

Executive Summary

The Potential Contribution of Aboriginal Canadians to Labour Force, Employment, Productivity and Output Growth in Canada, 2001-2017

Two salient facts stand out about Aboriginal Canadians. First, relative to all other groups, they are disadvantaged both economically and socially. Second, their level of educational attainment is well below the national average. Equally, Canada currently faces two major economic challenges: reviving our lackluster rate of labour productivity growth and dealing with slower labour force growth. In this context, the rationale for assisting Aboriginal peoples increase their educational attainment, especially the high school completion rate and the university completion rate, is twofold: (i) it reduces poverty and increases economic well-being among the Aboriginal population and (ii) it contributes to greater employment and productivity growth in this country. This report assesses that potential contribution of the Aboriginal population to the Canadian labour market and therefore to output and productivity, assuming they increase their average educational attainment.

The report is divided into seven main sections. After a brief discussion of the motivation for and the methodology of the report, the second section reviews the importance of education for an improvement in labour market outcomes, income and other social indicators. The next section draws a portrait of the Aboriginal population, and of the possible improvements they need to achieve to reach the level of the non-Aboriginal population. The fourth section discusses the population projection scenarios for 2017, both for the Aboriginal and overall populations, noting that Aboriginal women have a much higher fertility rate than non-Aboriginal women. With these data, the fifth section projects the contribution of the Aboriginal population to the labour market in 2017 under different assumptions for participation rates and employment rates. The sixth and most important section provides projections of income for Aboriginals in 2017 and its implications for Canadian output and productivity given different levels of increase in Aboriginal educational attainment. Finally, the seventh section highlights four important contributions which capture the most important policy-relevant questions related to the improvement of the educational attainment of the aboriginal population.

It is beyond the scope of this report to address the crucial question of what measures and actions are needed by all actors (governments, Aboriginal communities, educational institutions, the private sector, and others) to raise the educational attainment of Aboriginal Canadians and eliminate the gap with non-Aboriginal Canadians. Without the realization of this goal, of course, the projections in this report have little value.

Key Highlights

- In 2001, the Aboriginal identity population made up 3.4 per cent of the Canadian population, with 1,066,500 persons.
- In 2001, 352,000 Aboriginal Canadians, about a third of the Aboriginal population, lived on reserves. Of that number, 97 per cent, or 341,300 persons, were North American Indians.

- The Aboriginal population is much younger than the average Canadian, with a median age in 2001 of only 24.7 years, compared to 37.6 years for non-Aboriginal Canadians.
- Aboriginal Canadians aged 15 and over have a much lower educational attainment than their non-Aboriginal counterparts with only 52.2 per cent holding a high school diploma in 2001, compared to 69.1 per cent for other Canadians.
- The labour market outcomes for Aboriginal Canadians are significantly inferior to the Canadian average. In 2001, Aboriginal Canadians had lower employment income, a higher unemployment rate, a lower participation rate, and a lower employment rate.
- Slightly under half (47.3 per cent) of the 2001 employment income gap, or \$3,247 per person, between Aboriginal Canadians and non-Aboriginal Canadian in 2001 can be attributed directly to differences in educational attainment.
- In 2001, if Aboriginal Canadians had the same educational profile of that of non-Aboriginal Canadians, their participation rate would have been 67.7 per cent instead of 61.4 per cent, higher than the 66.6 per cent of non-Aboriginal Canadians. This higher participation rate reflects the younger age structure of the Aboriginal population. This suggests that the rest of the employment income gap (52.7 per cent) noted above is due to a lack of employment opportunities rather than a lack of desire to participate in the labour market.
- Aboriginals 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.
- In 2017, using the medium growth projection for Aboriginal and the General population, the Aboriginal population is projected to make up 4.0 per cent of the Canadian population.
- Aboriginal Canadians are projected to account for 29.8 per cent of the annual natural population increase (births minus deaths) in Canada over the 2011-2017 period.
- The potential contribution of Aboriginal Canadians to the total growth of the labour force between 2001 and 2017 is projected to be up to 7.4 per cent.
- If Aboriginal Canadians were, by 2017, able to increase their level of educational attainment to the level of non-Aboriginal Canadians in 2001, the average annual GDP growth rate in Canada would be up to 0.036 percentage point higher, or an additional cumulative \$71 billion (2001 dollars) over the 2001-2017 period.
- If, in addition, the Aboriginal/non-Aboriginal employment rate gap and employment income gap at the same level of educational attainment were eliminated, the potential contribution of Aboriginal Canadians to Canadian GDP over the 2001-2017 would increase to \$160 billion, or up to a 0.081 percentage point increase in annual average output growth rate. This potential, however, is unlikely to be fully realized in such a short period of time since older Aboriginal Canadians are not likely to go back to school and reach the 2001 level of non-Aboriginal Canadians by 2017. Still, these estimates show the potential gain that could be realized.

