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CENTRE FOR THE STUDY OF LIVING STANDARDS

INVESTING IN ABORIGINAL EDUCATION IN CANADA: AN ECONOMIC PERSPECTIVE

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Investing in Aboriginal Education in Canada: An Economic Perspective

Abstract

The objective of this paper is to summarize the research done by the Centre for the Study of Living Standards (CSLS) on the economic impacts of improving levels of Aboriginal education. Improving the social and economic well-being of the Aboriginal population is not only a moral imperative; it is a sound investment that will pay substantial dividends in the coming decades. In particular, Canada's Aboriginal population could play a key role in mitigating the looming long-term labour shortage caused by Canada's aging population and low birth rate. We estimate that complete closure of both the education and the labour market outcomes gaps by 2026 would lead to cumulative benefits of $400.5 billion (2006 dollars) in additional output and $115 billion in avoided government expenditures over the 2001-2026 period.

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Investing in Aboriginal Education in Canada: An Economic Perspective

Executive Summary

The objective of this paper is to summarize the research done by the Centre for the Study of Living Standards (CSLS) on the economic impacts of improving levels of Aboriginal education.

The Importance of Educational Attainment

The strong positive relationship between education and earnings is one of the most well-established relationships in social science. A large number of recent studies based on natural experiments have analyzed the relationship using data on sources of variation in education such as those arising from compulsory schooling laws. These studies provide strong evidence that policy interventions that raised the educational attainment of certain groups many years ago had significant beneficial effects on the subsequent lifetime earnings of these individuals. Two principal findings follow from this body of research:

- Rates of return to investments in education are high – and possibly higher than has generally been believed on the basis of previous studies of the impact of education on earnings.

- The payoff to incremental investments in education may exceed the average return in the population. This general finding is consistent with the view that these individuals stopped their schooling because they faced above-average costs of additional education rather than below-average expected returns.

In addition to education having a direct effect on earnings, the literature also finds that education is associated with social benefits such as economic growth, knowledge spillovers, non-market external benefits such as reduced criminal activity, and improved health.

In Canada, educational attainment has a strong positive effect on the labour market outcomes of individuals. Persons with more education tend to experience lower unemployment, participate at a higher rate in the labour force, enjoy higher employment rates and have higher incomes.

The Importance of the Aboriginal Population for Canada

The importance of the Aboriginal population for Canada and the Canadian economy is best exemplified by these few key observations:

- In 2006, the Aboriginal identity population made up 4.0 percent of the Canadian population, with 1,311,200 persons.
- The Aboriginal population is much younger than the Canadian population average, with a median age in 2006 of only 26.5 years, compared to 39.5 years for all Canadians.
- Aboriginal Canadians aged 15 and over have a much lower educational attainment than their non-Aboriginal counterparts, with 43.7 percent not holding any certificate, diploma or degree in 2006, compared to 23.1 percent for other Canadians.
- As a result, the labour market outcomes for Aboriginal Canadians are significantly inferior to the Canadian average. In 2006, Aboriginal Canadians had lower incomes, a higher unemployment rate, a lower participation rate, and a lower employment rate.
- Aboriginal people with a high school diploma or higher had significantly better labour market outcomes, both in absolute terms and relative to non-Aboriginal Canadians, than those who did not have a high school diploma.
- In 2026, using the medium growth projection for the Aboriginal and general populations, the Aboriginal population is projected to make up 4.6 percent of the Canadian population.
- If the Aboriginal population's employment and participation rates reach 2006 non-Aboriginal levels by 2026, it is projected that the Aboriginal population will account for 19.9 percent of labour force growth and 22.1 percent of employment growth between 2006 and 2026.

Improving the social and economic well-being of the Aboriginal population is not only a moral imperative; it is a sound investment that will pay substantial dividends in the coming decades. In particular, Canada's Aboriginal population could play a key role in mitigating the looming long-term labour shortage caused by Canada's aging population and low birth rate. This is true not only because of their relatively young population and higher population growth rate, but also because their participation and employment rates currently lag far behind the Canadian average. If Aboriginal participation and employment rates reach 2006 non-Aboriginal levels by 2026, it is projected that the Aboriginal population will account for 19.9 percent of labour force growth and 22.1 percent of employment growth over the 2006–2026 period.

Key conclusions on the importance of Aboriginals for the Canadian economy are:

- First, regardless of changes to its participation and employment rates, the Aboriginal population will have a disproportionately large contribution to both the Canadian labour force and to total Canadian employment. Assuming constant age-specific participation and employment rates, this report projects that the Aboriginal population labour force will grow by 187,196 persons (13.0 percent of total labour force growth) and total Aboriginal employment will grow by 155,857 (11.3 percent of total employment growth).

- Second, increasing levels of Aboriginal participation and employment would have a dramatic effect on labour force and employment growth. Should these levels reach 2006 non-Aboriginal levels by 2026, Aboriginal labour force and employment will grow by an additional 130,000 and 200,000 persons, respectively. This is equivalent to a 1 percent increase in total Canadian employment.
- Finally, Aboriginal labour force and employment growth is most important for Western Canada – especially for Manitoba and Saskatchewan. Two-thirds of the growth will occur in Western Canada.

Estimating the Economic Contribution of Aboriginal People

The potential contribution of the Aboriginal population is examined under different scenarios, based on various assumptions about the future path of the educational level, employment rates and employment incomes of Aboriginal Canadians. Key results are as follows:

- Under the best-case scenario, complete closing of both education and labour market outcomes gaps by 2026 leads to a $36.5 billion increase in GDP in 2026 and an increase in productivity growth of 0.033 percentage points.
- The cumulative benefits over the 2001-2026 period are estimated at $400.5 billion (2006 dollars), of which $179.3 billion can be directly attributed to an increase in educational attainment for Aboriginal Canadians.
- In 2026, the effect of improved Aboriginal social and economic well-being on government balance sheets is estimated at $11.9 billion (in 2006 dollars). The cumulative effect on government balance sheets is estimated at roughly $115 billion for the 2006–2026 period.

Conclusion

A few specific results and recommendations can be taken from this report:

- Education is by far the most important determinant of labour market outcomes and also plays a pre-eminent role in improving social outcomes.
- Given the demographic structure of the Aboriginal and non-Aboriginal populations, Aboriginal people will undoubtedly play a significant role in shaping the economic future of Canada, and, in particular, that of the Western provinces.
- As a result, if businesses are to thrive in the environment of limited labour supply that is currently developing in Canada, the integration of Aboriginal people into the labour force will have to be accelerated. If these individuals do not possess the necessary skills, businesses will suffer.
- In addition, the long-term fiscal impact of better education and better social outcomes for the Aboriginal population is massive. If governments want to deal with looming

fiscal issues, they should address the pressing needs of the Aboriginal population, as this group may be part of the solution.

- Finally, the analysis in this paper ignores the dynamic effect that increased education can have on the leadership capacity of the Aboriginal community and therefore may underestimate the contribution of improved education for Aboriginal Canadians to future output and productivity growth. Better-educated Aboriginal Canadians will be more effective leaders and thereby provide better direction for the economic development of Aboriginal communities.

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Investing in Aboriginal Education in Canada: An Economic Perspective[1]

I. Introduction

The objective of this paper is to summarize the research done by the Centre for the Study of Living Standards (CSLS) on the economic impacts of improving levels of Aboriginal education. The first section provides a brief review of available evidence concerning the importance of education for economic development. The second section contextualizes CSLS research (Sharpe *et al*, 2007 and 2009), focusing on the importance of Aboriginal Canadians for the economy in the years to come. The third section describes the methodology used and the key results obtained from the CSLS research on estimating the impact of closing the education gap on the Canadian economy and governments' spending and revenues.

II. The Importance of Educational Attainment

This section investigates the links between educational attainment and economic and social indicators. It first reviews the literature on the effects of education on earnings and non-market outcomes. It then discusses the relationship between educational attainment and labour market outcomes in Canada, including the unemployment rate, the labour force participation rate and the employment rate. Finally, it looks at the relationship between education, income and productivity in Canada.

A. Review of the Literature: The Measured Effects of Education[2]

The strong positive relationship between education and earnings is one of the most well-established relationships in social science. Many social scientists have, however, been reluctant to interpret this correlation as evidence that education exerts a causal effect on earnings. According to human capital theory, schooling raises earnings because it enhances workers' skills, thus making employees more productive and more valuable to employers. However, the positive relationship between earnings and schooling could arise because both education and earnings are correlated with unobserved factors such as ability, perseverance and ambition (hereafter simply referred to as "ability"). More generally, those with greater ability or motivation may be more likely to be successful, even in the absence of additional education. That is, the correlation that exists between earnings and education, after controlling for other observed influences on earnings, may reflect the contribution of unobserved influences rather than a causal impact of education on earnings (Riddell, 2006: 10).

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[1] This report was prepared for Canadian Policy Research Networks (CPRN) and published in December 2009. It is available at http://www.cprn.com/doc.cfm?doc=2087&l=en.

[2] This section is taken from a paper written for the CPRN for its workshop "An Integrated Approach to Human Capital Development" (Riddell, 2006: 10, 12, 14, 18 and 35).

This issue is of fundamental importance not only for the question of how we should interpret the positive relationship between earnings and schooling, but also for the emphasis that should be placed on education in public policies (Riddell, 2006: 10). To solve this issue, many recent studies have used natural experiments in which some policy change or other event causes changes in educational attainment among some individuals, and does so in a manner that is external to (or independent of) the decisions of the affected individuals. An example of such an external (or exogenous) event – one that has been extensively used in empirical studies – consists of changes in compulsory schooling and child labour laws (Riddell, 2006: 12).

A large number of studies based on natural experiments have recently been carried out, using data on sources of variation in education such as those arising from compulsory schooling laws. These studies provide strong evidence that policy interventions that raised the educational attainment of certain groups many years ago had significant beneficial effects on the subsequent lifetime earnings of these individuals (Riddell, 2006: 14).

