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

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Abstract

Investing in disadvantaged young people is one of the rare public policies with no equity-efficiency tradeoff. This report estimates the potential benefit for the Canadian economy of increasing the educational attainment level of Aboriginal Canadians. We find that increasing the number of Aboriginals who complete high school is a low-hanging fruit with significant and far-reaching economic and social benefits for Canadians. Not only would it significantly contribute to increase 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 and lackluster labour productivity growth.

In fact, we find that in the best case scenario where by 2017 the educational attainment and the labour market outcomes at a given level of educational attainment of Aboriginal Canadians reach the same level non-Aboriginal Canadians had in 2001, the potential contribution of Aboriginal Canadians is up to an additional cumulative $160 billion (2001 dollars) over the 2001-2017 period. That represents an increase of $21.5 billion (2001 dollars) in 2017 alone. Moreover, the potential contribution of Aboriginal Canadians to the total growth of the labour force between 2001 and 2017 is projected to be up to 7.39 per cent of the total labour force growth, much higher than their projected 3.37 per cent share of the working age population in 2017. Finally, we find that the potential contribution of Aboriginal Canadians to the annual growth rate of labour productivity in Canada is up to 0.037 percentage point.

Résumé

Investir pour assurer un meilleur avenir aux jeunes désavantagés est l'une des rares politiques publiques qui n'implique pas de compromis entre équité et efficacité. Ce rapport estime les bénéfices potentiels pour l'économie canadienne d'un accroissement du niveau d'éducation des autochtones au Canada. Il est établi qu'augmenter le nombre d'autochtones qui complètent leurs études secondaires est une amélioration à portée de main qui apporte des bénéfices économiques et sociaux d'une importance significative. Une telle politique augmenterait non seulement le bien-être de la population autochtone au Canada, mais elle contribuerait également à atténuer l'impact de deux des défis majeures auxquels fait face l'économie canadienne : une faible croissance de la population active et la piètre croissance de la productivité de la main d'œuvre.

En fait, ce rapport établi que dans le scénario idéal où le niveau d'éducation et les résultats sur le marché du travail des autochtones au Canada atteindraient en 2017 le même niveau que celui des non-autochtones en 2001, la contribution de la population autochtone à l'économie canadienne pourrait potentiellement augmenter d'un montant allant jusqu'à 160 milliards (dollars de 2001) pendant la période 2001-2017. Pour l'année 2017 seulement, l'augmentation de la production serait de 21.5 milliards (dollars de 2001). De plus, il est estimé que la contribution potentielle des peuples autochtones à la croissance totale de la population active pendant la période allant de 2001 à 2017 pourrait atteindre 7.39 pourcent de cette croissance, un chiffre bien au-delà de leur proportion de la population active de 3.37 pourcent prévue en 2017. Finalement, il est établi que contribution potentielle des autochtones au Canada à la croissance annuelle moyenne de la productivité de la main d'œuvre atteint 0.037 point de pourcentage.

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.

List of Charts and Tables

The Potential Contribution of Aboriginal Canadians to Labour Force, Employment, Productivity and Output Growth in Canada, 2001-2017[1]

I. Introduction

A. Motivation

Canada faces two major economic challenges: reviving our lackluster rate of labour productivity growth and dealing with slower labour force growth arising from the retirement of the baby boom generation. The closing of the education gap between Aboriginal peoples and the overall Canadian population can contribute significantly to meeting these challenges.

Productivity growth is important as it is the most important driver of increases in our standard of living (Sharpe, 2007b). The higher the productivity growth, the greater are the potential for real income gains. A failure of Canada's productivity growth to keep pace with that of other countries will see a relative decline in our standard of living.

Two stylized facts stand out from labour productivity development in the Canadian and US business sectors up to 2006. First, output per hour growth in Canada, at 1.0 per cent since 2000, has been around one third the pace experienced in the second half of the 1990s. Second, since the year 2000, productivity growth in Canada has been one third the rate experienced in the United States (Panel A). Post-2000 trends have thus lead to a large increase in the Canada-US labour productivity gap, and have contributed to a significant loss of competitiveness for Canadian industry.

A key driver of productivity growth is human capital. Increasing the average educational attainment of Aboriginal peoples, especially youth, would therefore boost aggregate productivity growth in this country.

Economic growth, or real output growth, is determined by productivity growth and labour force growth. Slower labour force growth therefore reduces potential output growth, with important implications for society. Indeed, as David Dodge (2007), Governor of the Bank of Canada, recently noted in a speech:

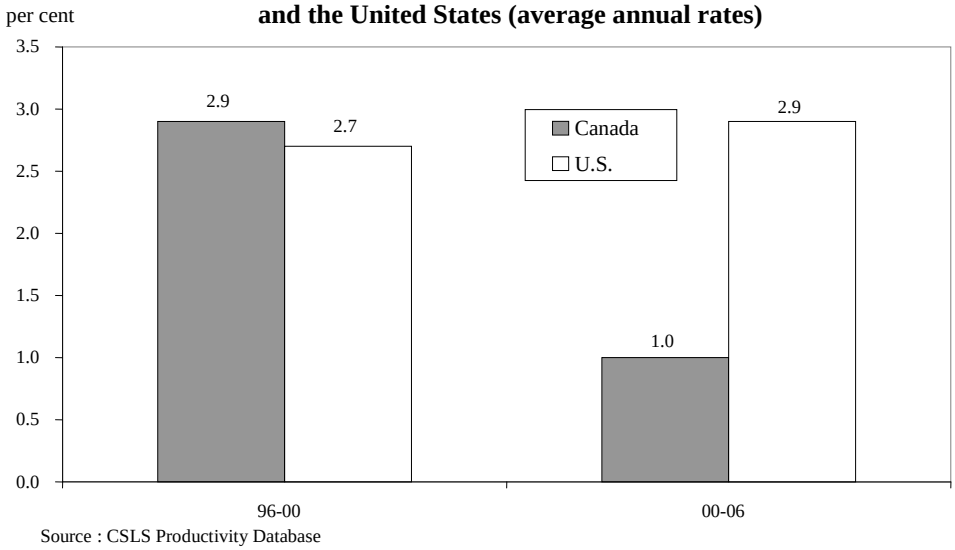
> "The projected decline in the growth of trend labour input has real consequences for the conduct of monetary policy. Declining growth in trend labour input implies lower growth of potential output. And if the trend rate of productivity growth remains unchanged, this means that inflationary pressures can begin to build at a lower rate of economic growth."

[1] The authors would like to thank Bonnie Gunn, Christopher Ross and Martha Sevigny for their contributions to this report. The report was commissioned by the Education Branch of Indian and Northern Affairs Canada. We would like to thank Kathleen Keenan, Director General of the Education Branch at Indian and Northern Affairs Canada, for the support for this project. We would also like to thank Bert Waslander from Informetrica Ltd., Maximilian Baylor from Finance Canada and Dan Beavon, Director of the Research and Analysis Directorate at Indian and Northern Affairs Canada, for useful comments and suggestions on an earlier draft of the report.

In addition to the inflationary implications, falling labour force growth will mean that a smaller share of the population will be employed and hence able to support the non-employed through taxes. The rising dependency ratio, particularly in relation to health spending, has important implications for the fiscal position of governments.

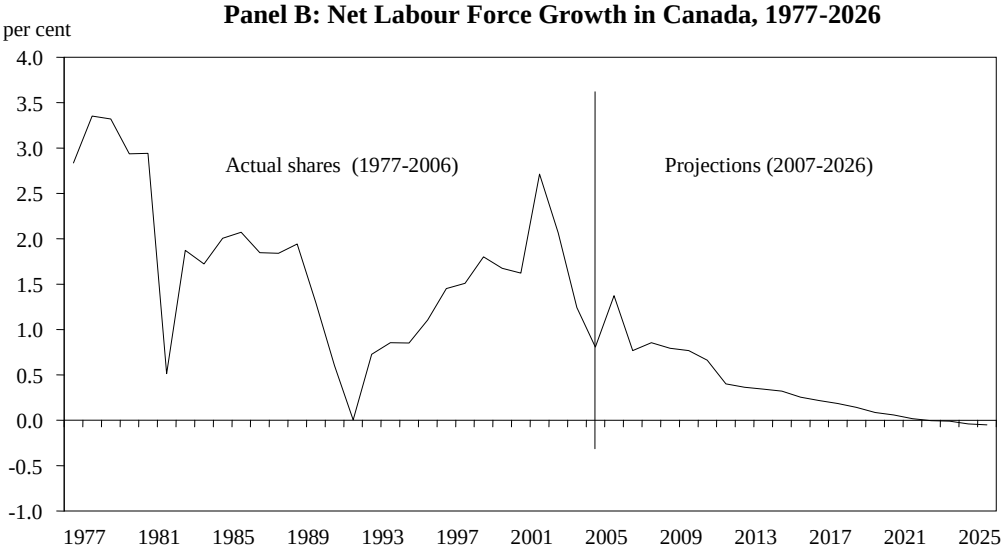
In the short to medium term, labour force growth varies with the business cycle, falling in recession and rising in expansions. From a longer term perspective, labour force growth is determined by the demographic structure of the population and net international migration. The imminent retirement of the baby boom cohorts will see labour force growth fall from its current level of around 200,000 per year to zero over the next 15 years (Panel B).

Panel A: Business Sector Output per Hour Growth in Canada and the United States (average annual rates)



Source : CSLS Productivity Database

Panel B: Net Labour Force Growth in Canada, 1977-2026



Source : Statistics Canada

The labour force participation rate is directly related to the level of educational attainment of the population. The more education one has the more one participates in the labour market as one has more employment opportunities and greater earnings potential. Increasing the

education attainment of the Aboriginal population in Canada will therefore increase the participation rate of Aboriginal peoples and offset some, but certainly not all, of the projected decline in labour force growth. This is particularly true in Western Canada, especially Saskatchewan and Manitoba, where the share of Aboriginal peoples in the population is well above the national average.

Raising the educational attainment of Aboriginal people in Canada is not a novel policy objective. In fact, it has already been the center of much discussion, debate and research. Yet, the fundamental problem remains and the topic continues to raise serious questions. In the latest Speech From the Throne on October 16, 2007, the Government of Canada confirmed that Aboriginal education was still the key to improving the economic condition of Aboriginal Canadians:

> "Our mining and resource sectors present extraordinary opportunities across Canada, and our Government will help move forward by providing a single window for major project approvals. With these increased opportunities for employment, our Government will continue to foster partnerships that help Aboriginal people get the skills and training to take advantage of these job prospects in the North and across Canada."

In the spirit of the government's emphasis on skills and training, this report shows the significant potential benefits for Canada of improving the overall level of education of its Aboriginal people.

B. Structure of the Report

This report assesses the potential of the Aboriginal population in meeting the two major challenges facing the Canadian economy outlined above. The report focuses on the potential labour force growth and employment growth and their impact on income and productivity given increased educational attainment among the Aboriginal population.

The current section established the motivation for this report. The next section reviews the importance of education for labour market performance, income, productivity and other measures of well-being. The third section draws a portrait of Aboriginal Canadians. It focuses primarily on education, income, unemployment, labour force participation levels and employment, but also reviews other important indicators of well-being such as poverty, crime and health. The fourth section examines the various population projection scenarios for the general and the Aboriginal population from 2001 to 2017 produced by Statistics Canada. It also reviews the forecasts for major economic indicators produced by the Institute for Policy Analysis at the University of Toronto. The fifth section provides projections for the Aboriginal labour force and employment in 2017 and the contribution to the total growth of labour force and employment under a number of scenarios. The sixth section uses the labour force projections made in the previous section to forecast potential Aboriginal employment income and output in 2017. It also examines the potential impact on employment growth, total economy GDP growth and labour productivity growth over the 2001-2017 period. The seventh section highlights a number of important contributions to the literature which capture the most important policy-relevant questions related to the improvement of the educational attainment of the aboriginal population. The last section offers directions for future research and concludes.

II. The Importance of Educational Attainment

This section investigates the links between educational attainment and indicators of economic performance. It first discusses the relationship between educational attainment and labour market outcomes including the unemployment rate, the labour force participation rate and the employment rate. It then looks at the linkages between education, income and productivity. Finally, it examines the relationship between education and other measures of well-being such as poverty, crime, and health

A. Educational Attainment and Labour Market Outcomes

Educational attainment has a strong positive effect on the labour market outcomes of individuals.[2] Persons with more education tend to experience lower unemployment, participate at a higher rate in the labour force, and thus enjoy higher employment rates. In this sub-section, an analysis of these three major labour market indicators is provided by educational attainment, based on data from the Labour Force Survey.

i. Unemployment Rates

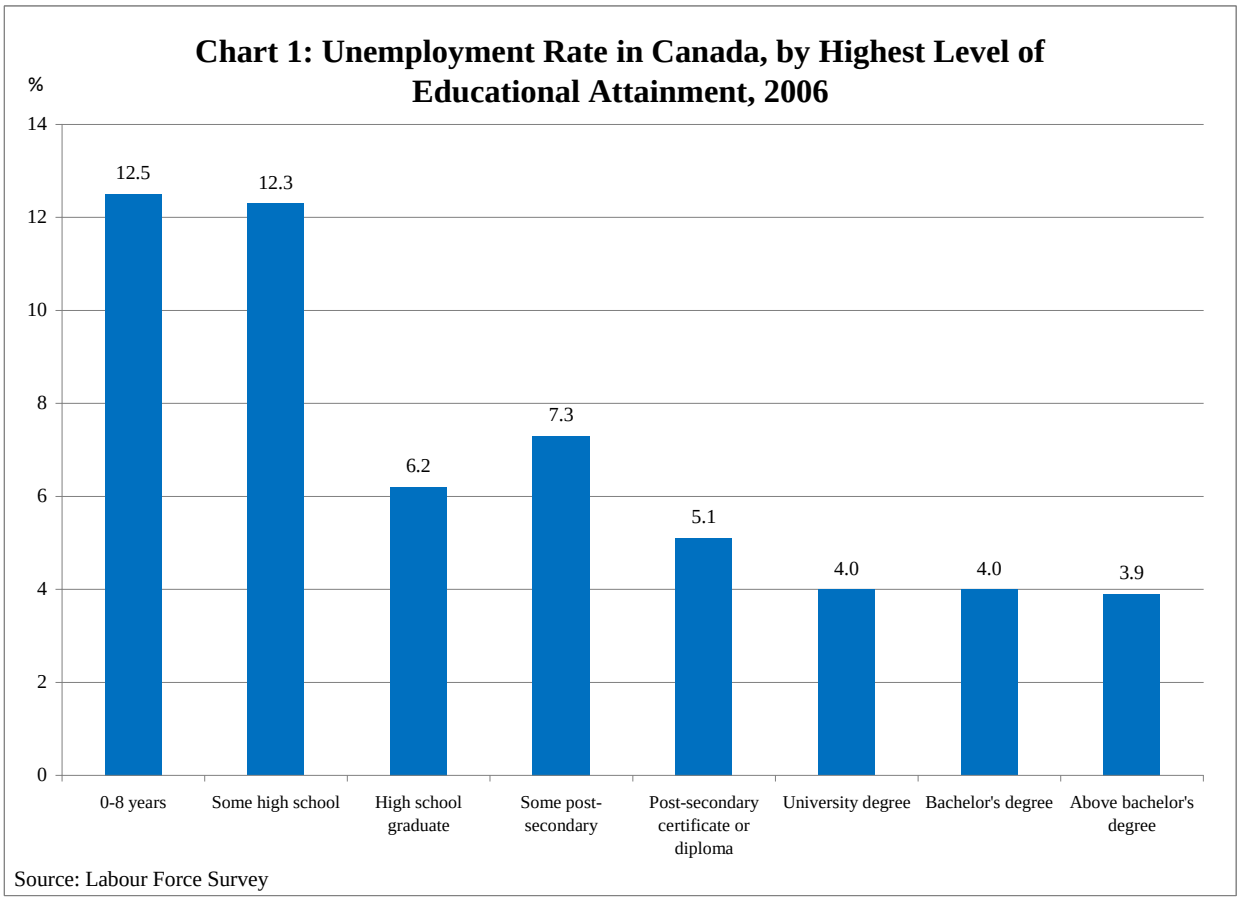
Persons with more education run a much lower risk of being unemployed (Chart 1). The overall rate of unemployment in Canada was 6.3 per cent in 2006, but only 4.0 per cent for persons holding a bachelor's degree. It was slightly lower for those holding a degree above the bachelor level (3.9 per cent). Persons with post-secondary certificate or diploma also had a significant labour force advantage, since the unemployment rate was only 5.1 per cent for this group. There seems to be no advantage in continuing to post-secondary education after high school if one does not complete: the unemployment rate for persons whose highest level of educational attainment was some post-secondary education without certificate was 7.3 per cent, above that for persons with only high school education.

High school graduates without any higher education, perhaps surprisingly, have an unemployment rate of only 6.2 per cent, compared to 12.3 per cent for persons with some high school education and 12.5 per cent for those with 0 to 8 years of education.[3] The data from the

[2] Along with the number of years of formal education one receives, or the certification or degree obtained, the quality of the education the student receives is also important. Poor quality education not only leads to lower levels of educational attainment because of students leaving school early, but also prevents students from gaining the skills they need for a suitable job in the workforce and thus lowers the returns from education. Richard and Vining (2004) found that as a school performance in standardized test score improves, the students rise academically as an overall group independent of their socio-economic background. This suggests that increasing the quality of education is beneficial to all categories of students.

[3] Nonetheless, it is important to remember that these rates include all of those who are 15 years old and over, and so include students that may still be in high school and looking for part-time work, who are classified as unemployed. The unemployment rate for individuals aged 25 years and over in 2006 was 10.5 and 8.5 per cent respectively for persons with 0-8 years of schooling and those with some high school education. This is respectively 2.0 and 3.8 percentage points lower than the rates for individuals aged 15 years and over. Comparatively, the unemployment rate for high school graduates aged 25 and over was only 0.8 percentage point lower (5.4 per cent) than that of individuals aged 15 years and over. This illustrates the phenomenon underlined in the text. Even though the divide is not as stark for persons 25 and above as that for the group aged 15 and over, individuals aged 25 years and over

Census indicate that 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, 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 per cent compared to only 5.3 per cent average for all those who did graduate (Appendix Table 1).



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 per cent of persons with no high school experience participated in the labour force in 2006 in Canada, whereas 51.2 per cent of those with some high school did (Chart 2). High school graduation still

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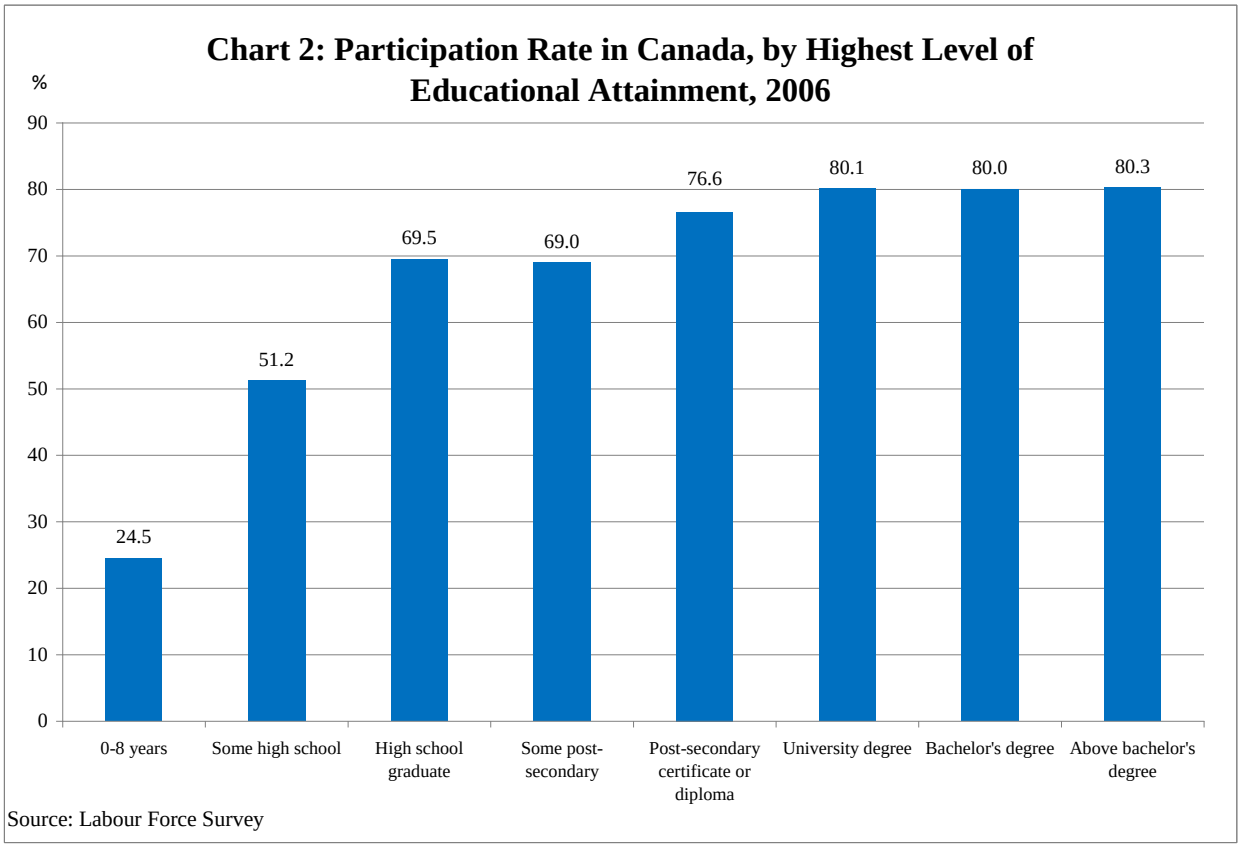
without a high school degree still displayed a much higher unemployment rate than other groups of the same age. This phenomenon is also reflected in the participation rate and employment rate statistics.

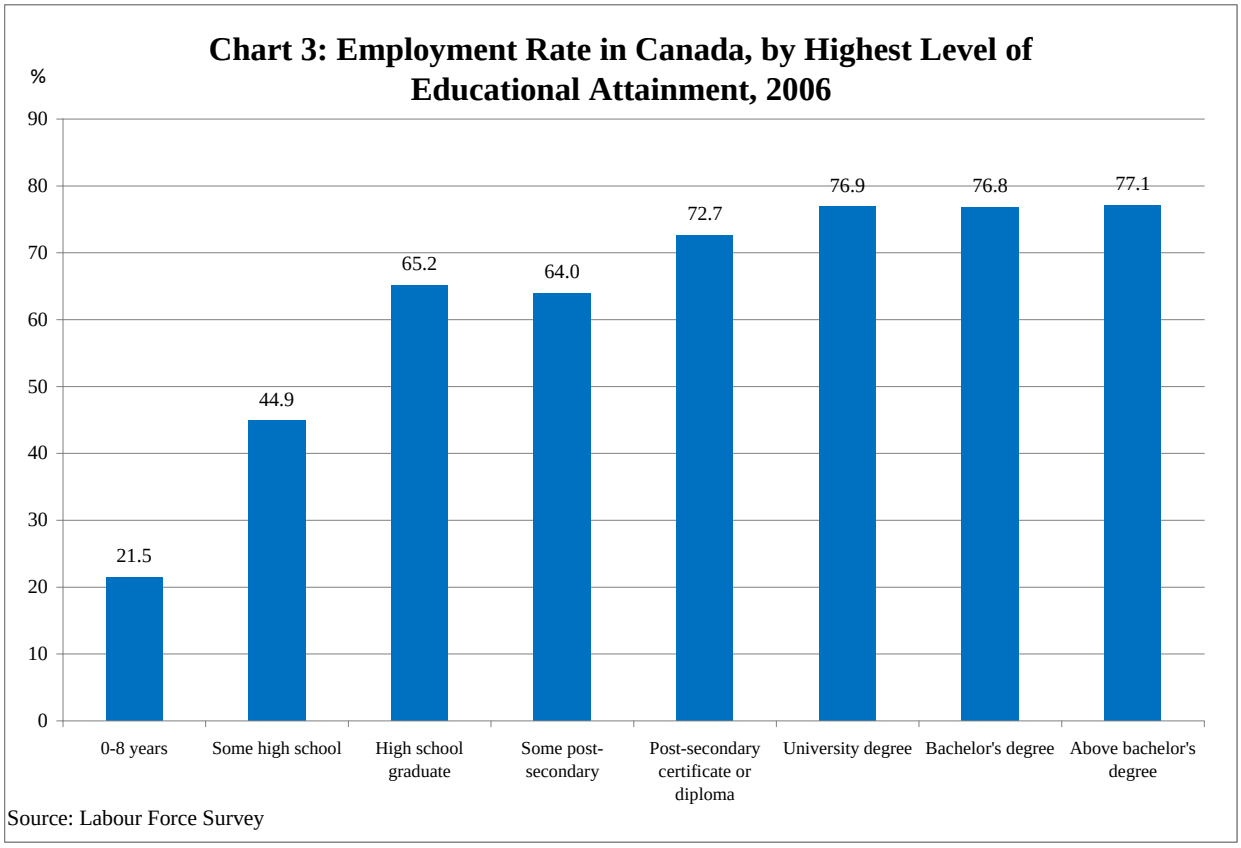
holds a significant advantage: 69.5 per cent of persons whose highest level of education attainment was high school graduation participated in the labour force. The participation rate for persons with a post-secondary certificate was 76.6 per cent, well above that of persons with only high school certification. But for persons not completing their post-secondary education, the participation rate was only 69.0 per cent. Not surprisingly, persons who completed university education enjoyed a higher participation rate: 80.1 per cent. This number was almost the same for bachelor's degree holders (80.0 per cent) than for holders of advanced degrees (80.3 per cent). 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 points 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 none at all, and is even higher for people who actually completed high school (Chart 3). Persons with 0 to 8 years of education have a 21.5 per cent employment rate. This rate rises to 44.9 per cent for persons with some high school and to 65.2 per cent for persons whose highest level of educational attainment is high school graduation. Again, continuing to post-secondary education does not seem to bring any advantage if one does not complete, as the employment rate for persons with some post-secondary education is only

64.0 per cent. Obtaining a post-secondary certificate, however, certainly does hold advantages: 72.7 per cent of working age individuals with post-secondary education were employed in 2006. Persons with university degrees were employed at a 76.9 per cent rate. The employment rate is virtually identical for bachelor's degree holders (76.8 per cent) and persons with above bachelor's degree (77.1 per cent). As was the case for unemployment and the labour force participation rate, there was a large employment rate gap between Canadians who did not finish high school and those who did: 34.1 percentage points.



Source: Labour Force Survey

B. Educational Attainment, Income and Productivity

If society is able to keep young people in school and increase their level of educational attainment, it will give them the necessary tools to improve their future quality of life. 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. Although education is not the sole determinant[4] of individual success in the labour market, it is probably

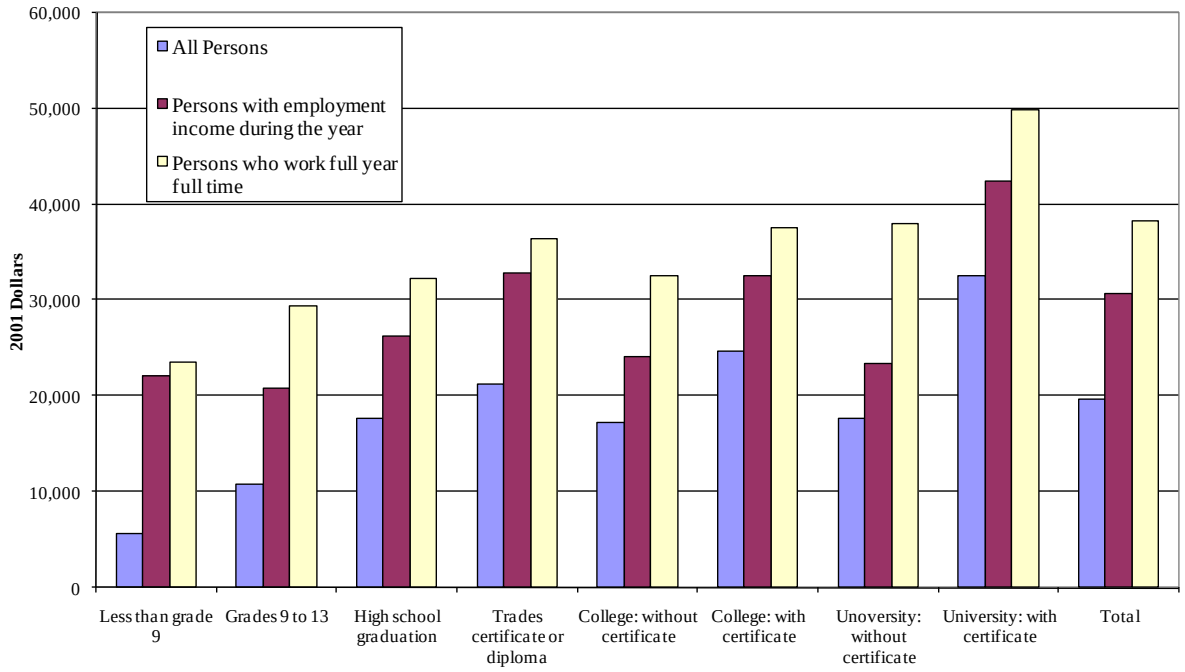
[4] It must be remembered when looking at employment income differentials that the inequalities are not all due to educational attainment. As we will see later in the report, the Aboriginal population in Canada earns less than non-Aboriginals at all levels of educational attainment. Holding education constant, there are many reasons why these differences may occur, such as the availability of job opportunities, perceived or actual differences in the quality of a given level of educational attainment, labour market discrimination, and individual preferences.

the most important. This section of the report will first examine the relationship between education and income using data from the Census. Then, it will briefly highlight some of the vast literature measuring the extent of the relationship between literacy levels and worker compensation.

i. Evidence from the Census

Overall, average employment income for all persons 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.

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



Source: Census 2001

Interestingly, persons who, after graduation from high school, continued to post-secondary education without finishing earn almost the same income on average than those who did not. However, graduating from college clearly holds an advantage: college graduates earn on average $24,569 ($32,539 considering only those with employment income and $37,520 for those who work full time the whole year). University graduates earn even more than 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 usually translate into larger incomes (Appendix Table 11).

Chart 4 also highlights the fact that full-time, full-year workers earned significantly more than others. This reflects the larger amount of hours worked by these workers, which in turn may reflect the greater employment opportunities for persons with higher education. It may also reflect personal preferences as there is a higher opportunity cost to idleness when well educated. Average income for workers with employment income was lower as it includes seasonal and part-time workers. However, despite reducing the level of income, including such workers does not significantly affect the obvious beneficial effect of education.[5] Finally, the average income level of the total population is drastically lower than the other two as it also include individuals with no income. The returns to education, however, still remain clear with average employment income increasing in line with the level of educational attainment.

ii. Evidence from the Literature

Coulombe et al. (2004) examined levels of human capital in OECD countries in relation to economic growth. Instead of measuring human capital using the usual years of schooling, they developed an indicator of human capital based on worker literacy scores. They found a strong relationship between human capital and growth, concluding that human capital had a positive and significant impact on the GDP level as well as a positive effect on the growth rate of the economy. Providing workers with opportunity for higher educational attainment would consequently yield higher GDP per capita, due to the increasing share of high skilled workers. The increase in overall productivity would increase GDP per capita and could potentially make everyone better off in term of standards of living.

In this context, a higher skilled worker benefits not only him or herself. In fact, an improvement in the quality of the workforce also benefits the wider population through the far reaching benefits stemming from increased productivity. The opposite can also be said for low skilled workers; low or unskilled workers reduce the quality of the labour force, dragging productivity down. Thus, ensuring an adequate level of human capital, both through formal education and better workplace skills development, has the potential to increase Canada's global competitiveness and profit all Canadians.

Coulombe et al. (2004:28) also found that two fifths of wages are due to basic labour, while the other three fifths represent the returns to skill. Therefore a larger share of workers' wages is related to their levels of skill, which in turn are highly affected by education. This also implies that as wages rise for skilled workers, the returns to schooling increase. The increase in wages for skilled workers is creating a gap between skilled and unskilled workers as the new and increasingly efficient technologies of the workplace are accelerating skilled workers productivity at a rate incomparable to that of the unskilled. Those who have lower levels of educational achievement are therefore falling farther behind.

[5] To the exception of the group with some college education but without certificates which do not have a larger income than workers with trade certificate or diploma.

C. Educational Attainment and Other Indicators of Well-Being

There have been many studies on the benefits of education for the overall quality of life. Education increases well-being through many channels, the most obvious being the increase in income resulting from higher educational attainment. The development of greater human capital, however, not only increases productivity and income, but can also reduce poverty, decrease crime, and improve health.

The literature shows that the long term benefits from education mean it is an investment well worth making due to the returns to society and the individual. The OECD (1998), for example, calculated that for Canada the private rate of return to university education in 1995 was 14 per cent for men and 21 per cent for women. Similarly, in a study focusing on Canada, Vaillancourt (1998) evaluated the rate of returns for different level of education attainment in 1985 and 1990. He found that the highest rates of return resulted from obtaining a high school diploma. The latter finding suggests that targeting those from disadvantaged backgrounds is likely to be the most effective strategy as they generally have a predisposition to drop out of high school. They also have a higher probability of committing crimes, experience low lifetime wages and have poorer health. It is also beneficial to target children because the rates of return from such investments are higher. This follows from the fact that the early years of development often "set the stage for learning, behaviour and health throughout the life cycle" (McCain and Mustard, 1999).

In this section, we not only focus on the direct benefits of education, but also on the interaction between education and other indicators of well-being. First, we briefly review the literature focusing on poverty and the possibility for disadvantaged youth to exit the cycle of poverty if given a proper education. Then, we examine the negative relationship between education and crime. We follow with a review of the relationship between family structure and education. We then examine the potential positive health effects of an increase in educational attainment. Finally, we review part of the literature on early child program and the potential they have in increasing educational attainment and thus achieve positive outcomes both individually and socially through the linkages reviewed in this section.

i. Poverty

Poverty is an issue with many implications for individuals and society. Childhood poverty, in particular, is often considered most troubling both because it affects persons who have little control over their life and because it has important long-term impact on society. Holzer et al. (2007:13) estimates that, in the United States, growing up in poverty reduces the national aggregate output (GDP) by 1.3 per cent or approximately $170 billion per year. It is further estimated that the total social cost to the United States associated with childhood poverty totals approximately $500 billion a year, which is around four per cent of GDP (Holzer et al., 2007:22). Persons from poor upbringing are more likely to be teen parents, engage in crime, have poorer health, and be unemployed in adulthood. Targeting disadvantaged youth through better educational opportunities, therefore, has the potential to reduce many of the negative externalities associated with a disadvantaged background.

Holzer et al. (2007) also suggest that inequalities, such as poverty, which are passed on through generations can be attributed 40 per cent to hereditary reasons, and 60 per cent to other factors, such as environment. Therefore, if we are able to provide better opportunities for educational attainment for children in disadvantaged environments we are then likely to have made a significant difference in improving both their lives and overall societal outcomes.

ii. Crime

Many studies show a strong linkage between low income and crime. For example, Holzer et al. (2007:18) estimate that poverty was responsible for 40 per cent of crimes in the United States. Elliot and Ageton (1980) also show the predisposition of disadvantaged youth and their participation in crime. They calculate that lower class youth committed nearly four times as many violent crimes as middle class youth. The reduction of poverty through higher levels of education attainment would thus result in lower level of crime and a fall in the costs associated with crime.

In addition to the relation between poverty and crime, researchers have also found that increased educational attainment directly reduces crime. Lochner and Moretti (1997) looked at the effects of education on crime through Census and FBI data in the United States and found a negative correlation between years of education and the rate of incarceration and arrest. The authors found that increased schooling significantly reduces the probability of incarceration and arrest.[6] More specifically, Lochner and Moretti found that incarceration rates decline with schooling beyond the eighth grade, with the largest decline occurring after high school graduation. They also showed that in the United States, White males[7] in states with 11 or more years of compulsory school attendance historically have a dropout rate 5.5 per cent below that of White males in states with eight or less years of required attendance (Lochner and Moretti, 2004:164). Therefore, because high school graduation is associated with lower incarceration rates, they believe that compulsory schooling laws are beneficial. More importantly, they find that increasing the graduation rates of children from disadvantaged environments has an even higher rate of return than for average children since the reduction in criminal activity from higher educational attainment is generally larger for disadvantaged youth.[8]

The most basic explanation as to why higher levels of education reduce the levels of crime is related to finances. A worker with a higher level of education has a greater likelihood of receiving a higher wage. First, this would decrease the need to commit crimes for financial gains. Second, if earnings are higher, there is a higher opportunity cost associated with the possibility of being caught and punished for criminal activity. There may also be more of a stigma around criminal behavior for well educated workers than for poorly educated workers.

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[6] Interestingly, they also controlled for the possibility of increased leniency due to a person's education background, but the results remained unchanged as prison sentences for the same crime were found to be similar among both high school dropouts and graduates.

[7] White males 20-60 years from the US censuses 1960, 1970, and 1980. Size of 3,209,138 individuals.

[8] Lochner and Moretti (1997) estimate that one extra year of schooling reduces the probability of incarceration by 0.1 percentage-points for whites and 0.37 percentage-points for blacks. They also estimated that one more year in the average level of schooling reduces overall arrests by 11 per cent. They showed that a Black high school graduate had a 3.4 percentage point lower probability of incarceration than a Black dropout, while White graduates had a 0.76 percentage point lower probability of incarceration than White dropouts.

Keeping children in school longer also keeps them off the street as it gives them something to do with their time and out of an environment which may be conducive to criminal opportunities. Another effect of school noted in Lochner and Moretti (1997) is that more years of schooling has been shown to make one more risk averse and less impatient, characteristics that may also be associated with declines in crimes. Increased risk averseness, along with the higher opportunity cost associated to time spent in jail, would decrease the benefits of crime at its current payoff level and therefore the number of crimes should be seen to diminish.

Lochner and Moretti (2007) estimate that in the United States, high school graduation has the biggest effect on violent crimes. As violent crimes are the most costly type of crime, reducing their number has enormous benefits. They estimate that a one year increase in the average years of schooling of the population will reduce murder and assault by 30 per cent, motor vehicle theft by 20 per cent, arson by 13 per cent and burglary and larceny by approximately 6 per cent. They also estimate that a one per cent increase in the male high school graduation rates would save as much as $1.4 billion (2003 US dollars) annually as a result of social savings from the reduction in crime.