- The potential contribution of Aboriginal Canadians to labour productivity annual growth rate in Canada is up to 0.037 percentage point if all three 2001 gaps with non-Aboriginal Canadians are eliminated by 2017. The potential contribution attributable only to the elimination of the 2001 educational attainment gap is up to 0.016 percentage point per year.

Importance of Education

This section reviews the importance of education in improving labour market success, income, productivity and other social indicators such as crime, health and poverty. The report finds that in general people with higher educational attainment enjoy lower unemployment, participate at a higher rate in the labour market, stand a higher chance of being employed and earn greater employment income. The major divide is between people who finished high school and those who did not. For example, the unemployment rate for persons in Canada in 2006 who went to high school but did not graduate (12.3 per cent) was about double the rate of those whose highest educational attainment was a high school diploma (6.2 per cent) and the latter's average employment income was about \$7,000 larger than the former group, a 63 per cent difference. The report also firmly establishes that the returns to education are not solely private, but also societal, as increased educational attainment generally reduces crime, improves health, and potentially breaks the cycle of poverty.

A Portrait of Aboriginal Canadians

In 2001, the Aboriginal population made up 3.4 per cent of the Canadian population, with 1,066,500 individuals. This share was up from 3.1 per cent of the total population in 1996, due in part to much higher fertility rates among Aboriginal Canadians than the rest of the population. The increased tendency of Metis to self-identify also explains a significant proportion of the increase. The Aboriginal population is also much younger than the average Canadian, with a median age of only 24.7 years compared to 37.6 years in 2001.

Aboriginal Canadians have a much lower educational attainment than their non-Aboriginal counterparts. In 2001, slightly over half (52.2 per cent) of Aboriginal Canadians had completed high school, compared to 69.1 per cent of non-Aboriginal Canadians. However, the gap is gradually closing. Between 1996 and 2001, the gap between the two groups in terms of high school completion closed by 4.5 percentage points.

A university degree was the educational category in which Aboriginal Canadians were most underrepresented compared to other Canadians. In 2001, only 8.9 per cent of Aboriginal individuals held a university degree, compared to 21.8 per cent of the non-Aboriginal population, a gap of 12.8 percentage points. While the share of Aboriginal Canadians with a university degree increased between 1996 and 2001 (from 7.8 per cent to 8.9 per cent), so did the share of non-Aboriginal Canadians (from 20.0 to 21.8 per cent), so the gap actually increase from 12.2 points in 1996 to 12.9 points in 2001.

With educational attainment being lower for Aboriginal Canadians, one can expect their average income to be lower than non-Aboriginals. However, even given a certain level of

education, Aboriginal individuals still suffer from a lower average income. As an example, among persons with university degrees, Aboriginal individuals received around three quarters of the average non-Aboriginal employment income (78.0 per cent). The relative income of Aboriginal Canadians whose highest level of educational attainment is high school graduation is slightly larger, but the gap is still significant with Aboriginal employment income representing only 86.6 per cent that of non-Aboriginal Canadians. This in part reflects the greater concentration of Aboriginal Canadians in rural and remote locations where there are fewer employment opportunities.

