this is especially true for Ontario).

Getting Through High School – The First Step

Canada has a surprisingly high dropout rate from high school. Although it is following a downward trend, the 2006 Census revealed that more than one million individuals between the ages of 25 and 44 had not completed high school by 2006. It should be noted, however, that a portion of students who at some point drop out of high school eventually do follow various pathways back into education by either graduating from high school and possibly pursuing PSE or by pursuing PSE without attempting to complete a high school diploma. The statistics compiled through the YITS shed some light on the educational progress of the original group of respondents through time. Between 1999 and 2007, it was found that 17 per cent of respondents had interrupted their high school education at some point in time, most predominantly, between the ages of 18 and 20. This meant that close to 210,000 young adults had failed to complete their high school diploma at some point in time between 1999 and 2007. Cycle 5 of the YITS which was conducted in December 2007 revealed, however, that only 6 per cent of the YITS cohort had still not graduated from

POST-SECONDARY PARTICIPATION RATE OF YOUTH AGED 24 TO 26 IN DECEMBER 2005, BY SELECTED FAMILY CHARACTERISTICS

	Share of total population	Participation rate		Type of institution attended			Type of university program	
		Never attended post-secondary education	Attended post-secondary education	Attended other post-secondary institution	Attended college/ CEGEP	Attended university	Bachelor's	Graduate students
	per cent	per cent	per cent	per cent	per cent	per cent	per cent	per cent
All		21	79	17	33	50	87	13
Family characteristics[1]								
Family structure								
Living with both birth parents	76	17	83	15	31	54	87	13
Other	24	29	71	22	38	40	86	14
Highest educational attainment of parents								
Less than high school	11	37	63	24	43	32	85	F
High school diploma	28	31	69	22	40	37	90	10
Some post-secondary education	8	18	82	21	35	43	92	8[E]
Post-secondary certificate diploma	54	10	90	12	28	60	85	15
Parents' opinion on the importance of pursuing education after high school								
Important	87	16	84	15	32	53	86	14
Not important	13	52	48	34	42	24	90	10[E]

[E] use with caution.

F too unreliable to be published.

[1] The family structure is the structure that was present when the respondent was in high school.

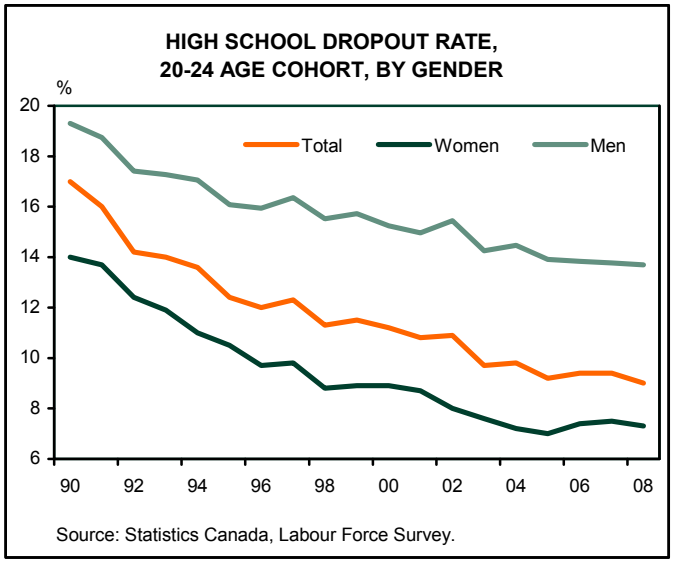
Source: Statistics Canada, *Participation in Post-Secondary Education: Graduates, Continuers and Drop Outs,* Results from YITS Cycle 4, Cat. No. 81-595-MIE - No. 059.

high school and had no further education. The remaining 11 per cent or two–thirds of students who had, at some point in time, interrupted their high school education had subsequently successfully graduated from high school or had pursued PSE.[26]

Given the fact that the size of the potential pool of PSE participants is affected by the high school dropout rate, greater effort should be vested in reducing it. With the intent to reduce the high school dropout rate, the Ontario government, for example, introduced legislation in December 2005 which would make learning in a classroom, apprenticeship or workplace program in Ontario mandatory up to age 18.

The likelihood of dropping out from high school is related to similar socio–economic factors affecting PSE participation rates such as high school engagement and type of community. Recent studies suggest that the non–completion of high school predominantly explains the limited access to PSE of students residing in rural areas. Between 2006 and 2009, the average high school incompletion rate for small towns and rural areas stood at 14 per cent and 16 per cent respectively, nearly twice the rate of large cities, which was 8 per cent. If high school graduation rates in rural areas are raised, it is thought that PSE participation rates may effectively be raised. In the case of Aboriginal people, Mendelson (2006) finds that the difference in PSE participation rates between Aboriginal people and the total population is almost completely driven by differences in high school completion rates. Using 2001 data, he analyzed the PSE participation rates of students who had graduated from high school in 2003. He found that when only the universe of high school graduates was included, the PSE participation rate for Aboriginal people was 75 per cent and only a shade below the 76 per cent for the total population. This leads him to conclude that "[a]boriginal high school graduates have already achieved parity with respect to completing PSE."[27]

In order to raise high school completion rates, representatives of universities and colleges need to engage with students in high schools and perhaps even earlier grades to demonstrate the benefits of completing high school and going on to PSE. This may provide a part of the motivation



PERCENTAGE OF 26- TO 28-YEAR-OLD COHORT WHO HAD EVER LEFT HIGH SCHOOL, COMPARED WITH THE PERCENTAGE WHO HAD NOT OBTAINED A HIGH SCHOOL DIPLOMA (OR HIGHER) BY DECEMBER 2007

	Ever left high school	No high school diploma and no post-secondary education	Difference
	percentage of 26- to 28-year-old cohort		per cent
Canada	**17.3**	**6**	11.3
Newfoundland and Labrador	8.3[E]	F	..
Prince Edward Island	F	F	..
Nova Scotia	12.1	4.9[E]	7.2[E]
New Brunswick	9.7[E]	F	..
Quebec	22.6	8.3	14.3
Ontario	14.8	4.1	10.7
Manitoba	20.8	7.4[E]	13.4
Saskatchewan	12.7	4.0[E]	8.7
Alberta	20.2	7.8	12.4[E]
British Columbia	16.7	6.4	10.3[E]

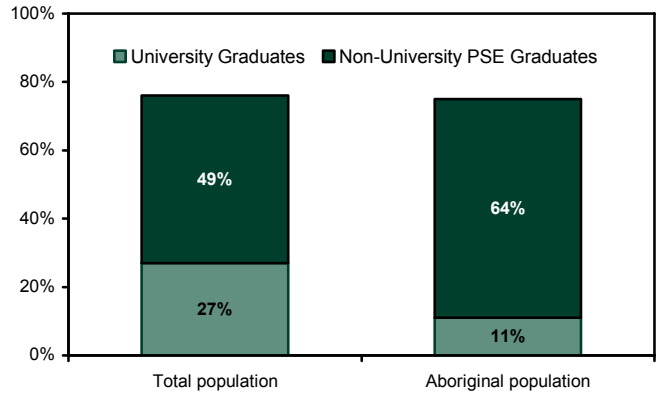
.. not available for a specific reference period
[E] use with caution
F too unreliable to be published
Source: Statistics Canada, Education Indicators in Canada: Fact Sheets, *Interrupting High School and Returning to Education* , Cat. No. 81-559-X, April 2010.

grade school students may lack. The University of Victoria, for example, has initiated an Indigenous Mini–University Summer Camp and Adult Orientation Program aimed at bringing Indigenous adults and youth from across British Columbia to the University to engage in activities that expose them to, and prepare them for, the realities of student life. Awareness and motivation about PSE are raised through numerous interactions with Indigenous faculty members and students, and engagement in a variety of activities which introduce them to a host of academic disciplines and programs. The staff at the University of Victoria recognizes that without such programs, these individuals may have never stepped on campus and realized their own potential and the educational options available to them. As noted by economist Nicholas Barr, "[t]he saddest impediment to access is someone who has never even thought of going to university."[28]

PSE students may also play an effective role in raising high school completion rates by providing tutorship to high school students who are at risk of terminating their studies. Such an initiative was implemented in the province of Quebec by Youth Fusion, a non–profit, non–partisan organization which establishes partnerships between high schools and universities. Their objective is to motivate youth and to keep them interested in pursuing higher levels of educational attainment. This is achieved through a variety of projects that enable high school students to spend their time in creative and productive settings, improve their student life and receive mentorship and tutorship from university students and recent graduates. It should also be noted that in–the–field professional experience is provided to undergraduates, graduate students and recent graduates through internships such that the full potential of these projects in raising high school completion rates may be exploited.