Two principal conclusions follow from this body of research. First, rates of return to investments in education are high – and possibly higher than has generally been believed on the basis of previous studies of the impact of education on earnings. Second, the payoff to incremental investments in education may exceed the average return in the population. In the past, interventions that raised educational attainment among groups with relatively low levels of schooling did not show evidence of diminishing returns to education because they required society to "reach lower into the ability barrel." This general finding is consistent with the view that these individuals stopped their schooling because they faced above-average costs of additional education rather than below-average expected returns. As a consequence, policy interventions that result in additional schooling being acquired by individuals from disadvantaged backgrounds, or those who face other barriers to acquiring human capital, may yield a substantial return in the form of enhanced earnings, in addition to contributing to equity objectives (Riddell, 2006: 18).

In addition to education having a direct effect on earnings, numerous non-market and social consequences of education have been identified and documented in the literature. A survey of the evidence found in the literature leads to several conclusions. Education provides the following social returns: dynamic externalities associated with economic growth; static knowledge spillovers; non-market external benefits such as reduced criminal activity; and social benefits associated with taxation (Riddell, 2006: 35). It also provides additional personal returns in the form of improved individual health. Finally, an important benefit, albeit one that is hard to measure, is the intergenerational effects – such as those on child development, health and education – which are associated with the educational attainment of the parents. These long-lasting benefits may be sizeable and should not be ignored when discussing the effects of education on societal outcomes.

B. Educational Attainment and Labour Market Outcomes in Canada

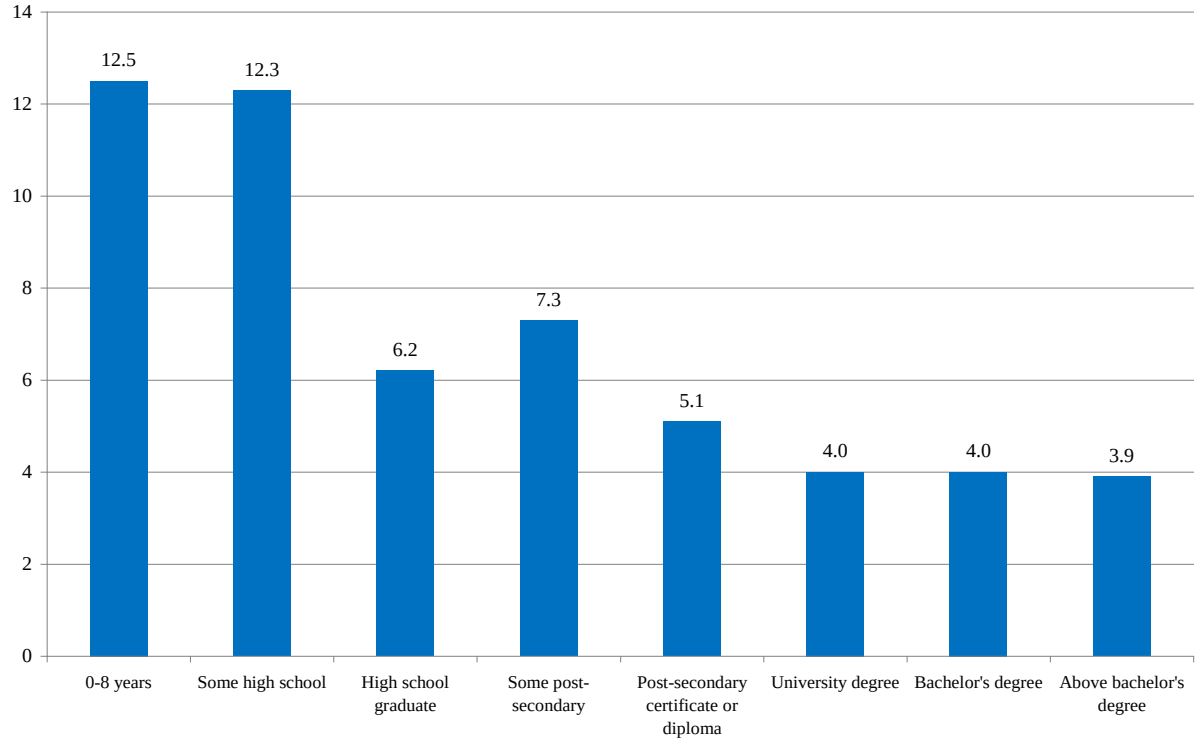
Educational attainment has a strong positive effect on the labour market outcomes of individuals. Persons with more education tend to experience lower unemployment, participate at a higher rate in the labour force, enjoy higher employment rates and have higher incomes. This sub-section provides an analysis of these four major labour market indicators according to educational attainment, based on data from the Labour Force Survey and the Census.

i. Unemployment Rates

Persons with more education run a much lower risk of being unemployed (Chart 1). In 2006, the overall rate of unemployment in Canada was 6.3 percent but only 4.0 percent for persons holding a bachelor's degree. The rate was slightly lower for those holding a degree above the bachelor level (3.9 percent). Persons with a post-secondary certificate or diploma also had a significant labour force advantage, with an unemployment rate of only 5.1 percent for this group. There seems to be no advantage in starting post-secondary education but not completing it: the unemployment rate for persons with some post-secondary education without certificate was 7.3 percent, above that for persons with only high school education (6.2 percent).

The greatest gains in terms of employment opportunities from increased education are for persons with a low initial level of education. High school graduation, especially,

Chart 1. Unemployment Rate in Canada, by Highest Level of Educational Attainment, 2006



Source: Labour Force Survey.

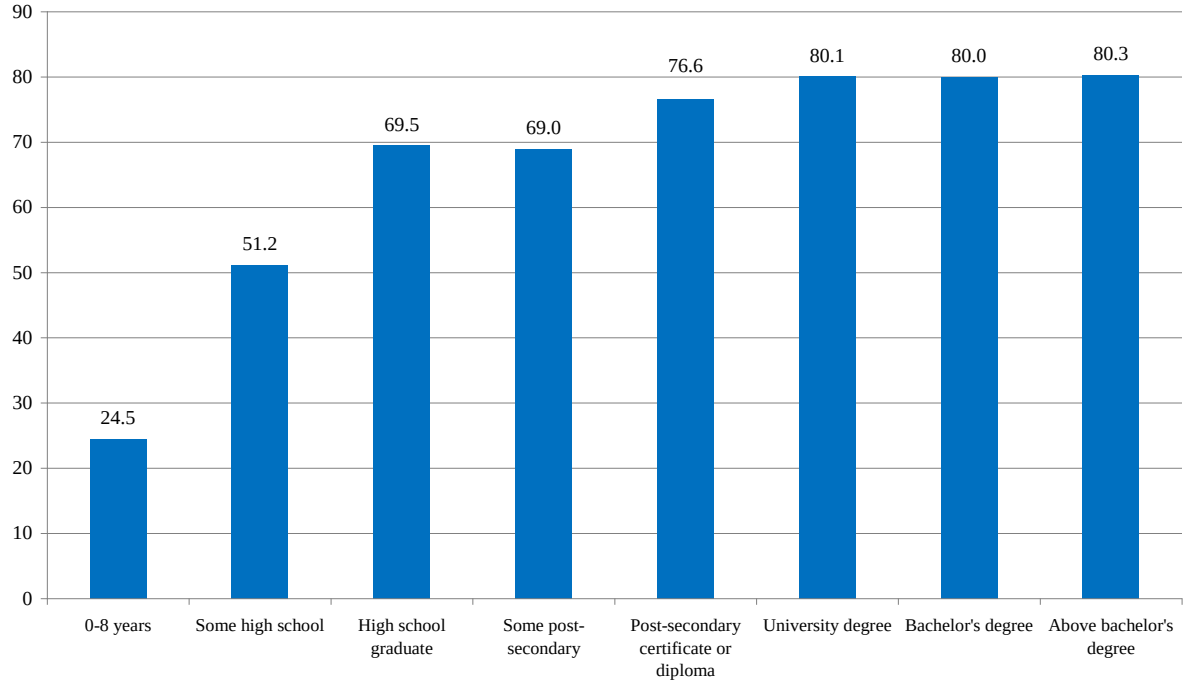
leads to a large decrease in unemployment, as is shown by the clear cut-off between high school graduates and those without certification. In 2006, the unemployment rate for Canadians who did not finish high school was 12.3 percent, compared to only 5.3 percent for those who did graduate.

The idea that the probability of being unemployed decreases as literacy increases is well supported by the literature (Holzer et al., 2007). As noted by Lynch (2007), in the United States, individuals with low levels of prose literacy have double the rate of unemployment of those with high levels. These finding are in line with the data on educational attainment presented here.

ii. Participation Rates

Participation rates are also an important indicator of labour market performance. Those who are in the labour force are either employed or are looking for a job. Only 24.5 percent of persons with no high school experience participated in the labour force in 2006 in Canada, whereas 51.2 percent of those with some high school did (Chart 2). High school graduation still holds a significant advantage: 69.5 percent of persons whose highest level of education attainment was high school graduation participated in the labour force. The participation rate for persons with a post-secondary certificate was 76.6 percent, well above that of persons with only high school certification. But for persons not completing their post-secondary education, the participation rate was only 69.0

Chart 2. Participation Rate in Canada, by Highest Level of Educational Attainment, 2006