Table A: Share of Aggregate Employment Income and Labour Market Outcomes Gap Accounted for by Differences in Educational Attainment, 2001

	Non-Aboriginal	Aboriginal	Gap	Aboriginal at Non-Aboriginal Educational Shares*	Education-Adjusted Gap	Proportion of the Gap Explained by Educational Attainment, %
	A	B	C = A - B	D	E = A - D	F = ((1-(E/C))*100
Employment Income (\$2001)	19,727	12,866	6,861	16,113	3,614	47.3
Participation Rate (%)	66.6	61.3	5.2	67.7	-1.2	122.0
Unemployment Rate** (%)	6.3	18.0	-11.6	15.2	-8.9	23.9
Employment Rate (%)	61.8	49.5	12.3	56.7	5.2	57.9

* The approach is to apply non-Aboriginal working age population shares to the education specific Aboriginal values for the variable to determine what aggregate value could be obtained if the Aboriginal population had the same educational profile as the non-Aboriginal population.

** The total for unemployment does not match the total given elsewhere in the report because the shares used here are those for the working age population rather than those for the labour force participants population, the latter being the one used for calculating unemployment rates. This analysis remains relevant as an indication of how much of the gap can be explained by educational attainment.

The labour market situation of the Aboriginal population was much worse than that of the non-Aboriginal population in 2001. Yet, between 1996 and 2001, the situation greatly improved in both absolute and relative terms with a 4 percentage points reduction in the gap between the Aboriginal and non-Aboriginal unemployment rates. The importance of high school completion for this trend can not be understated. In 2001, the unemployment rate gap between Aboriginal Canadians with a high school degree and those without a high school degree was almost 10 percentage points, with the unemployment rate at 13.2 per cent and 23.0 per cent respectively.

As is shown in Table A, only about a quarter of the difference in unemployment rates between Aboriginal and non-Aboriginal Canadians in 2001 could be attributed to differences in educational attainment. This again suggests that the main reason behind the higher level of unemployment for Aboriginal Canadians is a lack of employment opportunities rather than lower educational attainment, although the two are closely intertwined.

Labour force participation rates were also lower among Aboriginal individuals compared to the general population, by 5.2 percentage points in 2001 and 7.1 points in 1996. This was entirely explained by lower educational attainment since if Aboriginal Canadians had the same educational profile of that of non-Aboriginal Canadians, their participation rate would be 67.7 per cent, higher than the 66.6 per cent of non-Aboriginal Canadians. This higher participation rate reflects the younger age structure of the Aboriginal population. Aboriginal Canadians who graduated from high school have a much higher participation rate than those who did not: 75.0

per cent compared to 42.2 per cent in 2001. The participation rate of Aboriginal Canadians with a high school diploma or above was actually almost the same as that of non-Aboriginal Canadians with the same level of educational attainment in 2001 (75.5 per cent).

The employment rate was much lower for the Aboriginal population than for other Canadians. In 2001, the Aboriginal rate was 12.3 percentage points lower than the non-Aboriginal rate. This rate was lower for Aboriginal individuals in each educational category except one: those with a bachelor's degree, for which it was equal with non-Aboriginals at 78.3 per cent. Not surprisingly, people who complete high school enjoy better employment rates than those who do not by a large margin. Among Aboriginals who completed high school or above, the employment rate was 65.2 per cent while it was only 32.5 per cent for those who did not finish.

Since 1996, Aboriginal employment rates have increased and the gap between Aboriginal and non-Aboriginal populations has decreased by 2.7 points. If Aboriginal Canadians had in 2001 the same educational profile as non-Aboriginal Canadians, their employment rate would have been 7.1 percentage points higher at 56.7 per cent. This means that 57.9 per cent of the 2001 gap in employment rate between Aboriginal and non-Aboriginal populations was due to differences in educational attainment. This follows in large part from the fact that increased educational attainment increases participation in the labour force and also from the fact that increased educational attainment increases the likelihood of finding employment.