A similar initiative to Youth Fusion has been initiated by the Regent Park Community Health Centre through the Pathways to Education Program (PEP). The PEP, which was launched in Toronto's district of Regent Park in 2001, was later expanded to five additional locations across Canada through local partnerships. In 2007, the Boston Consulting Group (BCG) assessed the performance of the PEP and reported their main findings. The BCG found that the average dropout rate of the cohort which was surveyed prior to, and after, the implementation of the PEP plummeted from 56 to 10 per cent, representing a close to 80 per cent improvement. They also found that higher high school completion rates have lead to other social improvements such as increased post–secondary enrolment, decreased crime and youth violence, lower rates of teenage pregnancy and better integration of new immigrants in society. The BCG has estimated cumulative benefits of about $400,000 per student enrolled in the PEP (i.e. about $250,000 per student enrolled and $150,000 from second generation effects). The societal annual rate of return on investment is estimated to be 24.5 per cent in nominal terms or 12.5 per cent in real terms.[29]

SHARE OF ESTIMATED HIGH SCHOOL GRADUATES WHO HAVE COMPLETED PSE IN TOTAL AND ABORIGINAL POPULATION, 2001*



* Amongst population 15 years of age and over; Source: Mendelson, 2006.

Due to the recent extension of the PEP, there has only been an evaluation of the original program in Regent Park. Caution must be exercised in whether the findings from that evaluation done by the BCG would be applicable to other areas. Further, some of the findings in the evaluation may suffer from a selection bias in that students most likely to succeed were also most likely to sign up for this program. Nonetheless, the results documented by the BCG remain very impressive. More information on this program may be found in the exhibit appearing on page 33. While beyond the scope of this report, we simply note that there is growing evidence, however, that the highest rates of return are from interventions at even earlier ages.

In addition to the contribution that PSE institutions and communities may make towards raising high school completion rates, high schools will also be required to better prepare students for PSE and communicate to them the advantages and challenges of attending PSE and how these may be overcome. King et al. (2009) find that the reach into high schools has to be accomplished early on given the fact that academic failures and the decision to pursue PSE in grade 9 serve as good predictors of PSE attendance. The study also revealed that the type of high school program (i.e. OSSD with University–Preparation courses, College–Preparation OSSD and Workplace–Preparation OSSD) largely determined the likelihood to attend PSE as well as the type of

PSE institution. Hence decisions by educators, parents and students on "streaming" must not be taken lightly because the paths chosen by grade 9 can subsequently really stack the odds against the student continuing to PSE.

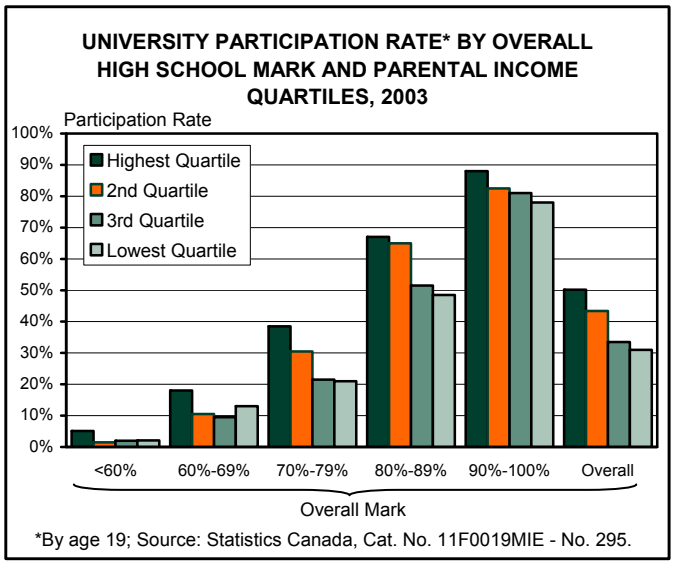
To maximize the degree of preparedness of students for PSE, career counselors in high schools should also provide comprehensive information about the range of opportunities and requirements for PSE. Colleges, in this respect, express some concern over the fact that most guidance counselors have had a university education and might present a certain bias towards the university route of PSE. Complete, unbiased information should be provided on both colleges and universities.

Improving Access To PSE For Under–Represented Groups

Data compiled by Statistics Canada show a gap of approximately 20 percentage points between the PSE participation rate of the highest and lowest income quartiles. Disaggregating the data further by overall high school mark provides further insight about this gap. The data demonstrate that the gap is not only explained by parental income quartile, but from a combination of both parental income quartile and overall high school mark. The gap in the participation rate between the highest and lowest income quartiles tends to be highest among students with an overall high school mark ranging between 70–89 per cent and tends to be lowest among those with an overall high school mark below 70 per cent and above 89 per cent.[30] This would lead one to conclude that any initiative targeted at increasing the parental income and/or the overall high school mark of marginalized groups could effectively increase participation rates. Moreover, these statistics also prove that access to PSE for marginalized groups is restrained by a combination of financial and non–financial barriers. The relative importance of these two types of barriers, however, remains difficult to decipher due to a lack of data on individuals who fail to access PSE as well as the statistical interaction between financial and non–financial barriers which may exist. According to Day (2008), "[i]t is difficult, if not impossible, to disentangle the effects of financial aid from… other determinants of persistence using existing data, in large part because many of those other determinants also influence the amount of financial aid received. These interrelationships no doubt explain why there are so many conflicting results about the effects of financial aid in the literature."[31]

Potential and Perceived Financial Barriers To PSE Participation

There are two types of financial barriers to PSE which



marginalized groups are confronted with, namely liquidity constraints and the perception that the expected private rate of return to PSE does not warrant the expected costs.

Low–Income Students Face Liquidity Constraints

Financial liquidity constraints in regards to PSE are currently being addressed through a combination of federal and provincial loans programs and the new Canada Student Grants Program (CSGP). In addition to these financial aid programs, bursaries were also disbursed to students under the Canada Millennium Scholarship Foundation (CMSF) between 2000 and 2010. Over the course of ten years, the Foundation received a total funding of $2.5 billion and was given the mandate to: 1) improve access to PSE for all Canadians, especially those facing financial and/or non–financial barriers; 2) encourage a high level of student achievement and engagement in Canadian society; and 3) build a national alliance of organizations and individuals around a shared post–secondary agenda. Approximately 95 per cent of the Foundation's funding was distributed under the Millennium Bursary Program targeted towards students with the greatest financial need and the remaining 5 per cent was disbursed under the Millennium Excellence Award Program based on merit. In 2008, the federal government announced that the mandate of the CMSF would not be renewed, but it did, however, announce that the CMSF would be replaced with a new program (i.e. the new CSGP starting in the 2009–10 academic year).

While the allocation of $350 million per year under the CSGP is slightly higher than the average annual funding of $250 million per year under the CMSF, the average bursary received by students is expected to decline from $3,000 per year to approximately $1,250 per year given the fact that an

expected 250,000 students will qualify rather than 100,000 students as was the case under the CMSF. This naturally triggers a concern in regards to the expected outcome regarding access to PSE.

Liquidity constraints may effectively be measured through students' unmet financial need (i.e. the difference between students' total assessed need and the total assistance received – the sum of federal and provincial loans and government grants). A review of the CMSF performed by Human Resources and Skills Development Canada (HRSDC) in 2007 showed that the unmet financial need of students was substantial and was on the rise, rising from $500.5 million to $ 671.9 million, or 34.2 per cent, between 2000–01 to 2004–05. This is largely explained by the fact that students' financial need was rising – due to the rise in tuition fees – while student financial assistance remained stagnant. As can be expected, the number of students with unmet needs rose from 145,430 to 170,538 between the 2000–2001 and 2003–04 academic years and then declined to 141,958 during the 2004–05 academic year. Moreover, it is found that the subset of CMSF recipients (i.e. students who generally face higher financial needs) had, on average, much higher unmet needs relative to all loan borrowers. This is explained by the fact that the amount of student financial assistance being offered is limited, leaving many high need students with a noticeable gap between their assessed need and the financial assistance available.