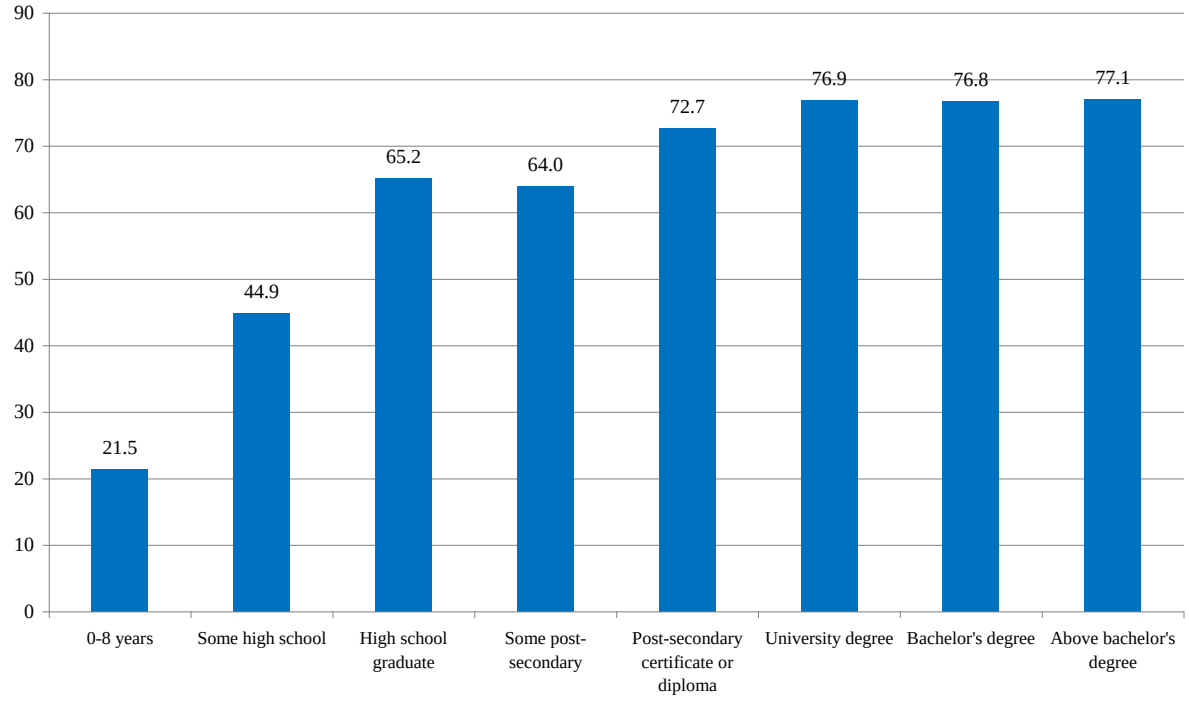
Source: Labour Force Survey.

percent. Not surprisingly, persons who completed university education enjoyed a higher participation rate (80.1 percent). The proportion was almost identical for holders of bachelor's degree (80.0 percent) and advanced degrees (80.3 percent). As was the case for unemployment, the big divide is between those who did not finish high school and those who did. There was a 32.9 percentage point gap between the participation rates of the two groups.

iii. Employment Rates

The employment rate is a function of both the participation and unemployment rates. As a result, it is no surprise that the employment rate is significantly higher for people who completed some high school compared to those who never went to high school, and is even higher for high school graduates (Chart 3). Persons with 0–8 years of education had a 21.5 percent employment rate. This rate rose to 44.9 percent for persons with some high school and to 65.2 percent for persons whose highest level of educational attainment is high school graduation. Obtaining a post-secondary certificate certainly does hold advantages: 72.7 percent of working-age individuals with post-secondary education were employed in 2006. Persons with university degrees were employed at a 76.9 percent rate. The employment rate is virtually identical for those with a bachelor's degree (76.8 percent) and those with above bachelor's degree (77.1 percent). As was the case for unemployment and the labour force participation, there was a large employment rate gap between Canadians who did not finish high school and those who did: 34.1 percentage points.

Chart 3. Employment Rate in Canada, by Highest Level of Educational Attainment, 2006



Source: Labour Force Survey.

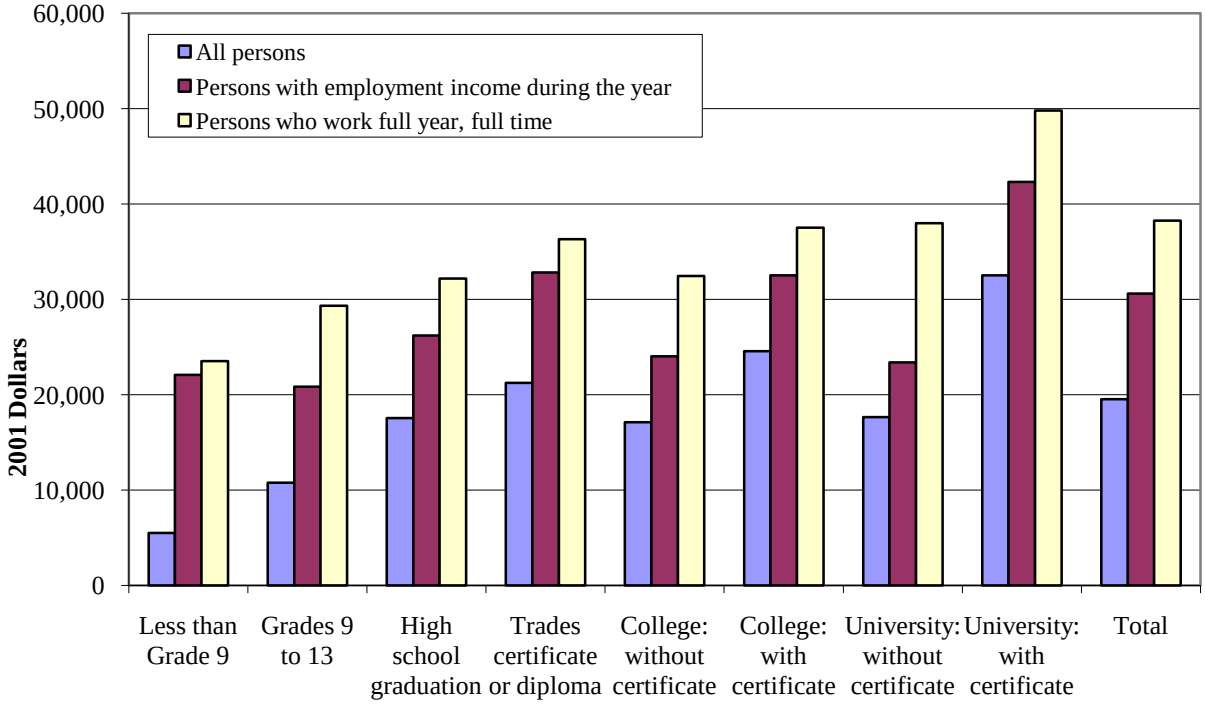
iv. Income and Productivity

The strong correlation between labour compensation and educational attainment at a point in time is evidence of the importance of education for individual and societal well-being. This part of the report will first examine the relationship between education and income using Census data. Then, it will briefly highlight some of the vast literature measuring the extent of the relationship between literacy levels and worker compensation.

Overall, average employment income for all persons aged 15 and over in Canada was $19,550 in 2001. Among persons with employment income, the average was $30,616 and among those who worked full time, full year, the average was $38,274 (Chart 4). High school graduation provided a considerable advantage for all groups. On average, Canadians whose highest level of educational attainment was high school graduation earned $17,557 a year, almost $7,000 higher than those who went to high school but did not graduate. The average for persons whose highest level of educational attainment was high school graduation and who received employment income, the average income was $26,220 while those who worked full time, full year earned, on average, $32,204.

Graduating from college clearly holds an advantage: college graduates in 2001 earned on average $24,569 ($32,539 for those with employment income and $37,520 for those who work full time the whole year). University graduates earned even more than

Chart 4. Average Employment Income for Persons 15 Years Old and Over, by Educational Attainment and Employment Status, Canada, 2001



Source: Census 2001

college graduates, $32,538 on average, or $42,343 for those with employment income and $49,825 for those who work full time, full year. Among those who graduated from university, higher degrees typically translated into larger incomes.

C. Education Versus Other Drivers of Productivity Growth

The growth accounting system provides a useful analytical framework for assessing the contribution of different drivers to productivity growth. It allows the decomposition of output growth, or gross domestic product (GDP), into the portion that comes from increases in labour input (hours worked or improved labour composition, including education) and capital input and a residual, multifactor productivity (MFP). This latter factor captures changes in output that are not directly related to the increased use of inputs, that is labour and capital.

The growth accounting framework is based on the extensive literature identifying human capital, physical capital and technological progress as the three fundamental determinants of economic growth. In Canada, the framework used in the MFP program decomposes productivity growth into four distinct components.

One of the components refers to human capital, or labour inputs:

1. Output growth related to changes in the average skills composition (or quality) of hours worked (QL).

Two of the components refer to physical capital, or capital inputs:

2. Output growth related to changes in the amount of capital per hour worked, or capital intensity (KI).
3. Output growth related to changes in the average composition (or quality) of capital (QK).

The final component is a residual component and is often interpreted as a proxy of technological progress:

4. Residual output growth, also called multifactor productivity growth (MFP).

Summary Table 1 summarizes the contributions of these four potential drivers to productivity growth in Canada over the 1997–2007 period. The contribution of labour composition, which embodies improvements in education and experience, explained 0.3 percentage points, or about 17.5 percent of labour productivity growth in the market sector over the period. The rest of labour productivity growth was accounted for by increases in the capital stock (0.68 percentage points or 39.9 percent), improvement in the quality of the capital stock (0.28 percentage points or 16.2 percent), and increases in total factor productivity (0.44 percentage points or 25.5 percent).

Summary Table 1. Sources of Growth in the Market Sector in Canada, 1997–2007

Average Annual Rate of Growth (percent)	
Output	3.61
Total Hours	1.87
Labour Composition	0.52
Capital Services	4.21
Capital Stock	2.97
Capital Composition	1.20
Capital Services Intensity	2.30
Percentage Point Contributions to Labour Productivity Growth	
Labour Productivity (Output per Hour)	1.71
Labour Composition	0.30
Capital Services Intensity	0.97
Capital Stock	0.68
Capital Composition	0.28
Total Factor Productivity	0.44
Percentage of Contributions to Labour Productivity Growth	
Labour Productivity (Output per Hour)	100.0
Labour Composition	17.5
Capital Services Intensity	56.6
Capital Stock	39.9
Capital Composition	16.2
Total Factor Productivity	25.5
Source: CSLS MFP Database, www.csls.ca/mfp.asp.	

These results, which suggest that education explains roughly 0.3 percentage points of labour productivity growth, are robust to different time periods. Baldwin and Gu (2008: 24) find that labour composition accounted for 0.5 percentage points of business sector labour productivity growth over the 1961–1980 period (or about 17 percent of labour productivity growth at 2.9 percent), 0.4 percentage points over the 1980–2000 period (or 25 percent of labour productivity growth at 1.6 percent) and 0.3 percentage points between 2000 and 2008 (or about 40 percent of labour productivity growth at 0.7 percent). Interestingly, despite a trend towards smaller absolute contributions, the relative importance of labour composition for labour productivity growth has increased over time because of the decline in the absolute rate of labour productivity growth.