Aboriginal Canadians fare worse than non-Aboriginal Canadians on many other indicators of well-being. For example, in Canadian Census Metropolitan Areas (CMAs), the poverty rate of the Aboriginal population in 2001 was 41.6 per cent, compared to 17.3 for the general population. The Aboriginal population was also represented at a much higher share in prisons (17 per cent of total prison population) than in the Canadian population. Finally, Aboriginal Canadians have poorer health than non-Aboriginal Canadians and they are at higher risk of developing diabetes and tuberculosis as well as having a much higher suicide rate.

Population and Labour Market Projections

This section reviews population projection for the general population and the Aboriginal population both provided by Statistics Canada as well as economic projections provided by the Institute for Policy Analysis of the University of Toronto. The scenario used in the report for the general population is the medium growth scenario from Statistics Canada. In this scenario, the fertility rate is set at the 2002 level of 1.51 children per woman and Canadians are expected to experience a steady increase in life expectancy. The scenario retained for projecting the Aboriginal population is also the medium growth scenario from Statistics Canada (Scenario B) which assumes a slow decline in fertility rate, and a slightly smaller increase in life expectancy than for other Canadians.

The total population in Canada in 2017 is projected to be 35,538,000, up 14.7 per cent from 2001, out of which 30,054,000 will be aged 15 and over, a 23.8 per cent increase over 2001. The growth rate of the labour force should decrease over the 2001-2017 period, mainly due to the aging of the population.

The Aboriginal population enjoys a much higher birth rate than their Canadian counterparts. Therefore, based on an overall increase of 33.1 per cent of their population over the 2001-2017 period, their share of the total population is expected to climb from 3.4 per cent in 2001 to 4.0 per cent in 2017. The Aboriginal working age population is expected to grow by 41.7 per cent between 2001 and 2017 – almost double the rate of the overall working age population.

The report projects the Aboriginal labour force in 2017 and the contribution of the Aboriginal population group to the overall labour force growth over the period. It does so assuming different scenarios for an increase in Aboriginal participation rates. It finds that Aboriginal Canadians have the potential to contribute up to 7.39 per cent of the total labour force growth between 2001 and 2017 if the 2001 Aboriginal/non-Aboriginal participation rate gap were eliminated. Moreover, the elimination of the participation rate gap would translate into a 0.3 percentage point increase in the 2017 national participation rate. Moreover, in the case where the employment rate of the Aboriginal population reaches by 2017 that of the non-Aboriginal population in 2001, the report finds that the Aboriginal population has the potential to contribute up to 7.64 per cent of the total employment growth in Canada between 2001 and 2017. The national employment rate in 2017 would be roughly 0.6 percentage point higher in the case where Aboriginal Canadians closed the 2001 employment rate gap with non-Aboriginal Canadians by 2017 than in the case where their employment rate remained at its 2001 level.

Output and Productivity Projections

This key section of the report develops estimates of the potential contribution of the Aboriginal population to output and productivity in the Canadian economy over the 2001-2017 period based on a number of assumptions and hypotheses. The report uses micro-data from the 2001 census (unfortunately, data from the 2006 census are not yet available) as well as the projections obtained in the previous section. It is important to stress that it would be very difficult to realize this potential, particularly by 2017.

The key assumptions relate to the evolution of the educational attainment gap between Aboriginal and non-Aboriginal Canadians, the evolution of the employment rate gap between Aboriginal and non-Aboriginal Canadians at a given level of educational attainment, and the evolution of the employment income gap between Aboriginal and non-Aboriginal Canadians at a given level of educational attainment. For the first variable, three assumptions are considered:

- (i) The educational level for Aboriginal Canadians in 2017 remains at the 2001 level. This means that by 2017 all the 2001 educational gap between non-Aboriginal and Aboriginal Canadians remains.
- (ii) The educational level for Aboriginal Canadians in 2017 reaches the mid-point between the 2001 level of non-Aboriginal Canadians and the current level for Aboriginal Canadians. This means that by 2017 one half of the 2001 educational gap between non-Aboriginal and Aboriginal Canadians remains.
- (iii) The educational level for Aboriginal Canadians in 2017 reaches the 2001 level of non-Aboriginal Canadians. This means that by 2017 the 2001 educational gap between non-Aboriginal and Aboriginal Canadians is eliminated.