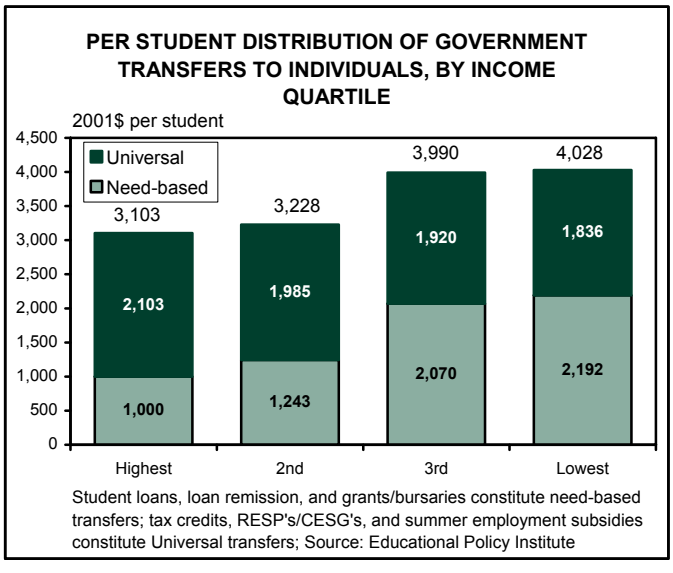
A more recent study by McElroy (2009) reveals, however, that unmet need decreased in six provinces between the 2004–05 and 2006–07 academic years after governments adopted a policy of expanding the size of student aid packages. An inter–provincial comparison of the four key measures under study (i.e. average assessed need, total award, total amount repayable and unmet need for recipients enrolled in bachelors programs in 2006–07) also revealed wide disparities across the country. This in turn explains why there are wide disparities between the distribution of level of unmet need among recipients enrolled in bachelor programs.

A lot of resources are applied to student financial assistance. In 2007–2008 there was an estimated disbursement of $2.9 billion in net loans, $540 million in loan remissions, $960 million in grants and $2.1 billion in tax credits, expressed in constant 2008 dollars. But, it is not well targeted by income. Indeed, with much of the money going to savings vehicles (such as Registered Education Savings Plans) and tuition credits, there are important elements where support rises with income. This leaves the system relatively flat in terms of distinguishing between students' financial situations. Statistics on the per student distribution of government transfers (universal and need–based) by income quartile show that there is a meager $900 gap between the financial assistance provided to the lowest and highest income quartiles. In regards to universal government transfers, a report prepared for the CMSF in 2007 concludes that the tuition and education tax credits do not encourage participation in PSE and are costly given the fact that they are "at best neutral and at worst regressive". The study further concludes that "eliminating credits would create an opportunity to use these funds in less regressive ways and allow for some effective restructuring of Canada's "complex web of student financial aid systems".[32]

Financial barriers to PSE only partially account for the lower participation rates of students from lower–income backgrounds. A study conducted by Statistics Canada revealed that there are wide provincial disparities in the size of the gap in university participation rates between the lowest and highest family income quartiles and that most surprisingly, the provinces with the highest tuition fees did not post the largest university participation rate gaps between low–income and high–income youth.[33] Similarly, a note written by Norma Kozhaya for the Montreal Economic Institute in 2004 revealed that Quebec's university enrolment was amongst the lowest in Canada despite the fact that tuition fees were the lowest. These two studies suggest that there are other important factors at play which need to be carefully considered.

Financial Literacy Challenges Impede PSE Participation

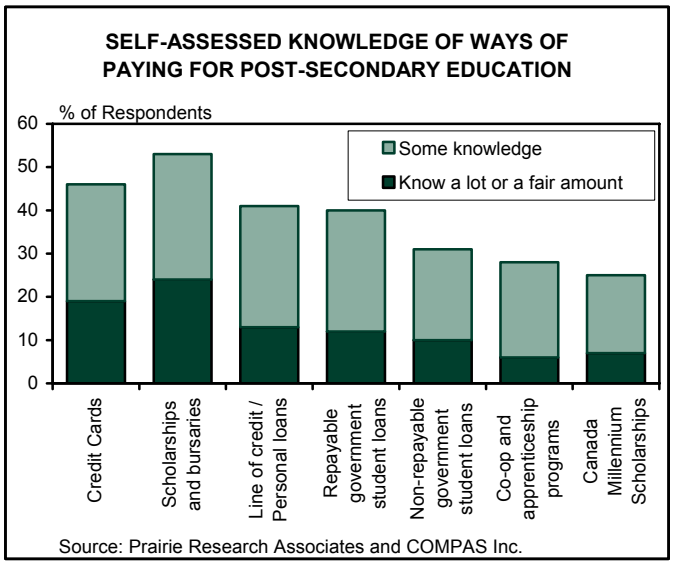
In 2005, the CMSF conducted a study aimed at gauging

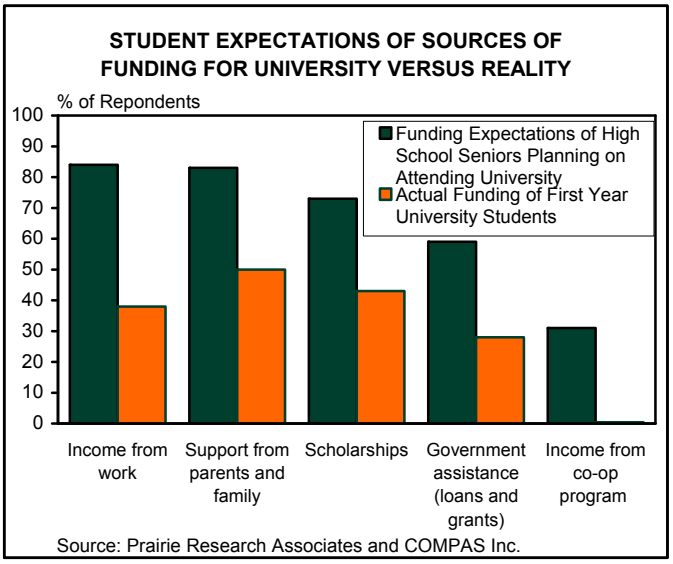


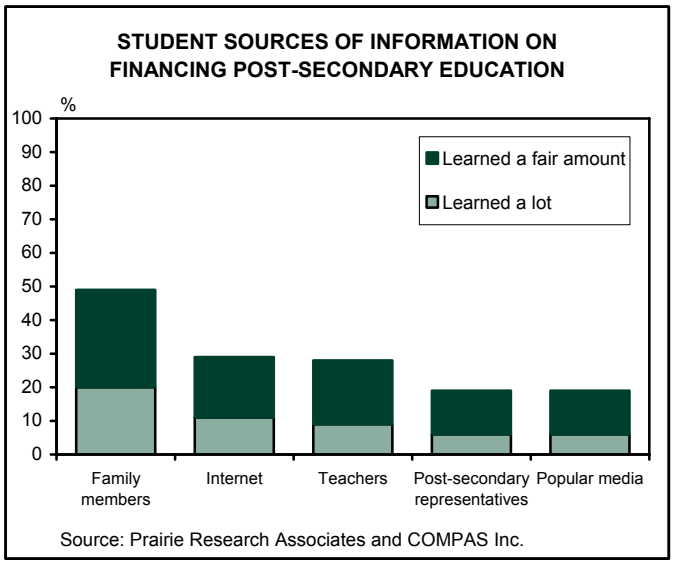
the severity of the lack of information or misperception about the financial aspects to PSE. When asked about the respondents' self–assessed knowledge of ways of paying for PSE, the greatest share of respondents (46 per cent), claimed to have at least some knowledge about credit cards. This was followed by scholarships and bursaries (43 per cent), line of credit/personal loans (41 per cent), repayable government student loans (40 per cent), non–payable government student loans (31 per cent), co–op and apprenticeship programs (28 per cent) and finally, Canada Millennium Scholarships (25 per cent).

The results of the survey suggest that students are not only lacking information, but also have a misconstrued perception about how they will finance PSE. A significant share of senior high school students who expect to attend university, anticipate to finance their PSE through income from employment, support from parents and family, scholarships, government assistance (loans or grants) and income from co–op programs. However, in reality, they fail to finance PSE through these sources. Students are not alone in holding these optimistic expectations of student support for PSE – parents also demonstrate a significant misperception of student support. The survey also attempts to identify students' source of information on the costs and the options for financing PSE. The largest share of respondents claimed that they learnt at least a fair amount from family members (49 per cent), followed by the Internet (29 per cent), teachers (28 per cent), post–secondary representatives (19 per cent) and popular media (19 per cent). Moreover, the survey revealed the existence of a certain information gap between the children of parents belonging to different socio–economic groups. The likelihood of parents having had at least a few discussions of any financial issues relating to PSE was found to be significantly lower amongst individuals with an annual family income of less than $30,000 and amongst those whose parents have a high school degree as their highest level of educational attainment. The study stresses that "[w]hile information on its own is no substitute for adequate financial assistance, a lack of good information may discourage some students from participating in PSE. Others may embark on their studies poorly prepared to meet the full costs that await them. Either way, the transition to PSE is more difficult than it need be."[34]

A study conducted by Looker (2001) suggests that PSE participation rates may be enhanced by recognizing the importance of information with regards to financial assistance.[35] Moreover, Looker and Lowe (2001) show a lack of information with regards to how financial information







shapes one's decision to pursue PSE in Canada. They also find that the children of more educated parents are more likely to possess better information with regards to financial assistance, despite the fact that they are less likely to need it.