III. The Importance of the Aboriginal Population for Canada

Canada's Aboriginal population is in crisis. In 2007, the National Council of Welfare (2007) concluded that "to date, no governmental response has made major inroads into the issues" faced by Aboriginal people. Improving the social and economic well-being of the Aboriginal population is not only a moral imperative; it is a sound investment that will pay substantial dividends in the coming decades. Aboriginal education must be a key component in any such effort.

The importance of the Aboriginal population for Canada and the Canadian economy is best exemplified by these few key observations:

- In 2006, the Aboriginal identity population made up 4.0 percent of the Canadian population, with 1,311,200 persons (CSLS, 2009).
- The Aboriginal population is much younger than the Canadian population average, with a median age in 2006 of only 26.5 years, compared to 39.5 years for all Canadians.
- Aboriginal Canadians aged 15 and over have a much lower educational attainment than their non-Aboriginal counterparts, with 43.7 percent not holding any certificate, diploma or degree in 2006, compared to 23.1 percent for other Canadians.
- As a result, the labour market outcomes for Aboriginal Canadians are significantly inferior to the Canadian average. In 2006, Aboriginal Canadians had lower incomes, a higher unemployment rate, a lower participation rate, and a lower employment rate.
- Aboriginal people with a high school diploma or higher had significantly better labour market outcomes, both in absolute terms and relative to non-Aboriginal Canadians, than those who did not have a high school diploma.
- In 2026, using the medium growth projection for the Aboriginal and general populations, the Aboriginal population is projected to make up 4.6 percent of the Canadian population.
- If the Aboriginal population's employment and participation rates reach 2006 non-Aboriginal levels by 2026, it is projected that the Aboriginal population will account for 19.9 percent of labour force growth and 22.1 percent of employment growth between 2006 and 2026.

As made obvious by these observations, Canada's Aboriginal population could play a key role in mitigating the looming long-term labour shortage caused by Canada's aging population and low birth rate. This section aims to provide insight into the extent of the Aboriginal population's potential contribution to Canadian labour force and employment growth from 2006 to 2026.

Although Indian and Northern Affairs Canada (INAC) expects the Aboriginal population to experience demographic trends similar to those of the general Canadian

population (declining birth rates and an aging population), the Aboriginal population will remain significantly younger and maintain its high growth rate relative to the non-Aboriginal population for at least the next 20 years (INAC and CMHC, 2007). Indeed, the Aboriginal population is expected to grow at an annual rate of 1.47 percent between 2006 and 2026 compared to the non-Aboriginal rate of 0.73 percent per year. Owing to its high growth rate and favourable age structure, the Aboriginal population is expected to account for at least 12.7 percent of labour force growth and 11.3 percent of employment growth from 2006 to 2026.

The potential contribution of the Aboriginal population to Canadian labour force and employment growth could be even larger than predicted by simple demographic forecasts, however, because their participation and employment rates currently lag far behind the Canadian average. If Aboriginal participation and employment rates reach 2006 non-Aboriginal levels by 2026, it is projected that the Aboriginal population will account for 19.9 percent of labour force growth and 22.1 percent of employment growth over the 2006–2026 period. In other words, if in 2026 Aboriginal people experience the same labour market outcomes as non-Aboriginal people did in 2006, the share of the Aboriginal population in the Canadian labour force will rise to 4.5 percent from 3.1p percent in 2006. Given that educational attainment is one of the key drivers of participation and employment rates, there are clear incentives for the Canadian government to make Aboriginal education a priority. If in fact Aboriginal education is not made a priority, the drag on Canadian productivity caused by below-average Aboriginal education will grow as the Aboriginal population's share of Canada's labour force increases over time.

A. Detailed Population Projections

CMHC and INAC's medium growth scenario of the Aboriginal populations forecasts moderate declines in fertility, increases in life expectancy for all Aboriginal groups with the exception of the Inuit and constant transfer rate of Aboriginal identity from parent to child. Statistics Canada's total population projections assume medium trends in both population growth and migration. The average age of most groups is expected to rise by roughly five years from 2006 to 2026 (Summary Table 2). In 2026, the average Aboriginal Canadian is expected to be 32.8 years of age, roughly 10 years younger than the average Canadian.

Summary Table 2. Average Age of Aboriginal and Non-Aboriginal Population

	2006	2026
Total Population	38.0	43.1
Aboriginal	28.2	32.8
North American Indian	27.7	32.4
On Reserve	27.1	31.3
Off Reserve	28.3	33.6
Métis	30.1	35.0
Inuit	24.4	27.8

Note: These figures were calculated as the weighted average of each age group from 0 to 80 years of age. Unfortunately, age groups above 80 years were unavailable, resulting in a slight underestimation.

Sources: CMHC-INAC (2007), Cansim tables 520-0004 and 510-0001.

The Aboriginal and non-Aboriginal working-age populations are expected to experience similar ageing trends between 2006 and 2026. The non-Aboriginal, on-reserve and off-reserve North American Indian, Métis and Inuit populations are all expected to experience a decline in population growth during this period. Even though the total Aboriginal population is expected to maintain a higher growth rate than the non-Aboriginal population over the 2006–2026 period, its rate of growth is expected to decrease slightly faster than that of the non-Aboriginal population.

A decomposition of the working-age population growth by age and Aboriginal identity suggest that growth trends for the Aboriginal and non-Aboriginal populations will be very similar (Summary Table 3). In both cases, the oldest age group (those aged 65 and over) is expected to grow the fastest. Furthermore, in both cases, the youngest age groups (those aged 15 to 19 and 20 to 24) are expected to experience the slowest growth for most of the time period. This reinforces the earlier finding that both populations will age significantly over the next 20 years.

This trend has important ramifications for the Canadian economy, as individuals aged 65 and over tend to have low participation and employment rates. Therefore, if age-specific participation and employment rates remained constant at 2006 levels, an aging population means that both the Aboriginal and non-Aboriginal aggregate participation rates will fall over the next 20 years (Chart 5). Under that scenario, the Aboriginal participation rate would fall from 62.4 percent to 58.0 percent, and the non-Aboriginal participation rate would decline from 66.9 percent to 60.5 percent between 2006 and 2026. Similarly, the Aboriginal employment rate would fall from 52.8 percent to 48.9 percent and the non-Aboriginal employment rate from 62.7 percent to 56.7 percent.

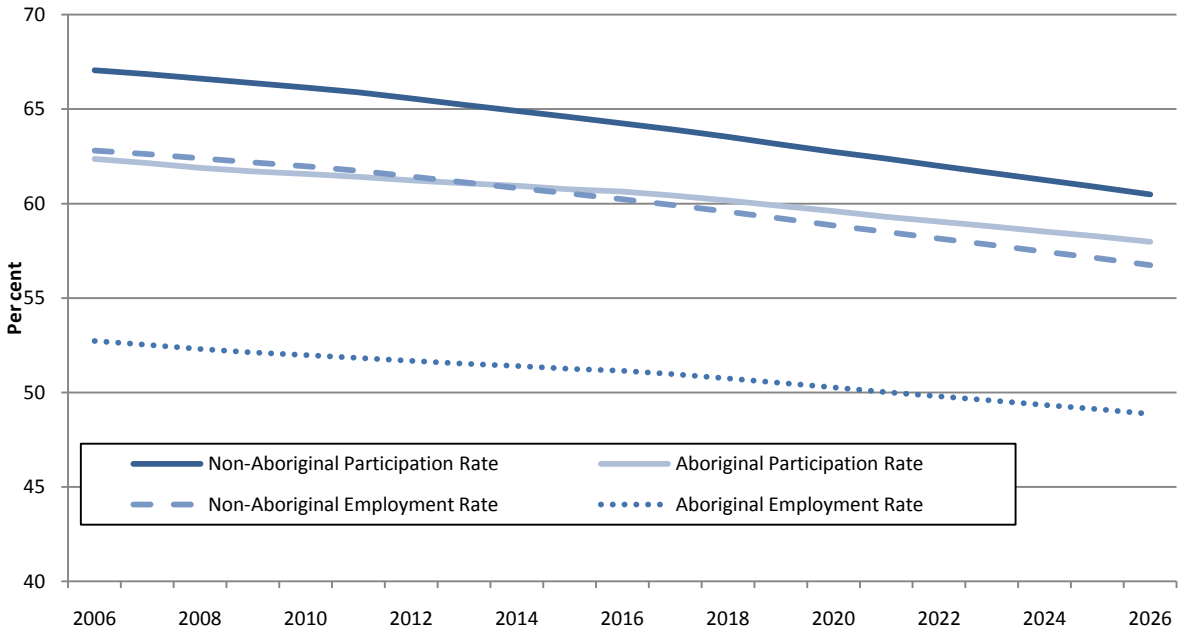
Summary Table 3. Average Annual Population Growth Rates, by Age Group and Aboriginal Identity, Working-Age Population, 2006–2026 (%)

	15+	15–19	20–24	25–34	35–44	45–54	55–64	65–74	75+
Non-Aboriginal	0.86	-0.47	-0.43	0.30	0.19	-0.09	1.52	3.45	2.76
Total Aboriginal	1.85	0.38	0.88	1.70	1.29	1.12	3.67	5.25	5.72
North American Indian	1.98	0.47	1.15	2.01	1.32	1.22	3.90	5.18	5.41
On Reserve	2.39	0.66	1.35	2.77	2.13	1.84	4.14	4.78	4.97
Off Reserve	1.59	0.26	0.96	1.32	0.58	0.71	3.70	5.57	5.88
Métis	1.43	-0.01	-0.07	0.71	1.10	0.60	2.95	5.49	6.67
Inuit	2.24	0.81	1.52	2.05	1.86	3.12	4.85	4.22	3.51

Source: CMHC-INAC (2007).

These trends underscore the potential importance of a rise in the Aboriginal labour force and employment rates for the Canadian economy. If there is no change in the Aboriginal participation and employment rates, the Aboriginal population will contribute to the overall trend towards higher dependency rates. Conversely, if Aboriginal participation and employment rates converge towards 2006 non-Aboriginal levels, dependency rates should decline and Canada's labour force growth will be stronger.