For the following two variables, only two assumptions are considered. For the employment rate gap between Aboriginal and non-Aboriginal Canadians at a given level of educational attainment, we assume that either:

- (i) The employment rate for Aboriginal Canadians at a given level of educational attainment remains at its 2001 level over the 2001-2017 period. By 2017, the 2001 employment rate gap remains.
- (ii) The employment rate for Aboriginal Canadians at a given level of educational attainment reaches the 2001 level of non-Aboriginals by 2017. By 2017, the 2001 employment rate gap is eliminated.

Similarly, for the employment income gap between Aboriginal and non-Aboriginal Canadians at a given level of educational attainment, we assume that either:

- (i) Aboriginal employment income at any given level of educational attainment grows at the same rate as that of other Canadians, that is 25.5 per cent over the 2001-2017 period. By 2017, the 2001 employment income gap remains.
- (ii) Aboriginal employment income at a given level of educational attainment reaches the same level as that of non-Aboriginal Canadians by 2017. By 2017, the employment income gap is closed.

To obtain the GDP associated with Aboriginal Canadians, we multiply their total employment income by two, which reflects the fact that labour share in GDP is about 50 per cent. The scenario which maximizes the potential contribution of Aboriginal Canadians to the Canadian economy is the one where Aboriginal Canadians reach parity with non-Aboriginal Canadians for educational attainment, employment rate and average income in a given educational attainment group by 2017. For this scenario to be realized, however, older Aboriginal Canadians would have to go back to school in order to reach the level of educational attainment of their non-Aboriginal counterparts in 2001, which is unlikely. In this context, the scenario under which only half of the educational gap is eliminated is more realistic for the short period of time covered by these projections.

In the scenario maximizing the potential contribution of Aboriginal Canadians, annual average growth rate of the Canadian GDP is projected to be 0.081 percentage points higher than the base scenario in which no improvement is observed. If only half the 2001 educational gap was eliminated but 2001 labour market gaps (employment rate and employment income) at a given level of educational attainment were eliminated by 2017, the annual additional increase in GDP growth over the base scenario would be 0.064 percentage points. Since the Aboriginal population is projected to represent 4.0 per cent of the population in 2017, these results are significant.

In fact, if we add up the annual contributions to GDP over the 16 years period, and assuming that the rate of growth remains constant over the period, the aggregate additional GDP

to the Canadian economy would be up to \$161.0 billion (2001 dollars) if all the educational gap were eliminated and \$126.3 billion if only half the educational gap was eliminated (Table B). In 2017 alone, GDP would be \$21.5 billion and \$16.9 billion higher respectively. These estimates do not include the social benefits and the lower government expenditures that would arise from increased Aboriginal educational attainment. Moreover, these estimates assume that Aboriginal Canadians only reach the 2001 level of educational attainment of non-Aboriginal Canadians. It is likely that over the 2001-2017 period, the educational attainment and employment rate of non-Aboriginal Canadians will continue to increase. In this context, if Aboriginal Canadians succeed in closing the gap with non-Aboriginal Canadians by 2017, their educational attainment would be even higher than what is considered in our scenarios.

Yet, it is important to remember that because improvements are likely to be mostly driven by younger Aboriginal Canadians rather than by both younger and older Aboriginal Canadians, the aggregate increase in the educational attainment of Aboriginal Canadians will likely not be large enough to close the 2001 gap by 2017. Moreover, any increase in educational attainment coming from already employed Aboriginal Canadians will likely reduce cumulated benefits over the period as these individuals may forego labour market income during the period in which they are upgrading their educational qualifications. Finally, it is important to note that the potential benefits of educating older Aboriginal Canadians might be overestimated since labour market outcomes are not only a function of education, but also of experience. On the other hand, only 31.4 per cent of the Aboriginal working age population was aged 45 or over in 2006, compared to 47.6 per cent for the total population, a fact that suggests that most of the catch-up could in fact be done by younger Aboriginal Canadians.