Improving educational attainment and increasing high school graduation rates might well be a more effective crime reducing strategy than increasing the size of the police force. By increasing risk averseness and the opportunity cost of jail time as well as by diminishing the need for committing crime, encouraging the achievement of higher levels of educational attainment appears to be an effective policy to fight crime. In addition, the benefits from schooling have much larger long run benefits as higher education encourages one to become a contributing member of society and can potentially reduce social costs associated with crime such as policing costs, incarceration costs, legal costs and correctional services costs.

iii. Births/ Family Structure

There are two ways in which educational attainment and family structure interact. On the one hand, family environment greatly influences educational attainment. For example, children who grow up in single parent families are less likely to achieve higher levels of educational attainment than children in two-parent homes. This may be due to the fact that there are lower expectations from single parents, so children are more likely to take less interest in school. These children who disengage themselves from school at an early stage are more likely to develop low cognitive abilities, as schooling does not stimulate them, and to eventually become high school dropouts. Lower cognitive ability is also associated with a higher probability of incarceration and increased likeliness of having children at a young age. It is, therefore, very important to target children in this situation with quality schooling to help them overcome their predisposition to these negative behaviours.

On the other hand, high school dropouts are also more likely to have out-of-wedlock births. In 2000, 10 per cent of babies in the United States were born to unmarried teenage mothers (Heckman and Masterov, 2007). This situation of children being born into teenage single parent households only perpetuates the cycle of the disadvantaged environment. Teenaged mothers, who themselves generally had lower levels of cognitive ability and were uninterested

by school, are unlikely to push their children to achieve higher levels of educational attainment. Heckman and Masterov state further that poorly educated teenage mothers are also likely to have children who participate in crime. It is therefore of potentially great importance that society offer all children the opportunity to gain the educational tools that will benefit them in the future, as the benefits will extend far beyond their private returns and help society as a whole.

iv. Health

Education also plays a role in health. Education makes people aware of the importance of good nutrition, the danger of smoking, and the benefits of making healthier lifestyle choices. Ross and Wu (1995) examined the links between education and health in three areas: work and economic conditions, social-psychological resources, and health lifestyle. They found that well educated people reported better physical functioning[9] and a better sense of control over their lives and health than poorly educated people.

Work and economic conditions were shown to affect health as people who reported to have suffered from economic hardship[10] reported poorer levels of health. Economic hardship was highest among those who did not graduate high school. People with above average educational attainment and who were employed reported to have the highest level of health, (Ross and Wu (1995:722). These findings substantiate the view that education plays a part in improving health.

Individuals with higher incomes, who generally are well educated, report better health than those with lower levels of income. Holzer et al. (2007) estimated that poverty raises the direct expenditures on health care by about $22 billion a year in the United States. Therefore increasing levels of education and giving people the skills to help them reduce their levels of poverty will in turn help them improve their health status. This would lead to direct benefits from a reduction in both private and public healthcare spending. Thus, the gains related to better health would be felt by both private individuals and the public in general.

The impact that education has on health, though, is due to much more than higher income. Ross and Hubert (1985) find that poorly educated people, even at the same income level as well educated people, experience greater health hardship. This may be associated with the fact that low educational attainment is associated with higher rates of infectious disease, many chronic non-infectious diseases, self-reported poorer health, shorter survival when sick and shorter life expectancy.

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[9] Physical functioning deals with self-reports of physical mobility and functioning in daily activities. The physical function was measured using an index of seven questions. " How much difficulty do you have (1) going up and down stairs; (2) kneeling or stooping; (3) lifting or carrying objects less than 10 pounds, like a bag of groceries; (4) using your hands or fingers; (5) seeing, even with glasses; (6) hearing; (7) walking?" Respondents then answered these questions with either 'a great deal of difficulty', 'some difficulty' or 'no difficulty'.

[10] Ross and Wu's measured economic hardship from the responses to three questions posed. "During the past twelve months, how often did it happen that you (1) did not have enough money to buy food, clothes or other things your household needed; (2) did not have enough money to pay for medical care; and (3) had trouble paying bills?" Respondents answered each question either 'never', 'not very often', 'fairly often' or 'very often'. The economic hardship index is the mean response to the three questions.

Ross and Wu (1995) found that, in general, well educated people have more rewarding jobs giving them more of a sense of self worth and a more fulfilling and enjoyable work life. In addition, it was found that more educated people have a better sense of control on their lives and understand that many outcomes in their life depend on their actions. This in turn may influence people to quit or not smoke, exercise and take preventative measures, such as routine check-ups, which may explain why well educated people report much better health.

The effect that education has on a conscious decision to lead a healthy lifestyle are illustrated by Ross and Wu through the examples of smoking, exercise, drinking and check-ups. It is shown that well educated people are more likely to have never smoked or to have quit. As smoking and the externalities associated with second hand smoke have been proven to be harmful, a decline in the smoking population will have many social benefits. Drinking has also been shown to be affected by education; persons with above average levels of education are reported to drink more moderately than persons with below average education (Ross and Wu, 1995:724). There is also a positive correlation between physical activity and education. Exercise is an important component of maintaining a healthy lifestyle and well educated people are more likely to engage in exercise on a regular basis. The last factor looked at was medical check-ups. They are important as people who had annual physicals were more likely to detect early signs of illness and receive immunizations.

v. Impact of Early Education Programs

There is a large literature that argues that the most effective way to help children of disadvantaged background achieve higher educational attainment is through investment into the early years of learning (Heckman and Masterov (2007), Lynch (2007), McCain and Mustard (1999)). Providing a solid foundation in the early years upon which students can build is a much better strategy than investing later in their education because the capacity of children to change their human skills' development path is highest at a young age. That is not to say that investing in high school, for example, is not important. It is simply that the returns from investment at a young age are higher than solely investing later in life, such as on job training or GED programs.

Heckman and Masterov (2007) present a very persuasive case for the benefits of investing in young children. Presenting evidence on disadvantaged youth in the United States the study asserts that investments in the education of the young outweigh the costs due to the overwhelming future productivity gains. They argue that investments in education for disadvantaged youth will be beneficial to all, as it will benefit them, their children and society as a whole. The benefits will be manifested not only through higher wages, but also through fewer out-of-wedlock births and less crime. Investments in education, properly directed, can make society more socially functional, affluent and safer. Heckman and Masterov also note that education investments are a rare public policy choice with no equity-efficiency trade off. In fact, they point out that the estimated rate of return on one of the best documented early intervention program is in the range of 16 per cent; 4 per cent goes to the participant and 12 per cent is felt by society at large.

In Canada, the McCain and Mustard (1999) report in Ontario also convincingly make the case for early child programs. After reviewing the neuroscience evidence on early child

development and examining the linkages between such programs and individual and societal outcomes, they conclude that early child programs provide net benefits to society. They also point out that these programs are even more beneficial today than in previous periods as women enter the labour force in increasing numbers and young workers devote more hours to work.

Lynch (2007) also provides arguments as to why educational investment at a young age is a good long-term economic policy, as high quality pre-kindergarten generally pays for itself. He finds that despite the upfront cost of providing suitable pre-kindergarten programs, by 2050 the benefits of the program would outweigh the costs by 12.1 to 1. A policy of this nature would actually earn the government money through increased revenues and lower costs from the reduction of crime. Education therefore improves the quality of life of the student and society in general as a result of both a safer environment and an increase in government revenues. Although the initial costs of these programs are high - each participant will cost approximately $6,300 (Lynch, 2007:4) - it is estimated that if such a program were instituted universally in the United States it would only take 12 years for the program to start providing positive net benefits.

The attractiveness of such a policy can also be seen as better education programs for children at a young age will reduce the need for remedial and special education programs in the future. This will reduce the need for government funding in remedial and special education programs. The need for government to provide social assistance will also decline as children will have more of the tools needed to help lift themselves out of poverty as adults.

Investment in education can have sustained effects on the lives of children as they will be able to improve their lives, the lives of their future children and society as a whole. Education benefits not only the economic aspects of life, but also improves other facets as well. Education decreases participation in criminal activity, reduces the occurrence of teen pregnancy, encourages people to make better lifestyle choices and improve their health. Quality education provides children with the skills to improve their future and contribute to society. In general, the benefits of effective educational programs can therefore be seen to greatly outweigh any costs associated with their implementation.

III. A Portrait of Aboriginal Canadians

This section draws a portrait of the major characteristics of Aboriginal Canadians. It uses data from the 1996 and 2001 censuses to illustrate how the Aboriginal population fares compared to the general population, and how much their situation has changed between the two Census years. First, it focuses on the distribution and size of the Aboriginal population relative to the general Canadian population. Then, it examines the census data on Aboriginal educational attainment, income, labour market participation, unemployment and employment.

A. Characteristics of the Aboriginal Population

The Census is the most important source of detailed information on Aboriginal Canadians. The most recently released Census contains labour market data for the year 2001, and income data for 2000. Results from the 2006 Census are scheduled to be released only in 2008. Consequently, the data used in this section are largely drawn from the 2001 Census, even though these data are over half a decade old. Specifically, this report uses the Public Use Micro-Data Files, which allows the user to create custom tabulations.

Table 1: Population Growth by Identity Group, per cent unless otherwise noted, 1996-2001

	Total Population	Non-Aboriginal	Aboriginal	North American Indian	Metis	Inuit
1996 (thousands of persons)	29610.8	28706.7	904.3	648.0	214.2	42.1
2001 (thousands of persons)	31021.3	29954.5	1066.5	713.1	305.8	47.6
Increase Over 1996-2001	4.8	4.3	17.9	10.0	42.8	13.1
Share of Total Population in 1996	100.0	96.9	3.1	2.2	0.7	0.1
Share of Total Population in 2000	100.0	96.6	3.4	2.3	1.0	0.2
Share of Aboriginal Population in 1996	-	-	100.0	71.7	23.7	4.7
Share of Aboriginal Population in 2000	-	-	100.0	66.9	28.7	4.5
Contribution to Total Population Growth	100.0	88.5	11.5	4.6	6.5	0.4
Contribution to Aboriginal Population Growth	-	-	100.0	40.1	56.5	3.4

Source: Statistics Canada (2005a), 1996 and 2001 Census of Population Adjusted Counts (July 1st).

One issue related to Census data is population underestimation particular to the Aboriginal populations. In addition to general undercounting issues,[11] Statistics Canada officials often run into additional problems when trying to enumerate reserves. For example, in 2001, they were for various reasons unable to completely enumerate about 30 reserves. The official Census data are not adjusted for this collection issue, but adjusted estimates are provided in Statistics

[11] The Census population estimate is about 3 per cent lower than the adjusted population estimate that takes account of undercounting.

Canada's *Projections of the Aboriginal Populations*. These are the data used in this sub-section.[12]

In 2001, the Census indicated that 976,305 individuals identified themselves as Aboriginal Canadians. However, due to general undercount and incompletely enumerated reserves, as noted above, it is estimated that 90,195 Aboriginal Canadians were not included. Including these individuals, 1,066,500 Aboriginals lived in Canada in 2001. Of the difference between the two population estimates, 31,000 is due to incompletely enumerated reserves and the remainder, 59,195, is due to general Census undercount. The Aboriginal population accounted for 3.4 per cent of the total Canadian population in 2001 according to the adjusted number (Table 1).

The Aboriginal population is classified into three groups: North American Indians, Metis and Inuits. In the Census, these are referred to as Aboriginal Identity groups. Individuals are asked to self-identify when completing the questionnaire. Two problems arise: some choose to identify as belonging to more than one group, and some of the individuals stating that they have registered Indian status do not identify any group. Again, some adjustments are needed to obtain reliable data. The report *Projections of the Aboriginal Populations* by Statistics Canada, mentioned earlier, adjusts the data for the 6,700 persons who indicated belonging to more than one group, and the 23,400 persons who did not self-identify as Aboriginal Canadians, but were counted as Registered Indians or member of an Indian Band. In 2001, there were 713,100 North American Indians (66.9 per cent of total Aboriginal population), 305,800 Metis (28.7 per cent), and 47,600 Inuits (4.5 per cent).

Table 2: Characteristics of the Aboriginal Population by Province, 2001

	Proportion of the Canadian Population	Proportion of the Aboriginal Population in Canada	Incidence of the Aboriginal Population
Canada	100.0	100.0	3.4
Atlantic	7.5	5.4	2.4
Quebec	23.8	9.0	1.3
Ontario	38.4	20.1	1.8
Western Canada	29.9	60.6	7.0
Manitoba	3.7	14.9	13.8
Saskatchewan	3.2	13.0	13.8
Alberta	9.9	15.7	5.5
British Columbia	13.1	17.0	4.4
Territories	0.3	4.8	52.0
Yukon	0.1	0.7	23.9
NWT	0.1	1.9	50.5
Nunavut	0.1	2.2	84.3

Source: Statistics Canada (2005a), 2001 Census of Population Adjusted Counts (July 1st).

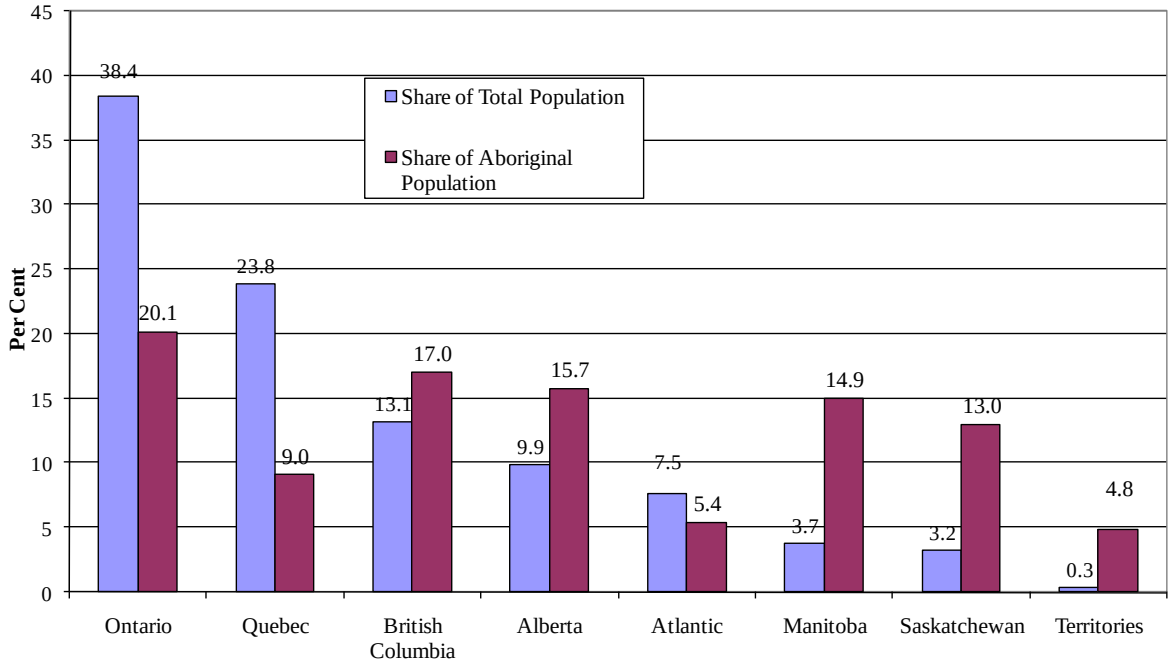
[12] However, in the remainder of the report, when breakdowns by educational attainment of the Aboriginal are used, the data from the Census 2001 Public Use Micro-data Files were used. Note that no absolute numbers will be used from the Public Use Micro-Data Files, but only shares of the total and growth rates. To the degree that non-enumerated reserves have the same characteristics as other reserves, this measure's underestimation is of little importance as it will not affect ratios or growth rates.

There is a long history of Treaties between North American Indians and the Government of Canada dating back to the period of colonisation. Aboriginal Canadians covered by Treaties can register under the Indian Act (the most recent revision being in 1985), which provides certain advantages, rights and protections that apply to registered Indians. 83 per cent of North American Indians were registered in 2001. The Inuit and Metis groups, however, are not recognized as Indian under the Act and thus do not benefit from its statutes.

Of the 1,066,500 Aboriginals mentioned above, 352,000 lived on reserves, around a third of the total. The vast majority of the Aboriginals living on reserve were North American Indians: 341,300 or 97 per cent. Equally, this means that just about half (47.9 per cent) of North American Indians lived on reserves in 2001 (Statistics Canada, 2005a).

In 1996, the total Aboriginal population stood at 904,300, which represented 3.1 per cent of the total population. By 2001, it had grown 17.9 per cent to reach 1066.5 thousands persons. Considering the total Canadian population grew by only 4.8 per cent over the same period, this means that Aboriginal Canadians were responsible for 11.5 per cent of the total Canadian population growth. Consequently, the share of the total population accounted by the Aboriginal population increased from 3.1 per cent in 1996 to 3.4 in 2001 (Table 1).

Chart 5: Relative Importance of Aboriginal Population by Provinces and Territories, 2001

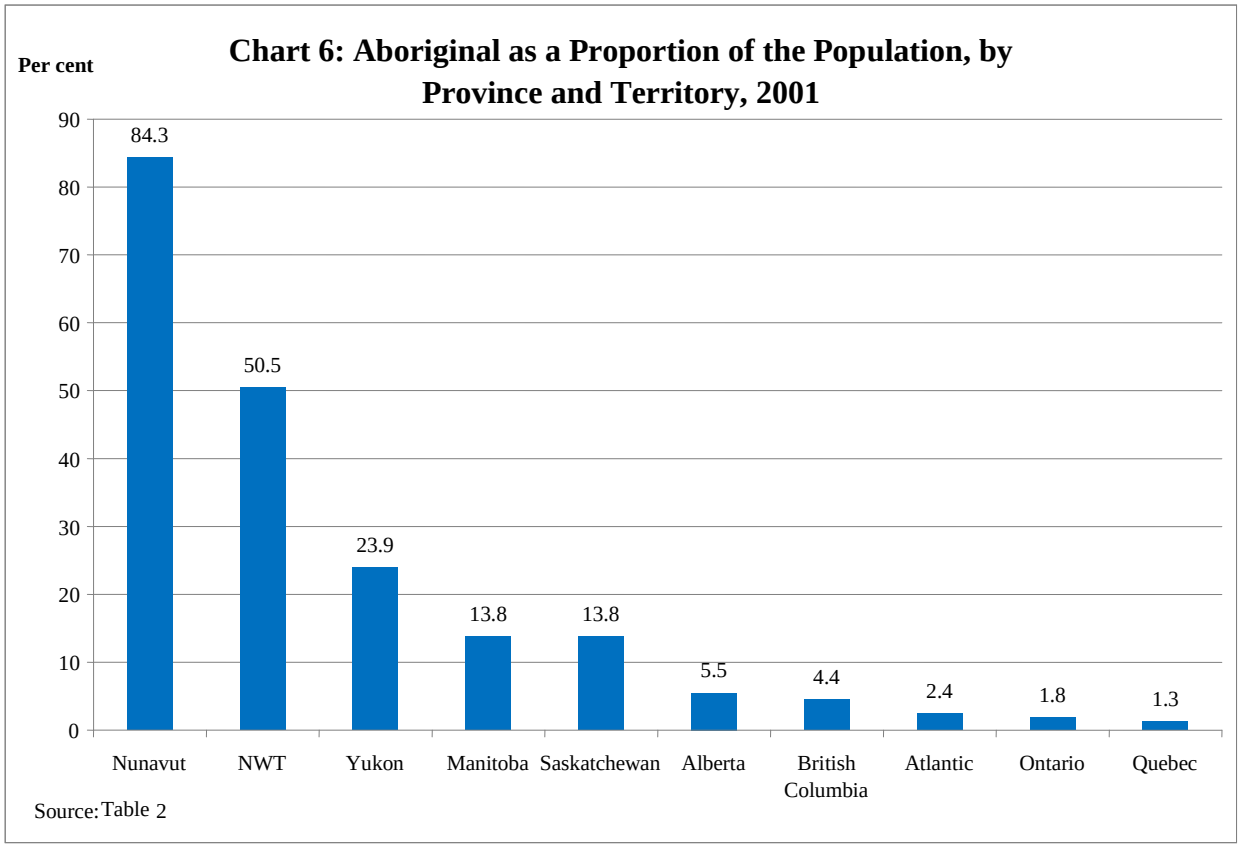


Source: Table 2

The North American Indian population was 648,000 in 1996 and experienced 10.0 per cent growth over the 1996-2001 period to reach 713,000 in 2001. The Metis community was estimated to have a population of 214,200 in 1996 rising to 305,800 in 2001, 42.8 per cent growth over the five years. Historic rights of Metis have been increasingly recognized, which

may have contributed to this massive increase in the number of persons also self-identifying as Metis. The Inuit population grew to 47,600 in 2001 from 42,100 in 1996, a total growth of 13.1 per cent over the 1996-2001 period.

If the Metis population had increase between 1996 and 2001 at the same rate as the North American Indian population (10.0 per cent instead of the actual 42.8 per cent), the Metis population in 2001 would have been 235.7 thousands, not 305.8 thousands. The total Aboriginal population in 2001 would have been 996.4 thousands, not 1,066.5 thousands. Similarly, the growth rate of the Aboriginal population between 1996 and 2001 would have been 10.2 per cent instead of 17.9 per cent and the share of the total population self-identifying as Aboriginal would have been 3.2 per cent instead of 3.4 per cent. In other words, 43.2 per cent of the total growth in the Aboriginal population between 1996 and 2001 appears to have been due to the increasing number of persons with Metis roots who self-identify as Metis.



The geographic distribution of the aboriginal population does not correspond to the distribution of the general population, either on a provincial basis or on a rural/urban basis. The Aboriginal population is much more concentrated in the Western provinces and in the Canadian north and in rural and remote locations. Out of the 1,066.5 thousands of Aboriginals in 2001, 60.6 per cent live in the four Western provinces (Chart 5 and Table 2). These provinces accounted for only 29.9 per cent of the total population. In other words, the relative weight of Western Canada in term of the Aboriginal population is double that of the overall population.

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A total of 4.8 per cent of the Aboriginal population in 2001 resided in one of the three territories, compared to only 0.3 per cent of the total population. Only 9.0 per cent of the Aboriginal population lived in Quebec and 20.1 per cent in Ontario, a much lower proportion than could be expected given the large proportion of the Canadian population in these provinces (23.8 and 38.4 per cent respectively).

In term of the individual provinces and territories, Aboriginals are the most highly concentrated in Nunavut, where they represented 84.3 per cent of the population in 2001 (Chart 6 and Table 2). The Aboriginal share was 50.5 per cent in the Northwest Territories and 23.9 per cent in Yukon. The two provinces that had the greatest concentration of Aboriginals were Manitoba and Saskatchewan, each with around 14 per cent of their population. Alberta's population was composed of 5.5 per cent of Aboriginal Canadians, and British Columbia 4.4 per cent. Atlantic provinces had 2.4 per cent of their population as Aboriginals, while Ontario and Quebec had 1.8 and 1.3 per cent, respectively.

In most provinces and territories, the Aboriginal population is composed mostly of North American Indians and Metis. However, almost all of Nunavut's population is Inuit. The other two provinces with a high proportion of Inuits are Quebec and Newfoundland, with some also living in the Northwest Territories.

B. The Educational Attainment of Aboriginal Canadians

It was shown earlier in the report that education was an important determinant of income, labour market outcomes and other indicators of well-being. In particular, higher educational attainment was associated with higher income, lower unemployment, higher labour market participation, lower chances of being involved in crime, and better overall health. This section examines the level of educational attainment of Aboriginal Canadians in relation to the level attained by non-Aboriginal Canadians.

i. Situation in 2001

Aboriginal individuals on average had a lower educational attainment in 2001 than their non-Aboriginal counterparts. Slightly over half (52.2 per cent) of Aboriginal Canadians had completed high school, compared to 69.1 per cent of non-Aboriginal Canadians (Table 3).

The high school completion rate of individuals aged 25 to 34 years old is a good indicator of future completion rates as it reflects the educational attainment of the youngest 10-year cohort that can be expected to have completed high school. In 2001, 65.6 per cent of the Aboriginal population in this age group had completed high school compared to 44.0 per cent for the 55-64 age group, High school completion is thus higher for younger age cohorts (Chart 7a).

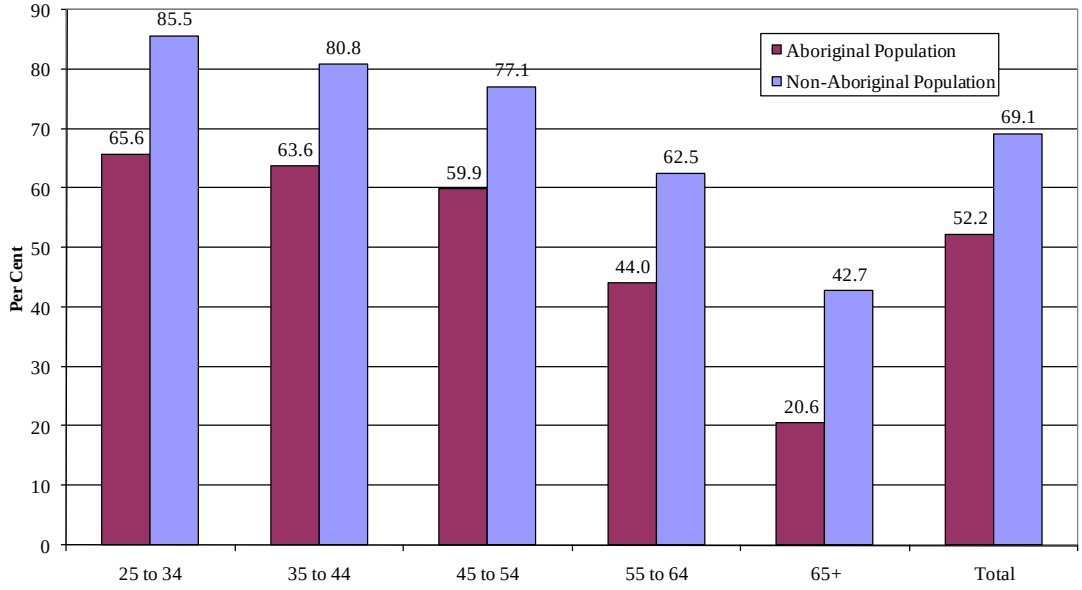
Table 3: Proportion of the Population by Educational Attainment and Aboriginal Identity, 1996 and 2001

	1996			2001		
	Aboriginals	Non-Aboriginals	Gap	Aboriginals	Non-Aboriginals	Gap
Less than Grade 9	20.2	11.8	8.4	15.0	9.7	5.3
Grade 9 to 13, Without Certificate	33.6	22.4	11.1	32.9	21.2	11.7
Grade 9 to 13, With Certificate	8.5	14.5	-6.0	9.5	14.2	-4.8
Trades Certificate or Diploma	3.8	3.7	0.1	3.9	3.5	0.4
College: Without Certificate	6.4	6.3	0.2	8.8	6.4	2.4
College: With Certificate	14.9	17.9	-2.9	16.8	18.8	-2.1
University: Without Certificate	2.7	3.3	-0.6	4.3	4.4	-0.1
University: With Certificate	7.8	20.0	-12.1	8.9	21.8	-12.8
Less than High School Graduation	53.8	34.3	19.5	47.8	30.9	16.9
High School Graduation or Greater	44.1	65.6	-21.4	52.2	69.1	-16.9
High School Graduates Continuing to Post-Secondary Education	80.8	77.9	2.9	81.9	79.4	2.5
High School Graduates Completing Post-Secondary Education	60.1	63.3	-3.2	56.8	63.8	-7.0
College Drop-Out Rate	30.1	26.0	4.2	34.3	25.3	8.9
University Drop-Out Rate	25.6	14.2	11.4	32.7	16.8	15.8

Source: Census Public Use Microdata Files, 1996 and 2001

In both 2001 and 1996, a slightly larger proportion of Aboriginal high school graduates than non-Aboriginal high school graduates continued on to post-secondary education. In 2001, 81.9 per cent of Aboriginal high school graduates had some form of post-secondary education, compared to only 79.4 per cent for non-Aboriginal Canadians (Table 3). This is consistent with Mendelson's (2006) finding that Aboriginal high school graduates are just as likely as non-Aboriginal graduates to continue to post-secondary education.

Chart 7a: Proportion of the Population who Completed High School, by Age Group, 2001

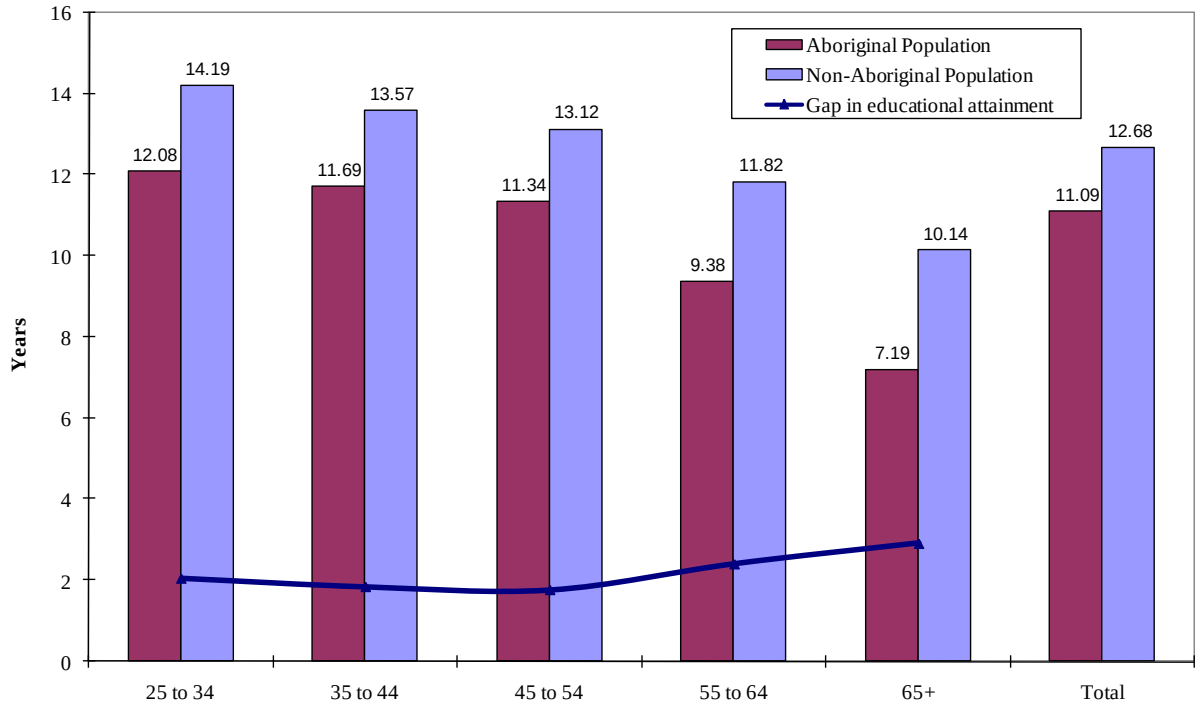


Source: Census 2001 Public Use Microdata Files

The picture is not as upbeat for Aboriginal Canadians if we consider only the proportion of those who actually obtained a post-secondary certificate or diploma. In 2001, the proportion of Aboriginal high school graduates who successfully completed further studies (56.8 per cent) was seven percentage points lower than for non-Aboriginal Canadians (63.8 per cent). For college, the drop-out rate of Aboriginal was 34.3 per cent in 2001 compared to only 25.3 per cent for non-Aboriginal Canadians, a 8.9 percentage points difference. At the university level, the difference was even larger (15.8 percentage points), with a 32.7 per cent drop-out rate for Aboriginal Canadians compared to only 16.8 per cent for the non-Aboriginal population in 2001.

In 2001, 8.9 per cent of Aboriginal Canadians aged 15 and over had obtained a university degree, 16.8 per cent a college certification or diploma and 3.9 per cent a trade certificate. Trades seem to be quite attractive to Aboriginal Canadians compared to their non-Aboriginal counterparts, since only 3.5 per cent of non-Aboriginals had that type of education. However, much more non-Aboriginal Canadians had other types of post-secondary education: 21.8 per cent graduated from university and 18.8 per cent from college. There were 9.5 per cent of Aboriginal Canadians with high school diploma as their highest level of educational attainment compared to 14.2 per cent of non-Aboriginal Canadians.

Chart 7b: Average Number of Years of Schooling, by Age Group, 2001



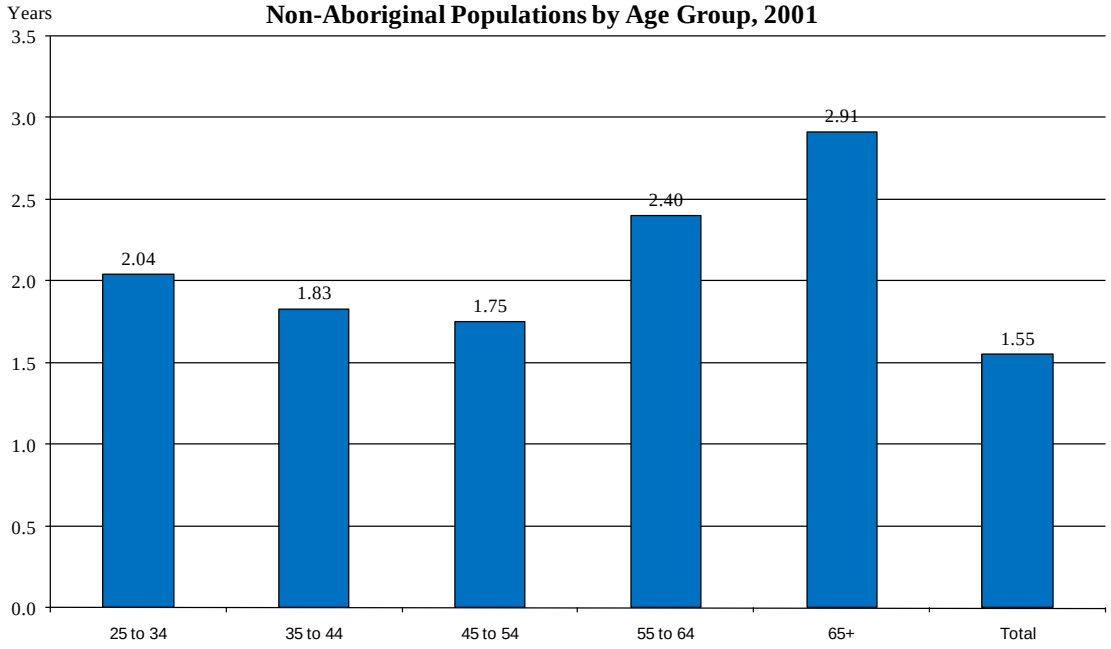
Source: Census 2001

Many Aboriginal Canadians enrol in post-secondary institutions, but do not finish their course of studies. Even though 13.2 per cent of the Aboriginal population went to university, only around two thirds of them graduated (8.9 per cent of the Aboriginal population). Hence, 4.3 per cent of the Aboriginal population did not graduate after beginning their university education. For the non-Aboriginal population, the proportion of the population not finishing university was

similar, at 4.4 per cent. However it represents a much smaller share of the population who went to university (21.8 per cent).

The average number of years of schooling[13] among the Aboriginal population in 2001 was 11.09 years, whereas it was 12.68 years for the non-Aboriginal population, a gap of 14.3 per cent. Younger age groups are more likely to have more years of education.[14] Using a cross-section decomposed by age, we can roughly observe the evolution in the average number of years of schooling through time. For example, 30 years ago, in 1971, the current 55 to 64 group was aged between 25 and 34 years. Thus, we can compare how educational attainment evolved since 1971 using the groups aged 55-64 group (1971), 45-54 (1981), 35-44 (1991) and the 2001 group aged 25-34. As Chart 7a and 7b illustrate, the trend in the proportion of Aboriginal Canadians who completed high school and the average years of schooling of the Aboriginal population are both clearly increasing through time. For example, only 44.0 per cent of the 1971 Aboriginal cohort had completed high school compared to 65.6 per cent for the 2001 cohort (Chart 7a). Similarly, while the 1971 cohort had only an average of 9.38 years of schooling, the 2001 cohort had an average of 12.06 years. Both indicators, however, show a slower progression for later cohorts than for earlier cohorts. For example, the 1981 Aboriginal cohort had on average 1.96 more years of schooling than the 1971 Aboriginal cohort whereas the 2001 Aboriginal cohort experienced an increase of only 0.39 years over the 1991 cohort.

Chart 8: The Gap in Educational Attainment Between the Aboriginal and Non-Aboriginal Populations by Age Group, 2001



Census 2001

The gap refers to the difference between the average number of years of education that Non-Aboriginals attain compared to the corresponding

[13] This was calculated from the Census 2001 Public Use Micro-data Files. Some respondent provided a direct number of years of schooling (e.g. "11 years"), but when the response was in a range of years (e.g. "Between 0 and 5 years"), the mid-point in the category was used as the value (in the last example, 2.5 years).

[14] Note that the 15 to 24 group is not presented because it includes many young people who have not yet completed their education.

Both Aboriginal and non-Aboriginal population experienced significant increases in their level of educational attainment since 1971. The Aboriginal population, however, has been unable to close the gap with the non-Aboriginal population in the average number of years of schooling. Comparing the 45-54 Aboriginal and non-Aboriginal cohorts, we can infer that non-Aboriginal Canadians of the same age had on average 2.40 more years of schooling than Aboriginal Canadians in 1971. This gap decreased to 1.75 years in 1981, but has increased since then, reaching 2.04 years for the 2001 cohort. In other words, despite constant increases in their level of educational attainment, Aboriginal Canadians' level of educational attainment has not been growing fast enough to close the gap with non-Aboriginal Canadians.

ii. Change in the 1996 to 2001 period

High school completion rates increased for Aboriginal communities between 1996 and 2001. Moreover, the gap between Aboriginal and non-Aboriginal populations in terms of non-completion of high school is closing. In 1996, 44.1 per cent of the Aboriginal population and 65.6 per cent of the non-Aboriginal population completed high school, a gap of 21.4 percentage points (Table 3). In 2001, the figures were 52.2 per cent for Aboriginal Canadians and 69.1 per cent for non-Aboriginal Canadians, a 16.9 percentage points gap. In other words, the gap was 4.5 percentage points lower in 2001 than in 1996. At this rate, the gap between Aboriginal and non-Aboriginal populations in terms of completion of high school would be only 3.4 percentage points in 2016.

Focusing on the 25 to 34 years cohort, 54.3 per cent of the Aboriginal population had completed high school in 1996, compared to 82.2 per cent of the non-Aboriginal population (Appendix Table 4). By 2001, 65.6 per cent of Aboriginal Canadians aged 25-34 had completed high school compared to 85.5 per cent for non-Aboriginal Canadians (Appendix Table 3). Thus, while the Aboriginal/non-Aboriginal gap in the percentage of the population completing high school was 27.9 percentage points in 1996, it decreased to only 19.9 percentage points in 2001, an eight point reduction.

In 1996, 8.5 per cent of Aboriginal Canadians had at most a high school diploma, one percentage point lower than in 2001. Post-secondary education is also on the rise among Aboriginal Canadians. In 1996, 21.4 per cent of them had frequented college (including those who did not graduate), and this figure increased to 25.5 per cent five years later (Table 3). There was a similar increase in university education; 10.5 per cent of Aboriginals had been to university in 1996, which increased to 13.3 per cent five years later.