Chart 5. Participation and Employment Rate Projections, Assuming Constant 2006 Age-Specific Employment and Participation Rates (2006–2026)



Sources: INAC & CMHC (2007), Statistics Canada (2005a) and 2006 Census Custom Tabulations.

B. Labour Force Projections

i. Methodology

In this sub-section, we obtain labour force and employment projections in 2026 by applying 2006 participation and employment rates to the projected 2026 working-age population. At the national level, participation and employment rates are held constant at 2006 levels for each of eight age groups (Summary Table 3). Additionally, the Aboriginal population is divided into four categories: North-American Indians living on reserves, North American Indians living off reserves, the Métis population and the Inuit population. Projections are made for each age and identity group combination. National estimates reflect the aggregation of all these estimates, and thus capture the effects of projected changes in the composition of the Canadian population (i.e. changes in the relative size of the non-Aboriginal and Aboriginal population as well as changes in the relative size of each of the four Aboriginal sub-groups) and of its age structure.

In addition to labour force and employment projections based on constant participation and employment rates (Scenario A) that were outlined in the introductory section, this report includes projections using two other key scenarios. Scenario B assumes that half of the participation and employment rates gap in 2006 between the Aboriginal and the non-Aboriginal populations is closed by 2026. Scenario C assumes that the participation and employment rates of the Aboriginal population will reach 2006 non-Aboriginal levels by 2026.

ii. National Projections

This report estimates that the Aboriginal labour force will increase from 564,515 in 2006 to a range of 751,711 (Scenario A) to 885,283 (Scenario C) in 2026 (Summary Table 4).[3] Likewise, the total number of employed Aboriginal people is projected to increase from 477,772 to a range of 633,629 (Scenario A) to 824,978 (Scenario C).

Under all three scenarios, the Aboriginal share of labour force and employment growth far surpasses the share of the working-age population. While the Aboriginal share of working-age population growth between 2006 and 2026 is only 7.4 percent, the Aboriginal share of labour force growth over the same period is projected to be between 12.7 and 19.9 percent, and the Aboriginal share of employment growth between 11.3 and 22.1 percent.

[3] The Aboriginal employment and labour force estimates for 2006 were calculated by applying the 2006 Aboriginal employment and participation rates (from the 2006 Census) to adjusted Aboriginal population counts for each identity group. Using adjusted counts instead of unadjusted counts increases the weight of the North American Indian population, which has lower participation and employment rates than the aggregate Aboriginal population. Thus, the Aboriginal participation and employment rates found in this report are respectively 0.9 and 0.6 percentage points lower than those found in the 2006 Census tabulations based on unadjusted counts.

Summary Table 4. Potential Contribution of the Aboriginal Population to the Canadian Labour Force and Employment, 2006–2026

		2006	2026	Percentage Change 2006–2026	Absolute Change 2006–2026	Contribution to Growth (%)
Population (15+)	Aboriginal	905,387	1,296,630	43.21	391,243	7.41
	Non-Aboriginal	26,017,313	30,905,470	18.79	4,888,157	92.6
	Total Population	26,922,700	32,202,100	19.61	5,279,400	100.0
Labour Force	Aboriginal					
	Scenario A	564,515	751,711	33.16	187,196	12.69
	Scenario B	564,515	827,043	46.51	262,528	16.93
	Scenario C	564,515	885,283	56.82	320,768	19.94
	Non-Aboriginal	17,405,582	18,693,692	7.40	1,288,109	100.0
Participation Rate	Aboriginal					
	Scenario A	62.4	58.0	-7.02	-4.38	
	Scenario B	62.4	63.8	2.30	1.43	
	Scenario C	62.4	68.3	9.50	5.92	
	Non-Aboriginal	66.9	60.5	-9.59	-6.41	
Employment	Aboriginal					
	Scenario A	477,772	633,629	32.62	155,857	11.29
	Scenario B	477,772	741,536	55.21	263,764	17.72
	Scenario C	477,772	824,978	72.67	347,206	22.08
	Non-Aboriginal	16,312,855	17,537,926	7.51	1,225,071	100.0
Employment Rate	Aboriginal					
	Scenario A	52.8	48.9	-7.40	-3.90	
	Scenario B	52.8	57.2	8.38	4.42	
	Scenario C	52.8	63.6	20.57	10.85	
	Non-Aboriginal	62.7	56.7	-9.49	-5.95	

Notes: Scenario A assumes age-specific Aboriginal employment, and participation rates remain at 2006 levels in 2026.

Scenario B assumes age-specific Aboriginal employment, and participation rates reach the midpoint between 2006 Aboriginal rates and 2006 non-Aboriginal rates by 2026.

Scenario C assumes Aboriginal employment, and participation rates reach 2006 non-Aboriginal levels by 2026.

Sources: Statistics Canada (2005a), INAC-CMHC (2007), 2006 Census.

In other words, even if there is no fundamental improvement in labour market outcomes for the Aboriginal population, the demographic structure of the Aboriginal population means that they will account for a disproportionately large share of Canada's future employment and labour force growth. Yet, this situation also suggests that if actions are taken to raise their participation and employment rates, the benefits to the Canadian economy could be considerable, with the contribution of Aboriginal Canadians to labour force and employment growth almost doubling.

iii. Provincial Projections

Because of data limitations, the provincial analysis is not as thorough as the national analysis, as participation and employment rates are not separated by age and/or

Aboriginal groups.[4] Nonetheless, these provincial projections provide a good proxy of the importance of the Aboriginal population to the labour market of each province.

In Atlantic Canada, depending on the scenario, Aboriginal Canadians are projected to account for between 13.1 and 13.2 percent of labour force growth and 11.6 and 17.0 percent of employment growth (Summary Table 5). While these numbers appear very high given the relatively small number of Aboriginals living in Atlantic Canada, it is largely the result of slow non-Aboriginal labour force and employment growth caused by net outmigration and limited international immigration.

Aboriginal Canadians in Central Canada are projected to contribute modestly to labour force and employment growth in Quebec and Ontario. In Quebec, projections suggest that Aboriginal Canadians will account for between 3.7 and 4.6 percent of labour force growth and between 3.4 and 5.5 percent of employment growth between 2006 and 2026. Projections for Ontario are similar: Aboriginals are expected to account for between 2.3 and 2.6 percent of labour force growth and between 2.2 and 3.1 percent of employment growth from 2006 to 2026.

The Aboriginal population is projected to have by far the greatest impact – both in absolute terms and relative to total growth – in Western Canada. Aboriginal Canadians are projected to account for between 14.0 and 18.1 percent of labour force growth and 12.7 and 20.5 percent of employment growth in the Western provinces between 2006 and 2026 (Summary Table 5). In terms of absolute contribution, the Aboriginal labour force is projected to grow between 162,869 and 221,718 persons and employment by between 139,444 and 246,680 persons.

The importance of Aboriginal labour force and employment growth is most significant in Manitoba and Saskatchewan. In Manitoba, Aboriginal people are expected to account for approximately half of labour force and employment growth from 2006 to 2026. In Saskatchewan, because the non-Aboriginal labour force and non-Aboriginal employment is projected to decline over the period, Aboriginals are expected to account for all labour force and employment growth. In fact, because Aboriginal contribution is defined as Aboriginal growth divided by total growth, the calculated Aboriginal contribution to both employment and labour force growth is well above 100 percent in Saskatchewan.

As was just mentioned, Aboriginal labour force and employment growth is most significant in Western Canada – especially in Manitoba and Saskatchewan. Not only do Aboriginal Canadians account for a large percentage of these provinces' population, they

[4] The effect of this methodological difference is to understate the potential contribution of the Aboriginal population to labour force and total employment growth in Canada. By not accounting for Canada's ageing population, the provincial projections significantly overestimate non-Aboriginal labour force growth. For the same reason, the provincial projections overestimate Aboriginal labour force and employment growth for Scenario A. Conversely, the aggregate Aboriginal population will be somewhat younger in 2026 than the non-Aboriginal population was in 2006, so without adjusting for age, the provincial projections underestimate Aboriginal labour force and employment growth under Scenario C. Finally, by implicitly assuming that the relative size of each Aboriginal subgroup will remain constant over the next 20 years, the provincial projections further distort Aboriginal labour force growth.

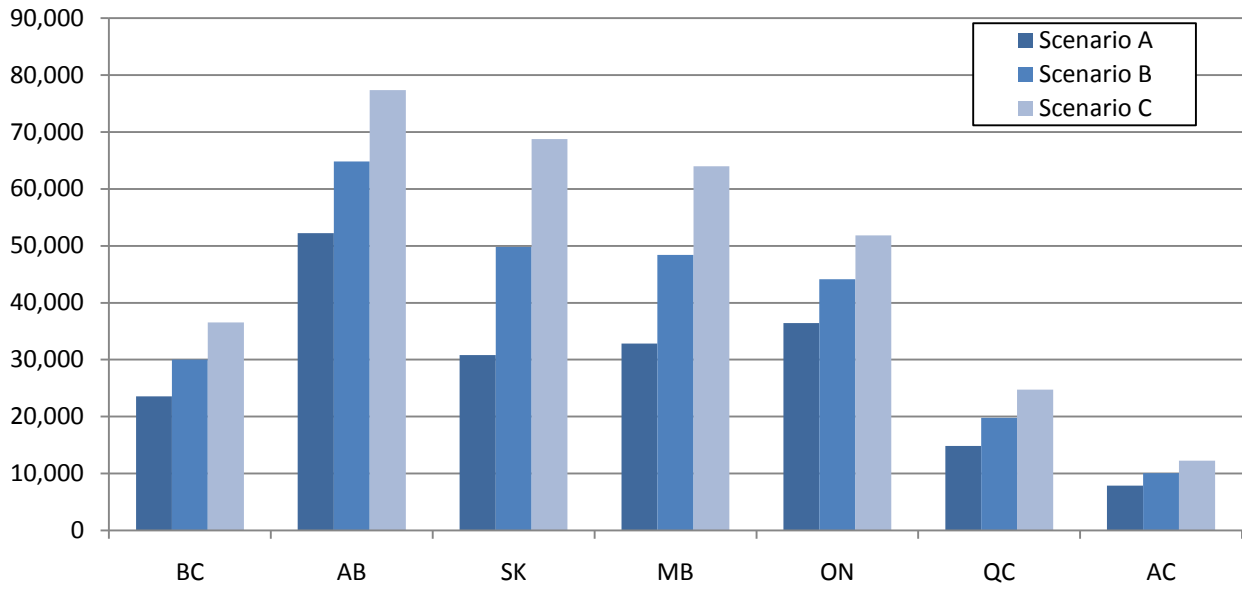
Summary Table 5. The Potential Contribution of the Aboriginal Population to Working-Age Population (WAP) Growth, Labour Force Growth and Employment Growth, by Province, 2006–2026