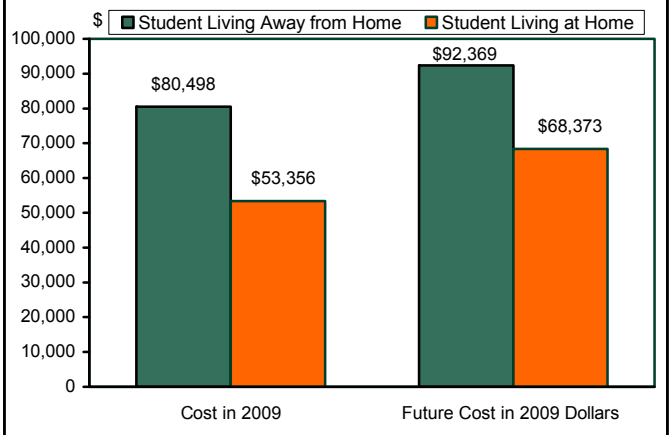
For some students, however, liquidity constraints will never be met due to their risk aversion attitude towards taking a loan. Studies show that willingness to borrow is largely conditional upon one's socio–economic background. In light of this fact, there is some merit for the attribution of grants to individuals who are not predisposed to the idea of taking a loan.

To meet the rising costs of PSE in the future, parents' savings for their childrens' education must become an ingrained part of the lifecycle of savings. Demographics and workplace changes are collapsing the period available to amass savings. With more education, individuals enter the workforce later. Until recently they were retiring earlier. And couples are older when they have children, so this additional expense continues into what used to be savings years. The median age for first–time mothers in Canada has risen to 30. Parents are, therefore, incurring PSE bills right into their 50s. In earlier generations, these were out–of–pocket expenses for parents or covered by students' part–time earnings. TD Economics projected in 2009 that the total cost of pursuing a 4–year undergraduate degree in 18 years time will be $92,369 for students living away from home and $68,373 for students living at home in 2009 dollars.

Many Have A Shaky Sense Of Expected Returns To PSE

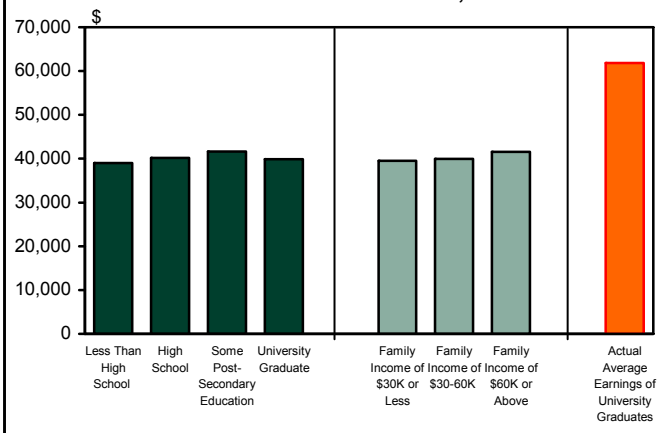
Some individuals perceive that the expected return to PSE does not warrant the expected costs. In an attempt to gauge Canadians' knowledge of the expected costs and benefits to PSE, the CMSF commissioned Ipsos–Reid to conduct a survey in August 2003. Survey respondents were asked the following question with regards to expected tuition fee costs: "What would you guess it costs for one year of undergraduate university tuition last year in your province, not counting books, fees, or living expenses?" The responses given demonstrated that Canadians generally overestimated the actual average cost of tuition fees. But these responses more importantly revealed that individuals with a high school diploma overestimated expected costs by a significantly greater amount relative to those who had a post–secondary education. Survey responses organized by level of income reveal a similar pattern: individuals with a family income of $30,000 or less tend to overestimate expected costs by a greater amount relative to those with a family income of more than $30,000.

AVERAGE COST OF UNDERGRADUATE DEGREE IN 2009 VS. PROJECTED COST IN 18 YEARS



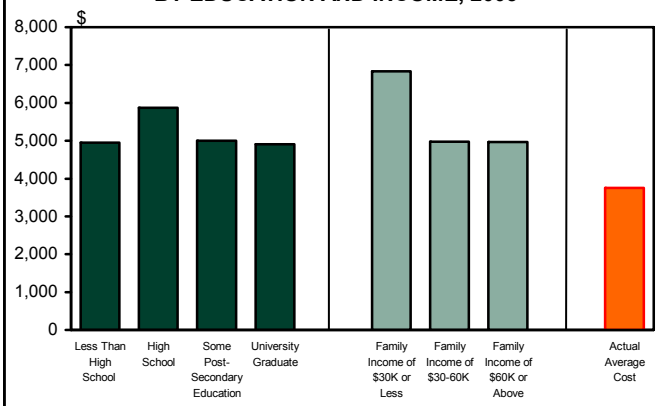
Source: HRSDC, Statistics Canada and TD Economics.

MEDIAN ANNUAL SALARY ESTIMATES BY EDUCATION AND INCOME, 2003



Source: Canada Millennium Scholarship Foundation.

MEDIAN AVERAGE ESTIMATES OF UNDERGRADUATE TUITION FEES BY EDUCATION AND INCOME, 2003



Source: Canada Millennium Scholarship Foundation.

Survey respondents were then asked the following question with regards to expected benefits: "According to the 2001 Census, the average income for a high school graduate is $34,632. What would you guess the average university graduate makes?" The results revealed that Canadians significantly underestimated the expected benefits to PSE. While the results did not reveal any obvious relationship between educational attainment and estimates of financial benefits to PSE, they did, however, reveal a relationship between family income and estimates of expected financial benefits. Individuals within lower–income family groups in effect had a tendency of underestimating the expected financial benefits to PSE.

The results of this survey suggest that the greater misperception of the expected costs and benefits to PSE amongst low–income Canadians may deter some individuals to pursue PSE. From the perspective of these individuals, the net rate of return to PSE is negative and the decision to forego investment in PSE is hence, an economically rational decision.

These studies suggest that access to PSE can be improved for traditionally under–represented groups of individuals if governments guaranteed that no student would be denied access due to financial constraints. The Government of Ontario, as presented earlier, has recognized this in its 2010 *Open Ontario Plan.* In addition to providing such a guarantee, governments should actively pursue to inform individuals of such an opportunity. These initiatives, however, will be insufficient in allowing equal access to the PSE system. Under–represented groups in PSE will continue to underestimate the benefits and face greater non–financial barriers for access to PSE.

Some Non–Financial Barriers Are In Fact Driven By Financial Status

Researchers noticed the persistence of a PSE participation gap between low–income families and the rest of Canadians, despite having controlled for financial support policies. This led them to investigate the relationship between PSE participation rates and non–financial barriers to PSE such as parental education, secondary school performance, measures of engagement in high school, rural versus urban location, distance to PSE institution, Aboriginal versus non–Aboriginal, immigrant versus Canadian–born, and gender. The insertion of non–financial variables in the mathematical models being used demonstrated some correlation between these explanatory variables and participation rates. Moreover, it weakened the correlation between family income and participation rates, leading researchers to conclude that some of the non–financial variables were correlated with financial variables.

One of the most widely cited non–financial barriers for not pursuing PSE by students is lack of motivation. The main challenge lies in identifying its main determinants and isolating the impact of this explanatory variable from other variables such as family income or parents' highest level of educational attainment. The literature also supports the idea that parents who did not attend PSE have less cultural capital to transmit to their children with regards to PSE. These parents are, therefore, not only less likely to relate information with regards to future studies to their children, but are unable to draw on their own PSE experiences and be inspirational to their children.

A Multi–Faceted Strategy Is Needed To Improve PSE Access

The CMSF has established three pillars for an effective policy on access to PSE:

1. Better outreach to and preparation of students well before they reach PSE;
2. More effective student financial assistance program; and
3. Improved support programs for students once they have enrolled in PSE.

Baldwin and Parkin (2007) have established five guiding principles with respect to the 2nd and 3rd pillars, which are as follows:

1. Provide early and easy access to the student aid system, especially for under–represented students who need to know there will be predictable funding available to support their studies;
2. Target assistance to those with the greatest need first;
3. Be sure to acknowledge and address non–financial barriers to access and success;
4. Ensure flexibility, transparency and accountability in the delivery of aid; and
5. Ensure that the interests of students are at the centre of reform.