The main difference between Aboriginal and non-Aboriginal populations was their respective drop-out rates: Aboriginal college and university drop-out rates increased from 30.1 and 25.6 per cent in 1996 to 34.3 and 32.7 respectively in 2001. Non-Aboriginal Canadians, on the other hand, experienced a slight decrease in their college drop-out rate (from 26.0 per cent in 1996 to 25.3 per cent in 2001) and only a marginal increase in their university drop-out rate (from 14.2 per cent in 1996 to 16.8 per cent in 2001).

iii. On-Reserve/Off-reserve Aboriginal Educational Attainment

Not all subsets of the aboriginal population face the same realities. In fact, major differences exist between those living in rural areas and those living in more urban settings. In effect, one of the variables most strongly related to the educational attainment of Aboriginal Canadians is their reserve status. The report titled "*Encouraging Success: Ensuring Aboriginal Youth Stay in School*" reviews much of the data comparing outcomes for aboriginals on and off reserves (Brunnen, 2005b). The author finds that an individual's area of residence has the largest influence on educational attainment.

Table 4: Educational Attainment of Aboriginal Canadians On- and Off-Reserve in the Western Provinces 1996, 2001

	On-Reserve Aboriginal			Off-Reserve Aboriginal			Non-Aboriginal		
	1996	2001	Change	1996	2001	Change	1996	2001	Change
Less than High School	63.9	60.4	-3.5	51.1	45.0	-6.1	33.5	30.2	-3.3
High School Certificate	5.8	7.2	1.4	9.1	10.2	1.2	12.3	12.1	-0.2
Some Post-Secondary Education	13.2	10.6	-2.6	18.0	14.1	-3.9	18.1	12.4	-5.7
Post-Secondary Certificate and/or Diploma and/or Degree	17.1	21.8	4.8	21.8	30.7	8.8	36.1	45.2	9.2

Source: Derived by CWF from Statistics Canada

Off-reserve residents have consistently higher educational outcomes than on-reserve residents (Table 4). On-reserve residents are twice as likely to have left school before grade nine than Aboriginal Canadians residing off-reserve. Moreover, in both 1996 and 2001 there was a larger proportion of off-reserve Aboriginal in every category of educational attainment beyond high school graduation. Finally, between 1996 and 2001, an additional 8.8 percentage points of off-reserve Aboriginal Canadians had a post-secondary certificate, diploma or degree compared to a 4.8 percentage point increase for on-reserve Aboriginal Canadians. This suggests that not only is educational attainment much higher for Aboriginal Canadians living off-reserve, but the off-reserve Aboriginal population also appears to be progressing faster than its on-reserve counterpart.

C. The Income of Aboriginal Canadians

In 2001, the average employment income of Aboriginal Canadians aged 15 and over was $12,866, 65.2 per cent of that of non-Aboriginal Canadians. This income gap reflected the influence of a number of factors. Given the importance of education in the determination of employment income, the below average level of educational attainment of the Aboriginal population directly contributed to the gap through lower wages. But even at the same level of educational attainment, the employment incomes of Aboriginal Canadians were below those of non-Aboriginal (Appendix Table 53).

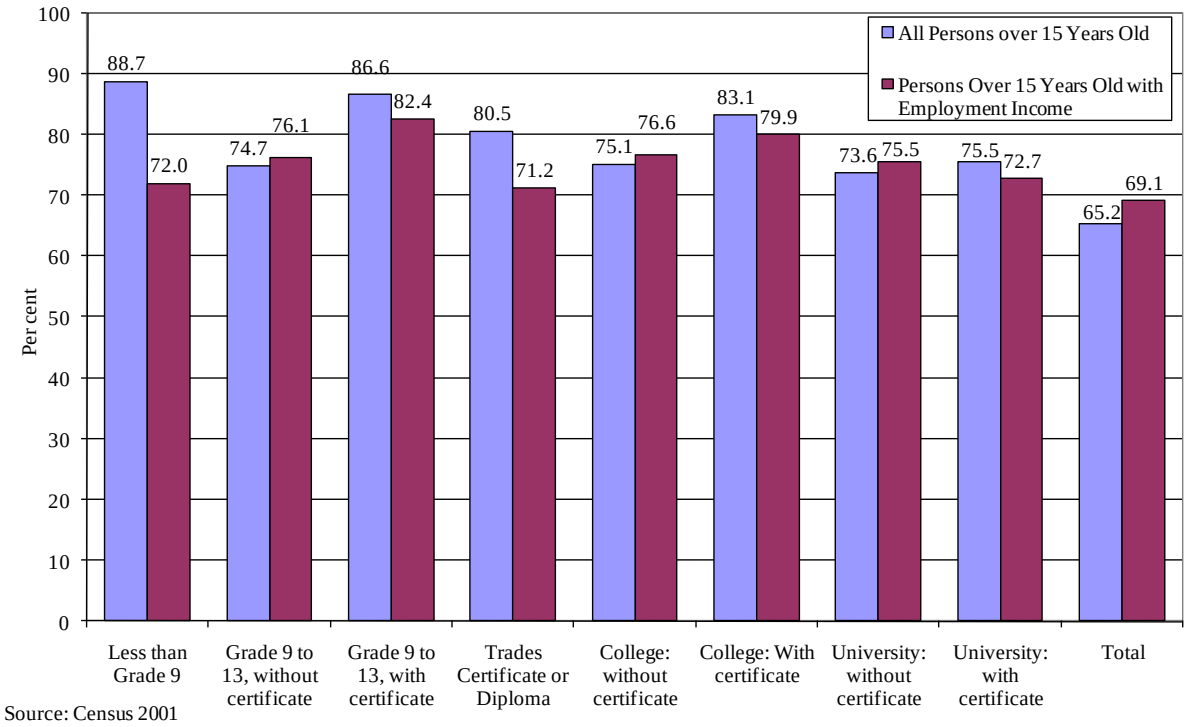
The income gap can be measured for three groups: all persons 15 and over, persons with employment income, and persons who worked full-time full year. These latter two groups are of course sub-sets of the first group, and the third group is a sub-set of the second group.

The largest of the employment income gaps is for all persons (65.2 per cent) and reflects the lower employment rate for Aboriginal Canadians relative to non-Aboriginal Canadians, in turn driven by the limited employment opportunities in rural and remote areas where many Aboriginal Canadians reside. The second largest employment income gap is for persons with employment income (69.1 per cent). This reflects the greater proportion of Aboriginals who have seasonal employment, again due to limited year round employment opportunities. The employment gap for full-year, full-time persons is the smallest but still substantial at 80.7 per cent. The factors behind this gap, other than educational attainment, are less obvious.

i. Situation in 2001

The income of Aboriginal Canadians is well below that of the non-Aboriginal population and is at the root of the much higher Aboriginal poverty rate. The low Aboriginal income in Canada can in part be attributed to lower levels of education. As discussed earlier in the paper, education and income are positively correlated. Higher levels of education usually translates into higher income, and this is also true for the Aboriginal population.

Chart 9: Average Employment Income of the Aboriginal Population, as a Share of non-Aboriginal Income, 2001

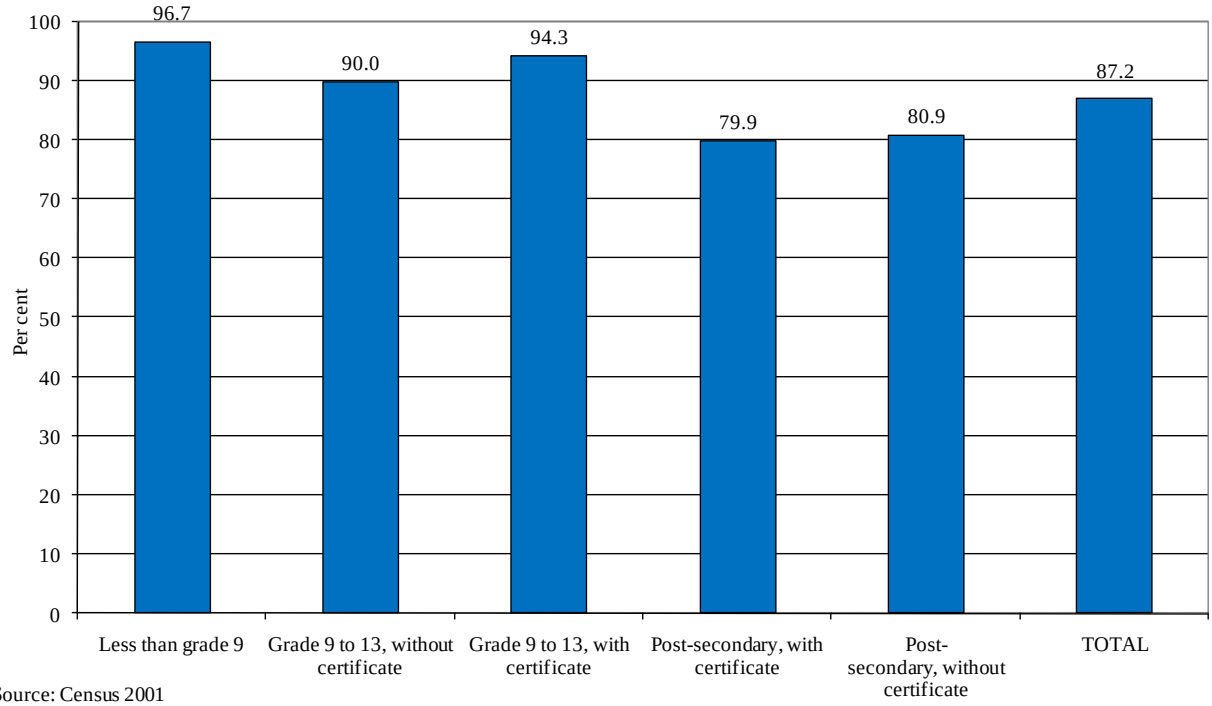


Source: Census 2001

However, given a particular level of education, Aboriginal Canadians still have on average a lower income than non-Aboriginal Canadians. In other words, educational attainment cannot account for all of the wage gap between aboriginal and non-aboriginal Canadians. In fact, if the Aboriginal population aged 15 and over in 2001 had the same educational profile as the non-Aboriginal population, they would still earn on average only 81.7 per cent of non-Aboriginal employment income. While they earned an average income of $12,886 with their educational attainment in 2001, they would earn $16,113 on average if they had the non-Aboriginal level of educational attainment. This is still $3,614 lower than the average non-Aboriginal employment income. Therefore, the educational attainment gap can explain 47.3 per cent of the employment income gap between Aboriginal and non-Aboriginal populations (Appendix Table 53).

In general, Aboriginal Canadians had an average income equivalent to only 65.2 per cent of the level of non-Aboriginals in 2001. The situation is slightly better when considering only individuals with employment income: the average income for Aboriginal Canadians in this case represents 69.1 per cent that of non-Aboriginal Canadians. Finally, the employment income of Aboriginal Canadians who worked full-time full-year was on average only 87.2 per cent that of non-Aboriginal Canadians. As explained above, only about half of this gap can be attributed to education. Comparing the income of the aboriginal population in relation to the average Canadian at a given level of education allows us to focus on the remaining part of the gap, that which is not directly associated to educational attainment.

Chart 10: Average Employment Income of the Aboriginal Population Who Work Full Time, Full Year, as a Share of the Non-Aboriginal Population, 2001



Source: Census 2001
Note: The total is a weighted average of the five other values.

In 2001, Aboriginal Canadians with less than grade 9 fare especially well when compared to the non-Aboriginals at the same level of educational attainment, with an average employment income 88.7 per cent of the non-Aboriginal level (Chart 9). However, this drops to 72.0 per cent

when only considering people with employment income. Graduating from high school is clearly advantageous for Aboriginal Canadians, since this group earns on average 86.6 per cent of the non-Aboriginal income (or 82.4 per cent when considering only income-earners), whereas those who did not complete high school earn 74.7 per cent of the non-Aboriginal income for a given level of educational attainment (76.1 per cent of those with employment income).

Aboriginals with trades certificates or diplomas earn on average 80.5 per cent of the non-Aboriginal income, but among those with employment income, the percentage is only 71.2 per cent. College graduation, like high school graduation, helps Aboriginals come closer to the non-aboriginal wages. Whereas they earn only 75.1 of non-Aboriginal wages with uncompleted college, this percentage jumps to 83.1 per cent with graduation. The closing of the gap is less important when considering only those with employment income, but still rises from 76.6 to 79.9 per cent. In contrast, graduating from university, even if it leads to a significant increase in their absolute income, does not increase it relative to non-Aboriginal income. Aboriginal Canadians who go to university without completing earn on average 73.6 per cent of non-Aboriginal income at this level of education, while those who graduate earn 75.5 per cent. Relative income actually drops between these two categories when considering income-earners only: from 75.5 to 72.7 per cent.

It is also possible to consider only workers who have full-time employment during the whole year. Among these workers, Aboriginal individuals who did not go to post-secondary education seem to fare better relative to their Canadian counterparts than those who do. While wages are around 90 per cent of the non-Aboriginal wages for the first group, they are around 80 per cent for the second one (Chart 10). This fact is probably due to the lack of employment opportunities that require post-secondary education in remote areas where the reserves are usually situated.

ii. Change in the 1996 to 2001 Period

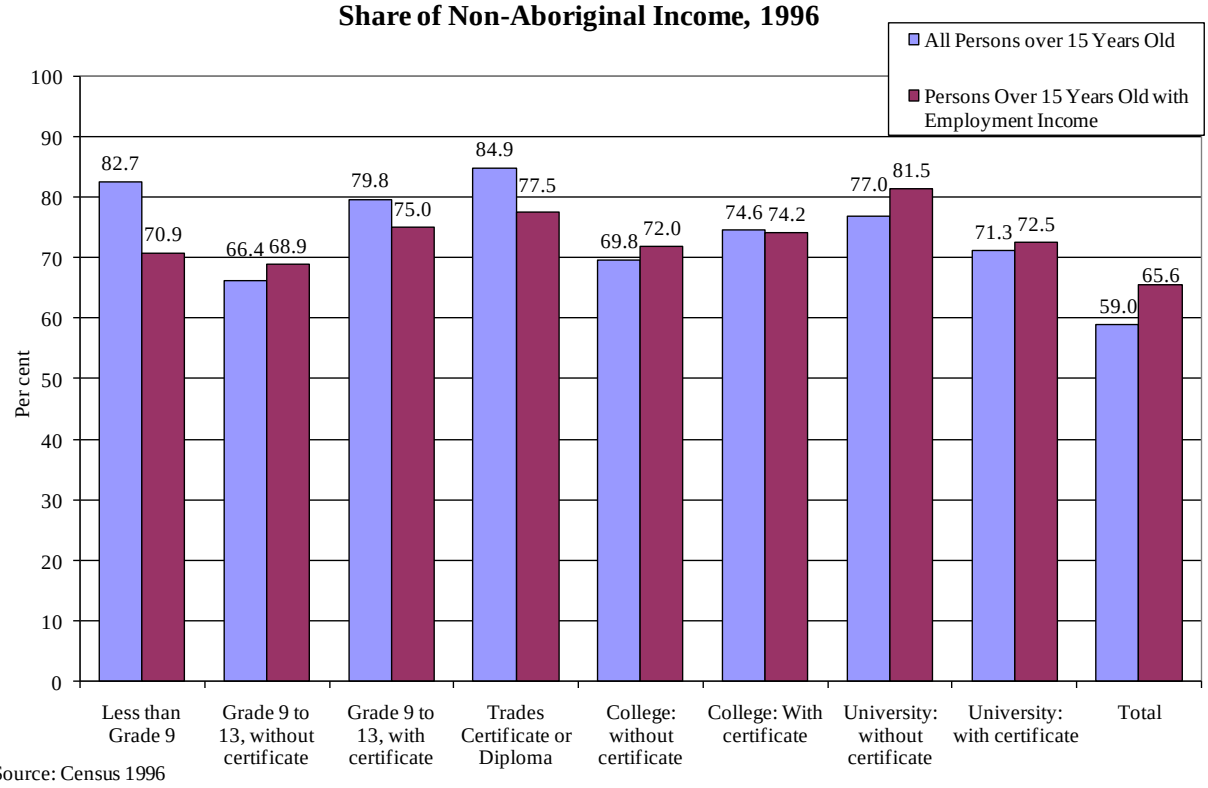
There was a large overall improvement in the income of Aboriginal Canadians relative to non-Aboriginal Canadians between 1996 and 2001. In 1996, Aboriginal Canadians earned on average 59.0 per cent of non-Aboriginal income, but by 2001 it had increased to 65.2 per cent. Similarly, the income of Aboriginal persons with employment income relative to their non-Aboriginal counterpart increased from 65.6 per cent in 1996 to 69.1 per cent in 2001.

Aboriginal individual who frequented college saw the largest improvement. In 1996, those who did not graduate received only 69.8 per cent of non-Aboriginal income while those with a certificate or diploma received 74.6 per cent (72.0 and 74.2 per cent among those with employment income). Persons with low educational attainment also experienced a large improvement in their relative incomes. Aboriginal Canadians with less than grade 9 earned 82.7 per cent of non-Aboriginal income, those who went to high school without graduating only 66.4 per cent, and those who graduated 79.8 per cent (70.9, 68.9 and 75.0 respectively among those with employment income).

Aboriginals with trade certificates were actually better off relative to other Canadians with equivalent educational attainment in 1996 than in 2001. In 1996, they earned 84.9 per cent

of non-Aboriginal incomes (77.5 per cent among those with employment income) (Chart 11). The situation of university graduates and students did not change much but those without a certificate suffered a slight decline in their relative income (77.0 per cent in 1996, 81.5 per cent among those with employment income). Those with a certificate experienced a slight increase, from 71.3 per cent in 1996, but this was almost inexistent among those with employment income, a group that earned 72.5 per cent of non-Aboriginal income in 1996.

Chart 11: Average Employment Income of the Aboriginal Population, as a Share of Non-Aboriginal Income, 1996



Source: Census 1996

iii. On-Reserve/Off-reserve Aboriginal Income

One of the key determinants of income for Aboriginal and non-Aboriginal populations alike is employment opportunity, which is in turn greatly influenced by where one resides. The report titled "*Encouraging Success: Ensuring Aboriginal Youth Stay in School*" (Brunnen, 2005b) shows that at each level of educational attainment, there is a large on-reserve/off-reserve income gap (chart 15). On-reserve residents tend to earn less than off-reserve urban residents. Tax exemptions on reserve may partially decrease the income gap, but they are not likely to account for the entire difference.

Private returns to education also differ for on and off reserves individuals. At the university degree attainment level, Aboriginal Canadians living on-reserve are 2.5 times more likely to earn $50,000 than they are to earn under $10,000. Off-reserve Aboriginals are 1.3 times more likely. However, the returns to education are most often better for off-reserve urban Aboriginals than for on-reserve Aboriginals. Excluding the university degree attainment category, off-reserve urban returns are 1.5 higher than on-reserve returns. Clearly, living on or

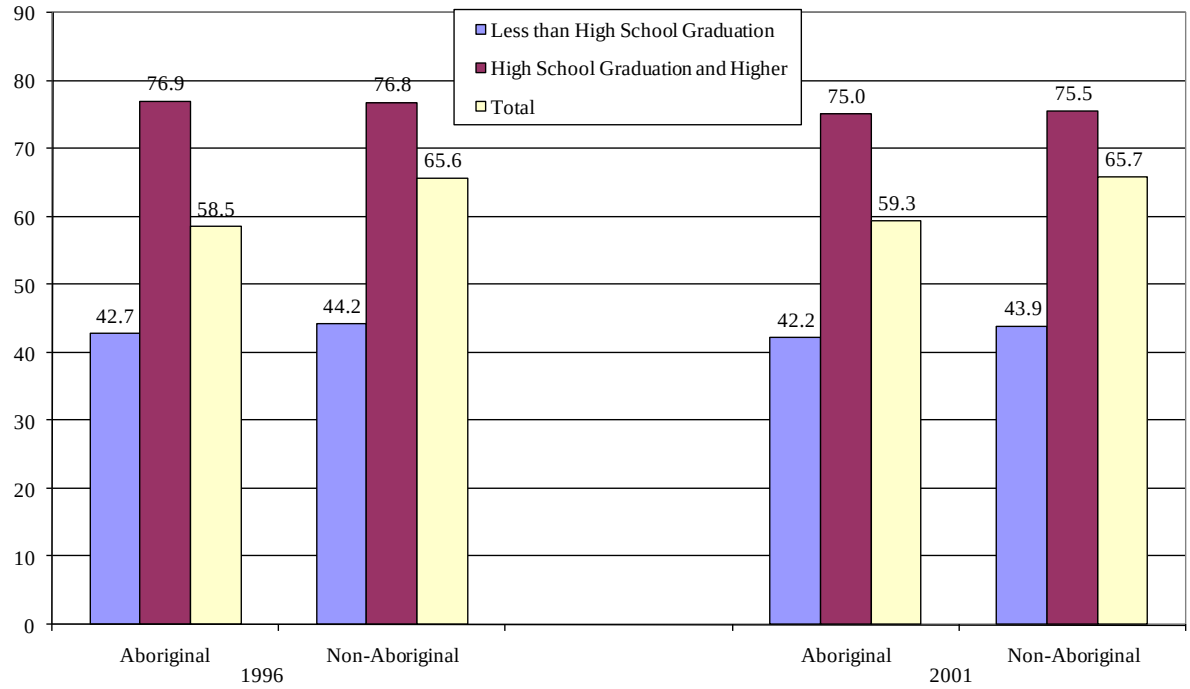
off reserve appears to be an important determinant of income for Aboriginal populations in Canada.

D. Labour Force Participation of Aboriginal Canadians

i. Situation in 2001

Participation in the labour force is lower among Aboriginal Canadians than non-Aboriginal Canadians. In 2001, the aggregate participation rate was 61.4 per cent for Aboriginal Canadians, compared to 66.6 per cent for non-Aboriginal Canadians, a gap of 5.2 percentage points. In general, participation was higher in groups with higher educational attainment, for Aboriginals as well as for non-Aboriginals. In fact, more than all of the participation rates difference can be explained by the difference in educational attainment between the two groups. If in 2001 the educational profile of Aboriginal Canadians was that of non-Aboriginal Canadians in the same year, their participation rate would be 67.7 per cent, higher than the 66.6 per cent of non-Aboriginal Canadians (Appendix Table 53).[15]

Chart 12: Participation Rate by Educational Attainment for Aboriginal and Non-Aboriginal Communities, 1996 and 2001



Source: Census 1996 and 2001

[15] This is also in part explained by the different age structure of the two groups. Younger workers tend to participate more than older workers. Consequently, it is no surprise that Aboriginal Canadians, which are significantly younger on average, have a larger participation rate at the same level of educational attainment. This is not true for the employment rate, however, because the rate is significantly affected by other factors mentioned in footnote #4.

The lowest participation rate was among those with less than grade 5, at 21.3 per cent for Aboriginals and 23.3 per cent for non-Aboriginals (Appendix Table 12). Persons who continued to grades 5 to 8 had a much higher participation rate, though it was still low. In fact, Aboriginal Canadians had a higher participation rate than non-aboriginal Canadians in this educational group (33.4 per cent compared to 28.3 per cent). Continuing to high school provided a clear advantage with 50.2 per cent of Aboriginal Canadians over 15 who started but did not finish high school and 72.3 per cent of those who graduated in the labour force. Results are similar for non-Aboriginals: 52.8 and 69.2 per cent, respectively.

Having completed high school education once again holds an important advantage. As Chart 13 illustrates, those who finished high school have a participation rate nearly double than those who do not, both in 1996 and 2001.

Aboriginal Canadians with a trade certificate or diploma had a higher participation rate than non-Aboriginal individuals at the same level of educational attainment: 76.0 versus 69.2 per cent. It was also slightly higher for Aboriginal Canadians who completed college education. They had participation rates around 82 per cent compared to 79 per cent for non-Aboriginal Canadians. For most of the educational groups encompassing university graduates, Aboriginal Canadians had higher participation rates than the general population. For example, holders of bachelor's degrees had a rate of 85.4 per cent, compared to 82.3 per cent for the non-Aboriginal population.[16]

Table 5: Participation Rates by Educational Attainment, 1996 and 2001

	Aboriginal Canadians (Per Cent)	Non-Aboriginal Canadians (Per Cent)	Difference between Non-Aboriginals and Aboriginals (Percentage Points)		Change in the gap, 1996-2001 (Percentage Points)
	2001	2001	1996	2001	1996-2001
Less than grade 5	21.3	23.3	-2.7	-2.0	0.7
Grades 5 to 8	33.4	28.3	6.3	5.1	-1.2
Grades 9 to 13	50.2	52.8	-3.5	-2.6	0.9
High School Graduation	72.3	69.2	1.2	3.1	1.9
Trades Certificate or Diploma	76.0	69.2	4.6	6.8	2.2
College: Without Trades or college Certificate	69.7	72.5	8.7	-2.7	-11.4
College: With trades certificate or diploma	82.0	78.8	-0.9	3.2	4.1
College: With college certificate or diploma	82.5	79.7	1.8	2.8	1.0
University: Without certificate, diploma or degree	75.0	75.2	-17.5	-0.2	17.3
University: With university or college certificate	79.9	78.0	0.5	1.8	1.3
University: With bachelor or first professional degree	85.4	82.3	1.0	3.1	2.1
University: With certificate above bachelor's degree	76.0	79.3	3.0	-3.3	-6.3
University: With master's degree(s)	83.9	81.8	2.9	2.1	-0.8
University: With earned doctorate	58.3	81.0	-0.7	-22.7	-22.0
Less than High School Graduation	44.0	44.8	0.1	-0.8	-0.9
High School Graduation and Higher	77.2	76.3	-1.5	0.9	2.4
Total	61.3	66.6	-7.1	-5.2	1.9

Source: Census 1996 & 2001, Public Use Microdata Files

[16] However, the most noticeable difference is in doctorate earners, group in which only 58.3 per cent of Aboriginal individuals participate in the labour force compared to 81.0 per cent for non-Aboriginals, although this could be due to the small sample size of Aboriginal doctorate earners.

Table 5 illustrates the difference between the Aboriginal and non-Aboriginal participation rates. The gap was the largest for individuals with a certificate above a bachelor's degree.[17] In contrast, Aboriginal individuals with trade certificates had a participation rate 6.8 points higher than the non-Aboriginal population.

Chart 12 and Table 5 illustrate an important point. For a given educational attainment, the participation rate of an Aboriginal Canadian is not particularly low compared to other Canadians. However, on the whole, the participation rate for the Aboriginal population is lower due to the fact that a larger share of that population is in the low educational attainment categories, which suffer from a relatively low participation rate. In other words, because the Aboriginal population is more concentrated at low educational levels, and because persons at lower levels of educational attainment have lower participation rates, their aggregate participation is lower than that of non-Aboriginal Canadians.

This also means that at a given level of education, Aboriginal Canadians are, in general, at least as likely to participate in the labour force. As noted earlier, the difference in educational profile between the Aboriginal and non-Aboriginal populations more than account for the difference in aggregate participation rates. This is a key, if not surprising, finding: Aboriginal Canadians appear to be as interested in finding work as non-Aboriginal Canadians.

ii. Change in the 1996-2001 Period

In general, participation rates were higher in 2001 than they were in 1996, both for the Aboriginal and non-Aboriginal populations. The overall rate for Aboriginal Canadians in 1996 was 58.5 per cent, 7.1 points lower than the value of 65.6 per cent for the non-Aboriginal population (Appendix Table 13). Therefore, Aboriginal individuals have seen a larger improvement than the non-Aboriginal population in those five years, reducing the gap by 1.9 percentage points. At this rate, the gap will be completely eliminated by 2016. In fact, Aboriginal Canadians would participate at a higher rate in the labour force, due to their younger age structure.

The largest increases in participation rates for Aboriginal Canadians between 1996 and 2001 were in the categories of persons with a collegial trade certificate or diploma (70.1 per cent in 1996, a 8.7 percentage points increase), persons that went to university without completing their education (only 58.5 per cent in 1996, up to 75.2 per cent in 2001) and bachelor's degree holders (78.0 per cent in 1996 and 82.3 per cent in 2001). Persons who went to college without graduating experienced a large decline in their participation rates (93.3 per cent in 1996, compared to 69.7 per cent in 2001).

In terms of the gap with the non-Aboriginal population, Table 6 shows that nine out of fourteen categories saw an improvement from 1996 to 2001. Aboriginal individuals with trades certificates who, as mentioned above, had the highest participation rates relative to their non-Aboriginal counterparts in 2001, saw a large improvement of 2.2 points in the gap. Individuals who had a trades certificate from colleges also enjoyed a large improvement, from -0.9 to 3.2

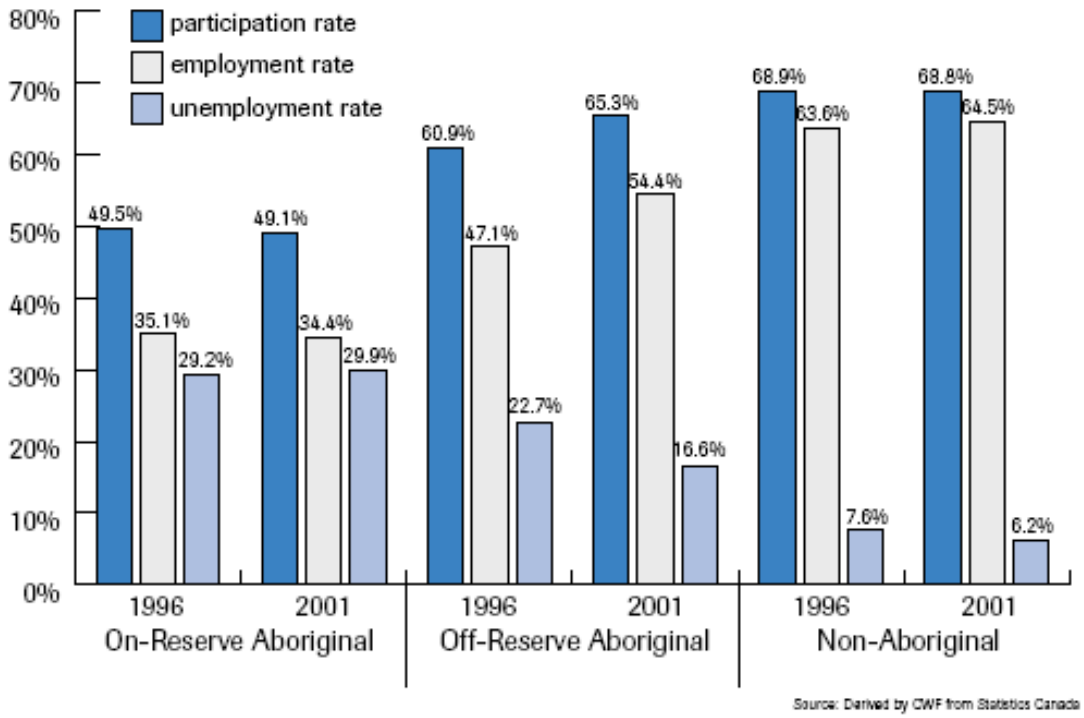
[17] In fact, the gap was larger for doctorate holders, but as explained earlier, the sample size is too small to make any conclusion.

percentage points. Individuals with bachelor's degrees, college certificates, high school certificates, and individuals who went to university without graduating all enjoyed noteworthy improvements over the 1996-2001 period.

iii. On-Reserve/Off-reserve Aboriginal Labour Market Participation

The area of residence also affects labour market outcomes. On-reserve Aboriginals have consistently lower labour participation rates, except at the university degree level where outcomes are similar (Brunnen (2003a)). On average, the participation rate of on-reserve Aboriginal Canadians was 16.2 percentage points lower than their off-reserve counterparts in 2001, 49.1 per cent compared to 65.3 per cent for off-reserve Aboriginal Canadians (Chart 13). The lower participation rates on reserves can be partially explained by the lower educational attainment of on-reserve Aboriginal Canadians noted in the previous section, lower employment opportunities and the fact that on-reserve residents are more likely to participate in more traditional activities such as hunting and gathering and as such may not be participating in the formal labour force.

Chart 13: Labour Force Outcomes of Aboriginal Canadians On- and Off-Reserve in the Western Provinces 1996, 2001

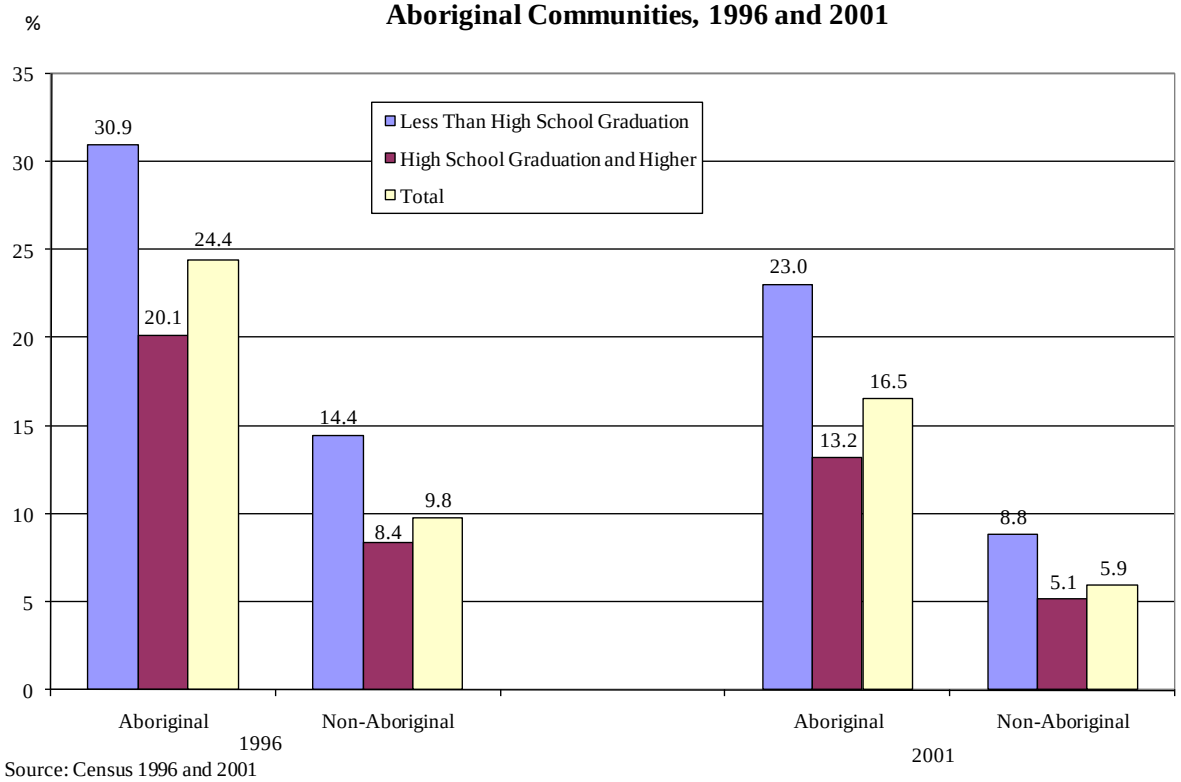


E. Unemployment Rates of Aboriginal Canadians

i. Situation in 2001

Unemployment is significantly higher among Aboriginal Canadians than among non-Aboriginal Canadians. In 2001, the unemployment rate for Aboriginals was 16.5 per cent, compared to the non-Aboriginal rate of 5.9 per cent, a gap of 10.6 percentage points. In general, at higher level of educational attainment, both the unemployment rate of the two communities and the gap between their respective unemployment rates were lower. Educational attainment, however, is not the prime factor behind the differences in unemployment rates between Aboriginal and non-Aboriginal populations. In fact, if Aboriginal Canadians had in 2001 the educational profile of non-Aboriginal Canadians, three-quarter of the difference between the unemployment rate of Aboriginal and non-Aboriginal Canadians would remain (Appendix Table 53).

Chart 14: Unemployment by Educational Attainment for Aboriginal and Non-Aboriginal Communities, 1996 and 2001



Source: Census 1996 and 2001

High school education is again shown to be particularly effective at reducing unemployment given that the unemployment rate for Aboriginal persons who have not graduated from high school in 2001 was 23.0 per cent compared to 13.2 per cent for those that had high school graduation or more as their highest educational attainment (Chart 14).[18]

[18] Interestingly, the unemployment rate of Aboriginal Canadians with high school graduation or greater is higher than that of those who just completed high school (Appendix Table 12). This is because Aboriginal Canadians who

Aboriginal Canadians who went to university and received a bachelor or professional degree had an unemployment rate of 5.8 per cent. This educational group had the lowest gap between Aboriginal and non-Aboriginal communities, with the gap standing at 1.9 percentage points. The impact of university completion on labour market success of Aboriginal individuals was demonstrated even more clearly by the fact that the unemployment rate for all Aboriginal Canadians was three times greater than the unemployment rate for those who attained a bachelor or professional degree.

Table 6 illustrates the unemployment rate gap between the non-Aboriginal and Aboriginal populations by educational attainment. Negative numbers indicate that unemployment was higher for the Aboriginal community. In 2001, the gap was largest for those with education extending only to grades 5 through 8 (at 15.0 percentage points) and lowest for those who received a bachelor or professional degree (at 1.9 percentage points).[19]

ii. Change in the 1996-2001 Period

In general, unemployment rates fell down between 1996 and 2001. The overall unemployment rate for Aboriginals fell from 24.4 per cent to 16.5 per cent, a substantial reduction of eight percentage points. Non-Aboriginal Canadians also saw improvement over the period, moving to 5.9 per cent in 2001 from 9.8 per cent in 1996, a four point drop (Appendix Table 12 and 13). In absolute term, the Aboriginal unemployment rate fell twice as much as the non-Aboriginal unemployment rate over the 1996-2001 period.

Table 6: Unemployment Rates by Educational Attainment, 1996 and 2001

	Aboriginal Canadians (Per Cent)	Non-Aboriginal Canadians (Per Cent)	Difference between Non-Aboriginals and Aboriginals (Percentage Points)		Change in the gap, 1996-2001 (Percentage Points)
	2001	2001	1996	2001	1996-2001
Less than grade 5	21.8	9.6	-2.4	-12.2	-9.8
Grades 5 to 8	24.5	9.5	-19.3	-15.0	4.4
Grades 9 to 13	22.8	8.7	-16.2	-14.1	2.1
High School Graduation	11.2	5.4	-9.1	-5.8	3.3
Trades Certificate or Diploma	17.1	5.4	-13.6	-11.7	1.9
College: Without Trades or college Certificate	17.3	7.1	-15.7	-10.2	5.5
College: With trades certificate or diploma	14.7	5.2	-13.2	-9.5	3.7
College: With college certificate or diploma	11.1	4.4	-10.1	-6.7	3.4
University: Without certificate, diploma or degree	17.9	8.5	-13.6	-9.4	4.2
University: With university or college certificate	11.6	5.1	-6.9	-6.5	0.5
University: With bachelor or first professional degree	5.8	3.9	-2.5	-1.9	0.6
University: With certificate above bachelor's degree	8.8	3.3	-7.6	-5.4	2.2
University: With master's degree(s)	6.5	3.9	2.2	-2.7	-4.9
University: With earned doctorate*	0.0	3.2	-21.2	3.2	24.4
Less than High School Graduation	23.1	8.9	-16.5	-14.2	2.3
High School Graduation and Higher	13.3	5.2	-11.7	-8.1	3.6
Total	16.5	5.9	-14.6	-10.6	4.0

Source: Census 1996 and 2001, Public Use Microdata Files

*The ample size for this category was very small

have trade certificates and persons who go to college or to university but do not finish have higher unemployment rates than those for whose high school graduation is the highest level of educational attainment.