	WAP	Labour Force			Employment		
		Scenario A	Scenario B	Scenario C	Scenario A	Scenario B	Scenario C
	Aboriginal Contribution as Percentage of Total Provincial Growth (%)						
Canada	7.41	6.64	7.57	8.47	6.07	7.99	9.84
Atlantic Provinces	13.08	13.05	13.12	13.19	11.64	14.43	17.04
Quebec	3.94	3.69	4.15	4.60	3.36	4.43	5.48
Ontario	2.40	2.31	2.48	2.64	2.17	2.61	3.05
Western Canada	15.21	13.96	16.08	18.09	12.74	16.82	20.53
Manitoba	47.23	43.62	48.97	53.40	40.60	50.19	57.11
Saskatchewan	711.18	-	510.64	281.54	-	442.96	227.60
Alberta	12.93	12.01	13.27	14.50	11.22	13.56	15.77
British Columbia	4.72	4.68	4.77	4.87	4.24	5.34	6.43
	Absolute Aboriginal Contribution						
Canada	391,243	232,061	266,908	301,755	198,586	267,039	335,492
Atlantic Provinces	16,194	10,094	10,157	10,220	7,867	10,066	12,265
Quebec	28,883	17,561	19,826	22,091	14,817	19,778	24,740
Ontario	64,299	41,537	44,632	47,726	36,457	44,132	51,807
Western Canada	260,898	162,869	192,293	221,718	139,444	193,062	246,680
Manitoba	65,556	38,809	48,153	57,497	32,844	48,417	63,991
Saskatchewan	66,851	37,704	50,080	62,457	30,818	49,789	68,761
Alberta	85,945	58,700	65,813	72,925	52,254	64,820	77,385
British Columbia	42,546	27,655	28,247	28,838	23,528	30,036	36,543
	Aboriginal Contribution as Percentage of National Aboriginal Contribution (%)						
Canada	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Atlantic Provinces	4.1	4.3	3.8	3.4	4.0	3.8	3.7
Quebec	7.4	7.6	7.4	7.3	7.5	7.4	7.4
Ontario	16.4	17.9	16.7	15.8	18.4	16.5	15.4
Western Canada	66.7	70.2	72.0	73.5	70.2	72.3	73.5
Manitoba	16.8	16.7	18.0	19.1	16.5	18.1	19.1
Saskatchewan	17.1	16.2	18.8	20.7	15.5	18.6	20.5
Alberta	22.0	25.3	24.7	24.2	26.3	24.3	23.1
British Columbia	10.9	11.9	10.6	9.6	11.8	11.2	10.9

Sources: Statistics Canada (2005b), INAC-CMHC (2007) and 2006 Census tabulations.

lag further behind their peers in other provinces in terms of labour market performance. As a result, in both Manitoba and Saskatchewan, Aboriginal employment growth nearly doubles in Scenario C compared to Scenario A (Chart 6). This is a much higher increase than in any other province in both relative and absolute terms. Significant gains could also be realized in British Columbia and Alberta, underlining the importance of including

Chart 6. Aboriginal Employment Growth, by Province, 2006–2026 (persons)



Sources: INAC & CMHC (2007), Statistics Canada (2005) and 2006 Census.

Western Canada in any analysis of the interaction between Aboriginal populations and the wider labour market.

iv. Key Findings

Three main conclusions can be drawn from this section:

- First, regardless of changes to its participation and employment rates, the Aboriginal population will have a disproportionately large contribution to both the Canadian labour force and to total Canadian employment. Assuming constant age-specific participation and employment rates, this report projects that the Aboriginal population labour force will grow by 187,196 persons (13.0 percent of total labour force growth) and total Aboriginal employment will grow by 155,857 (11.3 percent of total employment growth).
- Second, increasing levels of Aboriginal participation and employment would have a dramatic effect on labour force and employment growth. Should these levels reach 2006 non-Aboriginal levels by 2026, Aboriginal labour force and employment will grow by an additional 130,000 and 200,000 persons, respectively. This is equivalent to a 1 percent increase in total Canadian employment.
- Finally, Aboriginal labour force and employment growth is most important for Western Canada – especially for Manitoba and Saskatchewan. Two-thirds of the growth will occur in Western Canada.

IV. Estimating the Economic Contribution of Aboriginal People

In its research for this report, the CSLS has focused on estimating the potential effects of closing the educational gap on two key variables: GDP and government spending/revenues. In this section, we review the methodology and key results flowing from this research.

A. Estimating the Effect on GDP of Closing the Educational Gap

The methodology used in this report is explained in Sharpe, Arsenault and Lapointe (2007) and summarized briefly in Box 1:

The potential contribution of the Aboriginal population is examined under different scenarios, based on three assumptions: the educational level of Aboriginal Canadians remains unchanged over the period; the educational level of Aboriginal Canadians in 2026 reaches the mid-point between its level in 2001 and that of non-Aboriginals in 2001; and Aboriginal Canadians in 2026 acquire the same educational profile as that of non-Aboriginal Canadians in 2001. It is important to note that the potential dynamic effects (e.g. leadership in the community, intergenerational effects on child development) are not taken into account. In that sense, these estimates represent a lower-bound estimate of the effect of education on Aboriginal people and on Canada as a whole.

The report also makes different assumptions regarding the Aboriginal employment rate and employment income in 2026 for given educational categories (Summary Table 6).[5] In 2001, the base year, total Canadian GDP was $1,266 billion or 1.266 trillion (2006 dollars) and labour productivity was $84,654 per worker. These values are used as a benchmark. The analysis is done first for the Aboriginal population as a whole and then for the North American Indian population in particular.

The increase of the Aboriginal population has an effect on the aggregate income of the population that is unrelated to increased education. Thus, before estimating the impact of higher educational attainment on Aboriginal income, the report develops scenarios in which Aboriginal Canadians do not increase their educational attainment from 2001 to 2026. The two base scenarios are added especially for purposes of comparison with the scenarios in which educational attainment is increased.

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[5] In 2004, the Office of the Auditor General (2004) estimated that it would take 28 years to close the educational attainment gap that existed in 2001, thereby closing the gap in 2029. Additionally, one goal of the Kelowna Accord was to close the gap between Aboriginal and non-Aboriginal high school graduation rates and to increase the Aboriginal post-secondary completion rate by 50 percent by 2016. In this context, the assumption that the educational attainment gap is entirely closed by 2026 seems reasonable. Nevertheless, we provide an alternative scenario (half the gap is closed) as a potential lower-bound objective.

Box 1. Summary of the Methodology

In order to make projections of Aboriginal income and productivity to 2026, a general methodology was developed and is outlined below.

- The Aboriginal and non-Aboriginal populations in 2001 were divided into educational attainment categories based on the highest level of schooling achieved, and shares of the population were calculated for these two populations in each educational category.
- The shares of the Aboriginal population in each educational category were then applied to the total working-age population in 2001 and 2026 to find the absolute number of persons of working age in each educational category in 2001 and 2026.
- The working-age population in each educational category was then multiplied by the category's corresponding employment rate (chosen according to the scenario, in the Census reference week,(the week on which labour market information in the census is based) to which to find the number of Aboriginal persons employed in each category.
- The number of Aboriginal persons employed was then multiplied by the average employment income in each educational category (once again, chosen according to the scenario) to obtain the aggregate income for that category.
- Total income of the Aboriginal population in 2026 was calculated by summing up the incomes of each educational category. Total Canadian GDP was calculated from this information.

*It would also be possible to use the proportion of Aboriginal people with positive income in the reference year as a proxy for the employment rate. A cursory analysis suggests that using this indicator would reduce projections of Aboriginal output by up to 20 percent, depending on the scenario. This issue will be explored in more detail in future

Summary Table 6. Scenario Summary

Scenario	Share of Aboriginal Population in Each Educational Category	Aboriginal Average Income, Given Education	Aboriginal Employment Rate, Given Education
Base Scenario 1	2001 level of the Aboriginal population	Increase with average wage growth	Level of Aboriginal employment rate in 2001
Base Scenario 2	2001 level of the Aboriginal population	Level of non-Aboriginal income in 2026	Level of non-Aboriginal employment rate in 2001
3	Half of the educational attainment gap between the Aboriginal and non-Aboriginal populations in 2001 is eliminated	Increase with average wage growth	Level of Aboriginal employment rate in 2001
4	Half of the educational attainment gap between the Aboriginal and non-Aboriginal populations in 2001 is eliminated	Increase with average wage growth	Level of non-Aboriginal employment Rate in 2001
5	Half of the educational attainment gap between the Aboriginal and non-Aboriginal populations in 2001 is eliminated	Level of non-Aboriginal income in 2026	Level of Aboriginal employment rate in 2001
6	Half of the educational attainment gap between the Aboriginal and Non-Aboriginal populations in 2001 is eliminated	Level of non-Aboriginal income in 2026	Level of non-Aboriginal employment rate in 2001
7	The complete educational attainment gap between the Aboriginal and non-Aboriginal populations in 2001 is eliminated	Increase with average wage growth	Level of Aboriginal employment rate in 2001
8	The complete educational attainment gap between the Aboriginal and non-Aboriginal populations in 2001 is eliminated	Increase with average wage growth	Level of non-Aboriginal employment rate in 2001
9	The complete educational attainment gap between the Aboriginal and non-Aboriginal populations in 2001 is eliminated	Level of non-Aboriginal income in 2026	Level of Aboriginal employment rate in 2001
10	The complete educational attainment gap between the Aboriginal and non-Aboriginal populations in 2001 is eliminated	Level of non-Aboriginal income in 2026	Level of non-Aboriginal employment rate in 2001

i. Partial Closing of the Educational Attainment Gap

The best-case scenario for Canada developed in this report involves the Aboriginal population reaching the 2001 non-Aboriginal Canadians' level of educational attainment by 2026. However, the case where the Aboriginal population reaches, by 2026, the mid-point between their 2001 educational attainment and that of non-Aboriginal Canadians in 2001 is first considered.