Clearly, an injection of further financial support supplemented by better information is required for students who are least likely to participate in PSE. The overall cost could be offset somewhat if funds were reallocated away from support for students in less financial need. But in any scenario, the implementation of the kinds of reforms called for to increase PSE participation of traditionally under–represented groups will be a challenge in the constrained fiscal environment of

10 LESSONS FOR AN EFFECTIVE POLICY ON ACCESS

The CMSF has also highlighted specific lessons to be kept in mind to implement an effective policy on access.

1st Lesson: Policy responses must be comprehensive (i.e. they must include financial assistance and other forms of student support, in light of the fact that students from under-represented groups face a complex set of interacting barriers).

2nd Lesson: Outreach programs for under-represented groups should exist as early as elementary school or the first years of high school.

3rd Lesson: Student financial assistance programs should be reformed such that they:

- reach students early enough to influence educational aspirations and planning;
- are easy to access and navigate;
- deliver the best types of aid to the students who need it most;
- adequately cover costs; and
- keep debt levels in check.

4th Lesson: Policy to improve access to PSE should be done in conjunction with career development initiatives such that under-represented groups are provided with the information, skills and strategies to enable them to navigate from high school to PSE to the labour market.

5th Lesson: In light of the fact that students have different learning requirements, PSE institutions must ensure that they relate to students at every stage of their journey.

6th Lesson: Student financial assistance could be more efficiently spent if governments targeted funds to students which are most likely to have a positive impact on the objective of improving access. Programs such as grants for student facing financial barriers should be prioritized over expensive programs such as universal tax credits or rebates that achieve little in terms of improving access.

7th Lesson: Community organizations, businesses and PSE institutions must all reach to students to raise their aspirations, skills and resources needed to succeed in higher education.

8th Lesson: Programs should address the different challenges facing students throughout their transition from high school to PSE to the labour market. Moreover, access strategies should not only be focused on young Canadians but also on adult learners.

9th Lesson: Program outcomes should be evaluated through the collection and analysis of data to verify if they have achieved the expected results.

10th Lesson: Canada should embrace the learning and partnership opportunities offered through the 13 different education systems across the country.

federal and provincial governments.

One way of more finely tuning student assistance to income is through income–contingent loans (i.e. re–payment scheme that is conditional upon the income stream of the student after graduation). We believe that income–contingent loans should be given serious consideration in light of the fact that lower–income students generally face greater financial aid liabilities combined with a reduced ability for repayment. A study conducted by HRSDC in 1994 entitled *Improving Social Security in Canada* as well as a 2005 Government of Ontario report entitled *Ontario – A Leader in Learning* have also highlighted the potential benefits of income–contingent loans.

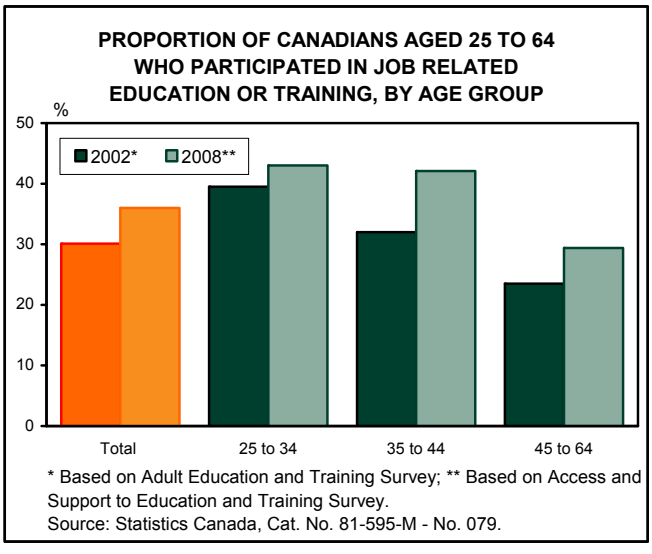
Kirby (2009) cited a number of improvements in the provinces which have initiated task force reviews of their respective PSE system. Some of these improvements include: 1) a freeze in tuition fees (an improvement from an individual's rather than from society's perspective); 2) an elimination or reduction of interest charges on provincial student loans program; 3) an introduction of needs–based grants; 4) a move to an income–based repayment for provincial student loans program modeled on the federal student loan Repayment Assistance Plan introduced in 2009; 5) a provision of a PSE graduate income provincial tax credit, refunding up to $20,000 of tuition fees costs; 6) a rise in living allowances under the provincial student loans program; 7) an increase in annual borrowing limit; 8) a decrease on the loan interest rate; 9) a decrease in the parental contribution towards costs; and 10) an amendment on loan eligibility criteria to increase the exemption on students' part–time

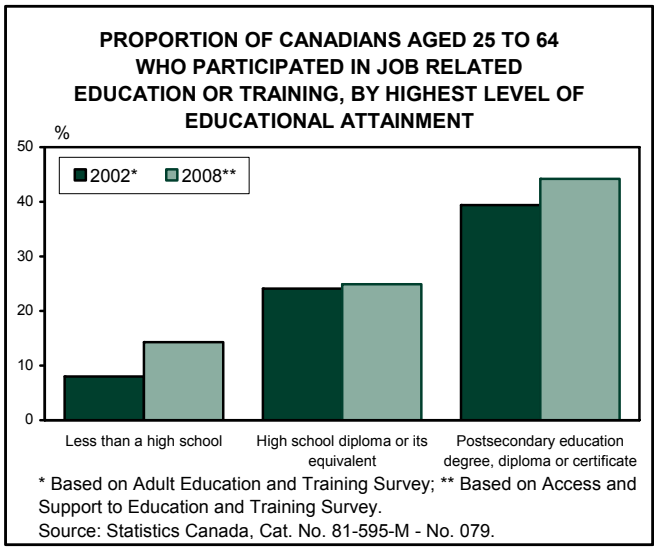
earnings, and removing scholarship earnings and the value of a student–owned vehicle from the criteria.

PSE WILL NEED TO PROVIDE AN IMPORTANT COMPONENT OF LIFELONG LEARNING

Today, the education and skills requirements of occupations are being altered at such a strong pace that one must actively pursue lifelong learning in an effort to constantly adapt to the evolving nature of work. The alternative is to find one self drifting toward less sophisticated jobs at lower pay, or in the extreme case, out of the workforce. The attainment of a PSE degree has become a necessary, but insufficient condition in determining one's ability to command and control his or her life through time. Individuals today must be cognizant of the fact that they will require periodic, if not constant learning, to develop new skills and competencies and upgrade existing ones, and that on–the–job training alone will not be sufficient in allowing them to reach the requirements of evolving jobs.

Lifelong learning is believed to have great benefits in allowing for the: adaptability of labour market participants; innovation; re–tooling of the labour market in response to structural changes in the economy; active and healthy citizenry; and the maximization of personal potential throughout the life cycle. Canadians have begun to embrace this idea to a large extent, as suggested by data compiled from Statistics Canada's Access to Support to Education and Training Survey (ASETS). In 2008, 36 per cent of Canadians between the ages of 25 and 64 participated in education or training which was job–related with some differentiation by age cohort. The proportion of Canadians who participated in job–related education or training was most significant for