[19] The lowest unemployment rate among Aboriginals was those holding doctorates; census information indicates that the unemployment rate was 0 per cent. However, the sample size for this category is particularly small.

The largest decreases in unemployment rates among Aboriginals were felt by those with education ending in the fifth to eighth grade (10.9 percentage points), those who went to college but did not receive a certificate or diploma (10.3 percentage points) and those who went to university but were not awarded a certificate or diploma. Aboriginals with a master's degree saw unemployment rise by 4.1 percentage points and those with education less than grade five saw unemployment rates rise 1.7 percentage points.

In terms of the gap between Aboriginal and non-Aboriginal populations, all but two categories saw improvements for Aboriginal Canadians. Only the master's degree category and the less than grade 5 education category saw the gap widen.

iii. On-Reserve/Off-reserve Aboriginal Unemployment Rates

Unemployment is also greatly affected by the opportunities present in ones' place of residency. Unfortunately, rural settings are generally less conducive to finding employment than urban settings, and on-reserve Aboriginals find themselves disproportionately in a rural setting. Evidence from Western Canada demonstrates the significant impact that rural settings have on the overall labour market success of Aboriginals. Chart 13 illustrates this fact: the unemployment of on-reserve Aboriginal Canadians was 29.9 per cent in 2001, nearly doubled that for off-reserve Aboriginal Canadians (16.6 per cent).

F. Employment Rates of Aboriginal Canadians

Participation rates capture the percentage of the working age population who are in the labour force, and the unemployment rate determines what share of the labour force is not currently employed. Therefore, employment rates, defined as the proportion of the working age population employed in the reference week, are a function of the two former rates.

i. Situation in 2001

Aboriginal Canadians had significantly lower employment rates than non-Aboriginal Canadians in 2001. The overall rate for Aboriginal persons was 49.5 per cent, whereas it was 61.8 per cent for non-Aboriginals (according to the 2001 Census), a gap of 12.3 percentage points (Table 7). This was the combined result of both the participation rate gap (5.2 points) and the unemployment rate gap (10.6 points) outlined in previous sections.

In the same vein, we noted earlier that about 25 per cent of the unemployment rate and more than a 100 per cent of the participation rate could be explained by differences in educational profiles between Aboriginal and non-Aboriginal populations. For the employment rate, we calculated that if Aboriginal Canadians had the same educational profile as non-Aboriginal Canadians in 2001, their employment rate would be 56.7 per cent. In other words, in 2001, about 58 per cent of the gap in employment rates can be directly attributed to differences in educational attainment (Appendix Table 53).

The employment rate was lowest for persons with low educational attainment: 16.1 per cent for those with less than grade 5, 24.0 per cent for those with grade 5 to 8 and 37.2 per cent

for those who went to high school without graduating. The highest employment rate was among those who had a bachelor's degree, at 78.3 per cent.3

Table 7: Employment Rates by Educational Attainment, 1996 and 2001

	Aboriginal Canadians (Per Cent)	Non-Aboriginal Canadians (Per Cent)	Difference between Non-Aboriginals and Aboriginals (Percentage Points)		Change in the Gap, 1996-2001 (Percentage Points)
	2001	2001	1996	2001	1996-2001
Less than grade 5	16.1	20.4	-2.7	-4.3	-1.5
Grades 5 to 8	24.0	24.8	-1.9	-0.8	1.1
Grades 9 to 13	37.2	47.4	-10.9	-10.2	0.7
High School Graduation	62.4	64.7	-5.2	-2.3	2.9
Trades Certificate or Diploma	60.0	64.6	-6.0	-4.6	1.5
College: Without Trades or college Certificate	55.8	66.4	10.3	-10.6	-20.9
College: With trades certificate or diploma	68.6	73.7	-11.8	-5.1	6.8
College: With college certificate or diploma	71.4	75.5	-9.2	-4.0	5.1
University: Without certificate, diploma or degree	59.2	67.4	-31.0	-8.2	22.8
University: With university or college certificate	69.1	73.4	-7.6	-4.2	3.4
University: With bachelor or first professional degree	78.3	78.3	-9.7	0.0	9.7
University: With certificate above bachelor's degree	69.3	76.1	-2.9	-6.7	-3.8
University: With master's degree(s)	77.4	78.1	0.6	-0.7	-1.2
University: With earned doctorate	58.3	77.9	-6.9	-19.7	-12.8
Less than High School Graduation	32.5	40.0	-8.3	-7.6	0.8
High School Graduation and Higher	65.2	71.6	61.4	-6.4	-67.8
Total	49.5	61.8	-15.0	-12.3	2.7

Source: Census 1996 & 2001, Public Use Microdata Files

The difference between the Aboriginal and non-Aboriginal populations was particularly noticeable in some educational attainment groups. For persons who only completed grades 9 to 13, employment rate of Aboriginals was 10.2 points lower than non-Aboriginals (37.2 per cent). There was an almost 20 points difference for persons with earned doctorates (58.3 per cent for Aboriginals and 77.9 per cent for non-Aboriginals). Aboriginal Canadians who went to college or university without getting a certificate also suffered from a lower employment rate than their non-Aboriginal counterparts.

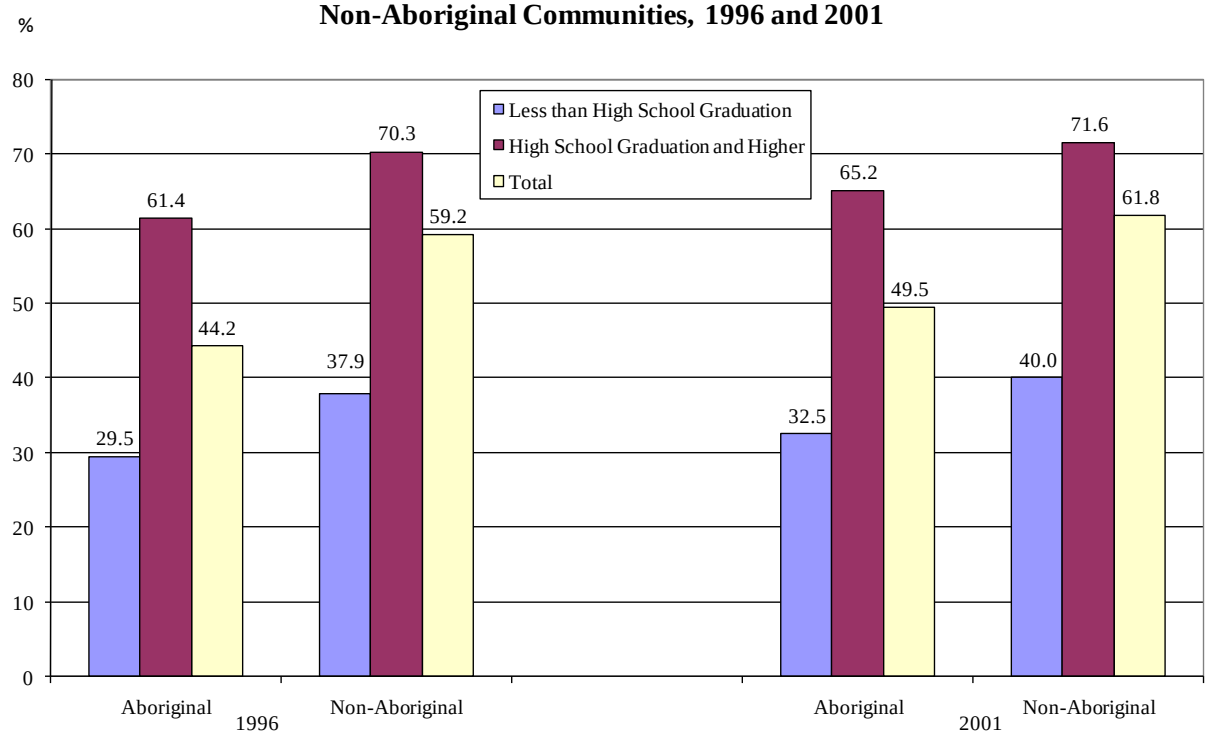
Perhaps the most important divide was, once again, between the group who finished high school and those who did not. Chart 15 illustrates this difference in both years. In general, employment rates doubles when high school is completed for both Aboriginal and non-Aboriginal Canadians.

ii. Change in the 1996 to 2001 Period

Aboriginal Canadians experienced an above average improvement in their employment rates between 1996 and 2001, compared to the overall Canadian population. In 1996, the aggregate employment rate for the Aboriginal population was 44.2 per cent, 15.0 points lower than the non-Aboriginal population's rate of 59.2 per cent. In 2001, the employment rate of Aboriginal Canadians increased to 49.5 per cent while that of non-Aboriginal Canadians only reached 61.8 per cent, thus lowering the gap to 12.3 percentage points (Table 7). This translated into a 2.7 percentage points lowering of the gap between the two groups over the 1996-2001 period. At this rate, the gap would be at 4.2 points in 2016.

Nine educational categories out of fourteen experienced a fall in the gap between the Aboriginal and non-Aboriginal employment rates. A particularly noticeable improvement was made in the category of persons with a bachelor's degree, since the employment rate for them was only 56.2 per cent in 1996, 9.7 points lower than the non-Aboriginal population in this category. By increasing their employment rate by 22.1 points to reach 78.3 per cent in 2001, this group managed to eliminate the entire gap from 1996 to 2001. They were the only group in 2001 to enjoy an employment rate at the level of the non-Aboriginal population. Another major improvement was for collegial trade certificate holders, who had only a 50.8 per cent employment rate in 1996. It rose up to 68.6 per cent in 2001, thus lowering the gap by 6.7 points.

Chart 15: Employment Rate by Educational Attainment for Aboriginal and Non-Aboriginal Communities, 1996 and 2001



Source: Census 1996 and 2001

In 1996, Aboriginal Canadians in two categories of educational attainment had employment rates higher than the non-Aboriginal population: those with master's degrees and those who frequented college without graduating. Unfortunately, both groups experienced a decline in their employment rates between 1996 and 2001.

In general, one of the direct consequence of living on-reserve is a significant reduction in employment opportunities. Hence, we would expect the on-reserve/off divide to clearly emerge in the form of different employment rates. This is indeed reflected in the data: while the employment rate of Aboriginal Canadians living on-reserve was 34.4 per cent in 2001, that of Aboriginal Canadians living off-reserve was 54.4 per cent (Chart 13).

iii. An Alternative Measure of Employment Rates

Another measure can be used to estimate employment rates. Employment rates based on the Labour Force Survey (LFS) consider the status of the respondents in the reference week of each month. The annual figure is the average of the monthly estimates. However, some people work only seasonally and hence are only counted as employed in the months in which they work, which lowers the annual average employment estimates. Seasonal workers sometimes earn the equivalent of a full year income and are still not counted as fully employed persons. The ratio of the number of persons who received employment income during the year, even if only for one month, to the total working age population is a measure similar to employment rates. To the degree that there are part-year workers, this measure will exceed the LFS figures based on monthly estimates.

Aboriginal Canadians fare much better in employment rates using this measure: 60.4 per cent of the Aboriginal population received employment income in 2001 compared to only 49.5 per cent under the LFS measure. Non-Aboriginal Canadians had a 63.9 per cent employment rate under this measure, a gap of 3.5 percentage points with aboriginal Canadians. Given that the gap between the two populations was 12.3 percentage points with the official rates, this suggests that Aboriginal Canadians have a desire to work, but that opportunities for stable work are lacking.

The most striking instance of the difference between the two employment rate measures is for persons with bachelor's degrees: 84.7 per cent of Aboriginal Canadians in this educational category received some income during the year, whereas only 78.1 per cent of non-Aboriginal Canadians did (Appendix Table 12). Aboriginal Canadians with grades 9 to 13, who had a much lower employment rate than their non-Aboriginal counterparts, actually had an employment ratio that was almost equivalent to that of non-Aboriginal Canadians (50.8 and 51.7 per cent, respectively). Overall, the 2001 gap of 3.5 percentage points between the Aboriginal and non-Aboriginal populations using this measure was only about half as large as in 1996 (6.2 points).

G. Other Indicators of Aboriginal Well-Being

The report earlier highlighted the important findings of the literature on the effects of educational attainment on many indicators of well-being such as poverty, crime and health. In this sub-section, the report will discuss some of the same indicators, focusing in particular on the Aboriginal population.

i. Poverty

Statistics Canada does not regularly report the poverty rate for Aboriginal individuals. However, a recent analytical paper by Heisz and McLeod (2004) reported that the poverty rate of the Aboriginal population living in 27 CMAs[20] was 2.4 times higher than the non-Aboriginal

[20] In some Canadian cities, the Aboriginal population represents a particularly large proportion of the total population. The highest proportion of Aboriginal Canadians in 2001 was in Saskatoon, with 9.0 per cent of the population, followed by Winnipeg (8.3 per cent) and Regina (8.1 per cent). Outside of the Western provinces, Thunder Bay had the highest proportion of Aboriginals with 6.6 per cent. The CMA with the smallest proportion of

poverty rate in 2000: 41.6 per cent for Aboriginal people and 17.3 per cent for the overall population based on the Low Income Measure (LIM) of Statistics Canada. Unfortunately, this was no improvement from the ratio in 1995 (also 2.4). However, in absolute terms, Aboriginal individuals living in CMAs did see an improvement, from a proportion of 52.4 per cent having low-income in 1995, it decreased to 41.6 per cent in 2000. For non-Aboriginal populations, the rate fell from 21.6 to 17.3 per cent (Heisz and McLeod, 2004).[21] The Aboriginal population had a higher poverty rate than both recent and other immigrants.

Furthermore, the Aboriginal population represented a disproportionately large share of the low-income population in Canadian CMAs.[22] Even though they only made up 1.6 per cent of the total population living in CMAs, they represented 3.7 per cent of the low-income population in the same areas in 2000. In 1995, their share of the total population was 1.3 per cent, and 3.2 per cent of low-income individuals were Aboriginal.

Poverty for on-reserve Aboriginal Canadians is even worse than those living in cities. An important aspect is that 41.5 per cent of on-reserve Aboriginals require welfare assistance relative to only 8.1 per cent of non-Aboriginals in Canada (Royal Commission on Aboriginal People, 1996a).

Helin (2006) argues that the situation of Aboriginal reserves across Canada are in many respects similar to that of the inner city ghettos of America. In fact, many parallels can be drawn between the problems faced by disadvantaged youth in the United States and those experienced by Aboriginal youth. Hence, it would be natural that the findings and conclusions of the existing literature, which illustrates the benefits of education and asks for improved educational attainment among inner-city youths in the United States, be applied to tackle some of the challenges confronting the Aboriginal population.

ii. Crime

Crime is very destructive and imposes huge costs to society. Unfortunately, according to the 2004 United Nations report on the indigenous issues from the commission on human rights, crime represents a serious problem for the Aboriginal population of Canada. The arrest rates for aboriginal crime is almost double that of the national average, while the incarceration rate is almost 4 times higher than the national average (Stavenhagen, 2004:14).

Aboriginals in its population was Sherbrooke (0.2 per cent), followed closely by Montreal (0.3 per cent), Toronto (0.4 per cent) and Trois-Rivieres (0.5 per cent).

[21] The Aboriginal poverty rate varied greatly between CMAs. The lowest poverty rate among the CMAs in which Aboriginal Canadians represented more than 4 per cent of the population was in Sudbury, with 33.5 per cent of the Aboriginal population below the poverty line and the highest was in Regina with 59.3 per cent. The poverty rate in Saskatoon was also particularly high with 54.2 per cent. However, differences in the costs of living in different CMAs were not accounted for in the report, so direct comparisons across CMAs are not particularly relevant.

[22] The share of Aboriginal people in the low-income population varied greatly between Canadian CMAs. Among the CMAs in which the Aboriginal population represents more than four per cent of the population, the low-income Aboriginal population represented the largest share of the total low-income population in 2000 in Saskatoon (26.9 per cent). Regina followed with 26.2 per cent, and Winnipeg with 23.8 per cent. Sudbury had the lowest representation of Aboriginals in its low-income population with 8.6 per cent, followed by Edmonton (11.1 per cent) and Thunder Bay (17.9 per cent).

Moreover, the prison statistics for Aboriginals are shockingly high. In 1995, Aboriginal Canadians made up only around 3 per cent of the Canadian population, but represented 17 per cent of federal penitentiary inmates. The situation is even worse for female Aboriginal Canadians who reportedly represented 29 per cent of women in federal prisons in 2003 (Stavenhagen, 2004:14-15). This illustrates the magnitude of the problem that aboriginal communities are facing with crime. As education can be seen as a crime reducing policy, it also illustrates the potentially large benefits education can bring to their communities, both to individuals and society in general.

iii. Health

Lower levels of education resulting in poverty among the Aboriginal population are a contributing factor to the poorer health experienced by Aboriginal Canadians. Reserves are characterized by higher rates of drug and alcohol abuse.[23] Aboriginal Canadians are also three times more likely to have diabetes than the overall Canadian population and nine times more likely to contract tuberculosis. The United Nations report of 2004 stated that a leading cause of death among aboriginal children and youth was suicide. Suicide in aboriginal men and women 15-24, was 5 and 8 times the general Canadian rate, respectively (Helin, 2006:112). Better physical and psychological health through education could lead to a healthier lifestyle and a better sense of control of one's life for Aboriginal Canadians.

[23] These realities might also impact the number of children who need to be, in one form or another, institutionalized. Current estimates are that there are between 22,500 and 28,000 aboriginal children who are in the child welfare system (First Nations Child and Family Caring Society, 2003). Although they represent only 3.3 per cent of the Canadian population, they account for a total of 30 per cent of the children in the Canadian welfare system (Bennet and Blackstock, 2002). In the same vein, the chance of a First Nation child going on to child welfare care is 1 in 17, versus a 1 in 200 chance for a non-aboriginal child in Canada (IICRD and ABLO, 2004)

IV. General Population, Aboriginal Population and Economic Projections

In order to project the potential contribution of the Aboriginal population to the overall labour force, employment, output, and productivity, one requires base case projections for the overall population growth in Canada as well as for the Aboriginal population. Projections of aggregate employment, output and labour productivity for Canada over the 2001-2017 must also be obtained. This section provides these projections.

Three main sources are used for projections in this report. General population projections for the 2005-2031 period are taken from *Population Projections for Canada, Provinces and Territories,* Statistics Canada (2005b). Aboriginal population projections are from *Projections of the Aboriginal Populations, Canada, Provinces and Territories* (Statistics Canada, 2005a). Long-term economic forecasts are from the report *Long Term Outlook for the Canadian Economy: National Projection Through 2025* by Peter Dungan and Steve Murphy (2007) from the Institute for Policy Analysis of the University of Toronto. This source is used as a benchmark for output, productivity, wages, participation and employment in 2017.

A. Projections for the General Population

i. Statistics Canada

In the publication *Populations Projections* of Statistics Canada (2005b), the general population is projected using six projection scenarios based on different assumptions about fertility, mortality (life expectancy) and migration. For the purposes of this report the third scenario will be used. Scenario 3 is a medium growth scenario with medium fertility rates, medium life expectancy projections and medium migration trends. Fertility rate assumptions are based on a detailed analysis of the trends in the fertility rate specific to each province and territory. Under Scenario 3, fertility rates for Canada are set at the 2002 level of 1.51 children per woman and remain at that level until 2017 (2002 was the most recent year for which vital statistics data were available). The mean age of childbearing is also set at its 2002 level of 29.2 years. Life expectancy is expected to be 79.6 years for males and 84.2 years for females in 2017. Finally migration trends, both international and inter-provincial, are projected using a number of underlying assumptions, including immigration and emigration rates, returning emigrants rates and recent data on inter-provincial movements.

Table 8:Statistics Canada Population Projections for Canada. 2001-2017

	Population (thousands)		Total Growth (%)	Average Annual Rate of Growth (%)
	2001	2017	2001-2017	2001-2017
Scenario 1	30,974	34,570	11.6	0.69
Scenario 2	30,974	35,542	14.7	0.86
Scenario 3	**30,974**	**35,538**	**14.7**	**0.86**
Scenario 4	30,974	35,534	14.7	0.86
Scenario 5	30,974	35,543	14.7	0.86
Scenario 6	30,974	36,439	17.6	1.02

Source: 2001 data retrieved from Census data. Projections for 2017 retrieved from Statistics Canada

Statistics Canada does not provide values for the year 2017. However, it provides projections for the years 2016 and 2021. To obtain an estimate for 2017, the average annual growth rate for the 2016-2021 period was calculated and applied to the 2016 estimate to obtain a value for 2017. The Canadian population is projected to reach 35,538,000 people by 2017 under Scenario 3, an increase of 14.7 per cent over 2001 (Table 8). The population aged 15 and older is anticipated to reach 30,054,000 (an increase of 23.8 per cent over 2001) and the population aged 15 to 64 years old is expected to be 24,049,000 (an increase of 17.9 per cent over 2001). The median age of the population is predicted to reach 41.4 years in 2017, up from 37.6 years in 2001.

ii. Institute for Policy Analysis

The Institute for Policy Analysis (IPA, Dungan and Murphy (2007)) of the University of Toronto provides projections of major economic indicators in Canada up to 2025. Their population projection is very similar to the medium growth scenario of Statistics Canada. Population is expected to grow at a decreasing rate between now and 2025 (1 per cent in 2006, and gradually down to 0.78 per cent in 2025). In 2017, the year of particular interest for this report, the Canadian population is expected to be at 35,916,000. This suggests a 16.0 per cent increase over the 2001-2017 period, a mere 1.3 percentage points more than the 14.7 per cent increase projected by Statistics Canada.

B. Projections for the Aboriginal Population

The Statistics Canada (2005a) publication *Projections of the Aboriginal Population, Canada, provinces and territories, 2001 to 2017* elaborates five projection scenarios for the Aboriginal population to 2017. The five scenarios presented make different underlying assumptions about fertility rates, mortality rates and migration trends. From these scenarios, the projected future importance of the Aboriginal population to the Canadian labour market can be calculated. All of the scenarios, excluding Scenario S, assume a perfect continuity in the transfer of Aboriginality from mother to child.[24] The five scenarios are explained in detail below.

- **Scenario A:** High Population Growth Scenario. It assumes that the fertility rates estimated in 2001 remain constant (Table 12), mortality rates are in decline (Table 13) and that the migration trends[25] remain the same as those of the second half of the 1990s.

- **Scenario B:** Medium Population Growth Scenario. It assumes a slow decline in fertility rates, while mortality rates and migration trends are the same as in Scenario A.

[24] Perfect continuity means that newborn children have the identity of their mother. However, this may not be the case, and some children may be identified differently than their mother. Statistics Canada used the "Continuity Index" defined as the total number of children with a given identity related to the number of children born to mothers with the same identity. Data shows gains in each identity group in the number of births.

[25] Internal migration is included mainly for the provincial estimates, since migration trend may differ by region or province. However, there may be a very little effect at the national effect, and what there is reflects changes in behaviour of migrants who would move to a region with different fertility and mortality levels.

- **Scenario C:** Medium Population Growth Scenario. It assumes a moderate decline in fertility and the mortality trends are those of Scenario A. Migration trends are estimated by extrapolation into the 2001 to 2017 period of the trends observed at the beginning of the 1990s.

- **Scenario D:** Low Population Growth Scenario. It assumes a rapid decline in fertility rates with fertility converging to reach 1.8 children per woman by 2026.

- **Scenario S:** Does not assume a perfect continuity in the transfer of Aboriginality from mother to child. Instead the 2001 Aboriginality transfers are extrapolated into the 16 year projection period. The mortality and migration trends are the same as in Scenario A.

Table 9: Aboriginal Identity Population Projections, in thousands, Canada, 2001, 2006, 2011 and 2017

Scenario	Population in thousands				Absolute Change	% Change	Average Annual Growth Rate
	2001	2006	2011	2017	2001-2017	2001-2017	2001-2017
A	1,066.5	1,169.5	1,282.8	1,431.8	262.3	34.3	1.86
B	1,066.5	1,168.6	1,278.4	1,420.0	251.4	33.1	1.81
C	1,066.5	1,168.9	1,280.8	1,427.9	259.0	33.9	1.84
D	1,066.5	1,166.6	1,268.5	1,390.2	223.6	30.4	1.67
S	1,066.5	1,182.1	1,308.2	1,471.7	289.6	38.0	2.03

Source: Statistics Canada (2005), 2001 data retrieved from Census 2001

The population projections range from a low of 1,390,200 in 2017 (30.4 per cent increase from 2001) to a high of 1,471,700 in 2017 (38.0 per cent increase from 2001). In all these scenarios the Aboriginal identity population is projected to grow at more than double the growth rate for the medium growth scenario of the overall population. While the Aboriginal population is projected to grow over 30 per cent over the period (Table 9), the total population is projected to increase 14.7 per cent from 2001 to 2017.

Table 10: Projections of the Aboriginal Population, Scenario B

	Total	Working Age (15+)	Aged 15 to 64	Aged 15 to 44
General Population, 2017 (thousands)	35,538,000	30,057,800	24,070,000	14,023,602
Aboriginal Population, 2001 (thousands)	1,066,500	715,500	673,000	514,400
Aboriginal Population, 2017 (thousands)	1,420,000	1,013,900	921,400	633,000
Aboriginal as a share of total, 2017	4.00	3.37	3.83	4.51
Total Growth, 2001-2017 (%)	33.1	41.7	36.9	23.1
Average Annual Growth Rate, 2001-2017 (%)	1.81	2.20	1.98	1.31

Source: Statistics Canada (2005a) and PUMF 2001 Census

The estimates by age groups are provided by Statistics Canada only for Scenario B. The Aboriginal working age population in 2017 is projected to be 1,013,900, a 41.7 per cent increase from the level in 2001, which was 715,500 individuals (Table 10). Interestingly, in 2017, the share of the population aged 15-44 of Aboriginal Identity will represent 4.51 per cent of the corresponding Canadian population, significantly larger than the Aboriginal share of the total population (4.00 per cent). This is important because the 15-44 age group is encompasses females of childbearing age. Thus, the fact that Aboriginal Canadians will represent a large proportion of the childbearing age population in 2017 suggests that the trend in population

growth for Aboriginal Canadians, which is to outpace total population growth, will most likely continue well beyond 2017.

Table 11: Aboriginal Identity Population Projections, Share of the Total Population, Canada, 2006, 2011 and 2017

Scenario	2001	2006	2011	2017	Percentage Point Change, 2001-2017
A	3.44	3.59	3.78	4.03	0.59
B	3.44	3.59	3.77	4.00	0.55
C	3.44	3.59	3.77	4.02	0.57
D	3.44	3.58	3.74	3.91	0.47
S	3.44	3.63	3.86	4.14	0.70

Source: Statistics Canada (2005a and 2005b)
Note: Total general population is based on Scenario 3

In each of the scenario, the Aboriginal population makes up an increasingly large portion of the Canadian and provincial populations (Table 11 and Appendix Tables 16 to 21). The highest increase in the shares is found in Scenario S, in which Aboriginal individuals represent a 0.70 percentage point higher share of the overall population in 2017 than in 2001. Even in the more modest scenario (D), the Aboriginal population is predicted to represent 0.47 percentage points more of the total population in 2017 than in 2001.

Table 12: Total Fertility Rates by Aboriginal Group and Scenario, Canada, 2017

	Constant	Declining			Ethnic Transfer
		Slowly	Moderately	Rapidly	
	(Scenario A)	(Scenario B)	(Scenario C)	(Scenario D)	(Scenario S)
North American Indians	2.86	2.71	2.56	2.18	3.12
Metis	2.17	2.06	1.95	1.93	2.48
Inuit	3.37	3.19	3.02	2.36	3.47

Source: Statistics Canada (2005)

The Aboriginal Identity population makes up a growing percentage of the Canadian population because Aboriginal Canadians have a higher birth rate than the general population. The fertility rates vary greatly among Aboriginal Identity groups: North American Indians (2.86 children per woman), Metis (2.17 children per woman) and Inuit (3.37 children per woman) (Table 12). All three were, however, still consistently higher than that of the overall population in 2001 (1.51 children per woman).

Life expectancy at birth in 2001 was much lower for the Aboriginal population, compared to the general population. Overall in Canada, life expectancy was 77.0 years for men and 82.2 years for women. Inuits had by far the lowest life expectancy, with 62.6 years for men and 71.7 years for women. North American Indian and Metis men had a life expectancy of 71.1 and 71.9 years, respectively. Women had higher life expectancy, as usual, with 76.7 and 77.7 years respectively (Table 13).

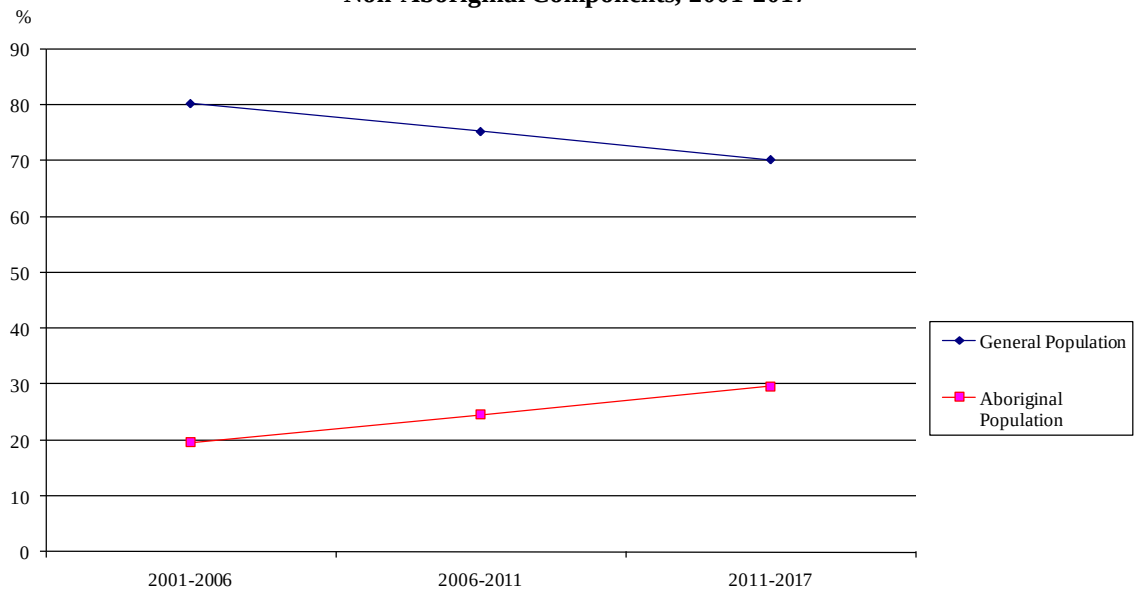
Table 13: Life Expectancy at Birth for Males and Females by Aboriginal Group, 2001 and 2017

	Male		Female	
	2001	2017	2001	2017
North American Indian	71.1	73.3	76.7	78.4
Metis	71.9	74.1	77.7	79.7
Inuit	62.6	63.9	71.7	72.9
Overall Population	77.0	79.6	82.2	84.2

Source: Statistics Canada (2005a)

None of the Aboriginal groups are predicted to reach parity in life expectancy with the non-Aboriginal population by 2017. In fact, no group is even expected to reach the non-Aboriginal life expectancy level of 2001, and the overall life expectancy will continue to rise up to 2017. The life expectancy for Metis will increase to 74.1 years for men and 79.7 years for women, again enjoying the highest life expectancy of all three Aboriginal groups. North American Indians will increase to 73.3 years for men and 78.4 years for women. Inuits will still have the lowest life expectancy, at 63.9 years for men and 72.9 years for women. The overall population life expectancy level was not available for 2017, but is projected to reach 81.1 years for men and 85.3 years for women by 2031. Assuming a linear progression, in 2017, life expectancy would be 79.3 years for men and 83.9 years for women.

Chart 16: Shares of Canada's Natural Population Increase, by Aboriginal and Non-Aboriginal Components, 2001-2017



Census, "Projections of the Aboriginal Populations, Canada, Provinces and Territories", "Population Projections for Canada, Provinces and Territories". 2001-2004 data taken from CANSIM II series v391069 and v391084

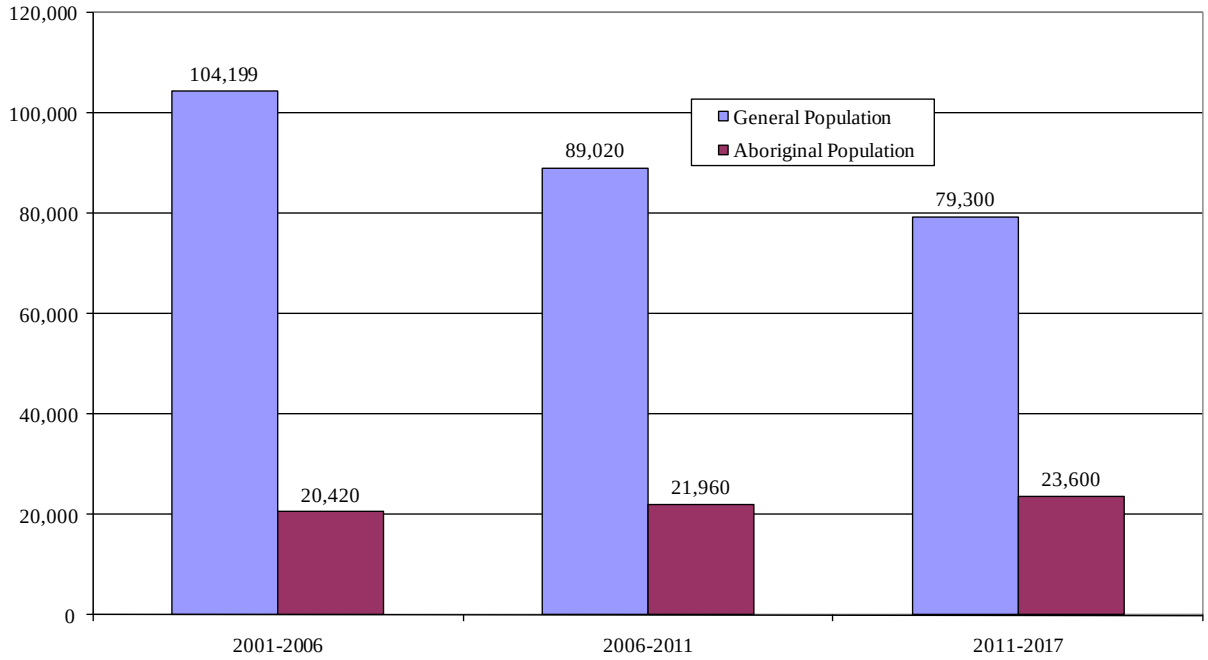
*Natural population increase assuming Scenario 3 for the general population and Scenario B for Aboriginal population growth.

In 2001, the median age of the total Aboriginal population was 24.7 years. This is projected to increase to 27.8 years in 2017, still nearly 15 years younger than that of the overall population in 2017 (41.4 years). The North American Indian population is even younger, at 24.0 years in 2001 and 26.6 years in 2017.

From 2001 to 2017, the 353.5 thousands persons (Scenario B) increase in the Aboriginal population accounts for 7.7 per cent of the 4,564 thousands persons increase in the overall population (Medium Growth – Scenario 3). This is based on a 33.1 per cent increase of the Aboriginal population and a 14.7 per cent increase of the overall population.

But there is a fundamental difference in the natural population growth between Aboriginal and non-Aboriginal Canadians. All the population growth of the former is due to natural increase (births minus deaths), but well less than half of the increase of non-Aboriginal comes from this source, with international migration being much more important. Equally, the Aboriginal have a much higher fertility rate than non-Aboriginal and they have a greater share of their population in the child-bearing age group.

Chart 17: Average Annual Natural Population Increase (Births - Deaths) in Canada, by Aboriginal and Non-Aboriginal Population, 2001-2017



Census, "Projections of the Aboriginal Populations, Canada, Provinces and Territories", "Population Projections for Canada, Provinces and Territories". 2001-2004 data taken from CANSIM II series v391069 and v391084
*Natural population increase assuming Scenario 3 for the general population and Scenario B for Aboriginal population

Using scenario B for the Aboriginal population growth and scenario 3 for the total Canadian population growth, it is predicted that the Aboriginal community will be responsible for much of Canada's natural population increase. These projections estimate that between 2001-2006,[26] the Aboriginal population was responsible for 19.6 per cent of Canada's natural population growth, a figure projected to rise to 29.8 per cent for the 2011-2017 period (Chart 16).

[26] Data for 2001-2004 was taken from currently available data (v391069 and v391084). The natural rate of Aboriginal population growth is calculated based on projected populations and thus slightly underestimates due to the lack of controlling for Aboriginals who emigrate from Canada.

The Aboriginal population is estimated to have grown by 20,400 per year over the 2001-2006 period while the general population saw natural growth of 104,199 person per year. Over the 2011-2017 period, the average yearly Aboriginal contribution to total population growth is projected to rise to 23,600 persons while the general population is projected to see natural growth of only 79,300 persons per year (Chart 17). Clearly the Aboriginal population will form a significant portion of Canada's population growth due to a younger age structure and higher birth rate.

C. Projections for the Canadian Economy

Now that we have established base case scenarios for projections of both Aboriginal and non-Aboriginal populations, we need to establish base case economic projections in line with these population estimates. These projections will provide a benchmark against which to measure the potential contribution of Aboriginal Canadians to the overall economy. As discussed earlier, Dungan and Murphy (2007) from the Institute for Policy Analysis of the University of Toronto provide projections for many economic variables up to 2025. Moreover, we already established that their population projections are in line with those of Statistics Canada used in this report. Thus, these economic projections will be adopted as the base case scenario for this report. In this section, we review in more detail their projections for key labour market outcome indicators as well as for GDP, employment, and labour productivity.

Dungan and Murphy project a total population increase of 16.0 per cent between 2001 and 2017, a 0.93 per cent annual average growth rate. The working age population is projected to increase at a slightly faster rate of 1.17 per cent per year over the 2001-2017 period, a total increase of 20.5 per cent. Finally, the authors expect the labour force to grow only slightly slower, at 1.13 per cent per year or 19.8 per cent over the period (Table 14). This represents an additional 3,185,000 workers in the labour force in 2017 compared to 2001.