Table B: Potential Cumulative Contribution of Increases in Aboriginal Educational Attainment and Labour Market Outcomes Over the 2001-2017 Period

	Half the 2001 Educational Gap is Eliminated by 2017 (Billion of 2001Dollars)	The Complete 2001 Educational Gap is Eliminated by 2017 (Billion of 2001Dollars)
Contribution of Aboriginal Canadians Assuming Increases in Educational Attainment and Employment Rates and Income Level at Given Level of Educational Attainment (Scenario 6 and 10 over Scenario 1)	126.3	161.0
Lower-Bound Contribution of Increases in Educational Attainment (Scenario 3 and 7 over Scenario 1)	31.2	62.3
Upper-Bound Contribution of Increases in Educational Attainment (Scenario 6 and 10 over Scenario 2)	36.5	71.1

Source: Appendix Table 55 and 56

The potential increase mentioned previously, however, encompasses more than only an increase in educational attainment. It also includes the impact of increased employment rates and increased income for Aboriginal Canadians at a given level of educational attainment. To find lower-bound and upper-bound estimates of the impact of increasing educational attainment for Aboriginal Canadians, we compare scenarios for which only the level of educational attainment is changed. Lower-bound estimates capture the effect of education if the labour market variables remain at their base case values. The upper-bound estimate captures the benefits of increased education in a world where labour market outcomes at a given level of educational attainment for both Aboriginal and non-Aboriginal Canadians are identical by 2017, but separates the effect of increased education from that of increased labour market outcomes at a given level of educational attainment.

The report finds that an increase of in the educational attainment of Aboriginal Canadians by 2017 to the level non-aboriginal Canadians had in 2001 would increase annual average growth rate of the Canadian GDP by up to 0.036 percentage points, or almost half the total potential annual effect. The cumulative effect on GDP in Canada over the 2001-2017 period would be up to \$71.1 billion. In 2017, Canadian GDP would be \$9.5 billion higher. If only half the gap was eliminated, the cumulative increase over the 2001-2017 period would be up to \$36.5 billion, or an increase of \$4.9 billion in 2017 only. Clearly, education is an important factor for increasing output attributable to the Aboriginal population.

Apart from increased output, there is also a significant potential effect on productivity growth. The average annual labour productivity growth, estimated at 1.7 per cent over the 2001-2017 period, would increase by 0.037 percentage points in the best case scenario. Again, however, this represents the aggregate effect of all the changes in the Aboriginal population. The isolated effect of increased educational attainment if the gap is completely eliminated would be an increase of up to 0.016 percentage points.

Conclusion

A few key messages can be taken from this report. First, assuming Aboriginal Canadians increase their level of educational attainment, their potential contribution to Canada's economy, while small in aggregate terms, is still significant. Second, the key to increasing educational attainment is to increase the number of Aboriginal Canadians graduating from high school, as this not only increases the potential economic contribution of these individuals but also creates a larger pool of potential university graduates. Third, to maximize the potential of Aboriginal Canadians not only should the educational level of their youth be increased, but also that of their older people. In this context, programs to provide high school education targeted at all Aboriginal Canadians without high school education under 35 or even older could be considered. Fourth, the analysis in this paper ignores the dynamic effect that increased education can have of the leadership capacity of the Aboriginal community and therefore may underestimate the contribution of increased education of 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 young people is one of the rare public policies with no equity-efficiency tradeoff. Aboriginal Canadians are without doubt one of the groups where the potential benefits of increasing educational attainment clearly outweigh the costs. Not only would it significantly contribute to the personal well-being of Aboriginal Canadians, but it would also contribute somewhat to alleviating two of the most pressing challenges facing the Canadian economy: slower labour force growth leading to labour shortages and lackluster labour productivity growth. In fact, the core finding of the report is that increasing the number of Aboriginals who complete high school and university is a low-hanging fruit with significant and far-reaching economic and social benefits for Canadians.