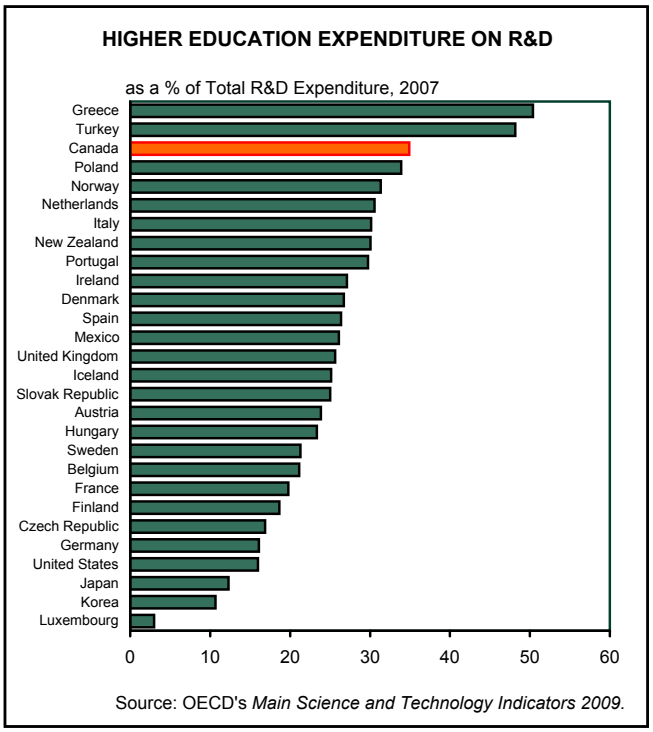


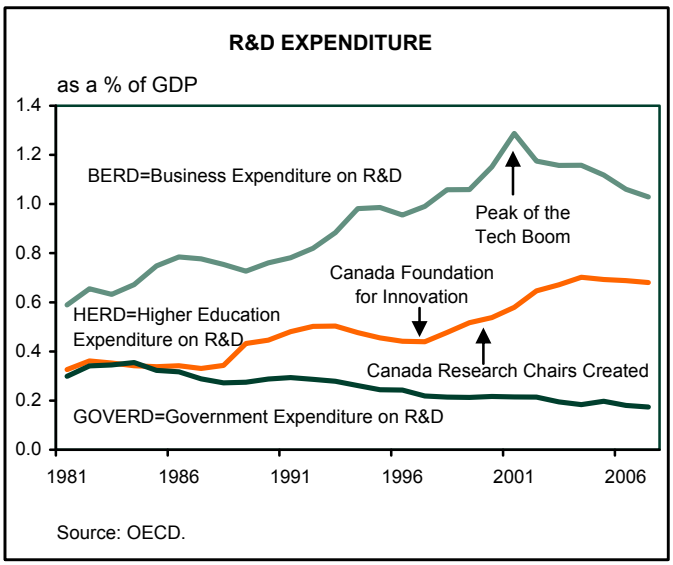
those between the ages of 25–34 (43.0 per cent) and 35–44 (42.1 per cent), relative to those between the ages of 45–64 (29.4 per cent). Significant improvements in participation were also achieved in recent years. The Adult Education and Training Survey (AETS) conducted in 2002 suggested that 30.1 per cent of Canadians between the ages of 25 to 64 participated in job–related education or training. The results of the 2008 ASETS show a 5.9 percentage point improvement relative to the 2002 AETS. Higher levels of educational attainment, as noted earlier, really serve as a basis for lifelong learning according to data produced by Statistics Canada. The results of the 2008 ASETS show that 44.2 per cent of individuals with a PSE degree, diploma or certificate engaged in job–related education and training relative to 14.3 per cent for individuals with less than a high school diploma and 24.9 per cent for individuals with a high school diploma or its equivalent.[36]

According to statistics compiled through the 2008 ASETS, approximately 32 per cent of Canadians aged 18 to 64 reportedly had unmet need, or want for, education or training. Respondents with higher levels of educational attainment expressed a disproportionately higher degree of unmet need or want. More specifically, 34 per cent of respondents with PSE reported an unmet need or want compared to 26 per cent for those with a high school diploma and 30 per cent for those with less than a high school diploma. The most widely reported reasons for not undertaking further education or training between July 2007 and June 2008 were: family responsibilities (27.3 per cent); needed to work (25.5 per cent); training conflicted with your work schedule (24.8 per cent); and training was too expensive, couldn't afford the cost (20.8 per cent).

A fair amount of job–related education and training will presumably be accomplished by colleges and universities as well as by private schools in the future. Lifelong learning will hence be: 1) forming a growing part of the demand for PSE institutions to serve; 2) altering our perception of PSE as being for the 18–24 age cohort almost exclusively; and 3) if the trend is increasing, so too will the demand for classroom space. The gradual decline in youth PSE enrolment beyond 2016 will, however, allow the adult population to take greater advantage of existing educational resources. Surveys also show that the retired, or about to retire, population are showing growing interest in participating in education and training. This represents another source of pressure on demand which should, however, be mostly self–financed.

Special attention should also be given to facilitating the access to lifelong learning to under–represented groups given the fact that "[s]ome people who are employed also have additional difficulties that make it all the more necessary for them to maintain and enhance their occupational competencies or even, in some cases, their basic competencies; this is the case for immigrants and people with disabilities, people over 45 years of age and women in some categories as well as people under 30 years of age with little schooling."[37] The provincial PSE task force reviews also recognized that a broader portion of the population to include under–represented groups of individuals should be able to benefit from the opportunities of lifelong learning. This, however, will likely not bring the same funding pressures as the access to PSE by the youth population given the fact that: 1) individuals will be involved in this after having worked and hopefully, having saved money; 2) employers will often assist these individuals financially; and 3) the short duration of courses and fairly quick payback should serve as a motivation for individuals to assume the costs without much subsidy from their employer or the public system.





PSE MUST BE AN ENGINE OF INNOVATION

Universities Have Greatly Expanded Research Capacity But Commercialization Is A Weak Link

Canada's productivity levels may effectively be increased through higher levels of investment in R&D. Canada's record in R&D investment, however, is not great. Data compiled by the OECD suggest that Canada ranked 14th in business enterprise expenditure on R&D as a per cent of GDP amongst the OECD countries tin 2007. Relative to its OECD peers, Canada has an odd positioning with regards to the breakdown of R&D spending by source. In 2007, higher education expenditure on R&D represented 35 per cent of total R&D expenditure. During the same year, Canada's R&D spending within the private sector stood at only 54 per cent compared to 69 per cent for the OECD countries.[38] Growth in R&D intensity especially that which is performed within the private sector, is correlated with productivity growth as well as with other measures of commercialization of innovation. According to the OECD, a one percentage point increase in business R&D as a proportion of GDP leads to a 12 per cent increase in income per person in the long run.[39]According to Brzustowski (2006), "[p]rosperity

requires wealth creation, and wealth creation is the business of business. Wealth is created where value is added. The more value is added, the more wealth is created. In the knowledge–based economy, value is added when knowledge is embedded in new or improved products (goods or services), and that is done through R&D."[40]

In contrast, higher education R&D can present a commercialization challenge for innovation, as it is one step away from the private sector. Moreover, the ability of Canadian universities to commercialize remains very weak, as research suggests that U.S. universities perform about 14 times as much research as Canadian universities, but receive 49 times as much licensing income[41] – a key indicator of the value of innovations. It is therefore critical that universities and the private sector work together to more effectively commercialize the research being done on campuses. A good deal of the onus rests on the private sector as universities often complain that the private sector receptor capacity for the R&D is weak.

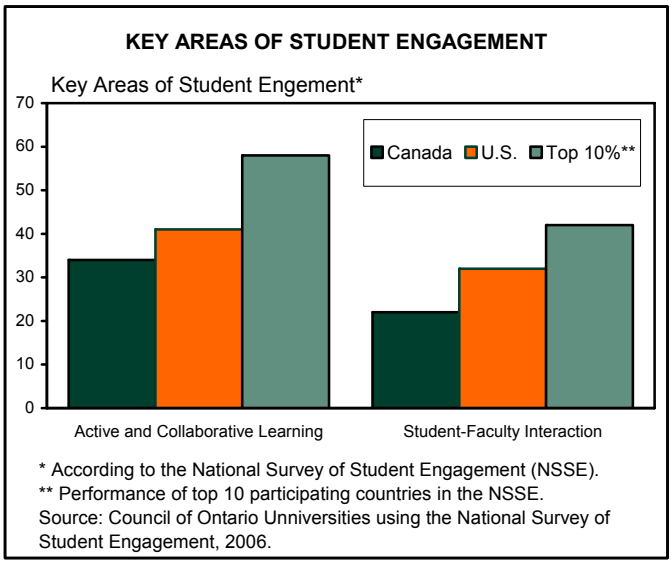
PSE MUST DELIVER WITH QUALITY AND EFFICIENCY

In an Era of Restrained Budgets, the PSE Sector Will Be Increasingly Pressed to Demonstrate Quality and Efficiency

In addition to increasing access, institutions will be hard pressed to raise the quality of teaching in the coming decades. The quality of teaching in PSE institutions will, in effect, be a key determinant of our productivity growth. Moreover, the necessity to increase quality is heightened by the fact that emerging economies are rapidly expanding the access to and the quality of their PSE institutions. Raising the quality of our PSE system in the context of fiscal restraints will imply that greater efficiencies will need to be achieved.

We must be cognizant of the fact that improvements to the quality of the PSE learning experience will likely not be cost neutral even if we were to achieve greater efficiencies in the system. According to the National Survey of Student Engagement (NSSE), investments in academic support create an engaging, interactive and research–enriched learning environment for students, which enhance the quality of students' learning experience. A survey conducted in 2006 revealed the existence of a strong correlation between students' engagement in academic programs and the personal development as well as the development of highly valued skills within the labour force, such as: problem solving, critical thinking, communication, skills, teamwork and leadership skills.

Certain PSE programs have been found to have fairly



high failure rates. Although this may be related to insufficiently rigourous entrance requirements, it may reflect upon the less than desired level of quality of certain programs, which would adversely affect student engagement. PSE institutions may often not have adequate financial resources to provide such support. The resulting high dropout rates remain, however, a large cost to the individuals' well–being throughout life and society's returns from investments in education.