Table 14: Institute for Policy Analysis Population and Labour Market Outcomes Projections to 2017

	2001	2017	% change, 2001-2007	Average Annual % Change
Total Population	30,974	35,916	16.0	0.93
Working Age Population	24,444	29,451	20.5	1.17
Labour Force	16,111	19,296	19.8	1.13
Participation Rate	65.9	65.5	-0.6	-0.04
Unemployment Rate	7.2	6.2	-13.9	-0.93
Employment Rate	61.1	62.8	2.7	0.16

Source: Dungan, Peter and Steve Murphy (2007), Tables 1b and Table 2

Of course, with the labour force growing marginally slower than the working age population, the participation rate is expected to fall slightly from 65.9 per cent in 2001 to 65.5 per cent in 2017. The unemployment rate is also expected to decrease, from 7.2 per cent in 2001 to 6.2 per cent in 2017. This one percentage point decrease in unemployment rate over the 2001-2017 period is sufficient to counterbalance the small decrease in participation rate, leading to a

1.7 percentage point increase in the employment rate, from 61.1 per cent in 2001 to 62.8 per cent in 2017.

Real gross domestic product (GDP) in Canada in 2001 was $1,038.7 billion (1997 dollars), and it grew to $1,189.8 billion in 2006. The rate of growth of GDP is projected to increase until 2010, reaching 3.0 per cent that year, but should then gradually decrease to reach 2.2 per cent in 2017. In 2017, real GDP is projected to be at a level of $1,564.4 billion (1997 dollars), a total growth of 50.6 per cent over the 2001-2017 period or 2.59 per cent on average each year (Table 15).

Due to projected increases in both the working age population (20.5) and the employment rate (2.7 per cent), the level of employment is expected to increase 23.7 per cent between 2001 and 2017, from 14,946,000 persons in 2001 to 18,486,000 persons in 2017. This translates into a projected annual average growth rate of 1.34 per cent for the 2001-2017 period.

Table 15: Institute for Policy Analysis Economic Projections to 2017

	2001	2017	% change, 2001-2007	Average Annual % Change
GDP (billions of chained 1997 $)	1,038.7	1,564.4	50.6	2.59
Employment (in thousands)	14,946	18,486	23.7	1.34
GDP per Worker (chained 1997 $)	69,496	84,628	21.8	1.24
Labour Productivity per hour	n.a.	n.a.	24.5	1.38
Average Real Wage per Worker	n.a.	n.a.	25.5	1.43

Source: Dungan, Peter and Steve Murphy (2007), Tables 1b and Table 2

GDP per worker is the ratio of GDP to employment. Hence, the growth of GDP per worker is projected to be 1.24 per cent per year over the 2001.2017, which represent the residual GDP growth not due to increased employment. Another measure of productivity, labour productivity per hour, is projected to grow slightly faster than GDP per worker, with an average annual growth rate of 1.38 per cent. This implies that the projected amount of hours worked by each worker should decrease slightly between 2001 and 2017. Finally, real wages generally increase in line with productivity. In their projections, Dungan and Murphy (2007) project a 25.5 per cent increase in real wage per worker between 2001 and 2017, a slightly larger increase than that of labour productivity (24.5 per cent). This slight divergence suggests that the authors believe the share of labour in GDP in Canada will increase over the period. This is not surprising since the share of profit in GDP in Canada were at an unusually high level in 2001. A realignment can thus to be expected.

V. Potential Labour Market Scenarios for Aboriginal Canadians With Higher Educational Attainment

Earlier research has highlighted the importance of education for the economic success of the Aboriginal population as measured by increased participation rates, employment rates, lower unemployment and increased earnings. However, this research has not developed the implications of better Aboriginal labour market outcomes for the overall labour market as well as for aggregate output and labour productivity. The next two sections fill this gap and strengthen the case for increasing the educational attainment of the Aboriginal population. As noted in previous sections, this is particularly relevant in the context of weak labour productivity growth and slower labour force growth facing Canada.

In this section, the projections described in the previous section for the overall and the Aboriginal populations are used to estimate under various assumptions both (i) the share of the growth in the labour force and (ii) the share of the growth in employment between 2001 and 2017 that can be attributed to Aboriginal Canadians. Finally, we review the changes that already occurred during the 2001-2006 period.

A. Potential Impact of Increased Participation of Aboriginal Canadians on the Labour Force

As noted in the previous section, due to demographics, Aboriginal Canadians will make up an increasingly share of the working age population, from 2.95 per cent in 2001 to 3.37 per cent in 2017 (Table 10 and Appendix Table 22). However, their importance to the future labour force depends not only on their share of the working age population but also on their participation rates. In 2001, the Aboriginal participation rate (61.4 per cent) was 5.2 percentage points below that of the non-Aboriginal population (66.6 per cent). The report has already shown that participation rates are higher at higher levels of educational attainment, and also that there is currently a large educational attainment gap between Aboriginals and the general population.

In this section, we project the future labour force of Aboriginal Canadians based on different assumptions. The increased participation rate of Aboriginal Canadians is assumed driven by increased educational attainment as previously documented. The labour market participation rate, however, is not only affected by increased educational attainment, but also by employment opportunities. Theoretically, the participation rate of Aboriginal Canadians could increase, even if there was no change in their level of educational attainment, if labour demand is strong enough, as we currently see in Western Canada due to the commodity boom.

Although four scenarios were developed, this section focuses on the two limit scenarios (Scenario 1 and 3). Under Scenario 1, the assumption is that there is no change in the Aboriginal participation rate. Hence the participation rate of Aboriginal Canadians in 2017 remains the same as its 2001 level, which is 61.4 per cent.

Under Scenario 3, it is assumed that the participation rate of Aboriginal Canadian in 2017 reaches the level non-Aboriginal Canadians had attained in 2001. For example, at the national level, we assume that the participation rate of Aboriginals reaches 66.6 per cent by 2017. Clearly, even this scenario is conservative since it represents a lower increase in participation rate than would be achieve only through an increase in educational attainment.[27]

The projections are made using Aboriginals population projection estimates (Statistics Canada, 2005a) and projections on the total labour force growth (Dungan and Murphy, 2007) described in the previous section.

i. National Projections

These different scenarios produce interesting results (see Appendix Tables 22 to 27 for details). Scenario 1 projects an important increase in the Aboriginal labour force, a direct result of Aboriginal population growth of 41.7 per cent from 2001 to 2017. This means that given no increase in participation rate, 183,218 Aboriginal individuals are projected to join the labour force. In this case, Aboriginal Canadians, who made up only 3.4 percent of the total population in 2001 (Statistics Canada – Aboriginal Population Projections), would be responsible for 5.75 percent of the total increase in the size of the Canadian labour force (Table 16). Their share in the labour force would go from 2.73 per cent in 2001 to 3.23 in 2017. This can be explained by the fact that Aboriginal Canadians had a higher birth rate and therefore their working age population is increasing at a faster rate than that of the non-Aboriginal population.

Table 16: Summary of Aboriginal Labour Force (15+) Projections

	Labour Force (15+)		Share of labour force in 2001	Share of labour force in 2017	Absolute change, 2001-2017	Per cent growth, 2001-2017	Contribution to overall labour force growth, 2001-2017, per cent
	2001	2017					
Scenario 1	439,317	622,535	2.73	3.23	183,218	41.7	5.75
Scenario 3	439,317	674,889	2.73	3.50	235,572	53.6	7.39

Source: Appendix Table 23

Scenario 3 projects that the Aboriginal labour force would increase by 235,572 individuals (53.6 per cent), from 439,317 in 2001 to 674,889 in 2017. In this scenario, the

[27] Under Scenario 2, the participation rate gap of Aboriginal Canadians reaches the mid-point between their level in 2001 and that of non-Aboriginal Canadians in 2001. At the national level, this scenario assumes that the participation rate in 2017 of Aboriginals would be 64.0 per cent – the mid-point between the 2001 participation rate for Aboriginals (61.4 per cent) and the 2001 participation rate for non-Aboriginals (66.6 per cent). A fourth scenario can be considered. This scenario assumes that the participation rate of Aboriginal Canadian in 2017 reaches the same level as that forecasted by Dungan and Murphy for the general population in 2017 (65.5 per cent). Parity is achieved. These scenarios are included for projections at the national level in Appendix Tables 22 and 23. The scenario is not investigated partly because there is a considerable degree of uncertainty associated to the forecast for the overall participation rate in 2017. Marshall and Ferrao (2007) suggest that the labour force participation rate may be higher than expected in 2017. Indeed, they find that older people are currently retiring at an older age than before, and that the participation rate of the population aged 55 to 64 increased compared to 1976, with a noticeable increase in the past ten years. This effect may counter-balance the effect on participation from the aging of the population.

Aboriginal percentage contribution in the increase of the total labour force would be 7.39 per cent and the share of Aboriginal Canadians in total labour force in 2017 would be 3.50 per cent.

Table 17: Summary of Aboriginal Labour Force (15-64) Projections

	Labour Force (15-64)		Share of labour force in 2001	Share of labour force in 2017	Absolute change, 2001-2017	Per cent growth, 2001-2017	Contribution to overall labour force growth, 2001-2017, per cent
	2001	2017					
Scenario 1	420,692	575,967	2.62	3.16	155,275	36.9	7.18
Scenario 3	420,692	701,185	2.62	3.85	280,493	66.7	12.97

Source: Appendix Table 23

The percentage contribution of the Aboriginal population to the change in the labour force is even more considerable when we consider only the labour force aged 15-64 (Table 17). In this case, under Scenario 3, Aboriginals are expected to contribute 12.97 per cent to the change in the labour force between 2001 and 2017 (Table 16).[28] Even if participation rates of Aboriginals do not change (Scenario 1) this figure is 7.18 per cent. The increase is larger for the population aged 15-64 because the proportion of the non-Aboriginal population aged 65 and over is expected to grow much more rapidly than that of the Aboriginal population aged 65 and over.

It is important to note that even without any change to the participation rate of Aboriginal Canadians, the proportion of the labour force that is Identity Aboriginal is projected to rise. This is an important finding because it shows that the Aboriginal population will become increasingly important to the Canadian economy. This is especially true for the population 15 to 64 because the Aboriginal population is younger than the non-Aboriginal population. For the population 15 and over, the Canadian definition of the working age population, assuming Aboriginal participation rates do not change from the rates in 2001, Aboriginals are projected to make up 3.23 per cent of the labour force in 2017. This represents a 0.5 percentage point increase from the 2.73 per cent in 2001. For the population 15 to 64, however, the difference is slightly greater. Without a change in their participation rates, Aboriginals are projected to represent 3.16 per cent of the labour force in 2017, up from 2.61 per cent in 2001.

Of the Aboriginal identity groups, the North American Indians have the lowest participation rates at 57 per cent in 2001. For this reason and because they are the identity group with the largest population, 713,100 people in 2001 (Statistics Canada – Aboriginal Population Projections), if the North American Indian population were to achieve parity with the non-Aboriginal population there would be a larger impact to the labour force than a similar change in other identity groups. If participation rate parity was achieved by 2017, 222,569 additional

[28] There appears to be an inconsistency between tables 15 and 16 in that they indicate that the Aboriginal labour force under scenario 3 would be larger in the 15-64 subset than it is for the 15 and older subset. This is because the tables were independently constructed to show the situation when the rate for the Aboriginal community in 2017 reaches the level of non-Aboriginals in 2001. The general population had a significantly higher proportion of the population aged 64 and over in 2001 than the Aboriginal community is projected to have in 2017 (16.3 per cent compared to 9.1). As our projections do not adjust for the different age structures, this creates inconsistencies. Finer projections, taking into account the difference in age structure, would lead to larger estimates for the potential contribution of Aboriginal Canadians to the total increase in labour force over the 2001-2017 period. In this context, our projections represent lower-bound estimates of the potential contribution of Aboriginal Canadians.

Aboriginals would enter into the labour force. In this case, the North American Indian contribution to the change in the size of the labour force between 2001 and 2017 would be 5.80 percent. The Inuit have the smallest effect on the size of the future Canadian labour force, 0.31 per cent if parity were to be achieved. However, considering that the Inuit make up only 0.12 per cent of the population, this change is significant. As for the Metis, the participation rate of the group is actually above that of the non-Aboriginal population, thus, it was just assumed that both the participation rates of the Metis and the non-Aboriginal population would remain constant. In this case, the Metis contribute 1.28 per cent to the change in the total Canadian labour force between 2001 and 2017.

It is also interesting to measure the level of the national participation rate when different scenarios are considered. Scenario 3 projects that roughly 50,000 additional persons will participate in the labour force compared to Scenario 1, the latter representing the status quo. This suggests that the 2017 national participation rate under Scenario 3 would be almost 0.3 percentage point higher than under Scenario 1.

ii. Provincial Projections

At the provincial level, the Aboriginal population is most important in the labour force of Saskatchewan, the Territories and Manitoba in descending order (Appendix Tables 22 to 27). It is consequently in these provinces that Aboriginal Canadians contribute most to labour force growth.

In Saskatchewan, the Aboriginals are projected to make up 16.8 per cent of the working age population by 2017. The non-Aboriginal working age population of Saskatchewan is projected to decrease by 19,010 individuals by 2017, while the Aboriginal working age population is projected to increase by 50,900 individuals or 60.5 per cent (Appendix Table 22). Thus, Aboriginals will make up an increasingly important share of the working age population. If Aboriginal Canadians were to achieve parity with the general population in terms of participation rate levels of 2001 by 2017 (Scenario 3), their share in the Saskatchewan labour force would also increase significantly. The percentage contribution of Aboriginals to the change in the labour force from 2001 to 2017 would be 221 per cent if Aboriginals achieve parity with the 2001 participation rates of the general population (Table 18).

Table 18: Summary of Aboriginal Labour Force Projections, by Scenario and by Province, 2001-2017

	Percentage Change in Aboriginal Labour Force, 2001-2017		Contribution to Total Labour Force Growth, 2001-2017, per cent		Percentage of Labour Force in 2001	Percentage of Labour Force in 2017	
	Scenario 1	Scenario 3	Scenario 1	Scenario 3	-	Scenario 1	Scenario 3
Atlantic	42.0	43.2	9.5	9.7	2.15	2.79	2.81
Quebec	10.3	15.3	0.7	1.1	1.08	1.03	1.08
Ontario	32.1	51.0	1.5	2.4	1.44	1.46	1.67
Manitoba	47.6	71.0	28.6	42.8	10.13	12.80	14.84
Saskatchewan	60.5	104.5	128.3	221.5	8.76	13.50	17.20
Alberta	54.9	77.5	7.6	10.7	4.12	4.91	5.63
British Columbia	27.4	32.2	3.6	4.2	3.82	3.76	3.91
Territories	49.7	78.8	100.4	159.2	40.88	50.89	60.78
Canada	41.7	53.6	5.8	7.4	2.73	3.23	3.50

Source: Appendix Tables 22 and 23

In the territories, the non-Aboriginal working age population is projected to decrease by 1,630 individuals during the 2001-2017 period. In 2001, 45 per cent of the working age population self-identified as Aboriginal (Appendix Table 22). In 2017, that proportion is projected to increase to 56 per cent. In 2001, the participation rate of Aboriginal Canadians (63.0 per cent) was below that of the non-Aboriginal population (75.2 per cent.) Under Scenario 3, if Aboriginal were to achieve parity with non-Aboriginals in terms of participation rate, 16,275 additional workers would join the labour force and the Aboriginal population would contribute 159 per cent to the increase in the total labour force between 2001 and 2017 in the Territories.

In Manitoba, under scenario 3, the Aboriginal contribution to the change in the labour force between 2001 and 2017 is also significant (42.8 per cent), though not as much as that for the Territories because Aboriginal Canadians make up a smaller proportion of the working age population of Manitoba (11.6 per cent in 2001) than they do in the Territories (45.2 per cent in 2001).

In Quebec and Ontario the Aboriginal population has the smallest effect on the labour force. Even if the participation rates of Aboriginals were to achieve parity with the participation rates of the non-Aboriginal population, by 2017 the Aboriginal contribution to the percentage change in the labour force between 2001 and 2017 would be minor (1.06 per cent in Quebec and 2.36 per cent in Ontario.) The small effect of Aboriginal Canadians in Quebec and Ontario can be explained by the fact that they make up a small proportion of the population. By 2017 they will make up a projected 1.1 per cent and 1.7 per cent of the labour force respectively.

B. Aboriginal Canadians and Employment

Participation rates are not the only labour market indicators in which Aboriginal Canadians trail behind the non-Aboriginal population. In terms of employment rates, there is an even greater gap between Aboriginal and non-Aboriginal populations. Just like participation rates, employment rates are positively affected by educational attainment. Much of the difference in employment rates between Aboriginals and non-Aboriginals can be explained by the educational gap between the two groups.

Following the same logic as that used for the participation rates, the potential contribution of Aboriginals to the future number of employed individuals will be calculated under various scenarios. The scenarios considered mirror those used for the participation rates projections. Scenario 1 assumes no change in employment rate for Aboriginal Canadians, and Scenario 3 assumes that the employment rate of Aboriginal Canadians in 2017 will reach the 2001 employment rate level of non-Aboriginal Canadians.

Table 19a Summary of Aboriginal Employment Projections, Canada

	Employment		Share of Employment in 2001	Share of Employment in 2017	Absolute change, 2001-2017	Per cent growth, 2001-2017	Contribution to overall employment growth, 2001-2017, per cent
	2001	2017					
Scenario 1	355,604	503,908	2.38	2.73	148,305	41.7	4.17
Scenario 3	355,604	627,181	2.38	3.39	271,577	76.4	7.64

Source: Appendix Table 22

In Canada, if Aboriginals were to achieve employment rate parity with the 2001 level of the non-Aboriginal population, by 2017, 627,181 Aboriginals would be employed and Aboriginals would contribute 7.64 per cent to the change in the total number of employed in Canada between 2001 and 2017 (Table 19a, Table 19b and Appendix Table 24). Considering Aboriginal Canadians are projected to make up only 4.0 per cent of the population by 2017, their potential contribution is impressive. Even under Scenario 1, Aboriginals have a potential 4.17 per cent contribution to make to change in the total number of employed from 2001 to 2017. The difference between Scenario 1 and Scenario 3 is more than 120,000 employed individuals, which roughly translates into a 0.6 percentage point increase in the national employment rate in 2017. Of course, since only part of the employment rate gap between Aboriginal and non-Aboriginal Canadians is accounted for by differences in education, the difference between the two scenarios captures more than differences in educational attainment. Yet, it does underline the significant unrealized potential of Aboriginal Canadians and their potential impact on the Canadian economy.

At the provincial level, the difference could be most felt in Saskatchewan, the Territories and Manitoba because this is where the Aboriginal population makes up the greatest proportion of the total population (Table 19 and Appendix Table 24). In Saskatchewan, achieving parity between the Aboriginal and the non-Aboriginal employment rate would mean an additional 53,953 employed individuals by 2017.

Table 19b: Summary of Aboriginal Employment Projections, by Scenario and by Province, 2001-2017

	Percentage Change, 2001-2017		Contribution to the Employment Growth, , per cent		Percentage of Employment in 2001	Percentage of employment in 2017	
	Scenario 1	Scenario 3	Scenario 1	Scenario 3	-	Scenario 1	Scenario 3
Atlantic	42.0	72.4	7.9	13.6	1.8	2.3	2.8
Quebec	10.3	30.9	0.6	1.9	1.0	0.9	1.1
Ontario	32.1	55.3	1.5	2.5	1.4	1.4	1.7
Manitoba	47.6	101.7	24.7	52.7	8.7	11.0	15.1
Saskatchewan	60.5	152.7	105.6	266.4	7.2	11.1	17.5
Alberta	54.9	98.7	6.8	12.2	3.7	4.4	5.7
British Columbi	27.4	57.0	3.0	6.3	3.2	3.2	3.9
Territories	49.7	110.1	91.0	201.6	37.0	46.1	64.7
Canada	41.7	76.4	4.17	7.64	2.4	2.7	3.4

Source: Appendix Table 24

If the employment rates remain the same, the province of Saskatchewan is only projected to have an increase of 20,250 employed individuals due to out-migration. In this case, the

potential contribution of Aboriginal Canadians is staggering (266.4 per cent). In the Territories, where, just like Saskatchewan, the non-Aboriginal working age population is projected to decrease, Aboriginal Canadians also have the potential to greatly alter the labour market. If the employment rate of the general population remains constant, the economy is only projected to have an increase of 8,993 individuals between 2001 and 2017. However, under Scenario 3, the Aboriginal population can potentially contribute an additional 18,132 individuals to the number of employed. Thus, the potential contribution of Aboriginals to the change in the number of employed between 2001 and 2017 in the Territories is 201.6 per cent.

In Manitoba, where Aboriginals are projected to make up 15 per cent of the working age population, under Scenario 3, the potential contribution of Aboriginals to the number of employed individuals is 52.7 per cent. Quebec and Ontario will be least affected by any changes in the employment rates of Aboriginal Canadians. If parity were to be achieved the aboriginal population would only contribute 1.9 per cent and 2.5 per cent respectively to the change in the total number of employed between 2001 and 2017. However, when one considers the fact that Aboriginal Canadians make up only 1.3 per cent in Quebec and 1.8 per cent in Ontario of the total population, the potential contribution of the Aboriginal population is still important.

C. Aboriginal Labour Market Development in Western Canada, 2001-2005

In 2005, Statistics Canada added a question about Aboriginal identity to the Labour Force Survey conducted in Western Canada. These estimates provide more up-to-date information about Aboriginal labour market performance in Western Canada than available in the 2001 census. These new estimates shed light on labour market outcomes for Aboriginal Canadians over the 2001-2005 period, at least for Western Canada. Overall, they show significant improvement over 2001.

The participation rate of off-reserve Aboriginals increased relative to that of the non-Aboriginal population since 2001. The off-reserve Aboriginal participation rate increased by two percentage points between 2001 and 2005 (66.4 per cent in 2005 up from 64.4 per cent in 2001), while the non-Aboriginal participation rate only increased by 0.3 percentage points (68.7 per cent in 2005 up from 68.4 per cent in 2001). This resulted in a large decrease of the off-reserve Aboriginal/non-Aboriginal participation rate gap of 1.7 percentage points (Table 20).

Table 20: Off-reserve Aboriginal Labour Force Outcomes, Western Canada, 2001 and 2005

	2001			2005			Change over the 2001-2005 period		
	Aboriginal	Non-Aboriginal	Gap	Aboriginal	Non-Aboriginal	Gap	Aboriginal	Non-Aboriginal	Gap
Employment rate	54.4	64.5	10.1	58.3	65.5	7.2	-3.9	-1.0	2.9
Unemployment rate	15.5	5.6	-9.9	12.1	4.7	-7.4	3.4	0.9	-2.5
Participation rate	64.4	68.4	4.0	66.4	68.7	2.3	-2.0	-0.3	1.7

Source: Luffman and Sussman (2007)

The off-reserve unemployment rate also fell during the 2001-2005 period, from 15.5 per cent in 2001 to 12.1 per cent in 2005. This 3.4 percentage point decrease was much large than

that of non-Aboriginal over the same period (0.9 percentage point). The unemployment rate gap between off-reserve Aboriginal and non-Aboriginal in Western Canada thus decreased from 9.9 points in 2001 to 7.4 points in 2005.

Table 21: Proportion of Projected Increase in Aboriginal Labour Force and Number of Employed (Scenario 3) Which Occurred between 2001 and 2005 in Western Canada

	Projected Increase from 2001-2017	Increase from 2001-2005, off-reserve	Estimates of total increase from 2001-2005*	Proportion of Projected Increase for 2001-2017 that has already Occurred (2001-2005)
	A	B	C = B * 1 / 0.676	D = C / A * 100
Labour Force	171,455	34,000	50,277	29.32
Employed	198,488	36,000	53,235	26.82

Source: Projected increase calculated from appendix tables 23 and 24. Increase from 2001-2005 found in Luffman and Sussman (2007).

*Share of aboriginal Canadians living off-reserve in Western Canada was 67.6 per cent in 2001 as calculated from Statistics Canada (2005a). This share was used to estimates the total increase.

In Western Canada, the employment rate of off-reserve Aboriginals was 58.3 per cent in 2005, up from the 54.4 per cent in 2001. The employment rate of non-Aboriginals increased as well, 65.5 per cent in 2005 up from 64.5 per cent in 2001. Therefore the gap between the non-Aboriginal and the Aboriginal employment rate decreased from 10.1 to 7.2 percentage points over the 2001-2005 period. In only four years, almost a third of the original employment rate gap was eliminated.

The increase in the participation rates and employment rates of off-reserve Aboriginals in the West has effectively increased the Aboriginal labour force by 34,000 individuals and the number of employed has increased by 36,000 individuals. Under scenario 3, by 2017, the Aboriginal labour force in Western Canada will increase by a projected 171,385 people and the number of Aboriginal employed will increase by 198,487. If we assume that improvements for off-reserve and on-reserve Aboriginal Canadians were of a similar magnitude, we can estimate that almost 30 per cent of the projected increase in labour force for Aboriginal Canadians for the 2001-2017 period already occurred (Table 21). Moreover, 26.8 per cent of the most optimistic projected change in employment for Aboriginal Canadians already occurred. Since the period observed is four years, or 25 per cent of the total 16 years period, these developments suggest that our projections might in fact underestimate the potential contribution of Aboriginal Canadians to the country's economy.

VI. Potential Output and Productivity Scenarios When Aboriginal Canadians Attain Higher Educational Attainment

This section will draw from the findings in the two previous sections to project the income of the Aboriginal population to 2017 and calculate their potential contribution to output and labour productivity growth based on different assumptions related to educational attainment. After a short methodological review, the potential contributions are examined under different scenarios based on three assumptions: (i) the educational level of Aboriginal Canadians remains unchanged over the period, (ii) the educational level of Aboriginal Canadians in 2017 reaches the mid-point between its level in 2001 and that of non-Aboriginal in 2001 and (iii) the Aboriginal Canadians in 2017 acquire the same educational profile as that of non-Aboriginal Canadians in 2001.[29] Also, the report makes different assumptions regarding the Aboriginal employment rate and employment income in 2017 for given educational categories. Finally, the case of North American Indians is considered, using the same methodology.

A. Assumptions and Methodology

In order to make projections of Aboriginal income and productivity to 2017, 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 they achieved, and shares of the population for these two populations in each educational category were calculated (Appendix Tables 30 to 39).

- The appropriate shares (chosen according to the scenario) in each educational category are then applied to the Aboriginal working age population in 2017 to project the absolute number of Aboriginal Canadians of working age in each educational category in 2017.

- The working age population in each educational category is then multiplied by the category's corresponding employment rate in 2017 (chosen according to the scenario) to find the number of Aboriginal employed in each category.

- The number of Aboriginals employed is then multiplied by the average employment income in each educational category in 2017 (once again, chosen according to the scenario) to obtain the aggregate income for that category.

[29] The report recognizes, but does not consider the fact that the non-Aboriginal population will reach a higher education by 2017 than achieved in 2001. Therefore, to the extent that the educational attainment of Aboriginal Canadians approach in 2017 the actual level of the non-Aboriginal population (rather than their 2001 level), this report actually underestimates the potential educational attainment of the Aboriginal group in 2017. Another scenario that could be investigated would be that the Aboriginal population reaches the level of education of the non-Aboriginal population in 2017, but this would require an estimate of the level of educational attainment of the non-Aboriginal population in 2017. Under this scenario, the potential level of educational attainment of the Aboriginal population in 2017 would be even higher than in our most optimistic scenario, and thus their contribution to output and productivity growth would be larger than the one forecasted in this section.

- Total income of the Aboriginal population is calculated by summing up the incomes of each educational category.

Box 1: Explanations of Different Assumptions

A number of assumptions are made about the three variables (education, income, and employment rate) considered in our projections. This box explains all of them in detail.

Share of Aboriginal Population in Educational Attainment Groups

The Aboriginal population is separated into 14 categories according to their highest level of educational attainment. The shares of the population in each group are assumed to take three sets of values in 2017, namely:

- 2001 level: This assumes no change. The shares of the Aboriginal population in 2017 in each educational category are kept at their 2001 level.
- Half of the gap eliminated: The shares of the Aboriginal population in 2017 in each educational category are assumed to take the mid-point between the share of the Aboriginal population in 2001 and the share of the non-Aboriginal population in 2001.
- Complete elimination of the gap: The shares of the Aboriginal population in 2017 are assumed to take the values of the non-Aboriginal population in 2001.

Average Employment Income of the Aboriginal Population

The average employment income for the Aboriginal population in 2017 given the educational level is assumed to take two sets of values:

- It is assumed to increase at the same rate as that of the overall workforce, which is forecast to be 25.5 per cent over the 2001-2017 period in real terms (Dungan and Murphy, 2007).
- It is assumed to reach parity with that of the non-Aboriginal population. In this case, the average employment income of the Aboriginal population in 2017 at a given education level would be the same as the non-Aboriginal income in 2017. The average increase is thus 61.4 per cent, with a 25.5 per cent increase from an overall increase in real wages and a 29.9 per cent increase due to the elimination of the 2001 employment income gap between Aboriginal and non-Aboriginal populations at given levels of educational attainment.

Employment Rate of the Aboriginal Population

Employment rates of Aboriginal individuals are in general lower than that of the non-Aboriginal population at a given level of education. In 2017, the rates can be assumed to take two different sets of values:

- 2001 level: No change assumed in the education-specific Aboriginal employment rates from the 2001 level.
- Elimination of the Aboriginal/non-Aboriginal employment rate gap: The employment rates of the Aboriginal population in each education group are assumed to reach the level of the 2001 employment rate of the non-Aboriginal population in the same educational group.

This methodology is applied for each of ten different scenarios which differ based on assumptions related to the shares of the population in each educational category (educational profile), the average employment income of Aboriginal Canadians in each educational category, and the employment rates of the Aboriginal population in each educational category. These assumptions are summarized in Table 22 and explained in Box 1. Employment income for Aboriginal Canadians in 2001 was estimated to be $7,716 million, corresponding to a GDP of $15,432 million (assuming employment income represents roughly half of GDP[30]). The aboriginal working age population in 2001 was 715,500 individuals, and this number is expected to grow to 1,013,900 by 2017, due to the higher fertility level of Aboriginal Canadians.

Table 22: Summary of Different Assumption Sets for Aboriginal Income and Productivity Projections in 2017

	Assumptions		
Scenario	Share of Aboriginal Population in Each Educational Category	Aboriginal Average Income Increase Given Education	Aboriginal Employment Rate Given Education
Base Scenario 1	2001 Share of the Aboriginal Population	Increase with average wage growth	Level of Aboriginal Employment Rate in 2001
Base Scenario 2		Level of Non-Aboriginal Income in 2017	Level of Non-Aboriginal Employment Rates in 2001
3	Half of the Gap Between the Aboriginal and Non-Aboriginal Education in 2001 is Eliminated	Increase with average wage growth	Level of Aboriginal Employment Rate in 2001
4		Increase with average wage growth	Level of Non-Aboriginal Employment Rates in 2001
5		Level of Non-Aboriginal Income in 2017	Level of Aboriginal Employment Rate in 2001
6		Level of Non-Aboriginal Income in 2017	Level of Non-Aboriginal Employment Rates in 2001
7	Complete Gap Between the Aboriginal and Non-Aboriginal Education in 2001 is Eliminated	Increase with average wage growth	Level of Aboriginal Employment Rate in 2001
8		Increase with average wage growth	Level of Non-Aboriginal Employment Rates in 2001
9		Level of Non-Aboriginal Income in 2017	Level of Aboriginal Employment Rate in 2001
10		Level of Non-Aboriginal Income in 2017	Level of Non-Aboriginal Employment Rates in 2001

[30] In 2006, nominal labour compensation in Canada was $737 million and total nominal GDP was $1,446 million, with the former representing 51 per cent of the latter. The ratio was 50.5 per cent in 2005, 50.7 per cent in 2004 and 51.2 per cent in 2003.

In 2001, GDP and productivity levels are based on actual values and are the same for all scenarios. Total Canadian GDP is $1,108,048 millions (2001 dollars) and the labour productivity is $74,136 per worker (2001 dollars). In each scenario, total GDP and labour productivity levels in 2017, adjusted for the additional Aboriginal income, had to be approximated.

Output in 2017 had to be estimated to take into account the additional GDP created by the Aboriginal population over the base scenario. It is assumed that Base Scenario 1 encompasses the assumptions made by Dungan and Murphy (2007) for their projection of GDP for Canada in 2017. To calculate the total contribution of Aboriginal Canadians to GDP under each scenario, the estimated incremental increase from each scenario is added to the Canadian GDP in the base scenario to find total Canadian GDP given each scenario. This is done in the following way:

(1) GDP in 2017 under scenario x
= GDP in Base Scenario 1
+ (Aboriginal Income in Scenario x
*- Aboriginal Income in Base Scenario 1)*2*

Total employment in 2017, including the incremental contribution of Aboriginal Canadians due to scenario–specific assumptions, is calculated in a similar way:

(2) Employment in 2017 under scenario x
= Employment in Base Scenario 1
+ (Aboriginal Employment in Scenario x
- Aboriginal Employment in Base Scenario 1)

Productivity in 2017 must also be adjusted for the additional income and employment added by Aboriginals over the base Scenario 1. The GDP estimated with the method outlined above was used, and was divided by the estimated employment in 2017 as calculated in (2).

$$\textit{(3) Productivity in 2017 under Scenario x} = \frac{\textit{GDP in 2017 under Scenario x}}{\textit{Employment in 2017 under Scenario x}}$$

It is interesting to compare differences between specific scenarios. The effect on output and productivity, in the scenarios of this report, come from three sources. The first source is increased educational attainment, which is particularly interesting for the purpose of this report. Two other sources are the increases in employment rates and the increases in average employment incomes in given educational attainment categories. The main results are discussed in the next three sub-sections, and summarized in Table 23, Table 23a, Table 24 and Table 24a.

The effect from education varies depending on the scenario. Obviously, the impact of higher educational attainment for Aboriginal income will be higher when employment rates and average employment income are higher in each educational attainment category. It is for this reason that the report analyzes a multitude of scenarios. Comparisons between scenarios will focus primarily on the implications for output, employment and labour productivity growth.

Our 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 and 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.

B. Base Scenarios – Scenarios 1 and 2

The increase of the Aboriginal population itself has an effect on the aggregate income of that population. Before estimating the impact of higher educational attainment for Aboriginal income, the report thus develops scenarios in which Aboriginal Canadians do not increase their educational attainment from 2001 to 2017. The two Base Scenarios are added especially for comparisons with the scenarios in which educational attainment is increased. The main results are summarized in Table 23.

The no change scenario (Base Scenario 1) is considered in Appendix Table 30. In this case, average employment income is assume to increase by 25.5 per cent over the period, which is the projected average real wage increase of the overall workforce (Dungan and Murphy, 2007), while employment rates remain constant for each educational attainment category.[31] The gap in employment income between Aboriginal and non-Aboriginal Canadians for each educational category is thus unchanged.

This scenario projects a level of estimated GDP created by the Aboriginal population in 2017 of $27,446 millions ($2001) – a $12,013 millions increase over 2001 - with an average annual growth of 3.66 per cent over the 2001-2017 period (Appendix Table 28). The total Canadian GDP in 2017 under this base scenario is assumed to be at a level of $1,692 billion ($2001) (Dungan and Murphy, 2007) while employment is projected to be 18,482,547 persons. Canadian labour productivity, then, is found to be $91,556 per worker. The annual average

[31] Of course, the employment rate of Aboriginal Canadians can be expected to increase due to a composition effect related to the age structure. This is not, however, taken into account in the different scenarios developed in this report.

growth rates are 2.68 per cent for GDP, 1.34 for employment and 1.33 per cent for labour productivity over the 2001-2017 period (Table 23).

Table 23: Summary of Projection Outcomes for Income and Productivity for Aboriginals, in 2017

Scenario		Increase in GDP of the Aboriginal Population, 2001-2017 (millions of $2001)	Average Annual Output Growth of Canadian GDP (2001-2017)	Increase in Employment of the Aboriginal Population (persons, 2001-2017)	Average Annual Employment Growth in Canada (2001-2017)	Average Annual Labour Productivity Growth in Canada (2001-2017)
Base Scenarios	1	12,013	2.683	147,770	1.337	1.328
	2	24,032	2.728	215,024	1.360	1.350
Half the educational gap is eliminated	3	16,178	2.699	183,936	1.350	1.331
	4	19,207	2.710	245,360	1.371	1.321
	5	24,963	2.732	183,936	1.350	1.364
	6	28,916	2.747	245,360	1.371	1.357
All the educational gap is eliminated	7	20,344	2.714	220,101	1.362	1.334
	8	23,032	2.724	272,624	1.380	1.326
	9	30,067	2.751	220,101	1.362	1.370
	10	33,542	2.764	272,624	1.380	1.365

Source: Appendix Tables 30 to 39

One other scenario was estimated with the assumption of no increase in educational attainment, also to be used as a benchmark. There are an increasing proportion of Aboriginals who live off-reserve, in urban locations (Globe and Mail, July 29, 2007). This has an effect on employment opportunities for Aboriginal Canadians. Whereas traditionally most Aboriginal Canadians lived on reserves situated in remote locations, where employment opportunities are limited, Aboriginal Canadians are increasingly moving to cities where they can more easily find jobs. Moreover, the development of natural resources has the potential to increase employment opportunities for Aboriginal Canadians who decide to remain on reserve. Base Scenario 2 takes this effect into account, assuming that the employment rates of the Aboriginal population in each educational attainment category will, by 2017, reach the same level as that for the non-Aboriginal population in 2001. It also assumes that the average Aboriginal employment income in each educational category will increase to the 2017 level of the non-Aboriginal population. In other words, this scenario assumes that given the same educational attainment, Aboriginal and non-Aboriginal Canadians would face the same labour market outcomes in 2017.

Under Base Scenario 2, the estimated Canadian GDP is $1,704 billion in 2017 – $12 billion over Base Scenario 1. The average annual increase of Canadian GDP is projected to reach 2.73 per cent per year over the 2001-2017 period or an additional 0.045 percentage point annually compared to Base Scenario 1. This additional output growth is divided equally between an increase in employment growth (0.023 percentage point annually) and labour productivity growth (0.022 percentage point annually). In other words, Canadian labour productivity in 2017 would be $91,872 per worker, increasing at an average of 1.35 per cent per year between 2001 and 2017. This scenario represents the largest estimated potential improvements in output and productivity if no increase in educational attainment for Aboriginal Canadians is achieved.

C. Partial Catching-Up in Educational Attainment – Scenarios 3 to 6

The best scenario for Canada developed in this report is that the Aboriginal population reaches the 2001 level of non-Aboriginals Canadians for educational attainment by 2017. However, the case where they reach the mid-point between their actual 2001 educational attainment and that of non-Aboriginals Canadians in 2001 by 2017 is first considered. To do so, the share of the population in each educational group is assumed to reach the mid-point between the non-Aboriginal share in 2001 and the Aboriginal share in 2001. For example, there were 3.72 per cent of Aboriginal Canadians with less than grade 5 in 2001, and 2.13 per cent of non-Aboriginal Canadians. The assumption is then that by 2017, 2.93 per cent of Aboriginals will be in this category. Another example is the 2001 share of Aboriginal Canadians with a bachelor degree (3.43 per cent) which would increase to 7.12 per cent under this assumption by 2017 because the share of non-Aboriginal Canadians in the bachelor educational category was 10.12 per cent in 2001.