Under Scenario 3, which assumes an increase in education only, total GDP increases at an average rate of 2.2 percent per year over the period. Labour productivity is $114,011, with an average annual growth rate of 1.2 percent. The effect of a partial catch-up in educational attainment is, in this case, an addition of 0.013 percentage points to annual output growth, 0.010 percentage points to annual employment growth and 0.003 percentage points to labour productivity growth (Summary Table 7). In 2026, the level of GDP would be increased by $7 billion. These estimates are obtained by comparing Scenario 3 to Base Scenario 1.

Under Scenario 6, which takes into account increases in both education and labour market outcomes, the average annual growth of GDP is 0.053 percentage points higher than that of Base Scenario 1. Employment increases 0.026 percentage points faster, with the remaining growth translating into an increase of 0.026 percentage points in average annual labour productivity growth (Summary Table 7).

Summary Table 7. Incremental Contribution (Over Base Scenarios) of Aboriginal Canadians to Output and Labour Productivity in Canada, 2001–2026

		Additional Output Growth Over Base Scenario 1	Additional Output Growth Over Base Scenario 2	Additional Employment Growth Over Scenario 1	Additional Employment Growth Over Scenario 2	Additional Productivity Growth Over Scenario 1	Additional Productivity Growth Over Scenario 2
Base Scenarios	1	-	-	-	-	-	-
	2	0.037	-	0.018	-	0.019	-
Half the educational attainment gap is eliminated	3	**0.013**	-	**0.010**	-	**0.003**	-
	4	0.022	-	0.026	-	-0.004	-
	5	0.040	-	0.010	-	0.030	-
	6	0.053	**0.015**	0.026	**0.008**	0.026	**0.007**
The entire educational attainment gap is eliminated	7	**0.026**	-	**0.019**	-	0.006	-
	8	0.026	-	0.020	-	0.006	-
	9	0.056	-	0.019	-	0.036	-
	10	0.068	**0.030**	0.034	**0.016**	0.033	**0.014**

Note: Comparisons of scenarios for which only the educational attainment assumption is changed appear in boldface.

Source: CSLS estimates. Only meaningful comparisons have been included.

In addition, an upper-bound estimate of the effect of education alone can be obtained by comparing Scenario 6 to Base Scenario 2, as these scenarios differ only on their assumption about educational attainment. Output growth under Scenario 6 is 0.015 percentage points higher annually than in Base Scenario 2. This increase in average annual GDP growth rate is divided almost equally between employment and labour productivity growth, with the former increasing 0.008 percent faster each year and the latter increasing 0.007 percent faster each year, compared to Base Scenario 2. In absolute terms, labour productivity per worker in 2026 under Scenario 6 is $193 higher than in Base Scenario 2, and total Canadian output in 2026 is higher by $8.2 billion.

The latter estimate shows that the effect of education is more important if it is accompanied by improvements in the labour market outcomes of the Aboriginal population. Thus, we can consider that the isolated effect of education in the case where labour market outcomes remain unchanged is a lower-bound estimate ($7 billion), while the isolated effect of education when labour market outcome variables for Aboriginal Canadians reach parity with those of other Canadians is an upper-bound estimate ($8.2 billion). Of course, these estimates do not differ dramatically from each other since they both embody only the impact of an increase in educational attainment.

ii. Complete Closing of the Educational Attainment Gap

We can also discuss the more optimistic assumption that the entire gap in educational attainment levels between the two groups is closed by 2026. Naturally, the estimates based on a complete closing of the gap are roughly double those obtained based on a half-closed gap.

Under Scenario 7, which assumes a closing of the education gap only, the average annual growth rate of output is 0.026 percentage points higher than in Base Scenario 1, and productivity growth is higher by 0.006 percentage points on average each year. The absolute value of Canadian output is higher by $14.0 billion over Base Scenario 1 in 2026, and labour productivity is also increased by $177 per worker.

Under the best-case scenario (Scenario 10), which assumes complete closing of both education and labour market outcomes gaps, GDP increases 0.068 percentage points faster than in Scenario 1, which results in the 2026 level being higher by $36.5 billion. Productivity growth is also higher by 0.033 percentage points.

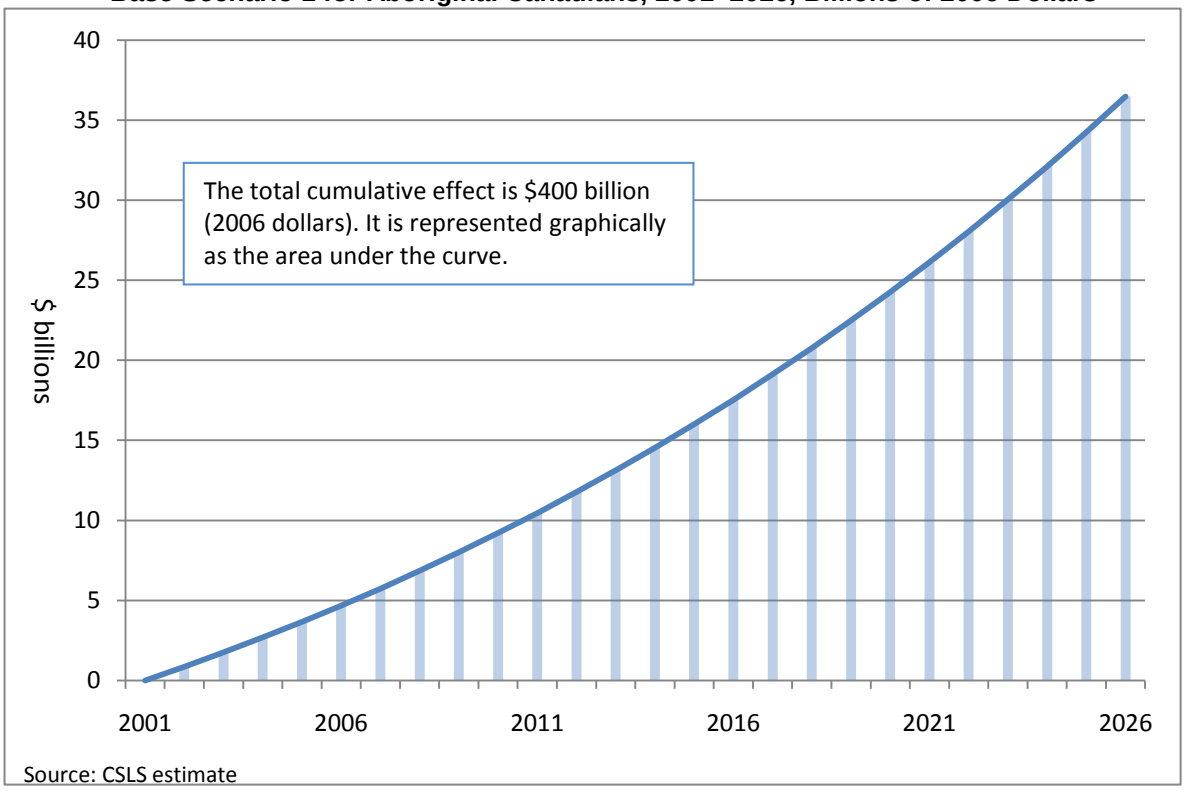
Finally, an upper-bound estimate of the effect of education alone can be obtained by comparing Scenario 10 to Base Scenario 2. The estimated differences in average annual growth rates are 0.030 percentage points for output, 0.016 percentage points for employment and 0.014 percentage points for labour productivity. The absolute value of productivity in Scenario 10 is higher by $386 over Base Scenario 2. In 2026, GDP would be $16.4 billion higher under Scenario 10 than under Base Scenario 2. In other words, the effect of education on output and productivity growth represents almost half of the total effect of $36.5 billion mentioned earlier. Clearly, the effect of education on its own is non-negligible.

iii. Cumulative Effect Over Time

The additional GDP growth in Scenario 10 over Base Scenario 1 may seem small at only 0.068 percentage points each year. However, when considering billion of dollars, a small increase in GDP growth has a large effect on the economy. Chart 7 illustrates the trend in the difference between GDP under scenarios 1 and 10.

It is important to note that the chart represents only one of the multitudes of possible paths between the level of GDP in 2001 and 2026.[6] In 2001, the GDP is the same in both scenarios, but in 2026, the difference grows to $36.5 billion. Over the 25 years, the aggregate additional GDP to the Canadian economy would be a staggering $400.5 billion. Of that sum, $179.3 billion can be directly attributed to an increase in educational attainment for Aboriginal Canadians.

Chart 7. Potential Path of Canadian GDP in Scenario 10 Compared to Canadian GDP in Base Scenario 1 for Aboriginal Canadians, 2001–2026, Billions of 2006 Dollars



[6] Chart 7 assumes that the growth rate remains constant over the period. Of course, the path between the level of GDP in 2001 and that in 2026 can take various other forms. Specifically, if a large number of currently employed Aboriginal Canadians drop out of the labour force in order to return to school, this might result in more muted growth at the beginning of the period and stronger growth towards the end. In turn, the shape of the path between the 2001 and 2026 GDP levels can significantly affect the estimate of cumulated benefits, and, as such, that estimate must be interpreted with care. It is meant to be illustrative of the magnitude of potential benefits rather than a definite and robust estimate of the cumulated benefits over the 2001–2026 period.

B. Estimating the Effects of Closing Educational and Social Gaps on Government Spending and Revenues

The 1996 Royal Commission on Aboriginal Peoples' (RCAP) final report estimated that excess government expenditure related to the below-average economic and social conditions of Aboriginal Canadians was $2.2 billion in fiscal year 1992–1993 (0.20 percent of nominal GDP). In the 15 years since the report's publication, gaps between Aboriginal and non-Aboriginal Canadians continue to persist in a litany of social and economic indicators. Given the demographic growth of the Canadian Aboriginal community and increases in federal, provincial and local governments' budgets, the total fiscal cost is much larger today.

ii. Methodology

Whenever possible, this report relied on the RCAP's methodology to estimate the fiscal cost of the Aboriginal population's sub-par social and economic conditions. It also followed the methodology developed by Bert Waslander to adjust for differences in age structure between the Aboriginal and non-Aboriginal populations (Waslander, 1997). Two broad categories of government spending on Aboriginal Canadians were considered: general government expenditures and expenditures specifically targeting Aboriginal Canadians. Moreover, the analysis focused on the following five areas of expenditures: child and family services; protection of persons and property; housing; transfer payments; and health care.