The 2009 NSSE annual results revealed that despite the fact that engagement in learning and collaborative learning by first–year students enrolled in large public research universities have improved steadily and significantly in recent years, their score remained lower than less research–intensive universities. In this respect, the results of the 2008 NSSE for Ontario demonstrate that this province's research–intensive institutions consistently ranked below their smaller, less research–intensive counterparts on a variety of measures of students' engagement in academic programs. These institutions consequently fared worse relative to the American or the smaller Ontario universities. Clark et al. (2009) argue that it is an expensive model to educate undergraduate students in research–intensive universities given the fact that professors do not allocate much time to teaching. It is not obvious that this must be the case or the issue. Indeed, it would seem relatively inexpensive to cram large numbers of students into auditoriums to be taught by part–time teachers or graduate students. The quality of the education experience is, however, definitely an issue. Research–intensive universities consequently make greater use of part–time and temporary faculty members, and larger classes relative to the less research–intensive universities, thereby deteriorat-

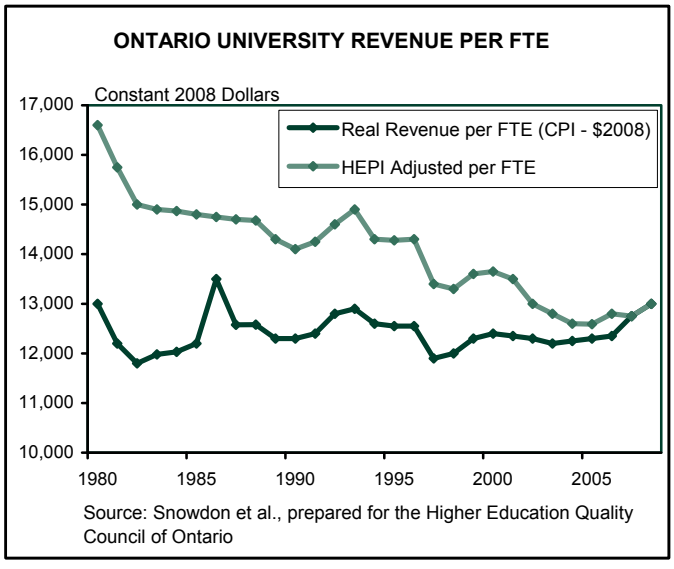
ing the quality of the learning experience as suggested by the NSSE's results. In turn, Canadian universities that have scored highest on the key NSSE benchmarks are the smaller, less research–intensive ones.

Clark et al. (2009) propose that instead of having every university aspire to become more research–intensive, there could be greater product differentiation between research–intensive and teaching–intensive universities. Some institutions would hence become specialized in undergraduate teaching, with full–time well–qualified professors, and others would become more specialized in research and graduate studies. In addition, some more "technical" universities could potentially be created through this process which would be similar in nature to the technical universities found in the U.S. Such institutions would facilitate the transfer of credits from colleges to universities. We find these ideas well worthy of careful consideration across Canada. We believe, however, that these "technical" universities (or "polytechnics") could be considered by many students as an educational destination rather than a transitional institution on the route to a university institution.

According to Christopher Knapper, "there is increasing empirical evidence from a variety of international settings that prevailing teaching practices in higher education do not encourage the sort of learning that contemporary society demands". Biggs (1999), Kember (1997), Prosser and Trigwell (1999) and Weimer (2002) have offered some suggestions of the types of change that are specifically required. According to their studies, it is strongly believed that teaching methods should initiate "deep learning" through student activity and task performance, rather than the mere acquisition of facts. Task performance should in turn encourage the integration of information and skills from various fields. It is also believed that personal interaction between students and teachers should become more meaningful and that there should be greater emphasis on collaborative team learning. Greater attention should be placed on the planning of curricula that should be based on realistic student–learning outcomes, rather than disciplinary traditions and faculty preferences. Such curricula would allow the transfer of knowledge and skills, both generic and discipline–based, which will be pertinent throughout individuals' lives and careers. Finally, learning outcomes could be improved if there were perhaps more authentic methods of assessment that stress task performance in naturalistic situations with some degree of peer self–assessment.

Earlier we noted that real per FTE university funding had been restored by 2006 to its level of the early 1990s, although it was still down 15.9 per cent relative to 1980. In reality, however, costs pertaining to the services being offered by PSE institutions have risen at above CPI levels given the amount of capital and human resources restraints facing these institutions. In a study commissioned by the Higher Education Quality Council of Ontario (HEQCO), Snowdon et al. (2009) developed an inflation measure of PSE funding that is specific to the province of Ontario, referred to as the Higher Education Price Index (HEPI). According to their estimates, the Ontario–based HEPI rose at an average annual rate of 4.5 per cent per year over the last three decades or a full percentage point above the Ontario–based CPI, which rose at an annual rate of 3.5 per cent per year over the same period. The application of the Ontario–based CPI to student funding suggests a close to 7 per cent decline in real per student funding in 2008 relative to 1980. In contrast, the application of the Ontario–based HEPI suggests a real per student funding decrease of 27 per cent in 2008 relative to 1980.

In response to restrained real funding, part–time and temporary faculty members have replaced a significant portion of full–time faculty members in a teaching capacity. And, as noted in the section on innovation, full–time professors have been drawn from teaching towards research. Clark et al. (2009) report that part–time and temporary faculty members now do the majority of the teaching in the largest undergraduate faculties in Ontario. This has been accompanied by a rise in the number of students per class. The authors report that at least 30 per cent of first year courses were being taught in classes with more than 100 students in 8 of Ontario's largest institutions.[42] According to Clark et al. (2009), the ratio of full–time students to full–time



INITIATIVES FUNDED BY THE TD BANK FINANCIAL GROUP TO HELP INCREASE ACCESS TO PSE

TD believes in the value of education as set out in the report, for individuals and for society. We see it as a powerful equalizer of opportunities. Hence, we support initiatives that improve access, particularly for traditionally under-represented groups. Here is a snapshot of some of the initiatives TD is currently involved in:

1) Centennial College: Helping Youth Pursue Education (HYPE)

TD Funding: $120,000/2yrs

Description:

Rooted in Mayor David Miller's Community Safety Plan, the HYPE program at Centennial College has given many young people new confidence to return to school by helping overcome the economic and social barriers that may have interfered with school attendance in the past and by providing a nurturing, inclusive environment.

Now in its sixth year, the free six-week summer training program offers experiential learning in a variety of subject areas.

This program is for youth aged 13 - 29, living in the east-end Toronto neighborhoods of Malvern, Kingston-Galloway and Scarborough Village.

2) University of Manitoba:

TD Funding: $50,000 (2009)

Description:

To fund a study that will explore ways of improving achievement among Aboriginal students in high school and university. The study will examine factors that prevent Aboriginal students from either entering or completing university. It will also consider ways to improve and develop university based programs.

Beginning in the fall of 2009, this study will measure the effectiveness of current outreach and in-house programs and identify ways to partner with other post-secondary institutions, community groups, governments, social agencies and other funders to strengthen the University's approach to Aboriginal education.

The study will also investigate successful models for engaging Aboriginal students in high school completion and post-secondary education. The final report will make recommendations for the role of the University of Manitoba with a strategic approach to improve outcomes for Aboriginal students in the secondary and post-secondary education systems.

3) Pathways to Education Canada:

TD Funding: $400,000 since 2002 with $40,000 commitment remaining

Additionally TD funds summer job placement for 2-6 Pathways students annually.

Description:

The Pathways to Education Program provides four key supports to ensure that young people will successfully complete high school, continue on to post-secondary programs and become actively engaged in their career development.

The four supports are:

1. Academic - Tutoring in five core subjects, four nights a week
2. Social - Group mentoring for grades 9 and 10, specialty and career mentoring for grades 11 and 12
3. Financial - Immediate financial support such as free bus tickets tied to attendance and a bursary for post-secondary education (up to $4,000 per student in the program)
4. Advocacy - Student-Parent Support Workers help connect teens, parents, school administration, teachers and community agencies

4) York University: York-TD Community Engagement Centre

TD Funding: $1MM over 10 yrs, 7 yrs remaining

Description:

Located in a mall at Jane-Finch, the York University - TD Community Engagement Centre has a holistic approach to working with the Jane-Finch community on multiple levels and has these focuses:

- Encourage greater depth and breadth in collaborative research partnerships between local service providers and York University by working together to encourage healthier communities and positive social change.
- Enrich the learning experience of students by providing experiential education opportunities - drawing on our community partners' expertise and allowing the community to benefit from the energy and enthusiasm of our students and faculty.
- Promote civic engagement - instilling a shared sense of social responsibility for our communities.
- Enable the reduction or elimination of perceived and actual barriers to post-secondary education: providing ready access to existing resources and learning how to make the path to university an easier one.
- Provide fertile ground for building on our existing partnerships and facilitating new community-university collaborations with all our stakeholders.