Table 23a: Potential Incremental Contribution of Aboriginal Canadians to Output, Employment and Labour Productivity Growth in Canada Over Base Scenario, in percentage point

Scenario		Additional Annual Output Growth Over Base Scenario 1	Additional Annual Employment Growth Over Base Scenario 1	Additional Annual Productivity Growth Over Base Scenario 1
Base Scenarios	1	0.000	0.000	0.000
	2	0.045	0.023	0.022
Half the educational gap is eliminated	3	0.016	0.012	0.003
	4	0.027	0.033	-0.006
	5	0.049	0.012	0.036
	6	0.064	0.033	0.030
All the educational gap is eliminated	7	0.032	0.025	0.006
	8	0.042	0.043	-0.002
	9	0.068	0.025	0.042
	10	0.081	0.043	0.037

Source: Table 23

In Scenario 3, average employment income increases only at the average growth rate of 25.5 per cent over the 2001-2017 period while employment rates are maintained constant over the period. Therefore, only educational attainment is changing if compared to Base Scenario 1. Scenario 4 adds the assumption that Aboriginal employment rates reach the 2001 level of non-Aboriginal Canadians by 2017. In Scenario 5, employment rates are kept constant, but instead average employment income at a given level of education increases to the level of the non-Aboriginal population. Finally, Scenario 6 estimates the additional output created if Aboriginal Canadians increase their educational level to the mid-point between the Aboriginal and non-Aboriginal levels in 2001 and if both Aboriginal employment rates and average employment incomes reach parity with non-Aboriginal Canadians in 2017.

i. Total Effect

Under Scenario 3, estimated total GDP is $1,696 billion ($2001) in 2017, increasing at an average of 2.70 per cent per year over the period. Labour productivity is $91,062, with an average annual growth rate of 1.33 per cent (Table 23). The effect of a partial catch-up in educational attainment is, in this case, a 0.016 percentage point addition to annual output growth, a 0.012 percentage point addition to annual employment growth and a 0.003 percentage point addition to labour productivity growth (Table 23a). In 2017, the level of GDP would be increased by more than $4 billion (Appendix Table 55). These estimates are obtained by comparing Scenario 3 to Base Scenario 1.

Under Scenario 6, the estimated Canadian GDP is estimated at $1,709 billion ($2001) in 2017, $16.9 billion over the level of Base Scenario 1. It is also increasing at an average 2.75 per cent per year. The labour productivity, for its part, is found to be $91,985 per worker, $429 over the Base Scenario 1, with an average annual increase over the period of 1.36 per cent. The average annual growth of GDP under Scenario 6 is 0.064 percentage point higher than that of the Base Scenario 1. This represents the aggregate effect of all three sources of improvement. Employment increases 0.033 percentage point faster under Scenario 6 than under Base Scenario 1, with the remaining growth translating into a 0.030 percentage points increase in average annual labour productivity growth (Table 23a). GDP in 2017 would be $16.9 billion larger under Scenario 6 than under Base Scenario 1 (Appendix Table 55).

ii. Effect of Increased Educational Attainment

More relevant to this report is the effect of education alone, and how much of the improvement can directly be attributed to it. It is possible to estimate this single effect by comparing Scenario 6 to Base Scenario 2 because both scenarios differ only on their assumption about educational attainment. Output growth under Scenario 6 is 0.019 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 0.010 per cent faster each year and the latter increasing 0.008 per cent faster each year compared to Base Scenario 2. In absolute terms, labour productivity per worker in 2017 under Scenario 6 is $113 higher than in Base Scenario 2 and total Canadian output in 2017 is higher by $4.9 billion.

The effect of education on output and productivity is smaller if no improvement in either employment rates or average employment income in a given educational attainment category occurred. In fact, we have already observed this when we compared Scenario 3 to Base Scenario 1. This comparison estimated that GDP would grow at a rate 0.016 percentage points higher per year, employment at a rate 0.012 percentage point higher per year and labour productivity at a rate 0.003 percentage points higher per year. Scenario 3 also projects that productivity will be $46 higher per worker than in the Base Scenario 1 and output higher by $4,2 billion. These estimates are slightly lower than those obtained when comparing Scenario 6 to Base Scenario 2. Yet, in both cases (comparing scenarios 3 and 1 and scenarios 6 and 2), we are comparing scenarios in which only the level of educational attainment was changed. The difference between

these two comparisons follows from the interaction effect between improved educational attainment and improved labour market outcomes.[32]

This 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 while the isolated effect of education when labour market outcomes variables for Aboriginal Canadians to reach parity with that of other Canadians is an upper-bound estimate. Of course, these estimates do not differ dramatically from each other since they both embody only the impact of an increased in educational attainment. A summary of the impact of increased educational attainment is shown in Table 24.

D. Complete Catching-Up in Educational Attainment – Scenarios 7 to 10

In the previous sub-section, the assumption was that Aboriginal Canadians by 2017 reached only the mid-way point between their 2001 educational level and the 2001 educational level of non-Aboriginal Canadians. In this sub-section, the more optimistic assumption that Aboriginal Canadians close the gap in educational level that separated them from the general population in 2001 is made. In practice, the shares in each educational category for Aboriginal Canadians in 2017 are assumed to be equal to those of non-Aboriginal Canadians in 2001.

Four scenarios are considered in which the educational profile of Aboriginal Canadians in 2017 is assumed to be the same as that of non-Aboriginal Canadians in 2001. Notwithstanding an additional increase in non-Aboriginal educational level between 2001 and 2017, parity would be reached in 2017 and the 2001 gap eliminated. These four scenarios mirror those of the previous section. In Scenario 7, educational attainment is the only variable improving for the Aboriginal population. Scenario 8 adds the assumption that employment rates reach the 2001 level of the non-Aboriginal population. In Scenario 9, employment rates are kept constant, but the average employment income of each education group reaches parity with the non-Aboriginal incomes in 2017. In the last scenario, all three variables improve. Scenario 10 is thus the *best case* scenario in this report.

i. Total Effect

Under Scenario 7, total GDP in Canada in 2017 is estimated at $1,701 billion ($2001), increasing at a rate of 2.71 per cent per year. Employment in Canada is projected to increase to 18,552,801 persons in 2017, which translates into an annual average growth rate of 1.36. Finally, labour productivity in 2017 is $91,648 per worker, with a growth rate of 1.33 per cent per year on average.

[32] This can be explained intuitively with an extreme example. Let's assume Mr. X who lives in Canada and Mr. Z who lives in Haiti are both projected to increase their level of educational attainment in the future. Intuitively, the impact on output *in absolute term* will be larger for Mr. X than for Mr. Z because of greater employment opportunities and higher average employment income in Canada compared to Haiti. Even though the relative effect will likely be much larger for Mr. Z, the value of additional output produced by Mr. X will be larger. A simple numerical example is presented in Appendix Table 57.

Under the best case Scenario (10), total GDP is $1,714.0 billion ($2001) in 2017, increasing at an average of 2.76 per cent per year over the period. Aboriginal employment is expected to increase 272,624 over the 2001-2017 period, bringing the average annual growth rate of employment in Canada to 1.38 per cent for the period. Labour productivity in this case is projected to be at $92,098 per worker, an additional $542 per worker over Base Scenario 2. This variable has an average annual growth rate of 1.37 per cent per year in this scenario.

Table 24: Estimated Effect of Education of Output and Productivity in Different Scenarios, for the Aboriginal Population

Aboriginal Educational Attainment in 2017	Aboriginal Employment Rate in 2017	Average Aboriginal Employment Income in 2017	Effect of Education on Output Annual Growth Rate	Effect of Education on Labour Productivity Annual Growth Rate
Half of the Gap Between the Aboriginal and Non-Aboriginal Education in 2001 is Eliminated	Level of Aboriginal Employment Rate in 2001	Increase with average wage growth	0.016	0.003
Half of the Gap Between the Aboriginal and Non-Aboriginal Education in 2001 is Eliminated	Level of Non-Aboriginal Employment Rates in 2001	Level of Non-Aboriginal Income in 2017	0.019	0.007
The Complete Gap Between the Aboriginal and Non-Aboriginal Education in 2001 is Eliminated	Level of Aboriginal Employment Rate in 2001	Increase with average wage growth	0.032	0.006
The Complete Gap Between the Aboriginal and Non-Aboriginal Education in 2001 is Eliminated	Level of Non-Aboriginal Employment Rates in 2001	Level of Non-Aboriginal Income in 2017	0.036	0.015

Note: Effects of education refer to the increase in percentage points of the annual growth rates.

As in the previous sub-section, comparisons with base scenarios are particularly interesting. The annual growth rate of output is higher by 0.081 percentage points in Scenario 10 than in Scenario 1, which translates in the 2017 level being higher by $21.5 billion (Table 24). Productivity growth is also higher by 0.037 percentage point. This encompasses improvement in the growth rate coming from all three sources outlined earlier.

ii. Effect of Increased Educational Attainment

This report, however, is most interested in the effect of education alone, which can be estimated by comparing Scenario 7 with Base Scenario 1 and Scenario 10 with Base Scenario 2. The differences in average annual growth rates between Scenario 10 and Scenario 2 are 0.036 percentage point for output, 0.20 percentage point for employment and 0.015 percentage points for labour productivity. The absolute value of productivity in Scenario 10 is increased by $226 over Base Scenario 2. In 2017, GDP would be $9.5 billion higher under scenario 10 than under Base Scenario 2. The effect of education on output and productivity growth represents almost half of the total effect. Clearly, the effect of education on its own is non-negligible.

As pointed out earlier, the impact of education is slightly lower if the Aboriginal population does not experience a concurrent improvement in its other labour market outcomes

(employment rate and average employment income). To estimate the effect of education in this context, the report compares Scenario 7 to Base Scenario 1. In Scenario 7, only education improves, whereas none of the variables improve in Base Scenario 1. The average annual growth rate of output is 0.032 percentage points higher in Scenario 7, and productivity growth is higher by 0.006 percentage points on average each year. The absolute value of Canadian output is higher by $8.3 billion over Base Scenario 1 in 2017, and labour productivity is also increased by $92 per worker.

Table 24a: 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 1997 Dollars)	The Complete 2001 Educational Gap is Eliminated by 2017 (Billion of 1997 Dollars)
Contribution of Aboriginal 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

iii. Cumulated Effect Over Time

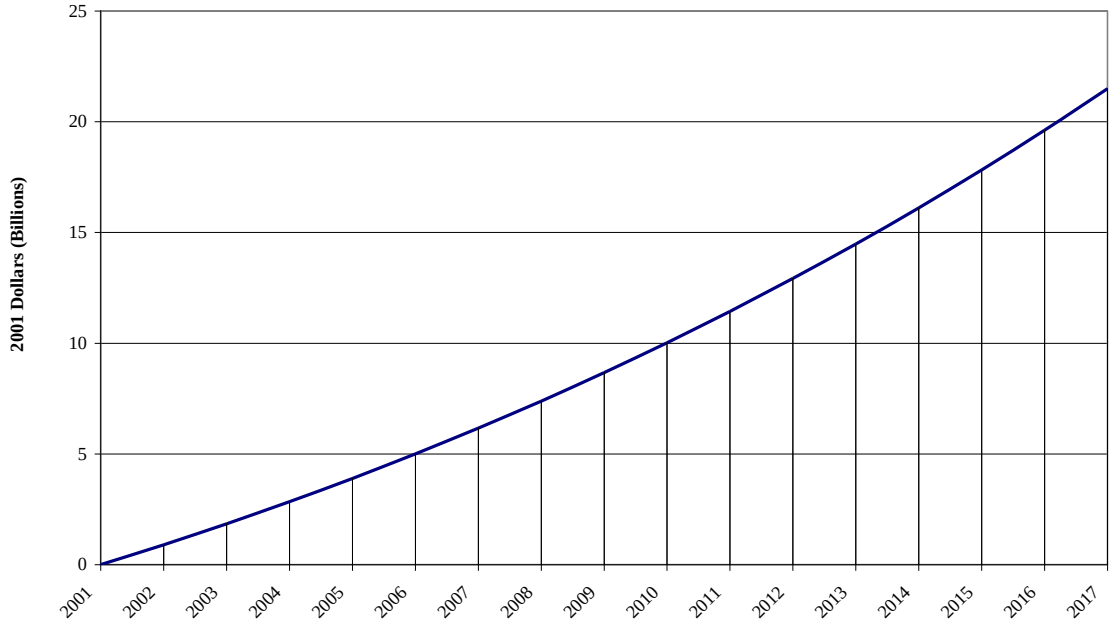
The additional GDP growth in Scenario 10 over Base Scenario 1 may seem small at only 0.081 percentage points each year. However, when considering billion of dollars, a small increase in GDP growth has a large effect on the economy. Chart 18 illustrates the trend in the difference between GDP under Scenarios 1 and 10. It is important to note that the chart represents only one of the multitude of possible paths between the level of GDP in 2001 and that reached in 2017. [33] In 2001, the GDP is the same in both scenarios, but in 2017, the difference grows to $21.5 billion. Over the 16 years, the aggregate additional GDP to the Canadian economy would be a staggering $161 billion (Appendix Table 55).[34] Of the $161 billion, $71.1

[33] Chart 18 assumes that the growth rate remains constant over the period. Of course, the path between the level of GDP in 2001 and that in 2017 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 results 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 the 2017 GDP level 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 2001-2017 period.

[34] This cumulated additional GDP over the 16 years is determined by two effects. First, there is a level effect. The increased growth rate in the first year induces an increase in the level of the GDP that is permanent over the whole period. This is not a one-time gain: it is realized year after year. In other words, even if the growth rate increase was only present in the first year, the level of the GDP would have been higher than the status quo in each of the subsequent years. However, the effect of the growth rate is higher every year, and thus there is a second effect,

billion can be directly attributed to an increase in educational attainment for Aboriginal Canadians. Table 24a also summarizes the potential cumulative impact of increases in educational attainment under different assumptions. In the case of a partial catch-up, the estimate ranges from a lower-bound of $31.2 billion to an upper-bound of $36.5 billion. If the complete educational gap is closed by 2017, these effects are twice as large, $62.3 billion and $71.1 billion respectively.

Chart 18: Difference Between Canadian GDP in Scenario 10 and Canadian GDP in Base Scenario 1, 2001-2017



E. The Case of the North American Indian Population

North American Indians constitute the majority of the Aboriginal population in Canada and so they are of particular interest to Canadian policy-makers. Also, this group is the one who mostly lives on reserve, and it has been shown that economic conditions are worst among the fraction of the Aboriginal population who live on reserves. In this sub-section, the methodology explained previously is applied to this particular group of the Aboriginal population.

Table 25 shows the main results of this analysis. Due to their high representation among the Aboriginal population, increasing the educational attainment of North American Indians alone has similar implications than doing it for the entire Aboriginal population.

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which can be called the growth rate effect. Each year, the growth rate is 0.081 percentage point. Therefore, there is a small compound growth rate effect which magnifies the difference of the absolute annual growth of GDP of the two scenarios. Overall, both effects add up, which means that past increases in the level of the GDP carry on to subsequent years and that each year an additional increase is added to the total. For example, the increase of around $1 billion in 2002 is repeated in every year until 2017.

i. Partial Catching-up in Educational Attainment

As was the case with the total Aboriginal population, the effect of increased educational attainment on output, employment and productivity can be obtained under a number of different assumptions. First, this report considers the effect of a partial elimination of the 2001 educational attainment gap.

The average annual growth of GDP under Scenario 6 (with all three variables increasing) over the 2001-2017 period is 0.055 percentage points higher than Base Scenario 1 (Table 25a). In absolute terms, this represents an addition of $14.6 billion to the projected level of total GDP in Base Scenario 1. This increase in average annual GDP growth is due both to higher growth in employment (0.33 percentage point per year) and labour productivity (0.019 percentage point per year). Thus, labour productivity in 2017 under Scenario 6 is $273 per worker higher in 2017 compared to Base Scenario 1.

Table 25: Summary of Projections for Income and Productivity for North American Indians, in 2017

Scenario		Increase in GDP of the Aboriginal Population between 2001 and 2017 (millions of $2001)	Average Annual Output Growth of Canadian GDP (2001-2017)	Increase in Employment of the Aboriginal Population (persons, 2001-2017)	Average Annual Employment Growth in Canada (2001-2017)	Average Annual Labour Productivity Growth in Canada (2001-2017)
Base Scenarios	1	7,872	2.683	110,188	1.337	1.328
	2	18,397	2.723	186,290	1.363	1.341
Half the educational gap is eliminated	3	11,047	2.695	140,825	1.348	1.329
	4	14,547	2.708	214,319	1.373	1.317
	5	17,718	2.720	140,825	1.348	1.354
	6	22,480	2.738	214,319	1.373	1.347
All the educational gap is eliminated	7	14,223	2.707	171,462	1.358	1.331
	8	17,575	2.719	237,523	1.381	1.321
	9	21,678	2.735	171,462	1.358	1.358
	10	26,161	2.752	237,523	1.381	1.352

Source: Appendix Table 29 and Appendix Tables 40 to 49.

To isolate the effect of education alone, and to estimate what share of this potential improvement can be attributed only to increased educational attainment, we need to compare Scenario 6 with Base Scenario 2. Base Scenario 2 assumes improvements in employment rates and average employment incomes, but none in educational attainment. Output growth under Scenario 6 is 0.015 percentage points higher annually than in Base Scenario 2 and in 2017 the level of GDP under Scenario 6 is $4,084 millions higher than under Base Scenario 2. In other words, almost a third of the total increase in GDP can be directly attributed to improved educational attainment. Under Scenario 6, productivity in 2017 is $82 per worker higher than under Base Scenario 2, which translates in a growth rate 0.006 percentage points higher on average each year over the 2001-2017.

Again, the effect of education on output and productivity would be smaller in the context of no improvement in neither employment rates or average employment income in a given educational attainment group. In Scenario 3, only the education was improved. Comparing this Scenario to the outcome of Base Scenario 1 gives a lower-bound estimate of the effect of a partial increase in educational attainment. Total GDP is estimated to grow at a rate 0.012 percentage points higher per year and to be $3,176 million ($2001) higher in 2017 than it would be under Base Scenario 1. Productivity is larger by $20 per worker in Scenario 3 than Base Scenario 1, and the growth rate is 0.001 percentage points higher on average each year over the period. This underlines the fact that education can have a much larger impact if the labour market outcomes of North American Indians at a given level of education also improve.

ii. Complete Catching-up in Educational Attainment

This section reviews the scenarios under which the North American Indian population achieves in 2017 the same educational profile as that of non-Aboriginal Canadians in 2001. Comparing Scenario 10, the best case scenario from the point of view of the North American Indian population, with Base Scenario 1, we find that the annual growth rate of output is higher by 0.069 percentage points in Scenario 10 than in Scenario 1, with the projected level reached by 2017 $18,289 millions higher in Scenario 10 than in Base Scenario 1. Projected labour productivity is also much larger, with an additional $356 per worker in 2017. The projected average annual growth of labour productivity is 1.352 per cent under Scenario 10 compared to only 1.328 under Base Scenario 1, a 0.025 percentage point increase. Scenario 10, however, encompasses increases in all three variables.

Table 25a: Potential Incremental Contribution of North American Indians to Output, Employment and Labour Productivity Growth in Canada Over Base Scenario, in percentage point

Scenario		Additional Annual Output Growth Over Base Scenario 1	Additional Annual Employment Growth Over Base Scenario 1	Additional Annual Productivity Growth Over Base Scenario 1
Base Scenarios	1	0.000	0.000	0.000
	2	0.040	0.026	0.013
Half the educational gap is eliminated	3	0.012	0.010	0.001
	4	0.025	0.036	-0.011
	5	0.037	0.010	0.026
	6	0.055	0.036	0.019
All the educational gap is eliminated	7	0.024	0.021	0.003
	8	0.037	0.043	-0.007
	9	0.052	0.021	0.030
	10	0.069	0.043	0.025

Source: Table 25

In order to focus only on increases in educational attainment we compare Scenario 10 and Base Scenario 2. The difference in growth rates between Scenarios 10 and 2 are 0.029 percentage point for output, 0.017 percentage point for employment and 0.011 percentage points

for labour productivity (Table 25a). Total Canadian output is larger by $7,764 million in 2017 and the productivity is $165 per worker higher under Scenario 10. Thus, the effect of education on output and productivity growth represents almost half of the total effect identified when comparing Scenario 1 and 10.

Table 26: Estimated Effect of Education of Output and Productivity in Different Situations, for the North American Indian Population

Aboriginal Educational Attainment in 2017	Aboriginal Employment Rate in 2017	Average Aboriginal Employment Income in 2017	Effect of Education on Output Annual Growth Rate	Effect of Education on Labour Productivity Annual Growth Rate
Half of the Gap Between the Aboriginal and Non-Aboriginal Education in 2001 is Eliminated	Level of Aboriginal Employment Rate in 2001	Increase with average wage growth	0.012	0.001
Half of the Gap Between the Aboriginal and Non-Aboriginal Education in 2001 is Eliminated	Level of Non-Aboriginal Employment Rates in 2001	Level of Non-Aboriginal Income in 2017	0.015	0.006
The Complete Gap Between the Aboriginal and Non-Aboriginal Education in 2001 is Eliminated	Level of Aboriginal Employment Rate in 2001	Increase with average wage growth	0.024	0.003
The Complete Gap Between the Aboriginal and Non-Aboriginal Education in 2001 is Eliminated	Level of Non-Aboriginal Employment Rates in 2001	Level of Non-Aboriginal Income in 2017	0.029	0.011

Note: Effects of education refer to the increase in percentage points of the annual growth rates.

Finally, we look at the impact of education if the North American Indian population does not improve in other aspects (employment and average employment income). To estimate this effect, we compare Scenario 7 to Base Scenario 1. In Scenario 7, the only change over Base Scenario 1 is an increase of North American Indian educational attainment, from their 2001 to the 2001 level of non-Aboriginal Canadians. Compared to Base Scenario 1, the growth rate of output under Scenario 7 is increased by 0.024 percentage points, and productivity growth is higher by 0.003 percentage points on average each year. In 2017, the total Canadian output is larger by $6,351 million and labour productivity gains an additional $40 per worker. The effects of education alone, both for the complete and partial elimination of the educational attainment gap, are summarized in Table 26.

The North American Indian population makes up a large part of the Aboriginal population in Canada. Therefore, it is normal that the effect of education when only considering this particular group is almost as large as for the complete Aboriginal population. Under the best case Scenario (10), total Canadian GDP is $1,710.8 billion in 2017, increasing at an average of

2.752 per cent per year over the 2001-2017 period, compared to 2.683 per cent for Base Scenario 1. While the difference is only 0.069 percentage point, this translates into a cumulative difference of $136.7 billion over the period. In other words, over the 2001-2017 period, the potential cumulative additional contribution of the North American Indian population to Canadian GDP is $136.7 billion (2001 dollars).

VII Policy Challenges and Strategies to Improve Educational Attainment for Aboriginal Canadians: A Selected Literature Review

This report does not focus on the policy-relevant questions related to the improvement of the educational attainment of the aboriginal population. However, there is a vast literature in this area. This section highlights four important contributions to this literature. The first, by Bert Waslander, examines the implications for government expenditures of the Aboriginal status quo. The second, by Michael Mendelson, discusses the challenges associated with increasing educational attainment for the Aboriginal population. The third, by the Canada West Foundation (CWF) under the pen of analyst Ben Brunnen, is a set of three reports which put forward strategies and recommendations to improve labour market outcomes and increase human capital for the Aboriginal population.

A. Implications for Government Expenditures

This report has argued that increased educational attainment for the Aboriginal population will have many positive benefits both for the Aboriginal community and for society at large. Government can play a role in assisting the Aboriginal population attain this objective by allocating additional resources or investing in Aboriginal education. The first article reviewed in this section provides a useful framework for the analysis of the costs and benefits of additional investment for the Aboriginal community.

Some might be tempted to argue that current levels of expenditures, which already are much larger on a per capita basis for Aboriginal population than for the rest of Canadians, are sufficient and should not be increased. In an article published in the *Canadian Tax Journal* entitled "Government Expenditures on Aboriginal Peoples: The Costly Status Quo*",* Bert Waslander argues otherwise. Expanding on the findings of the 1996 *Royal Commission on Aboriginal Peoples*, Waslander convincingly argues that increasing government expenditures on the Aboriginal population now would be wise from an investment perspective. Increased government expenditures now would decrease the dependence of the Aboriginal population on future government expenditures and foster greater productivity growth in that community and hence lead to higher future tax revenues.

Waslander calculates that total expenditures by all governments on the average Canadian for 1992-1993 amounted to $10,026 whereas the equivalent figure for the average of Aboriginal Canadians was $15,714. This is equivalent to saying that per capita government expenditures on Aboriginals were 57 per cent higher than expenditures for the general population. Waslander contends that this gap is likely wider today given that the late 1980s and early 1990s saw large increases in expenditures for programs directed towards Aboriginal Canadians, due mostly to increases in the number of registered Indians following changes to the Indian Act of 1985, the changing age structure of the Native community and the policies of the federal government at the time.

Three main factors are believed to contribute to the difference in average government expenditures between Aboriginal Canadian and other Canadians: (i) differences in the range and quality of services; (ii) differences in the cost of providing services; and (iii) differences in the need for government services. The range and quality of services offered differs due to

expenditures specific to the Aboriginal community such as supplementary health benefits or the negotiation and settlement of land claims. The second factor, differences in the cost of providing the same service to a Native and a non-Native, stems mostly from the fact that a greater proportion of the Aboriginal community are in remote communities. The third factor, demand for government services, is affected by the age structure of the Aboriginal community as well as the social, economic and health situation faced by Aboriginal Canadians. The Royal Commission, after reviewing the contribution of each factor, concluded that greater needs stemming from general social and economic disparities, not age structure, were at the root of the discrepancy in expenditures.

Waslander develops the findings of the Royal Commission that investments on Aboriginal costing $2 billion per year for 20 years could reap the enormous benefit of lasting gains amounting to $10 billion per annum ($1996). The gains would be in the form of lower government expenditures and greater productivity and output of Aboriginal people if they became more self-reliant. The potential of Aboriginal Canadians is so underutilized that a $5.8 billion dollar increase in the annual value of production by Aboriginals is conceivable. A further $1.7 billion per annum would be saved if the need for health and social services became more in line with the demand of the general population. These potential gains, estimated at $7.5 billion in 1996, would increase to $11 billion in 20 years due to increases in the Aboriginal population. Interestingly, the majority of the benefits arising from temporarily increasing expenditures on the Aboriginal community accrue to the various levels of government ($6.7 billion per annum) rather than to Aboriginal Canadians ($4.3 billion per annum).

In order to realize these benefits, significant changes must be made. The Royal Commission on Aboriginal Peoples concluded that there are four concepts that must be included in a long term solution. The reality of social and cultural difference must be recognized so that Aboriginal approaches to governance may be respected. Self government and self-determination must be recognized as an inherent right. The nature of Aboriginal nationhood must be based on historic nations rather than current communities; constitutions and a governing framework must be constructed. Finally, a requirement for land, resources and a self-reliant Aboriginal economy is needed.

B. The Challenge of Attaining Educational Parity

Aboriginal Peoples and Postsecondary Education in Canada is a report written by Michael Mendelson (2006) and released by the Caledon Institute of Social Policy. The report examines the data on Aboriginal postsecondary educational attainment and puts forward recommendations to improve the results. Of particular interest from the perspective of this report is Mendelson's argument that in order for Aboriginal Canadians to reach parity with non-Aboriginal Canadians in terms of postsecondary achievement, both the capacity of post-secondary institutions (supply side) and the numbers of Aboriginals entering the system (demand side) will have to increase.

Mendelson argues that the problem lies in the low number of Aboriginal Canadians graduating from the K-12 sector. He finds that Aboriginal high school graduates are just as likely to complete post-secondary education as non-Aboriginal high school graduates. Overall, for Aboriginals and non-Aboriginals alike, about 75 per cent of high school graduates finish some

form of post-secondary education (PSE). This percentage is slightly lower for Aboriginal males (74 per cent of Aboriginal male high school graduates finish some form of PSE compared to 77 per cent for the general population) than for Aboriginal female (76 per cent of female Aboriginal high school graduates finish some form of PSE compared to 74 per cent for the general population).

Mendelson calculates that in order to achieve educational parity within 20 years, an additional 15,000 aboriginal students would have to enroll in PSE every year. He argues that the post-secondary education system would easily be able to absorb the additional burden of increased Aboriginal enrolment. The current national system has an enrolment of about 800,000 students. An additional 15,000 students would be completely feasible within current capacity limits as it only represents a two per cent increase in enrolment. He concludes that capacity limitations are not the barrier to post-secondary education.

Mendelson then focuses on the demand side. He calculates that in 2001, an additional 23,000 Aboriginal Canadians would have need to be graduates of the non-university post-secondary sector and an additional 65,000 would have had to be graduates of the university sector to obtain educational parity with the overall Canadian population. There were, however, only 28,850 Aboriginal university graduates in 2001. Given that there were in 2001 only roughly 225,000 Aboriginals between the ages of 20 and 34, reaching educational parity in the near future seems unrealistic.

Mendelson's primary recommendation is "to focus on K-12 as the gateway to postsecondary education" (Mendelson, 2006:35). He also suggests setting ambitious and specific quantitative goals for Aboriginal educational attainment as well as setting up mechanisms to monitor their realization. Finally, to make these recommendations operational, Mendelson suggest mandating the newly created First Nations Statistical Institute to develop data sources and monitor results on Aboriginal educational attainment.

C. Strategies and Recommendations to Improve Aboriginal Labour Market Outcomes

In 2003 and 2004, the Canada West Foundation (CWF) published three reports by Brunnen (2003a, 2003,b and 2004) in which the Aboriginal population's contribution to the human capital needs of the West is explored. In this set of three reports, a multitude of policy recommendations were made. The first report (Brunnen, 2003a) posed the question "what are the promising practices to improve current labour market outcomes for Aboriginal people." It then elaborated seven promising practices to address labour market disparities between Aboriginal and non-Aboriginal populations. These practices were developed from interviews with key individuals experienced in Aboriginal education and labour market areas. The seven following practices were identified:

- Perform comprehensive evaluations of goals, focusing on both individual and holistic outcomes.
- Facilitate the dissemination of information.
- Reinforce the value of education.
- Consider social conditions.

- Display patience, tolerance and understanding.
- Build confidence, promote inclusion.
- Recognize, reward and celebrate successes.

Similarly, in the second report (Brunnen, (2003b)), the author develops strategies believed to be key to encourage Aboriginal youth to remain in school. Five strategies are elaborated in some detail:

- The promotion and dissemination of educational service information.
- The implementation of initiatives that focus on the motivations of all individuals involved.
- The coordination of approaches.
- The concentration on incremental progress.
- The maximization of returns and sustainable outcomes.

The final report (Brunnen, 2004) makes recommendations aimed at increasing the human capital of Aboriginal people which is believed to be the key mechanism to improve standards of living. The report attempts to convey the importance of Aboriginal Canadians to the western Canadian labour market, to underline the labour market realities facing this minority group, and to elaborate successful approaches for changing the labour market outcomes of Aboriginal Canadians. Ten public policy recommendations emerged in this final report. They are as follows:

- Governments must identify Aboriginal human capital as a top priority, and communicate this message broadly.
- The federal and provincial governments need to work together on Aboriginal human capital policy.
- Governments should cooperate to set quantifiable on- and off- reserve Aboriginal education targets.
- Governments should require all primary and secondary schools to include Aboriginal content, and should provide all education staff with the training and tools to help ensure the success of Aboriginal students.
- The federal and provincial governments should coordinate K-12 education grading criteria to ensure all provincial residents holding a high school certificate (both on-reserve and off-reserve, Aboriginal and non-Aboriginal) satisfy provincial K-12 skill requirements
- Provincial governments, the federal government, school boards and post-secondary institutions should coordinate and communicate human capital opportunities for Aboriginal students, and should evaluate Aboriginal post-secondary completion rates.
- Governments should cooperate to set quantifiable Aboriginal employment targets (both on- and off-reserve), and should gather sufficient data to assess short- and long-term progress
- Governments should fund locally-based non-profit support and outreach services that focus on Aboriginal labour recruitment and retention issues for small- and medium-sized organizations.

- The federal and provincial governments should be open to training and employment partnerships with businesses working on or near reserves.
- The federal government should improve the availability of Aboriginal data.

While this report is not intended as a policy document, this section makes it clear that all involved parties believe the status quo to be sub-optimal, both for the Aboriginal population and the wider Canadian population. This selected review of the literature only confirms the findings of our report: the unrealized potential of the Aboriginal population is large and hence its potential contribution to the Canadian economy is important and will be a key factor in Canada's future economic performance.

D. Aboriginal Poverty in Canada: Educational Reforms at the Band and Provincial levels

John Richards, Phillips Scholar in Social Policy and Fellow-in-Residence at the C.D. Howe Institute, is one of Canada's leading analysts on Aboriginal policy issues. In his latest book "*Creating Choices"* (Richards, 2006), Richards focuses on the need for reform in several key areas of Aboriginal policy, including education. In this section, we briefly review the context in which Aboriginal education is delivered in Canada as outlined in Richards (2006). Then, we review the main policy reforms contained in the book which relate to education. It is important to note that the author draws heavily on his previous research in its section on education, more specifically on a previous C.D. Howe report by Richards and Vining (2004).

The facts behind low Aboriginal educational attainment are well known. Aboriginal Canadians fare much worse than their non-Aboriginal counterparts. Moreover, Aboriginal Canadians living on-reserve attain a much lower level of education than their off-reserve counterparts. In other words, both band-level and provincial level education systems lead to worst outcomes for Aboriginal Canadians than for non-Aboriginal Canadians. Many factors have contributed to these low Aboriginal education levels. Historical factors, such as family disruptions occasioned by residential schools, have certainly played an important role. Yet, other factors, such as the increased tendency of off-reserve Aboriginal to live in poor neighborhoods, also contribute to perpetuate the gap between Aboriginal and non-Aboriginal educational attainment.

In the last thirty years, the federal government has transferred funds and responsibilities for education to band governments, which now play a much greater role in the lives of on-reserve Aboriginal Canadians. Yet, this trend was accompanied by a large migration of Aboriginal Canadians from reserves to off-reserves cities, where the main providers of services are provinces rather than band governments. In fact, almost 80 per cent of Aboriginal students attend provincially run schools. In this context, a successful reform of Aboriginal education must not only include negotiations between federal and band governments, but also reforms at the level of provincial governments.

In terms of concrete policy, Richards assesses four alternatives to improve the quality and the level of Aboriginal education in Canada: create separate schools; enhance student mobility; designate magnet schools; and enrich certain schools with large Aboriginal populations. Each of these alternatives is assessed using seven criteria, three of which relates to improving Aboriginal

academic achievement. The four other criteria respectively look at how each alternative: (i) lowers the cost of education; (ii) minimizes interracial cleavage; (iii) enables parental choice; and (iv) minimizes administrative complexity. Appendix 1 reproduces the table summarizing the author's assessment of the four strategies.

Richards note that while all four strategies rely on the supply side to improve quality, only the first three policy alternatives enhance parental choice, which can potentially act as a demand side check on quality. Yet, only the second, third and fourth options are within the range of provincial school boards for possible reform options. Richards, rather than dogmatically advocating one solution over another, proposes that school board combine all three options. In practical terms, he suggests:

- The relaxation of neighbourhood school boundaries and payment of a financial bonus to schools to encourage them to accept Aboriginal students who migrate from beyond the relevant school catchment area.
- In large urban communities, the creation of one or more magnet schools concentrating on Aboriginal cultural studies.
- The provision of generous enrichment programs for schools with large Aboriginal student populations.

Richards contend that active experimentation is an efficient way of arriving to a satisfying solution. He notes that Edmonton is doing just that, with the nondenominational public school board pursuing a magnet school strategy and the Catholic school board adopting a school enrichment strategy.

The question of on-reserve education is also central to any broad-based improvement in Aboriginal educational attainment. Richards believes that better education is a definite prerequisite if Aboriginal children are to have any real choice between living on and off-reserve. Thus his contention that "Education from kindergarten to grade 12 is about more than transmission of culture— it must also permit mastery of the basic academic skills and knowledge necessary for participation in a technical industrial society" (Richards, 2006:122).

Richards notes that the federal government has not played an effective role in the matter, with the Department of Indian Affairs failing to assess academic standards in on-reserve schools. Yet, assessing standards and insisting for better performance are not the only challenges. The question of Aboriginal authority is of paramount importance when addressing the question of on-reserve education.

> "Reconciling band control with higher school standards will not be easy. Reform requires greater professionalism in school administration. That, in turn, will almost certainly require individual bands to cede authority over schools to larger organizations such as tribal councils or to new, province-wide Aboriginal school boards, and that reserve schools integrate curricula and student testing more closely with the relevant province."

In general, Richards remarks that increased Aboriginal educational attainment can only be attained if politicians make it a priority. Setting and reaching targets requires detailed benchmarking, a willingness to experiment and a commitment to evaluate outcomes. These can not be achieved without a consistent commitment on the part of federal, provincial and Aboriginal politicians.

VIII Future Research and 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 children is one of the rare public policy with no equity-efficiency tradeoff. This report estimated the potential benefit for the Canadian economy of increasing the educational attainment level of Aboriginal Canadians. We found 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. Not only would it significantly contribute to the personal well-being of Aboriginal Canadians, but it would also contribute to alleviating two of the most pressing challenges facing the Canadian economy; slower labour force growth and lackluster labour productivity growth.

In fact, we found that if in 2017 the educational attainment of Aboriginal Canadians reaches the same level non-Aboriginal Canadians had attained in 2001, the potential contribution of Aboriginal Canadians is up to an additional cumulative $160 billion over the 2001-2017 period ($2001). This represents a 0.081 percentage point increase in the annual average growth rate of GDP. Moreover, the potential contribution of Aboriginal Canadians to the total growth of the labour force between 2001 and 2017 is projected to be up to 7.39 per cent of the total labour force growth, much higher than their projected 3.37 per cent share of the working age population in 2017. Their potential contribution to Canadian GDP average annual growth rate related only to an increase in educational attainment is 0.036 percentage point per year, or a cumulative $71 billion ($2001) over the 2001-2017 period. Finally, we find that the potential contribution of Aboriginal Canadians to the annual growth rate of labour productivity in Canada is up to 0.037 percentage point, of which 0.016 percentage point is directly attributable to an increase in educational attainment. Aboriginal Canadians are without doubt one of the groups where the potential benefits of increasing educational attainment clearly outweigh the costs.

This report opens a number of opportunities for future research. Most obvious is the continuous monitoring and updating of the potential contribution of Aboriginal Canadians to the national economy. The new 2006 census data on Aboriginal income and labour market performance, which should be available in 2008, will provide an opportunity to assess the progress of Aboriginal Canadians since 2001 and adjust projections of their future potential

contribution. Another possible research direction is the development of forecasts for non-Aboriginal educational attainment so that the potential contribution of Aboriginal Canadians in the case where they actually bridge the gap and reach educational parity with non-Aboriginal Canadians can be assessed.[35] This analysis has the potential to significantly increase the projected contribution of Aboriginal Canadians to Canadian economic growth. A third avenue would be to adjust projections to account for differences in current and future age structures between Aboriginal and non-Aboriginal population. Another interesting opportunity lies in the new Labour Force Survey which now includes a question about Aboriginal identity. LFS estimates could be uses to update and monitor the progress of Aboriginal Canadians in-between censuses. Finally, along with a review of current practices and existing recommendations designed to increase the level of human capital for Aboriginal Canadians, the development of new policies and strategies aimed specifically at increasing Aboriginal educational attainment in Canada should be considered.