For each of these categories, the share of expenditures accounted for by Aboriginal people was estimated using three key variables: government expenditures in the program area; Aboriginal population's share (APS), which reflects the "client" base; and the level of use (LOU), which reflects the extent to which Aboriginal people rely on government services compared to non-Aboriginal people. It was assumed that if Aboriginal people were to close the gap in terms of social outcomes observed today, expenditure per capita for Aboriginal and non-Aboriginal people would be identical.

ii. Key Results

Each of the five program areas underlined the dismal conditions facing many Aboriginal communities. High expenditures on family and child services indicated a high level of family breakdown among the Aboriginal population. As a result, a disproportionate number of Aboriginal children are taken from their families and put in state care. High expenditures on health care were the result of high rates of injury and illness among Aboriginal Canadians. High expenditures on crime prevention and rehabilitation followed from high crime and incarceration rates among this population. Finally, high expenditures on both transfer payments and social housing were the direct result of elevated poverty among Aboriginal people.

In 2006, excess expenditure by all levels of the Canadian government on the five program areas under analysis, when adjusted for age structure, was $6.2 billion. In other words, if the average Aboriginal Canadian benefited from the same social and economic conditions as those enjoyed by the average Canadian, the different government levels of Canada could allocate $6.2 billion towards other social programs, towards debt reduction or towards a reduction of the tax burden.

Of this sum, $1 billion was attributable to transfer payments, $2 billion to persons and property, $1.2 billion to child and family services and $300 million to social housing. If these expenditures grow at the same rate as the Aboriginal population, excess expenditure on Aboriginal Canadians will be $8.4 billion in 2026. Furthermore, if the Aboriginal/non-Aboriginal program expenditure gap is closed at a constant rate, the cumulative savings to all levels of Canadian government will be $77 billion over the period 2006 to 2026.

RCAP estimates did not adjust for age, but Waslander produced age-adjusted estimates based on the RCAP findings. Our estimate of $6.2 billion in 2006–07 (0.44 percent of nominal GDP) is a significant increase from the $3.9 billion estimated by Waslander in 1992–1993. About one-quarter of the increase ($0.8 billion) is directly related to inflation, while two-thirds is related to Aboriginal population growth. The remaining 10 percent difference is due to real increases in spending per capita for Aboriginal people over the period.

In addition to a decrease in program expenditure, Canadian governments will also benefit from an increase in tax revenue should the economic and social conditions of the Aboriginal population improve. Building on our estimate of potential GDP increase in an earlier section, it is possible to estimate the potential increase in government tax revenue attributable to improved Aboriginal educational attainment and education-specific labour market outcomes. In a nutshell, the overall tax rate is applied to potential increases in Aboriginal earnings, and an adjustment is made for the tax status of Registered Indians living on reserves.

It is estimated that if Aboriginal education and education-specific labour market outcomes reach 2001 non-Aboriginal levels by 2026, all levels of the Canadian government will incur an increase in total tax revenue of $3.5 billion in 2026 (in 2006 dollars). If this figure grows at a constant rate between 2001 and 2026, the cumulative increase in tax revenue over the period is an estimated $39 billion (in 2006 dollars).

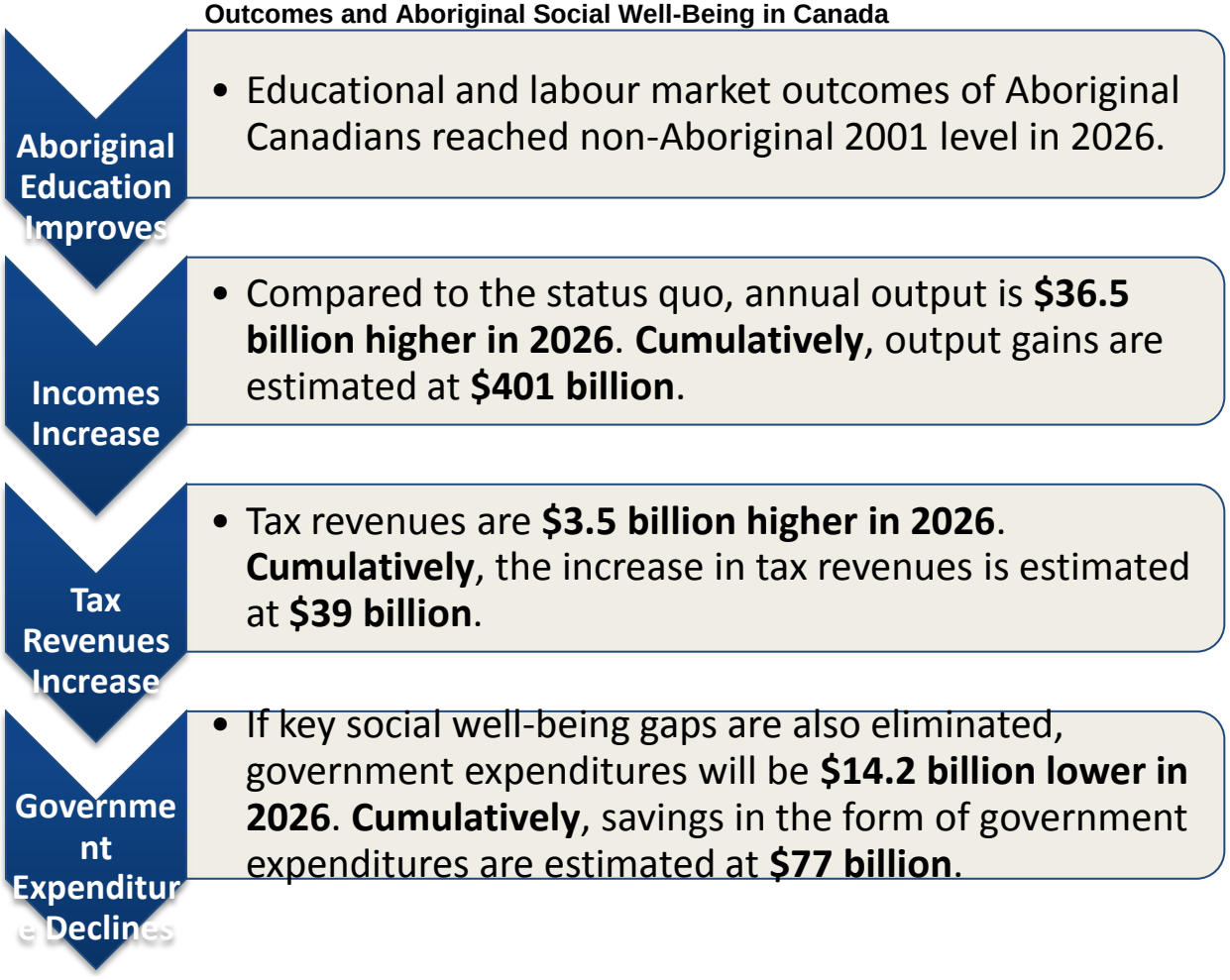
Adding the effects of decreased program expenditure and increased tax revenue generates the total impact on public sector balance sheets. In 2026, the effect of improved Aboriginal social and economic well-being on government balance sheets is estimated at $11.9 billion (in 2006 dollars). The cumulative effect on government balance sheets is estimated at roughly $115 billion for the 2006–2026 period. It should be emphasized, however, that these fiscal savings cannot be realized only through more and better education. In particular, if expenditures on health services, family and child services,

housing, crime and transfers to persons are to be reduced, significant investment in these areas may be needed in the transition period.

C. Summary of Results

Exhibit A succinctly summarizes key results. It shows the gains to the Canadian economy of improved educational and labour market outcomes in terms of income and tax revenues. It also provides an estimate of the magnitude of the costs (in terms of government expenditures) associated with the existence of a variety of social gaps between Aboriginal and non-Aboriginal Canadians.

Exhibit A. The Effects of Improving Aboriginal Educational and Labour Market Outcomes and Aboriginal Social Well-Being in Canada



V. Conclusion

A few specific results and recommendations can be taken from this report:

- Education is by far the most important determinant of labour market outcomes and also plays a pre-eminent role in improving social outcomes.
- Given the demographic structure of the Aboriginal and non-Aboriginal populations, Aboriginal people will undoubtedly play a significant role in shaping the economic future of Canada, and, in particular, that of the Western provinces.
- As a result, if businesses are to thrive in the environment of limited labour supply that is currently developing in Canada, the integration of Aboriginal people into the labour force will have to be accelerated. If these individuals do not possess the necessary skills, businesses will suffer.
- In addition, the long-term fiscal impact of better education and better social outcomes for the Aboriginal population is massive. If governments want to deal with looming fiscal issues, they should address the pressing needs of the Aboriginal population, as this group may be part of the solution.
- Finally, the analysis in this paper ignores the dynamic effect that increased education can have on the leadership capacity of the Aboriginal community and therefore may underestimate the contribution of improved education for Aboriginal Canadians to future output and productivity growth. Better-educated Aboriginal Canadians will be more effective leaders and thereby provide better direction for the economic development of Aboriginal communities.

Investing in disadvantaged children is one of the rare public policies with no equity-efficiency tradeoff. This report estimated the potential benefit for the Canadian economy of increasing the educational attainment level of Aboriginal Canadians. The findings of our analysis reveal that increasing the number of Aboriginal Canadians who complete high school is a low-hanging fruit with far-reaching and considerable economic and social benefits for Canadians.

The key message is clear: investing in Aboriginal education will benefit not only the Aboriginal population itself but also Canadian governments and businesses, and, by extension, the entire Canadian population. Increased output will drive up productivity, which is the key driver of our standard of living. Furthermore, decreased government cost and increased government revenue will provide Canadian government with the fiscal flexibility needed to cut taxes, increase services or reduce debt.

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