5) Ryerson University (new - to be announced May 17, 2010): Road to Ryerson

TD Funding: $200,000 (part of a $500,000 gift, the second component will involve a diversity project)

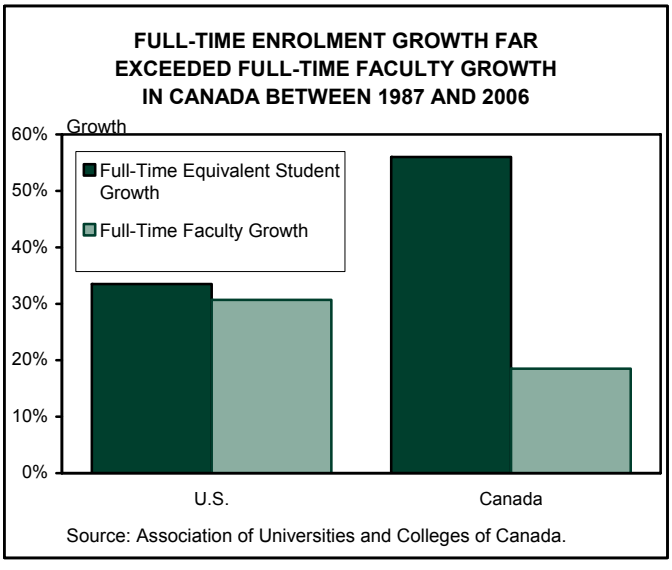
Description:

Road to Ryerson gives high school students who "just missed" getting into Ryerson a second chance. Working in partnership with Pathways to Education and the Toronto District School Board, Ryerson student mentors and tutors work with high school students to fulfill their academic requirements so they can meet the university's admission standards and enroll.

faculty member has risen from 17:1 to 25:1 between 1987 and 2007. Moreover, the results of their study suggest that Ontario's colleges are also shifting to part–time and temporary teachers and to an increased number of students per class. The ratio of full–time college equivalent per full–time academic staff has consequently risen from 14.4:1 to 27.5 between 1987–88 to 2007–08. Moreover, it is found that Canada's investments in university faculty are much weaker compared to our U.S. counterparts. According to data produced by the AUCC, full–time faculty growth has closely followed full–time student enrolment growth in the U.S., whereas full–time student enrolment has tripled relative to full–time faculty growth in Canada between 1987 and 2006.

Moving forward, inflationary pressures on PSE funding will likely continue to rise in excess of the CPI. If the quality of the learning experience is to be maintained, operating revenues per FTE student will need to rise at a significant pace to offset the rising costs of PSE.

With heightened attention to efficiency and quality in the PSE system, there will be a need for good data and analysis. A lot can be said for the notion that one cannot improve



what one does not measure. Unfortunately, Canada's already shaky PSE data are vulnerable to funding cutbacks and two sources of the country's analysis of education issues have seen their government funding end. In its final report entitled *Working Together to Build a Better Labour Market Infor-*

mation System for Canada, the Advisory Panel on Labour Market Information concluded that "Statistics Canada's funding should be core funding that is sufficient to finance the production and dissemination of the existing range of labour market data and not provided on a year–to–year basis as is currently done by HRSDC for many of the surveys that supply the required data." With respect to education data, the Panel concluded that this has "resulted in Canada being unable to report on 73 per cent of the data points in the recently released OECD *Education at a Glance* report. This result is starkly at odds with the aspirations of a knowledge–based economy and society."[43] Moreover, the compilation of raw data can only bring one so far in the analysis of learning outcomes. Data need to be effectively analyzed and communicated to individuals, institutions and public policymakers such that educational outcomes are improved. As presented earlier in our report, there are great challenges to the lack of financial and educational literacy which affect individuals' decision to participate in PSE which need to be overcome. We should, therefore, be concerned about the termination of the funding agreement of the federal government with institutions such as the Canada Millennium Scholarship Foundation and the Canadian Council on Learning as this may weaken the already unsatisfactory flow of evidence–based information. In turn, this could adversely impact Canadians' decisions about learning through all stages of life, from early childhood through to the senior years.

INFORMATION SET ON PSE IS DETERIORATING

- Threatened educational surveys include: National Graduate Survey, Programme for International Student Assessment (PISA), Youth in Transition Survey (YITS), Access and Support to Education and Training Survey (ASETS), Postsecondary Student Information System (PSIS), Registered Apprenticeship Information System (RAIS), National Apprenticeship Survey (NAS), and Survey of Earned Doctorates (SED) and Programme for the International Assessment of Adult Competencies (PIAAC). Cost of retaining these surveys: $15 million per annum.
- Role of the Canada Millennium Scholarship Foundation in the analysis of educational outcomes:
  - Millennium Research Program launched in 2001 assisted the Foundation in its mandate to improve access to PSE by:
    - Conducting studies of barriers to PSE;
    - Assessing the impact of policies and programs designed to alleviate them; and
    - Ensuring that policy-making and public discussion in regards to higher education in Canada are based on a rigorous analysis and empirical evidence.
- Role of the Canadian Council on Learning (CCL) in the analysis of educational outcomes:
  - Increase the most current information about effective approaches to learning for learners, educators, employers and policymakers.
  - Analyze three key areas of focus which consisted in: 1) research and knowledge mobilization; 2) monitoring and reporting on progress in learning; and 3) exchange of knowledge about effective learning practices among learning stakeholders.
  - Report main findings and recommendations for the way forward in all phases of adult learning through publications.

CONCLUSION

Some more hard thinking is required if PSE is to deliver on the great expectations. In many respects, PSE has moved in the right direction. Some key elements have improved since we expressed deep concern in 2004 with *Time to Wise Up on Post–Secondary Education in Canada*. But the bar just keeps being raised. And, it is not clear that well thought out plans are in place to leap over it. Provincial governments will need to find the resources to educate a rising share of the Canadian population. Increased funding will need to be initiated jointly with policies to draw more students from under–represented groups to PSE. To this end, vast strides in financial literacy will need to be achieved for the Canadian population in general, but more importantly for under–represented groups of society. PSE institutions will need to be more greatly involved in high schools to inform parents and teachers of the many opportunities and requirements of attending their institutions. Initiatives such as the Pathways to Education Program and Youth Fusion should continue to be implemented so that at risk students are provided with the intellectual and emotional support they require beyond normal school hours. Access to PSE for under–represented groups of individuals can effectively be improved if the financial assistance provided is targeted towards those in greatest need. Parents will also need to pre–save for their childrens' PSE aspirations and view this as being ingrained in their budgetary allocations as much as saving towards their retirement. Colleges will play a key role in drawing in under–represented groups of individuals and serve, in many

instances, as a point of entry to PSE for these individuals. In order to rise to the challenge of having an increasingly educated workforce, greater collaboration will be required between colleges and universities on respective roles and conditions for credit recognition.

Over the coming years, PSE institutions will increasingly be viewed as being an integral part of building a culture of lifelong learning amongst the working–age population. The classrooms of tomorrow will no longer be encompassing students from the lower age cohorts, but rather a rising share of individuals who have transitioned into the labour force. Until we are able to address the difficulties in raising the Canadian business sector's capacity to innovate, PSE institutions will need to disproportionately contribute towards research and innovation. In order to raise these institutions' ability to commercialize their innovation, greater partnerships with the business sector will need to be created. The funding of research should be achieved through a budgetary mechanism which does not unduly draw financial resources from teaching. Greater effort will be required by PSE institutions to raise the quality of their teaching methods and curricula. Within the context of constrained overall budgets, this will imply that greater efficiencies will need to be achieved in the PSE system. Greater efficiencies, however, should not compromise on quality. Recent trends towards larger classrooms and more part–time teachers might have led to more efficient financial outcomes, but they have also led to a deterioration of the learning experience. Clark et al. (2009) have provided much food for thought on the need for greater diversity in the educational and research structure of PSE institutions. They have suggested in particular that some universities should specialize in high quality undergraduate degrees such that resources are not diverted from teaching to research purposes. They have also suggested that colleges could also specialize. Finally, they have advanced that "technical" universities could help bridge from colleges to universities.

These suggestions are all well worthy of consideration. We recognize that PSE is a strength for Canada's economy and its sociological profile. However, it could, and indeed must, be an even greater asset to advance the wealth of our nation in the future.

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