[35] Statistics Canada released on November 21, 2007 a study forecasting post-secondary enrolments in Canada to 2031. This study might be a good benchmark for projecting educational attainment for non-Aboriginal Canadians. Information on the study is available on The Daily at http://www.statcan.ca/Daily/English/071121/d071121c.htm .

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Appendix 1

Table 4.4 *Policy Alternatives for Aboriginal Education Reform*

Goals	Alternative 1: "Separate Schools"	Alternative 2: Student Mobility	Alternative 3: Magnet School	Alternative 4: School Enrichment
Enhancing academic achievement				
Effect on students in poor neighbourhoods	potential to increase aboriginal parental involvement; probably positive effect	modestly positive effect (based on evaluation of US school-choice experiments	positive cultural aspect might benefit low-achieving students from poor neighbourhoods	small but not trivial; subject to Hawthorne effect; innovations must be evaluated
Effect on students in typical neighbourhoods	small or no effect	negligible, provided migrating students are small share of receiving school	uncertain result, much depends on relative quality of magnet, neighbourhood schools	as above
Effect on dropout rate	potential to reduce	small impact	cultural aspect might help lower rate among low-achieving students	as above
Lowering school program costs	highest incremental costs, requires administrative duplication	medium incremental costs, much depends on premium for migrating students	low incremental costs, requires staffing or more magnet school	low-to-medium incremental costs, depending on scope of enrichment programs

Table 4.4 - continued

Goals	Alternative 1: "Separate Schools"	Alternative 2: Student Mobility	Alternative 3: Magnet School	Alternative 4: School Enrichment
Minimizing interracial cleavage	potential to improve interracial relations in medium term; potential for short-term conflicts over access to financial resources and perceived threat to racially integrated schools	may provoke non-Aboriginal opposition	as with "separate school" model	little effect
Enabling parental choice	significant increase in school choice for aboriginal parents	as with "separate school" model	provides school choice for students who gain access	no change from status quo
Minimizing administrative complexity of reform	entails major administrative adjustments	few administrative problems; many precedents exist	more complexity than alternative 2, less than alternative 1	minor adminsitrative problems

Source: Table 4.4, Richards 2006, pp. 92-93

List of Appendix Tables

Appendix Table 1: Labour Force Participation, Employment and Unemployment Rates for all Persons 15+ in Canada, 2006

	Employment Rate	Participation Rate	Unemployment Rate
0-8 years	21.5	24.5	12.5
Some high school	44.9	51.2	12.3
High school graduate	65.2	69.5	6.2
Some post-secondary	64.0	69.0	7.3
Post-secondary certificate or diploma	72.7	76.6	5.1
University degree	76.9	80.1	4.0
Bachelor's degree	76.8	80.0	4.0
Above bachelor's degree	77.1	80.3	3.9
All education levels	63.0	67.2	6.3
High School Graduation	74.8	70.9	5.3
No High School Graduation	41.9	36.7	12.3

Source: Labour Force Survey, CANSIM Table 282-0004

Appendix Table 2: Average Employment Income for Persons Over 15 Years Old, Canada, 2001

	Persons with employment income during the year	Persons who work full year full time	All Persons
Less than Grade 5	21,114	23,687	4,748
Grades 5 to 8	22,337	23,479	5,740
Grades 9 to 13	20,834	29,351	10,769
Secondary - high school graduation certificate	26,220	32,204	17,557
Trades certificate or diploma	32,821	36,312	21,265
College: Without trades or college certificate or diploma	24,036	32,448	17,129
College: With trades certificate or diploma	32,636	36,175	23,981
College: With college certificate or diploma	32,488	38,253	24,893
University: Without certificate, diploma or degree	23,401	37,989	17,651
University: With university or college certificate or diploma	33,471	41,020	25,119
University: With bachelor or first professional degree	43,238	50,365	33,782
University: With certificate or diploma above bachelor level	45,340	51,778	33,915
University: With master's degree[s]	52,559	60,135	40,611
University: With earned doctorate	60,865	65,229	45,931
Total	30,616	38,274	19,550
Less than grade 9	22,093	23,518	5,521
Grades 9 to 13	20,834	29,351	10,769
High school graduation	26,220	32,204	17,557
Trades certificate or diploma	32,821	36,312	21,265
College: without certificate	24,036	32,448	17,129
College: with certificate	32,539	37,520	24,569
Unoversity: without certificate	23,401	37,989	17,651
University: with certificate	42,343	49,825	32,538
Total	30,616	38,274	19,550

Source: Census 2001, Public Use Microdata Files

Appendix Table 3: Proportion of Population, by Educational Attainment, Aboriginal Identity and Age, 2001

	15 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65+	Total
North American Indians							
Less than Grade 9	9.8	8.6	12.0	17.2	39.9	65.0	16.9
Grade 9 to 13, without certificate	58.4	28.1	26.3	24.2	18.7	16.1	33.4
Grade 9 to 13, with certificate	10.2	10.1	8.7	7.8	5.2	3.9	8.7
Trades Certificate or Diploma	1.8	4.8	4.6	5.0	6.1	3.6	4.1
College: without certificate	8.0	11.6	9.6	8.4	6.5	2.5	8.8
College: With certificate	4.7	18.7	22.6	21.3	13.6	4.8	15.0
University: without certificate	4.7	6.6	3.7	4.3	2.4	1.1	4.5
University: with certificate	2.4	11.4	12.6	11.9	7.7	3.1	8.6
Metis							
Less than Grade 9	2.6	3.2	6.9	8.9	24.5	53.7	9.4
Grade 9 to 13, without certificate	53.4	25.2	24.9	27.7	24.2	22.1	32.6
Grade 9 to 13, with certificate	15.8	11.7	11.0	8.4	9.3	4.6	11.5
Trades Certificate or Diploma	1.2	3.6	4.6	4.1	7.1	3.2	3.5
College: without certificate	7.8	11.0	7.9	7.1	5.9	4.2	8.1
College: With certificate	7.8	24.8	30.5	27.3	18.1	6.3	20.4
University: without certificate	7.3	5.6	3.1	3.0	1.0	1.8	4.5
University: with certificate	4.1	14.9	11.1	13.5	10.0	4.2	10.0
Inuits							
Less than Grade 9	19.7	14.4	20.4	38.9	64.7	72.6	25.0
Grade 9 to 13, without certificate	48.6	23.0	20.4	13.3	11.8	6.1	27.5
Grade 9 to 13, with certificate	10.6	5.4	5.9	3.3	2.9	0.0	6.4
Trades Certificate or Diploma	1.8	5.8	4.6	6.7	8.8	3.0	4.5
College: without certificate	9.6	19.8	12.5	10.0	0.0	3.1	12.5
College: With certificate	6.0	21.2	25.6	18.9	11.8	15.3	16.7
University: without certificate	0.9	1.8	3.3	0.0	0.0	0.0	1.5
University: with certificate	2.8	8.6	7.3	8.9	0.0	0.0	5.9
Aboriginals							
Less than Grade 9	8.1	7.4	10.8	15.2	35.7	61.9	15.0
Grade 9 to 13, without certificate	56.3	27.0	25.6	25.0	20.3	17.5	32.9
Grade 9 to 13, with certificate	11.9	10.3	9.3	7.8	6.4	3.9	9.5
Trades Certificate or Diploma	1.6	4.5	4.6	4.8	6.5	3.4	3.9
College: without certificate	8.0	11.9	9.2	8.0	6.1	3.0	8.8
College: With certificate	5.7	20.6	25.1	23.2	14.9	5.6	16.8
University: without certificate	5.3	6.0	3.5	3.7	1.9	1.2	4.3
University: with certificate	3.0	12.3	11.9	12.3	8.2	3.3	8.9
Non-Aboriginals							
Less than Grade 9	2.3	2.2	3.5	6.6	16.7	32.3	9.7
Grade 9 to 13, without certificate	39.4	12.2	15.8	16.4	20.8	25.0	21.2
Grade 9 to 13, with certificate	15.7	11.9	15.5	16.3	13.7	11.2	14.2
Trades Certificate or Diploma	1.0	2.5	4.0	4.5	4.9	4.2	3.5
College: without certificate	10.0	7.8	6.5	5.2	4.3	4.0	6.4
College: With certificate	10.9	25.2	24.6	21.4	17.4	10.8	18.8
University: without certificate	11.0	4.7	3.1	3.3	2.3	1.8	4.4
University: with certificate	9.7	33.6	26.9	26.3	19.8	10.8	21.8

Source: Census 2001, Public Use Microdata Files

Appendix Table 4: Proportion of Population, by Educational Attainment, Aboriginal Identity and Age, 1996

	15 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65+	Total
North American Indians							
Less than Grade 9	12.6	13.5	14.4	29.3	55.7	74.4	21.6
Grade 9 to 13, without certificate	56.8	29.6	26.9	21.0	14.8	10.9	33.6
Grade 9 to 13, with certificate	10.8	8.0	6.8	6.1	4.5	2.4	7.7
Trades Certificate or Diploma	1.7	3.3	5.4	5.1	3.3	2.1	3.5
College: without certificate	1.8	7.7	9.0	9.9	4.7	3.0	6.1
College: With certificate	4.4	18.7	21.2	19.4	11.4	6.0	14.1
University: without certificate	3.4	3.5	3.0	2.3	1.1	0.4	2.9
University: with certificate	2.7	10.0	13.2	10.2	5.3	2.1	7.9
Metis							
Less than Grade 9	6.6	5.7	9.8	21.1	42.2	64.5	14.6
Grade 9 to 13, without certificate	54.1	30.5	28.2	23.6	23.2	17.7	34.2
Grade 9 to 13, with certificate	14.9	11.6	9.4	9.7	5.9	2.0	10.8
Trades Certificate or Diploma	1.6	4.4	5.9	6.4	4.8	5.9	4.4
College: without certificate	2.7	10.1	10.4	9.0	8.7	1.5	7.5
College: With certificate	7.5	22.8	24.5	21.2	16.6	5.4	17.5
University: without certificate	4.5	2.3	1.6	0.6	0.7	1.0	2.3
University: with certificate	3.2	12.2	11.3	11.3	3.8	2.0	8.3
Inuits							
Less than Grade 9	24.6	23.2	36.5	50.0	71.8	90.9	34.3
Grade 9 to 13, without certificate	51.7	27.1	15.7	11.7	5.1	0.0	29.2
Grade 9 to 13, with certificate	5.4	5.6	7.0	1.7	0.0	0.0	4.9
Trades Certificate or Diploma	1.0	5.6	7.8	8.3	10.3	4.5	5.0
College: without certificate	0.0	9.6	6.1	10.0	0.0	4.5	5.0
College: With certificate	3.4	20.9	15.7	16.7	2.6	4.5	12.0
University: without certificate	4.9	0.0	2.6	0.0	0.0	0.0	2.1
University: with certificate	2.0	4.5	6.1	3.3	7.7	0.0	3.9
Aboriginals							
Less than Grade 9	11.6	11.9	13.9	27.6	52.3	72.3	20.2
Grade 9 to 13, without certificate	55.8	29.7	26.9	21.4	16.9	12.4	33.6
Grade 9 to 13, with certificate	11.6	8.9	7.5	7.0	4.7	2.2	8.5
Trades Certificate or Diploma	1.7	3.7	5.6	5.6	4.0	3.2	3.8
College: without certificate	1.9	8.5	9.3	9.6	5.7	2.6	6.4
College: With certificate	5.2	19.9	21.9	19.8	12.6	5.8	14.9
University: without certificate	3.8	3.0	2.6	1.7	0.9	0.5	2.7
University: with certificate	2.8	10.3	12.4	10.3	4.9	2.0	7.8
Non-Aboriginals							
Less than Grade 9	3.0	3.0	4.6	10.7	23.9	36.5	11.8
Grade 9 to 13, without certificate	40.4	15.2	17.3	17.4	22.8	24.8	22.4
Grade 9 to 13, with certificate	15.9	14.4	16.8	15.3	12.3	10.5	14.5
Trades Certificate or Diploma	1.1	3.4	4.1	4.8	5.2	4.0	3.7
College: without certificate	2.9	8.3	8.2	7.4	5.9	3.6	6.3
College: With certificate	9.8	24.7	23.2	20.1	15.0	9.6	17.9
University: without certificate	9.1	2.9	2.4	2.2	1.4	1.3	3.3
University: with certificate	10.8	28.6	25.2	24.7	15.2	9.3	20.0

Source: Census 1996, Public Use Microdata Files

Appendix Table 5: Average Number of Years of Schooling, by Sex, Age and Aboriginal Identity, 2001

		15 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65+	Total
Males	Aboriginals	10.77	11.79	11.47	11.15	9.18	7.16	10.90
	North American Indians	10.53	11.58	11.29	10.93	8.80	6.56	10.65
	Metis	11.38	12.53	12.00	11.81	9.98	8.60	11.57
	Inuits	9.88	10.43	10.28	9.10	6.23	6.14	9.69
	Non-aboriginals	12.30	14.03	13.51	13.23	12.01	10.32	12.71
	Total	**12.25**	**13.95**	**13.46**	**13.19**	**11.96**	**10.29**	**12.67**
Females	Aboriginals	11.12	12.35	11.90	11.51	9.56	7.22	11.26
	North American Indians	10.93	12.16	11.86	11.35	9.29	7.26	11.10
	Metis	11.68	13.02	12.31	12.03	10.67	7.46	11.84
	Inuits	10.28	11.31	9.70	9.36	5.87	3.60	9.86
	Non-aboriginals	12.74	14.34	13.62	13.02	11.63	9.99	12.64
	Total	**12.67**	**14.27**	**13.57**	**12.99**	**11.59**	**9.96**	**12.61**
Total	Aboriginals	10.95	12.08	11.69	11.34	9.38	7.19	11.09
	North American Indians	10.74	11.88	11.59	11.15	9.07	6.96	10.89
	Metis	11.53	12.76	12.16	11.92	10.29	7.99	11.70
	Inuits	10.09	10.86	9.96	9.22	6.03	5.00	9.78
	Non-aboriginals	12.52	14.19	13.57	13.12	11.82	10.14	12.68
	Total	**12.45**	**14.11**	**13.52**	**13.09**	**11.77**	**10.11**	**12.64**

Source: Census 2001, Public Use Microdata Files

Appendix Table 6: Average Employment Income for All Persons Over 15 Years Old, by Aboriginal Identity and Educational Atta

	15 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65+	Total
Aboriginals							
Less than grade 9	1,394	5,715	7,621	8,206	7,276	1,021	4,920
Grade 9 to 13, without certificate	2,841	11,117	14,724	14,774	9,777	2,506	8,129
Grade 9 to 13, with certificate	7,691	17,262	20,810	23,930	15,449	2,776	15,248
Post-secondary, with certificate	11,730	20,427	24,354	25,622	18,024	5,247	21,310
Post-secondary, without certificate	7,003	13,805	17,204	16,508	16,353	3,332	13,010
TOTAL	4,773	15,315	18,842	19,073	12,218	1,972	12,866
North American Indians							
Less than grade 9	1,374	4,841	6,117	7,746	5,927	930	4,221
Grade 9 to 13, without certificate	2,348	14,155	13,325	12,623	14,980	1,885	7,028
Grade 9 to 13, with certificate	5,867	15,854	19,689	22,546	17,968	2,732	14,300
Post-secondary, with certificate	10,537	18,189	22,438	22,782	17,484	3,469	19,349
Post-secondary, without certificate	6,062	12,823	16,514	14,315	15,941	4,395	12,215
TOTAL	3,815	13,368	17,054	16,656	11,204	1,569	11,292
Metis							
Less than grade 9	1,454	8,800	11,684	8,898	10,682	1,036	6,604
Grade 9 to 13, without certificate	3,929	15,076	16,331	18,317	10,687	3,608	10,281
Grade 9 to 13, with certificate	9,696	19,759	22,734	25,134	12,940	2,862	16,576
Post-secondary, with certificate	13,381	24,037	27,403	28,958	17,983	7,974	24,134
Post-secondary, without certificate	8,521	16,173	18,766	21,216	17,459	2,091	14,602
TOTAL	6,704	19,493	22,100	23,127	13,926	2,699	15,910
Inuits							
Less than grade 9	1,470	8,268	11,281	10,133	12,614	2,508	7,327
Grade 9 to 13, without certificate	3,022	12,391	27,953	13,046	11,255	0	9,831
Grade 9 to 13, with certificate	11,462	20,194	20,186	50,303	0	na	17,450
Post-secondary, with certificate	12,156	23,262	28,256	38,519	36,923	9,399	25,784
Post-secondary, without certificate	7,954	14,113	18,218	19,591	na	0	14,042
TOTAL	5,098	16,464	22,665	22,573	17,078	3,537	14,615
Non-aboriginal Population							
Less than grade 9	4,314	10,663	12,965	13,470	9,145	780	5,544
Grade 9 to 13, without certificate	3,491	17,280	21,067	21,458	13,011	1,396	10,879
Grade 9 to 13, with certificate	8,466	20,219	24,688	25,740	16,091	1,935	17,598
Post-secondary, with certificate	12,531	27,974	35,667	37,750	24,495	3,580	28,335
Post-secondary, without certificate	7,849	21,261	27,077	28,778	19,231	2,439	17,478
TOTAL	7,155	24,526	30,045	30,760	18,037	1,880	19,727
Total Population							
Less than grade 9	3,950	10,122	12,557	13,234	9,079	785	5,520
Grade 9 to 13, without certificate	3,455	16,813	20,807	21,258	12,958	1,403	10,774
Grade 9 to 13, with certificate	8,443	20,127	24,627	25,722	16,086	1,938	17,559
Post-secondary, with certificate	12,516	27,807	35,448	37,563	24,418	3,588	28,216
Post-secondary, without certificate	7,828	20,882	26,745	28,446	19,173	2,445	17,343
TOTAL	7,062	24,196	29,757	30,528	17,940	1,881	19,555

Source: Census 2001, Public Use Microdata Files

Appendix Table 6a: Average Employment Income for All Persons Over 15 Years Old, by Aboriginal Identity and Educational Attainment, as a Percentage of Non-Aboriginals, 2001

	15 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65+	Total
Aboriginals							
Less than grade 9	32.3	53.6	58.8	60.9	79.6	130.9	88.7
Grade 9 to 13, without certificate	81.4	64.3	69.9	68.9	75.1	179.5	74.7
Grade 9 to 13, with certificate	90.8	85.4	84.3	93.0	96.0	143.5	86.6
Post-secondary, with certificate	93.6	73.0	68.3	67.9	73.6	146.6	75.2
Post-secondary, without certificate	89.2	64.9	63.5	57.4	85.0	136.6	74.4
TOTAL	66.7	62.4	62.7	62.0	67.7	104.9	65.2
North American Indians							
Less than grade 9	31.8	45.4	47.2	57.5	64.8	119.2	76.1
Grade 9 to 13, without certificate	67.3	81.9	63.3	58.8	115.1	135.0	64.6
Grade 9 to 13, with certificate	69.3	78.4	79.8	87.6	111.7	141.2	81.3
Post-secondary, with certificate	84.1	65.0	62.9	60.4	71.4	96.9	68.3
Post-secondary, without certificate	77.2	60.3	61.0	49.7	82.9	180.2	69.9
TOTAL	53.3	54.5	56.8	54.1	62.1	83.5	57.2
Metis							
Less than grade 9	33.7	82.5	90.1	66.1	116.8	132.8	119.1
Grade 9 to 13, without certificate	112.6	87.2	77.5	85.4	82.1	258.5	94.5
Grade 9 to 13, with certificate	114.5	97.7	92.1	97.6	80.4	147.9	94.2
Post-secondary, with certificate	106.8	85.9	76.8	76.7	73.4	222.7	85.2
Post-secondary, without certificate	108.6	76.1	69.3	73.7	90.8	85.7	83.5
TOTAL	93.7	79.5	73.6	75.2	77.2	143.6	80.7
Inuits							
Less than grade 9	34.1	77.5	87.0	75.2	137.9	321.4	132.2
Grade 9 to 13, without certificate	86.6	71.7	132.7	60.8	86.5	0.0	90.4
Grade 9 to 13, with certificate	135.4	99.9	81.8	195.4	0.0	na	99.2
Post-secondary, with certificate	97.0	83.2	79.2	102.0	150.7	262.6	91.0
Post-secondary, without certificate	101.3	66.4	67.3	68.1	na	0.0	80.3
TOTAL	71.3	67.1	75.4	73.4	94.7	188.2	74.1
Non-aboriginal Population							
Less than grade 9	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Grade 9 to 13, without certificate	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Grade 9 to 13, with certificate	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Post-secondary, with certificate	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Post-secondary, without certificate	100.0	100.0	100.0	100.0	100.0	100.0	100.0
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total Population							
Less than grade 9	91.6	94.9	96.8	98.3	99.3	100.6	99.6
Grade 9 to 13, without certificate	99.0	97.3	98.8	99.1	99.6	100.6	99.0
Grade 9 to 13, with certificate	99.7	99.5	99.8	99.9	100.0	100.2	99.8
Post-secondary, with certificate	99.9	99.4	99.4	99.5	99.7	100.2	99.6
Post-secondary, without certificate	99.7	98.2	98.8	98.8	99.7	100.3	99.2
TOTAL	98.7	98.7	99.0	99.2	99.5	100.0	99.1

Source: Census 2001, Public Use Microdata Files

Appendix Table 7: Average Employment Income for Persons Over 15 Years Old with Employment Income, by Aboriginal Identity and Educational Attainment, 2001

	15 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65+	Total
Aboriginals							
Less than grade 9	6,723	13,698	16,833	18,141	20,811	11,257	16,114
Grade 9 to 13, without certificate	6,438	18,822	23,685	24,304	24,185	19,242	16,007
Grade 9 to 13, with certificate	10,965	23,275	28,008	32,087	28,511	21,154	21,681
Post-secondary, with certificate	14,015	24,305	29,786	34,104	30,281	21,509	27,285
Post-secondary, without certificate	9,403	18,424	24,190	24,633	28,089	15,186	18,290
TOTAL	8,929	21,411	26,630	28,889	26,309	15,943	21,316
North American Indians							
Less than grade 9	7,478	13,040	15,553	17,597	17,746	12,952	15,155
Grade 9 to 13, without certificate	6,211	17,624	22,801	22,061	22,813	16,338	15,317
Grade 9 to 13, with certificate	9,489	21,646	26,848	29,825	31,633	22,829	21,130
Post-secondary, with certificate	13,251	22,197	27,909	30,555	29,606	15,089	25,297
Post-secondary, without certificate	8,792	17,840	23,792	21,814	28,479	16,850	17,921
TOTAL	8,290	19,831	25,223	25,994	24,953	14,861	20,100
Metis							
Less than grade 9	7,988	14,706	19,248	20,353	30,550	10,589	20,133
Grade 9 to 13, without certificate	6,845	21,133	24,279	27,486	26,471	22,717	17,117
Grade 9 to 13, with certificate	12,224	26,040	29,077	34,341	24,610	18,637	22,298
Post-secondary, with certificate	14,995	27,400	32,792	38,331	30,471	31,094	30,095
Post-secondary, without certificate	10,193	20,264	25,682	30,736	27,178	11,855	19,233
TOTAL	9,863	24,360	29,008	33,324	28,784	19,249	23,405
Inuits							
Less than grade 9	3,952	15,579	18,414	17,738	21,343	6,704	14,584
Grade 9 to 13, without certificate	5,936	18,601	30,949	22,302	22,492	na	16,197
Grade 9 to 13, with certificate	13,182	26,878	45,566	75,500	na	na	23,927
Post-secondary, with certificate	13,985	27,414	32,205	47,791	43,107	28,076	30,789
Post-secondary, without certificate	10,158	16,522	21,905	25,179	na	na	17,151
TOTAL	8,680	21,753	28,486	33,309	27,658	10,632	21,462
Non-aboriginal Population							
Less than grade 9	10,109	19,946	22,735	24,746	25,157	16,868	22,386
Grade 9 to 13, without certificate	6,430	23,701	28,728	30,711	28,193	20,264	21,032
Grade 9 to 13, with certificate	10,911	25,593	30,926	33,423	30,723	21,979	26,301
Post-secondary, with certificate	14,329	32,279	42,367	46,129	41,418	26,680	37,650
Post-secondary, without certificate	9,468	26,159	34,059	37,511	35,054	23,511	23,937
TOTAL	10,100	29,669	37,367	40,026	35,080	22,774	30,847
Total Population							
Less than grade 9	9,890	19,400	22,371	24,499	25,010	16,666	22,093
Grade 9 to 13, without certificate	6,430	23,397	28,552	30,543	28,136	20,251	20,844
Grade 9 to 13, with certificate	10,912	25,525	30,884	33,411	30,705	21,975	26,220
Post-secondary, with certificate	14,323	32,107	42,130	45,958	41,285	26,635	37,468
Post-secondary, without certificate	9,466	25,794	33,761	37,205	34,906	23,384	23,771
TOTAL	10,065	29,412	37,123	39,835	34,947	22,674	30,622

Source: Census 2001, Public Use Microdata Files

Appendix Table 7a: Average Employment Income for Persons Over 15 Years Old with Employment Income, by Aboriginal Identity and Educational Attainment, as a Percentage of Non-Aboriginals, 2001

	15 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65+	Total
Aboriginals							
Less than grade 9	66.5	68.7	74.0	73.3	82.7	66.7	72.0
Grade 9 to 13, without certificate	100.1	79.4	82.4	79.1	85.8	95.0	76.1
Grade 9 to 13, with certificate	100.5	90.9	90.6	96.0	92.8	96.2	82.4
Post-secondary, with certificate	97.8	75.3	70.3	73.9	73.1	80.6	72.5
Post-secondary, without certificate	99.3	70.4	71.0	65.7	80.1	64.6	76.4
TOTAL	88.4	72.2	71.3	72.2	75.0	70.0	69.1
North American Indians							
Less than grade 9	74.0	65.4	68.4	71.1	70.5	76.8	67.7
Grade 9 to 13, without certificate	96.6	74.4	79.4	71.8	80.9	80.6	72.8
Grade 9 to 13, with certificate	87.0	84.6	86.8	89.2	103.0	103.9	80.3
Post-secondary, with certificate	92.5	68.8	65.9	66.2	71.5	56.6	67.2
Post-secondary, without certificate	92.9	68.2	69.9	58.2	81.2	71.7	74.9
TOTAL	82.1	66.8	67.5	64.9	71.1	65.3	65.2
Metis							
Less than grade 9	79.0	73.7	84.7	82.2	121.4	62.8	89.9
Grade 9 to 13, without certificate	106.5	89.2	84.5	89.5	93.9	112.1	81.4
Grade 9 to 13, with certificate	112.0	101.7	94.0	102.7	80.1	84.8	84.8
Post-secondary, with certificate	104.7	84.9	77.4	83.1	73.6	116.5	79.9
Post-secondary, without certificate	107.7	77.5	75.4	81.9	77.5	50.4	80.3
TOTAL	97.7	82.1	77.6	83.3	82.1	84.5	75.9
Inuits							
Less than grade 9	39.1	78.1	81.0	71.7	84.8	39.7	65.1
Grade 9 to 13, without certificate	92.3	78.5	107.7	72.6	79.8	na	77.0
Grade 9 to 13, with certificate	120.8	105.0	147.3	225.9	na	na	91.0
Post-secondary, with certificate	97.6	84.9	76.0	103.6	104.1	105.2	81.8
Post-secondary, without certificate	107.3	63.2	64.3	67.1	na	na	71.6
TOTAL	85.9	73.3	76.2	83.2	78.8	46.7	69.6
Non-aboriginal Population							
Less than grade 9	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Grade 9 to 13, without certificate	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Grade 9 to 13, with certificate	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Post-secondary, with certificate	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Post-secondary, without certificate	100.0	100.0	100.0	100.0	100.0	100.0	100.0
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total Population							
Less than grade 9	97.8	97.3	98.4	99.0	99.4	98.8	98.7
Grade 9 to 13, without certificate	100.0	98.7	99.4	99.5	99.8	99.9	99.1
Grade 9 to 13, with certificate	100.0	99.7	99.9	100.0	99.9	100.0	99.7
Post-secondary, with certificate	100.0	99.5	99.4	99.6	99.7	99.8	99.5
Post-secondary, without certificate	100.0	98.6	99.1	99.2	99.6	99.5	99.3
TOTAL	99.7	99.1	99.3	99.5	99.6	99.6	99.3

Source: Census 2001, Public Use Microdata Files

Appendix Table 8: Average Employment Income for Persons Over 15 Years Old who Work Full-Time Full-Year, by Aboriginal Identity and Educational Attainment, 2001

	15 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65+	Total
Aboriginals							
Less than grade 9	15,690	18,243	22,496	25,383	25,428	11,477	22,772
Grade 9 to 13, without certificate	16,362	25,853	29,560	28,799	28,930	21,452	26,485
Grade 9 to 13, with certificate	19,275	29,422	33,357	38,931	33,278	10,022	30,405
Post-secondary, with certificate	24,085	32,614	36,329	38,353	34,775	25,185	34,965
Post-secondary, without certificate	17,530	27,698	32,672	29,637	31,298	3,655	28,040
TOTAL	19,058	29,676	33,589	34,644	31,124	18,647	30,987
North American Indians							
Less than grade 9	18,388	18,295	23,924	24,683	23,156	13,390	22,501
Grade 9 to 13, without certificate	15,567	24,873	28,852	28,553	27,613	6,240	25,521
Grade 9 to 13, with certificate	16,998	29,002	32,933	35,788	35,016	20,000	30,050
Post-secondary, with certificate	24,868	31,242	34,011	36,116	33,298	19,001	33,213
Post-secondary, without certificate	17,108	28,080	32,394	27,163	33,310	na	27,948
TOTAL	18,246	28,782	32,253	32,750	30,189	14,127	29,857
Metis							
Less than grade 9	7	19,116	20,237	25,530	29,185	0	23,201
Grade 9 to 13, without certificate	17,690	27,537	28,740	28,927	31,757	37,924	27,358
Grade 9 to 13, with certificate	20,651	29,708	34,132	42,480	31,544	0	30,479
Post-secondary, with certificate	22,443	33,917	39,939	39,823	37,656	36,384	36,876
Post-secondary, without certificate	18,268	27,099	33,475	32,699	27,604	3,655	27,885
TOTAL	19,786	30,887	35,414	36,122	33,085	23,905	32,275
Inuits							
Less than grade 9	13,000	17,118	18,287	28,488	28,382	25,000	23,267
Grade 9 to 13, without certificate	15,748	25,677	39,392	32,615	22,492	0	30,635
Grade 9 to 13, with certificate	24,148	35,000	31,364	75,500	na	na	36,250
Post-secondary, with certificate	33,000	38,036	40,831	54,546	35,000	18,915	41,701
Post-secondary, without certificate	17,500	27,494	32,117	55,505	na	na	30,482
TOTAL	22,238	30,791	37,288	47,761	28,507	16,264	34,757
Non-aboriginal Population							
Less than grade 9	13,418	19,702	23,788	26,285	26,407	12,138	23,538
Grade 9 to 13, without certificate	18,258	27,212	31,023	32,776	30,351	17,789	29,434
Grade 9 to 13, with certificate	19,676	28,849	33,878	36,024	34,629	23,593	32,229
Post-secondary, with certificate	23,911	37,789	46,406	48,822	45,989	30,408	43,751
Post-secondary, without certificate	20,264	31,145	37,948	40,138	39,069	25,842	34,648
TOTAL	20,969	34,659	41,106	42,918	38,937	22,774	38,409
Total Population							
Less than grade 9	13,474	19,632	23,746	26,264	26,382	12,131	23,518
Grade 9 to 13, without certificate	18,176	27,155	30,984	32,697	30,334	17,836	29,357
Grade 9 to 13, with certificate	19,664	28,864	33,871	36,049	34,620	23,525	32,202
Post-secondary, with certificate	23,914	37,703	46,252	48,690	45,877	30,355	43,624
Post-secondary, without certificate	20,179	31,041	37,829	39,949	38,923	25,559	34,489
TOTAL	20,917	34,548	40,974	42,803	38,842	22,731	38,278

Source: Census 2001, Public Use Microdata Files

Appendix Table 8a: Average Employment Income for Persons Over 15 Years Old who Work Full-Time Full-Year, by Aboriginal Identity and Educational Attainment, as a Percentage of Non-Aboriginals, 2001

	15 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65+	Total
Aboriginals							
Less than grade 9	116.9	92.6	94.6	96.6	96.3	94.6	96.7
Grade 9 to 13, without certificate	89.6	95.0	95.3	87.9	95.3	120.6	90.0
Grade 9 to 13, with certificate	98.0	102.0	98.5	108.1	96.1	42.5	94.3
Post-secondary, with certificate	100.7	86.3	78.3	78.6	75.6	82.8	79.9
Post-secondary, without certificate	86.5	88.9	86.1	73.8	80.1	14.1	80.9
TOTAL	90.9	85.6	81.7	80.7	79.9	81.9	80.7
North American Indians							
Less than grade 9	137.0	92.9	100.6	93.9	87.7	110.3	95.6
Grade 9 to 13, without certificate	85.3	91.4	93.0	87.1	91.0	35.1	86.7
Grade 9 to 13, with certificate	86.4	100.5	97.2	99.3	101.1	84.8	93.2
Post-secondary, with certificate	104.0	82.7	73.3	74.0	72.4	62.5	75.9
Post-secondary, without certificate	84.4	90.2	85.4	67.7	85.3	na	80.7
TOTAL	87.0	83.0	78.5	76.3	77.5	62.0	77.7
Metis							
Less than grade 9	0.1	97.0	85.1	97.1	110.5	0.0	98.6
Grade 9 to 13, without certificate	96.9	101.2	92.6	88.3	104.6	213.2	92.9
Grade 9 to 13, with certificate	105.0	103.0	100.8	117.9	91.1	0.0	94.6
Post-secondary, with certificate	93.9	89.8	86.1	81.6	81.9	119.7	84.3
Post-secondary, without certificate	90.2	87.0	88.2	81.5	70.7	14.1	80.5
TOTAL	94.4	89.1	86.2	84.2	85.0	105.0	84.0
Inuits							
Less than grade 9	96.9	86.9	76.9	108.4	107.5	206.0	98.8
Grade 9 to 13, without certificate	86.3	94.4	127.0	99.5	74.1	0.0	104.1
Grade 9 to 13, with certificate	122.7	121.3	92.6	209.6	na	na	112.5
Post-secondary, with certificate	138.0	100.7	88.0	111.7	76.1	62.2	95.3
Post-secondary, without certificate	86.4	88.3	84.6	138.3	na	na	88.0
TOTAL	106.1	88.8	90.7	111.3	73.2	71.4	90.5
Non-aboriginal Population							
Less than grade 9	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Grade 9 to 13, without certificate	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Grade 9 to 13, with certificate	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Post-secondary, with certificate	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Post-secondary, without certificate	100.0	100.0	100.0	100.0	100.0	100.0	100.0
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total Population							
Less than grade 9	100.4	99.6	99.8	99.9	99.9	99.9	99.9
Grade 9 to 13, without certificate	99.6	99.8	99.9	99.8	99.9	100.3	99.7
Grade 9 to 13, with certificate	99.9	100.1	100.0	100.1	100.0	99.7	99.9
Post-secondary, with certificate	100.0	99.8	99.7	99.7	99.8	99.8	99.7
Post-secondary, without certificate	99.6	99.7	99.7	99.5	99.6	98.9	99.5
TOTAL	99.8	99.7	99.7	99.7	99.8	99.8	99.7

Source: Census 2001, Public Use Microdata Files

Appendix Table 9: Average Employment Income, by Educational Attainment and Aboriginal Identity, 2001

	Absolute Values		As a share of non-Aboriginals	
	All Persons over 15 Years Old	Persons Over 15 Years Old with Positive Income	All Persons over 15 Years Old	Persons Over 15 Years Old with Employment Income
North American Indians				
Less than Grade 9	4,221	15,155	76.1	67.7
Grade 9 to 13, without certificate	7,028	15,317	64.6	72.8
Grade 9 to 13, with certificate	14,300	21,130	81.3	80.3
Trades Certificate or Diploma	14,897	20,527	69.7	62.0
College: without certificate	12,290	18,102	71.1	74.7
College: With certificate	18,545	24,103	75.2	73.7
University: without certificate	12,067	17,568	67.9	74.6
University: with certificate	22,848	29,467	70.0	69.4
Total	11,292	20,100	57.2	65.2
Metis				
Less than Grade 9	6,604	20,133	119.1	89.9
Grade 9 to 13, without certificate	10,281	17,117	94.5	81.4
Grade 9 to 13, with certificate	16,576	22,298	94.2	84.8
Trades Certificate or Diploma	21,958	30,191	102.7	91.1
College: without certificate	14,279	19,899	82.6	82.1
College: With certificate	22,933	28,656	93.0	87.6
University: without certificate	15,183	18,203	85.4	77.3
University: with certificate	27,347	32,885	83.8	77.4
Total	15,910	23,405	80.7	75.9
Inuits				
Less than Grade 9	7,327	14,584	132.2	65.1
Grade 9 to 13, without certificate	9,831	16,197	90.4	77.0
Grade 9 to 13, with certificate	17,450	23,927	99.2	91.0
Trades Certificate or Diploma	21,765	27,400	101.8	82.7
College: without certificate	14,113	17,229	81.7	71.1
College: With certificate	25,426	29,995	103.1	91.7
University: without certificate	13,437	16,482	75.6	70.0
University: with certificate	29,884	35,505	91.6	83.6
Total	14,615	21,462	74.1	69.6
Aboriginal Population				
Less than Grade 9	4,920	16,114	88.7	72.0
Grade 9 to 13, without certificate	8,129	16,007	74.7	76.1
Grade 9 to 13, with certificate	15,248	21,681	86.6	82.4
Trades Certificate or Diploma	17,225	23,601	80.5	71.2
College: without certificate	12,975	18,557	75.1	76.6
College: With certificate	20,505	26,135	83.1	79.9
University: without certificate	13,082	17,779	73.6	75.5
University: with certificate	24,618	30,895	75.5	72.7
Total	12,866	21,316	65.2	69.1
Non-Aboriginal Population				
Less than Grade 9	5,544	22,386	100.0	100.0
Grade 9 to 13, without certificate	10,879	21,032	100.0	100.0
Grade 9 to 13, with certificate	17,598	26,301	100.0	100.0
Trades Certificate or Diploma	21,384	33,133	100.0	100.0
College: without certificate	17,278	24,225	100.0	100.0
College: With certificate	24,666	32,696	100.0	100.0
University: without certificate	17,769	23,542	100.0	100.0
University: with certificate	32,627	42,475	100.0	100.0
Total	19,727	30,847	100.0	100.0

Source: Census 2001, Public Use Microdata Files

Appendix Table 10: Average Employment Income, by Educational Attainment and Aboriginal Identity, 1996

	Absolute Values		As a share of non-Aboriginals	
	All Persons over 15 Years Old	Persons Over 15 Years Old with Positive Income	All Persons over 15 Years Old	Persons Over 15 Years Old with Employment Income
North American Indians				
Less than Grade 9	3,948	13,582	75.6	68.5
Grade 9 to 13, without certificate	5,615	12,705	60.6	67.8
Grade 9 to 13, with certificate	11,624	17,066	78.4	75.2
Trades Certificate or Diploma	14,684	21,005	77.7	72.3
College: without certificate	9,485	14,489	67.4	70.0
College: With certificate	14,753	19,968	70.7	71.1
University: without certificate	11,010	16,159	76.6	84.2
University: with certificate	18,949	25,653	68.3	71.2
Total	8,865	16,810	54.8	63.9
Metis				
Less than Grade 9	4,770	15,834	91.4	79.9
Grade 9 to 13, without certificate	7,289	13,629	78.7	72.7
Grade 9 to 13, with certificate	12,094	16,899	81.6	74.4
Trades Certificate or Diploma	17,880	24,712	94.6	85.0
College: without certificate	10,224	15,828	72.7	76.4
College: With certificate	16,881	22,410	80.9	79.8
University: without certificate	11,508	14,385	80.0	74.9
University: with certificate	21,416	27,000	77.2	74.9
Total	11,079	18,377	68.5	69.9
Inuits				
Less than Grade 9	6,685	13,829	128.1	69.8
Grade 9 to 13, without certificate	7,096	11,011	76.6	58.8
Grade 9 to 13, with certificate	12,829	18,327	86.6	80.7
Trades Certificate or Diploma	20,217	26,114	107.0	89.8
College: without certificate	12,667	15,984	90.0	77.2
College: With certificate	18,518	21,411	88.7	76.2
University: without certificate	9,158	14,881	63.7	77.5
University: with certificate	23,286	27,943	83.9	77.6
Total	10,420	16,169	64.4	61.5
Aboriginal Population				
Less than Grade 9	4,317	14,055	82.7	70.9
Grade 9 to 13, without certificate	6,146	12,912	66.4	68.9
Grade 9 to 13, with certificate	11,821	17,037	79.8	75.0
Trades Certificate or Diploma	16,033	22,540	84.9	77.5
College: without certificate	9,816	14,905	69.8	72.0
College: With certificate	15,578	20,827	74.6	74.2
University: without certificate	11,065	15,641	77.0	81.5
University: with certificate	19,772	26,124	71.3	72.5
Total	9,548	17,251	59.0	65.6
Non-Aboriginal Population				
Less than Grade 9	5,220	19,823	100.0	100.0
Grade 9 to 13, without certificate	9,259	18,741	100.0	100.0
Grade 9 to 13, with certificate	14,820	22,705	100.0	100.0
Trades Certificate or Diploma	18,891	29,065	100.0	100.0
College: without certificate	14,070	20,711	100.0	100.0
College: With certificate	20,879	28,087	100.0	100.0
University: without certificate	14,377	19,194	100.0	100.0
University: with certificate	27,742	36,027	100.0	100.0
Total	16,182	26,297	100.0	100.0

Source: Census 1996, Public Use Microdata Files

Appendix Table 11: Average Employment Income in 2001 for Persons Over 15 Years Old by Educational Attainment, Aboriginals vs. Non-Aboriginals

	Aboriginals	Sample size	Non-aboriginals	Sample size	Aboriginals as a percentage of non-aboriginals
1: Less than Grade 5	3,417	22,257	4,808	496,504	71.1
2: Grades 5 to 8	5,418	67,178	5,752	1,756,634	94.2
3: Grades 9 to 13	8,129	196,517	10,879	4,939,475	74.7
4: Secondary - high school graduation certificate	15,248	56,516	17,598	3,310,737	86.6
5: Trades certificate or diploma	17,225	23,441	21,384	811,504	80.5
6: College: Without trades or college certificate or diploma	12,975	52,319	17,278	1,489,013	75.1
7: College: With trades certificate or diploma	20,816	45,180	24,079	1,547,208	86.5
8: College: With college certificate or diploma	20,250	55,143	24,985	2,841,413	81.0
9: University: Without certificate, diploma or degree	13,082	25,909	17,769	1,025,161	73.6
10: University: With university or college certificate or diploma	19,679	26,207	25,229	1,401,578	78.0
11: University: With bachelor or first professional degree	28,012	20,519	33,830	2,516,850	82.8
12: University: With certificate or diploma above bachelor level	30,910	2,776	33,932	379,661	91.1
13: University: With master's degree[s]	36,106	3,436	40,644	636,620	88.8
14: University: With earned doctorate	31,055	443	45,982	130,467	67.5
TOTAL	**$12,866**	**597,841**	**$19,727**	**23,282,823**	**65.2**

Source: 2001 Census, Public Use Microdata Files

Appendix Table 12: Labour Force Participation and Employment Rates, 2001

	Unemployment Rate	Employment Rate	Participation Rate	Ratio of the Number of Persons with Positive Income and Total WAP
North American Indians				
Less than Grade 5	24.8	13.6	18.5	20.1
Grades 5 to 8	29.6	20.3	30.7	30.5
Grades 9 to 13	26.2	31.5	44.7	45.9
Secondary - high school graduation certificate	13.4	57.7	69.3	67.7
Trades certificate or diploma	19.2	57.8	74.9	72.6
College: With trades certificate or diploma	16.8	64.3	79.2	74.8
College: With college certificate or diploma	12.9	69.4	82.3	78.6
University: With university or college certificate or diploma	13.5	67.4	79.6	75.0
University: With bachelor or first professional degree	7.4	75.7	84.8	81.5
University: With certificate or diploma above bachelor level	7.4	62.5	67.6	77.5
University: With master's degree[s]	9.1	74.1	83.4	75.9
University: With earned doctorate	0.0	49.9	49.9	75.1
College: Without trades or college certificate or diploma	18.7	52.2	66.6	67.9
University: Without certificate, diploma or degree	22.2	51.4	69.3	68.7
Total	19.2	44.1	56.8	56.2
Metis				
Less than Grade 5	19.9	21.1	28.4	25.2
Grades 5 to 8	15.3	29.9	36.1	34.7
Grades 9 to 13	17.7	49.2	61.2	60.1
Secondary - high school graduation certificate	8.4	69.0	76.7	74.3
Trades certificate or diploma	12.5	63.7	77.3	72.7
College: With trades certificate or diploma	11.8	74.5	85.7	79.3
College: With college certificate or diploma	7.8	75.7	83.0	80.6
University: With university or college certificate or diploma	8.2	72.6	80.0	78.1
University: With bachelor or first professional degree	3.9	82.7	87.0	89.9
University: With certificate or diploma above bachelor level	10.7	75.7	84.8	84.8
University: With master's degree[s]	3.1	82.0	84.6	76.9
University: With earned doctorate	0.0	75.0	75.0	50.0
College: Without trades or college certificate or diploma	15.3	62.5	75.5	71.8
University: Without certificate, diploma or degree	11.1	74.9	86.5	83.4
Total	12.3	60.4	70.3	68.0
Inuits				
Less than Grade 5	11.1	28.0	31.5	43.8
Grades 5 to 8	13.4	44.6	53.1	53.1
Grades 9 to 13	21.5	40.8	55.9	60.7
Secondary - high school graduation certificate	8.2	70.8	77.1	72.9
Trades certificate or diploma	14.7	67.7	82.3	79.4
College: With trades certificate or diploma	15.6	73.0	86.5	84.6
College: With college certificate or diploma	14.5	64.4	80.8	84.9
University: With university or college certificate or diploma	5.2	71.9	83.9	84.1
University: With bachelor or first professional degree	0.0	76.4	76.4	82.4
University: With certificate or diploma above bachelor level	0.0	100.0	100.0	100.0
University: With master's degree[s]	n.a.	0.0	0.0	0.0
University: With earned doctorate	n.a.	0.0	0.0	0.0
College: Without trades or college certificate or diploma	14.7	61.7	75.5	81.9
University: Without certificate, diploma or degree	11.5	72.4	81.9	81.5
Total	14.6	53.3	65.0	68.1

Source: Census 2001, Public Use Microdata Files

Note: When n.a. appears, the census data indicate that there are no people in the particular education/ethnic subset necessary to calculate an unemployment rate. In cases where extreme values are given, such as 0 per cent or 100 per cent, this is almost certainly caused by the limited sample size.

Appendix Table 12: Labour Force Participation and Employment Rates, 2001 (continued)

	Unemployment Rate	Employment Rate	Participation Rate	Ratio of the Number of Persons with Positive Income and Total WAP
Aboriginals				
Less than Grade 5	21.8	16.1	21.3	23.1
Grades 5 to 8	24.5	24.0	33.4	33.0
Grades 9 to 13	22.8	37.2	50.2	50.8
Secondary - high school graduation certificate	11.2	62.4	72.3	70.3
Trades certificate or diploma	17.1	60.0	76.0	73.0
College: With trades certificate or diploma	14.7	68.6	82.0	77.0
College: With college certificate or diploma	11.1	71.4	82.5	79.7
University: With university or college certificate or diploma	11.6	69.1	79.9	76.3
University: With bachelor or first professional degree	5.8	78.3	85.4	84.7
University: With certificate or diploma above bachelor level	8.8	69.3	76.0	81.3
University: With master's degree[s]	6.5	77.4	83.9	76.3
University: With earned doctorate	0.0	58.3	58.3	66.7
College: Without trades or college certificate or diploma	17.3	55.8	69.7	69.9
University: Without certificate, diploma or degree	17.9	59.2	75.0	73.6
Total	16.5	49.5	61.3	60.4
Non-Aboriginals				
Less than Grade 5	9.6	20.4	23.3	22.5
Grades 5 to 8	9.5	24.8	28.3	25.4
Grades 9 to 13	8.7	47.4	52.8	51.7
Secondary - high school graduation certificate	5.4	64.7	69.2	66.9
Trades certificate or diploma	5.4	64.6	69.2	64.5
College: With trades certificate or diploma	5.2	73.7	78.8	73.4
College: With college certificate or diploma	4.4	75.5	79.7	76.6
University: With university or college certificate or diploma	5.1	73.4	78.0	75.0
University: With bachelor or first professional degree	3.9	78.3	82.3	78.1
University: With certificate or diploma above bachelor level	3.3	76.1	79.3	74.7
University: With master's degree[s]	3.9	78.1	81.8	77.3
University: With earned doctorate	3.2	77.9	81.0	75.5
College: Without trades or college certificate or diploma	7.1	66.4	72.5	71.3
University: Without certificate, diploma or degree	8.5	67.4	75.2	75.5
Total	5.9	61.8	66.6	63.9

Source: Census 2001, Public Use Microdata Files

Note: When n.a. appears, the census data indicate that there are no people in the particular education/ethnic subset necessary to calculate an unemployment rate. In cases where extreme values are given, such as 0 per cent or 100 per cent, this is almost certainly caused by the limited sample size.

Appendix Table 13: Labour Force Participation and Employment Rates, 1996

	Unemployment Rate	Employment Rate	Participation Rate	Ratio of the Number of Persons with Positive Income and Total WAP
North American Indians				
Less than Grade 5	24.2	14.5	19.1	20.1
Grades 5 to 8	36.1	22.8	35.6	32.1
Grades 9 to 13	32.9	30.2	45.0	44.2
Secondary - high school graduation certificate	20.6	53.3	67.2	68.1
Trades certificate or diploma	25.5	55.9	75.1	69.9
College: With trades certificate or diploma	25.5	48.3	70.3	65.5
College: With college certificate or diploma	17.7	58.6	78.7	71.0
University: With university or college certificate or diploma	16.9	66.8	81.1	76.1
University: With bachelor or first professional degree	8.5	52.9	76.3	67.9
University: With certificate or diploma above bachelor level	7.7	65.9	79.2	69.1
University: With master's degree[s]	0.0	79.6	87.0	82.4
University: With earned doctorate	0.0	78.3	84.8	76.1
College: Without trades or college certificate or diploma	25.5	92.9	92.9	85.7
University: Without certificate, diploma or degree	30.6	100.0	100.0	33.3
Total	26.6	41.0	55.8	52.7
Metis				
Less than Grade 5	12.0	17.6	20.0	17.6
Grades 5 to 8	35.8	25.3	39.5	33.6
Grades 9 to 13	25.6	41.9	56.3	53.5
Secondary - high school graduation certificate	14.5	64.5	75.4	71.6
Trades certificate or diploma	18.9	60.6	74.7	72.4
College: With trades certificate or diploma	18.2	55.4	70.8	64.6
College: With college certificate or diploma	16.1	71.1	86.9	79.4
University: With university or college certificate or diploma	11.0	68.2	81.3	72.3
University: With bachelor or first professional degree	8.2	67.8	82.2	80.0
University: With certificate or diploma above bachelor level	23.1	77.4	87.0	80.8
University: With master's degree[s]	0.0	80.9	88.2	77.3
University: With earned doctorate	50.0	58.8	76.5	64.7
College: Without trades or college certificate or diploma	21.8	93.8	93.8	93.8
University: Without certificate, diploma or degree	17.6	25.0	50.0	75.0
Total	20.3	51.9	65.1	60.3
Inuits				
Less than Grade 5	12.0	30.1	34.2	32.9
Grades 5 to 8	28.8	34.1	47.8	56.5
Grades 9 to 13	23.7	41.1	53.9	64.4
Secondary - high school graduation certificate	20.0	53.3	66.7	70.0
Trades certificate or diploma	16.7	64.5	77.4	77.4
College: With trades certificate or diploma	14.8	62.3	64.2	79.2
College: With college certificate or diploma	20.7	74.2	87.1	93.5
University: With university or college certificate or diploma	30.0	53.5	67.4	81.4
University: With bachelor or first professional degree	0.0	46.2	84.6	61.5
University: With certificate or diploma above bachelor level	n.a.	70.0	100.0	90.0
University: With master's degree[s]	100.0	91.7	91.7	75.0
University: With earned doctorate	n.a.	0.0	0.0	100.0
College: Without trades or college certificate or diploma	2.9	0.0	100.0	100.0
University: Without certificate, diploma or degree	45.5	na	na	na
Total	20.6	45.8	57.6	64.4

Source: Census 1996, Public Use Microdata Files

Note: When n.a. appears, the census data indicate that there are no people in the particular education/ethnic subset necessary to calculate an unemployment rate. In cases where extreme values are given, such as 0 per cent or 100 per cent, this is almost certainly caused by the limited sample size.

Appendix Table 13: Labour Force Participation and Employment Rates, 1996 (continued)

	Unemployment Rate	Employment Rate	Participation Rate	Ratio of the Number of Persons with Positive Income and Total WAP
Aboriginals				
Less than Grade 5	20.1	16.6	20.8	21.0
Grades 5 to 8	35.4	24.1	37.2	34.0
Grades 9 to 13	30.1	33.9	48.5	47.6
Secondary - high school graduation certificate	18.2	57.3	70.1	69.4
Trades certificate or diploma	22.9	57.9	75.1	71.1
College: With trades certificate or diploma	22.6	50.8	70.1	65.9
College: With college certificate or diploma	17.3	63.2	81.6	74.4
University: With university or college certificate or diploma	15.4	66.8	80.7	75.1
University: With bachelor or first professional degree	8.1	56.2	78.0	70.6
University: With certificate or diploma above bachelor level	11.5	69.1	81.7	72.7
University: With master's degree[s]	2.4	80.5	87.6	80.5
University: With earned doctorate	25.0	71.9	81.3	73.4
College: Without trades or college certificate or diploma	27.6	91.1	93.3	88.9
University: Without certificate, diploma or degree	27.9	50.0	66.7	57.1
Total	24.4	44.2	58.5	55.3
Non-Aboriginals				
Less than Grade 5	17.7	19.4	23.6	22.0
Grades 5 to 8	16.1	26.0	31.0	27.5
Grades 9 to 13	13.9	44.8	52.1	49.4
Secondary - high school graduation certificate	9.2	62.5	68.8	65.3
Trades certificate or diploma	9.2	64.0	70.5	65.0
College: With trades certificate or diploma	9.4	62.6	71.0	67.9
College: With college certificate or diploma	7.2	72.3	79.9	72.3
University: With university or college certificate or diploma	8.5	74.4	80.2	75.4
University: With bachelor or first professional degree	5.6	65.9	77.0	74.9
University: With certificate or diploma above bachelor level	3.9	72.0	78.7	74.4
University: With master's degree[s]	4.6	79.9	84.7	78.3
University: With earned doctorate	3.8	78.8	81.9	76.9
College: Without trades or college certificate or diploma	11.9	80.8	84.7	78.7
University: Without certificate, diploma or degree	14.3	81.0	84.1	77.7
Total	9.8	59.2	65.6	61.5

Source: Census 1996, Public Use Microdata Files

Note: When n.a. appears, the census data indicate that there are no people in the particular education/ethnic subset necessary to calculate an unemployment rate. In cases where extreme values are given, such as 0 per cent or 100 per cent, this is almost certainly caused by the limited sample size.

Appendix Table 14: Comparison of Employment Rates and the Proportion of Working Age Population with Employment Income, by Aboriginal Identity and Educational Attainment, 2001

	Aboriginals		Non-Aboriginals	
	Employment Rate	Proportion of Working Age Population with Employment Income	Employment Rate	Proportion of Working Age Population with Positive Income
Less than Grade 5	16.1	23.1	20.4	22.5
Grades 5 to 8	24.0	33.0	24.8	25.4
Grades 9 to 13	37.2	50.8	47.4	51.7
Secondary - high school graduation certificate	62.4	70.3	64.7	66.9
Trades certificate or diploma	60.0	73.0	64.6	64.5
College: With trades certificate or diploma	68.6	77.0	73.7	73.4
College: With college certificate or diploma	71.4	79.7	75.5	76.6
University: With university or college certificate or diploma	69.1	76.3	73.4	75.0
University: With bachelor or first professional degree	78.3	84.7	78.3	78.1
University: With certificate or diploma above bachelor level	69.3	81.3	76.1	74.7
University: With master's degree[s]	77.4	76.3	78.1	77.3
University: With earned doctorate	58.3	66.7	77.9	75.5
College: Without trades or college certificate or diploma	55.8	69.9	66.4	71.3
University: Without certificate, diploma or degree	59.2	73.6	67.4	75.5
TOTAL	49.5	60.4	61.8	63.9

Source: Census 2001, Public Use Microdata Files

Note: Employment rate is defined as the ratio of persons who were employed in the reference week over the total working age population (15+). The proportion of working age population with employment income is the ratio of the persons who received employment income over the year of the census over the total working age population.

Appendix Table 15: Total Aboriginal Population by Region, Province, and Projection Scenario: 2001, 2006, 2011,

Sex and Regions	Base year populatio	Scenario A			Scenario B			Scenario C		
	2001	2006	2011	2017	2006	2011	2017	2006	2011	2017
Canada										
Both sexes	1,066.5	1,169.5	1,282.8	1,431.8	1,168.6	1,278.4	1,420.0	1,168.9	1,280.8	1,427.9
Male	527.3	578.4	634.9	709.1	578.0	632.6	703.1	578.2	633.7	707.0
Female	539.2	591.1	647.9	722.7	590.6	645.8	717.0	590.8	647.1	720.9
Atlantic										
Both sexes	57.2	63.5	70.3	78.9	63.4	70.1	78.4	62.4	67.9	74.8
Male	28.9	31.9	35.2	39.3	31.8	35.1	39.1	31.3	33.8	37.1
Female	28.3	31.6	35.1	39.6	31.6	35.0	39.3	31.1	34.1	37.8
Quebec										
Both	96.4	104.5	113.2	124.2	104.4	112.8	123.3	104.9	113.9	126.0
Male	48.1	52.2	56.4	61.8	52.1	56.3	61.4	52.3	56.6	62.3
Female	48.3	52.4	56.7	62.4	52.3	56.5	61.9	52.6	57.3	63.8
Ontario										
Both sexes	214.6	231.2	248.1	269.4	231.1	247.5	267.7	231.3	248.0	268.5
Male	105.2	113.5	122.0	132.7	113.4	121.6	131.8	113.7	122.1	132.5
Female	109.5	117.7	126.2	136.7	117.7	125.8	135.9	117.7	125.9	135.9
Manitoba										
Both Sexes	159.4	176.8	196.5	223.6	176.6	195.6	221.1	176.0	195.1	221.8
Male	78.5	87.0	96.6	110.0	86.9	96.2	108.7	86.5	95.9	109.1
Female	80.9	89.8	99.9	113.6	89.7	99.4	112.4	89.4	99.2	112.7
Sask.										
Both Sexes	138.3	155.3	175.9	205.3	155.2	175.1	202.8	158.1	181.6	214.8
Male	68.1	76.6	86.9	101.7	76.5	86.4	100.4	77.8	89.5	106.1
Female	70.2	78.8	89.0	103.6	78.7	88.6	102.4	80.3	92.1	108.7
Alberta										
Both Sexes	167.9	186.9	207.6	234.1	186.8	207.0	232.6	178.7	190.1	204.5
Male	82.8	92.4	102.7	116.0	92.3	102.4	115.3	88.4	94.4	101.8
Female	85.0	94.5	104.9	118.0	94.5	104.6	117.3	90.2	95.8	102.7
B.C										
Both sexes	181.2	193.2	205.7	220.8	193.1	205.1	219.4	199.4	218.4	241.9
Male	89.6	95.8	102.2	110.0	95.8	101.9	109.2	98.9	108.5	120.3
Female	91.6	97.4	103.5	110.8	97.4	103.2	110.1	100.5	109.9	121.5
Yukon										
Both sexes	7.2	8.0	9.0	10.3	8.0	8.9	10.2	8.2	9.4	11.0
Male	3.5	3.9	4.3	4.9	3.9	4.3	4.8	4.0	4.6	5.3
Female	3.6	4.1	4.7	5.4	4.1	4.7	5.4	4.2	4.8	5.7
NWT										
Both sexes	20.6	23.1	25.8	29.5	23.0	25.7	29.1	23.1	25.9	29.4
Male	10.4	11.6	12.9	14.6	11.5	12.8	14.4	11.6	12.9	14.5
Female	10.2	11.5	13.0	14.9	11.5	12.9	14.7	11.5	13.0	14.9
Nunavut										
Both sexes	23.7	26.9	30.7	35.8	26.9	30.6	35.4	26.9	30.5	35.2
Male	12.2	13.7	15.6	18.2	13.7	15.6	18.0	13.7	15.5	17.9
Female	11.5	13.2	15.1	17.6	13.2	15.0	17.4	13.1	14.9	17.3

Source:
Statistics Canada Projections of the Aboriginal Population, Canada, Provinces and Territories, 91-547-XIE
http://www.statcan.ca/english/freepub/91-547-XIE/91-547-XIE2005001.pdf

Appendix Table 15: Total Aboriginal Population by Region, Province, and Projection Scenario: 2001, 2006, 2011, 2017 (continued)

Sex and Regions	Scenario D			Scenario S		
	2006	2011	2017	2006	2011	2017
Canada						
Both sexes	1,166.6	1,268.5	1,390.2	1,182.1	1,308.2	1,471.7
Male	576.9	627.5	687.7	584.9	648.0	730.0
Female	589.7	641.0	702.5	597.2	660.2	741.7
Atlantic						
Both sexes	63.3	69.6	76.9	64.2	71.7	81.2
Male	31.8	34.8	38.3	32.2	35.8	40.4
Female	31.6	34.8	38.6	32.0	35.9	40.8
Quebec						
Both	104.2	111.8	120.3	105.2	114.5	126.1
Male	52.0	55.7	59.8	52.5	57.2	62.9
Female	52.2	56.0	60.5	52.7	57.3	63.2
Ontario						
Both sexes	230.7	245.8	262.9	233.6	252.8	276.5
Male	113.2	120.8	129.3	114.8	124.6	136.7
Female	117.5	125.0	133.5	118.8	128.2	139.8
Manitoba						
Both Sexes	176.3	193.9	216.0	179.0	200.9	230.6
Male	86.7	95.3	106.1	88.0	98.8	113.5
Female	89.6	98.6	109.9	90.9	102.1	117.1
Sask.						
Both Sexes	154.9	173.4	197.8	157.4	179.9	211.4
Male	76.3	85.6	97.8	77.6	89.0	104.9
Female	78.6	87.8	100.0	79.7	90.9	106.5
Alberta						
Both Sexes	186.6	205.8	228.8	188.9	211.8	241.1
Male	92.2	101.8	113.3	93.4	104.8	119.6
Female	94.4	104.0	115.5	95.6	106.9	121.5
B.C						
Both sexes	192.8	203.7	215.2	195.4	210.0	227.5
Male	95.6	101.2	107.1	96.9	104.4	113.4
Female	97.2	102.5	108.1	98.5	105.6	114.1
Yukon						
Both sexes	8.0	8.8	9.9	8.2	9.3	10.8
Male	3.9	4.2	4.7	4.0	4.5	5.2
Female	4.1	4.6	5.2	4.2	4.8	5.6
NWT						
Both sexes	23.0	25.4	28.3	23.3	26.4	30.4
Male	11.5	12.7	14.0	11.6	13.1	15.0
Female	11.5	12.8	14.3	11.7	13.3	15.4
Nunavut						
Both sexes	26.8	30.1	34.1	27.0	30.9	36.2
Male	13.7	15.3	17.3	13.8	15.7	18.4
Female	13.1	14.8	16.8	13.2	15.2	17.8

Source:
Statistics Canada Projections of the Aboriginal Population, Canada, Provinces and Territories, 91-547-XIE
http://www.statcan.ca/english/freepub/91-547-XIE/91-547-XIE2005001.pdf

Appendix Table 16: Aboriginal Population as a Proportion of the General Population, Projection Scenario A, B, C, D, S

	Projection A				Projection B				Projection C				Projection D				Projection S			
	2001	2006	2011	2017	2001	2006	2011	2017	2001	2006	2011	2017	2001	2006	2011	2017	2001	2006	2011	2017
Canada*	3.55	3.59	3.78	4.03	3.55	3.59	3.77	4.00	3.55	3.59	3.77	4.00	3.55	3.58	3.74	3.91	3.55	3.63	3.86	4.00
Ontario*	1.88	1.82	1.85	1.90	1.88	1.82	1.85	1.88	1.88	1.82	1.85	1.89	1.88	1.82	1.83	1.85	1.88	1.84	1.89	1.95
Quebec*	1.33	1.37	1.44	1.54	1.33	1.37	1.44	1.53	1.33	1.37	1.45	1.56	1.33	1.36	1.42	1.49	1.33	1.38	1.46	1.57
BC*	4.64	4.49	4.53	4.56	4.64	4.49	4.51	4.53	4.64	4.63	4.81	5.00	4.64	4.48	4.48	4.44	4.64	4.54	4.62	4.70
Alberta*	5.64	5.67	5.96	6.32	5.64	5.67	2.01	2.12	5.64	5.42	5.46	5.52	5.64	5.66	5.91	6.18	5.64	5.73	6.08	6.51
Manitoba	14.24	14.94	16.18	17.77	14.24	14.93	16.10	17.57	14.24	14.88	16.06	17.63	####	####	15.96	17.17	14.24	####	####	18.33
Sask.*	14.13	15.66	17.91	20.99	14.13	15.65	17.83	20.74	14.13	15.95	18.49	21.97	####	####	17.66	20.23	14.13	####	####	21.62
Atlantic Provinces	2.50	2.71	2.98	3.32	2.50	2.71	2.97	3.30	2.50	2.66	2.88	3.14	2.50	2.70	2.95	3.23	2.50	2.74	3.04	3.41
NWT	55.14	52.98	81.90	59.72	55.14	52.75	55.39	58.91	55.14	52.98	82.22	59.51	####	####	80.63	57.29	55.14	####	####	61.54
Yukon	25.11	21.28	23.62	31.99	25.11	21.28	23.36	31.68	25.11	21.81	24.67	34.16	####	####	23.10	30.75	25.11	####	####	33.54
Nunavut	88.61	89.07	98.71	#####	88.61	89.07	98.39	110.28	88.61	89.07	98.07	#####	####	####	96.78	#####	88.61	####	####	#####

Note: Data for 2001 are actual population values from the 2001 Census, the values for 2006, 2011 and 2017 are projections.
* Excludes data from incompletely enumerated Indian reserves and Indian settlements, 20(

Source: Appendix Table 25
Statistics Canada. 2007. Population and dwelling counts, for Canada provinces and territories, 2006 and 2001 censuses. Population and Dwelling Count Highlight Tables. 2006 Census.
Statistics Canada Catalogue no. 97-550-XWE2006002. Ottawa. Released March 13, 2007.
http://www12.statcan.ca/english/census06/data/popdwell/Table.cfm?T=101&SR=1&S=4&O=D&RPP=25&PR=0&CMA=0
Statistics Canada Population Projections for Canada, Provinces and Territories, 91-520-XIE
http://www.statcan.ca/english/freepub/91-520-XIE/0010591-520-XIE.pdf
Statistics Canada Projections of the Aboriginal Population, Canada, Provinces and Territories, 91-547-XIE
http://www.statcan.ca/english/freepub/91-547-XIE/91-547-XIE2005001.pdf

Appendix Table 17: Aboriginal Population as a Proportion of the General Population, Projection Scenario A

	2001			2006			2011			2017		
	Aboriginal Population[2]	Total Population	% of Total Population	Aboriginal Population	Total Population	% of Total Population	Aboriginal Population	Total Population[3]	% of Total Population	Aboriginal Population	Total Population	% of Total Population
Canada[1]	1,066,500	30,007,094	3.55	1,169,500	32,547,200	3.59	1,282,800	33,909,700	3.78	1,431,800	35,537,600	4.03
Ontario[1]	214,600	11,410,046	1.88	231,200	12,682,000	1.82	248,100	13,374,700	1.85	269,400	14,212,100	1.90
Quebec[1]	96,400	7,237,479	1.33	104,500	7,641,600	1.37	113,200	7,841,400	1.44	124,200	8,052,000	1.54
British Columbia[1]	181,200	3,907,738	4.64	193,200	4,302,900	4.49	205,700	4,545,000	4.53	220,800	4,841,700	4.56
Alberta[1]	167,900	2,974,807	5.64	186,900	3,295,000	5.67	207,600	3,483,200	5.96	234,100	3,703,000	6.32
Manitoba	159,400	1,119,583	14.24	176,800	1,183,100	14.94	196,500	1,214,800	16.18	223,600	1,258,300	17.77
Saskatchewan	138,300	978,933	14.13	155,300	991,500	15.66	175,900	982,000	17.91	205,300	977,900	20.99
Atlantic Provinces	57,200	2,285,729	2.50	63,500	2,343,400	2.71	70,300	2,359,600	2.98	78,900	2,378,900	3.32
Northwest Territories	20,600	37,360	55.14	23,100	43,600	52.98	25,800	31,500	81.90	29,500	49,400	59.72
Yukon Territory	7,200	28,674	25.11	8,000	37,600	21.28	9,000	38,100	23.62	10,300	32,200	31.99
Nunavut	23,700	26,745	88.61	26,900	30,200	89.07	30,700	31,100	98.71	35,800	32,100	111.53 [4]

Note:
1) Excludes data from incompletely enumerated Indian reserves and Indian settlements, 2006
2) Actual Aboriginal population in 2001, the values for 2006, 2011 and 2017 are projections
3)Projection for the general population is Scenario 3, which uses medium growth and medium migration trends
4)Projected Aborginal population under Scenario A is higher than the projected total population under Scenario 3

Source: Statistics Canada, 2006 Census of Population.

Statistics Canada. 2007. Population and dwelling counts, for Canada provinces and territories, 2006 and 2001 censuses. Population and Dwelling Count Highlight Tables. 2006 Census.
Statistics Canada Catalogue no. 97-550-XWE2006002. Ottawa. Released March 13, 2007.
http://www12.statcan.ca/english/census06/data/popdwell/Table.cfm?T=101&SR=1&S=4&O=D&RPP=25&PR=0&CMA=0
Statistics Canada Population Projections for Canada, Provinces and Territories, 91-520-XIE
http://www.statcan.ca/english/freepub/91-520-XIE/0010591-520-XIE.pdf
Statistics Canada Projections of the Aboriginal Population, Canada, Provinces and Territories, 91-547-XIE
http://www.statcan.ca/english/freepub/91-547-XIE/91-547-XIE2005001.pdf

Appendix Table 18: Aboriginal Population as a Proportion of the General Population, Projection Scenario B

	2001			2006			2011			2017		
	Aboriginal Population[2]	Total Population	% of Total Population	Aboriginal Population	Total Population	% of Total Population	Aboriginal Population	Total Population[3]	% of Total Population	Aboriginal Population	Total Population	% of Total Population
Canada[1]	1,066,500	30,007,094	3.55	1,168,600	32,547,200	3.59	1,278,400	33,909,700	3.77	1,420,000	35,537,600	4.00
Ontario[1]	214,600	11,410,046	1.88	231,100	12,682,000	1.82	247,500	13,374,700	1.85	267,700	14,212,100	1.88
Quebec[1]	96,400	7,237,479	1.33	104,400	7,641,600	1.37	112,800	7,841,400	1.44	123,300	8,052,000	1.53
British Columbia[1]	181,200	3,907,738	4.64	193,100	4,302,900	4.49	205,100	4,545,000	4.51	219,400	4,841,700	4.53
Alberta[1]	167,900	2,974,807	5.64	186,800	3,295,000	5.67	70,100	3,483,200	2.01	78,400	3,703,000	2.12
Manitoba	159,400	1,119,583	14.24	176,600	1,183,100	14.93	195,600	1,214,800	16.10	221,100	1,258,300	17.57
Saskatchew	138,300	978,933	14.13	155,200	991,500	15.65	175,100	982,000	17.83	202,800	977,900	20.74
Atlantic Provinces	57,200	2,285,729	2.50	63,400	2,343,400	2.71	70,100	2,359,600	2.97	78,400	2,378,900	3.30
Northwest Territories	20,600	37,360	55.14	23,000	43,600	52.75	25,700	46,400	55.39	29,100	49,400	58.91
Yukon Territory	7,200	28,674	25.11	8,000	37,600	21.28	8,900	38,100	23.36	10,200	32,200	31.68
Nunavut	23,700	26,745	88.61	26,900	30,200	89.07	30,600	31,100	98.39	35,400	32,100	110.28 [4]

Note:
1) Excludes data from incompletely enumerated Indian reserves and Indian settlements, 2006
2) Actual Aboriginal population in 2001, the values for 2006, 2011 and 2017 are projections
3)Projection for the general population is Scenario 3, which uses medium growth and medium migration trends
4) Projected native population is higher than the projections for the total population
Source: Statistics Canada, 2006 Census of Population.
Statistics Canada. 2007. Population and dwelling counts, for Canada provinces and territories, 2006 and 2001 censuses. Population and Dwelling Count Highlight Tables. 2006 Statistics Canada Catalogue no. 97-550-XWE2006002. Ottawa. Released March 13, 2007. http://www12.statcan.ca/english/census06/data/popdwell/Table.cfm?T=101&SR=1&S=4&O=D&RPP=25&PR=0&CMA=0
Statistics Canada Population Projections for Canada, Provinces and Territories, 91-520-XIE http://www.statcan.ca/english/freepub/91-520-XIE/0010591-520-XIE.pdf
Statistics Canada Projections of the Aboriginal Population, Canada, Provinces and http://www.statcan.ca/english/freepub/91-547-XIE/91-547-XIE2005001.pdf

Appendix Table 19: Aboriginal Population as a Proportion of the General Population, Projection Scenario C

	2001			2006			2011			2017		
	Aboriginal Population[2]	Total Population	% of Total Population	Aboriginal Population	Total Population	% of Total Population	Aboriginal Population	Total Population[3]	% of Total Population	Aboriginal Population	Total Population	% of Total Population
Canada[1]	1,066,500	30,007,094	3.55	1,168,900	32,547,200	3.59	1,278,400	33,909,700	3.7700127	1,420,000	35,537,600	4.00
Ontario[1]	214,600	11,410,046	1.88	231,300	12,682,000	1.82	248,000	13,374,700	1.8542472	268,500	14,212,100	1.89
Quebec[1]	96,400	7,237,479	1.33	104,900	7,641,600	1.37	113,900	7,841,400	1.4525467	126,000	8,052,000	1.56
British Columbia[1]	181,200	3,907,738	4.64	199,400	4,302,900	4.63	218,400	4,545,000	4.8052805	241,900	4,841,700	5.00
Alberta[1]	167,900	2,974,807	5.64	178,700	3,295,000	5.42	190,100	3,483,200	5.4576252	204,500	3,703,000	5.52
Manitoba	159,400	1,119,583	14.24	176,000	1,183,100	14.88	195,100	1,214,800	16.060257	221,800	1,258,300	17.63
Saskatchewan	138,300	978,933	14.13	158,100	991,500	15.95	181,600	982,000	18.492872	214,800	977,900	21.97
Atlantic Provinces	57,200	2,285,729	2.50	62,400	2,343,400	2.66	67,900	2,359,600	2.8776064	74,800	2,378,900	3.14
Northwest Territories	20,600	37,360	55.14	23,100	43,600	52.98	25,900	31,500	82.222222	29,400	49,400	59.51
Yukon	7,200	28,674	25.11	8,200	37,600	21.81	9,400	38,100	24.671916	11,000	32,200	34.16
Nunavut	23,700	26,745	88.61	26,900	30,200	89.07	30,500	31,100	98.07074	35,200	32,100	109.66

[4]

Note:
1) Excludes data from incompletely enumerated Indian reserves and Indian settlements, 2006
2) Actual Aboriginal population in 2001, the values for 2006, 2011 and 2017 are projections
3)Projection for the general population is Scenario 3, which uses medium growth and medium migration trends
4) Projections for the native population are higher than those of the general population
Source: Statistics Canada, 2006 Census of Population.
Statistics Canada. 2007. Population and dwelling counts, for Canada provinces and territories, 2006 and 2001 censuses. Population and Dwelling Count Highlight Tables. 2006 Census.
Statistics Canada Catalogue no. 97-550-XWE2006002. Ottawa. Released March 13, 2007.
http://www12.statcan.ca/english/census06/data/popdwell/Table.cfm?T=101&SR=1&S=4&O=D&RPP=25&PR=0&CMA=0
Statistics Canada Population Projections for Canada, Provinces and Territories, 91-520-XIE
http://www.statcan.ca/english/freepub/91-520-XIE/0010591-520-XIE.pdf
Statistics Canada Projections of the Aboriginal Population, Canada, Provinces and Territories, 91-547-XIE
http://www.statcan.ca/english/freepub/91-547-XIE/91-547-XIE2005001.pdf

Appendix Table 20: Aboriginal Population as a Proportion of the General Population, Projection Scenario D

	2001			2006			2011			2017		
	Aboriginal Population[2]	Total Population	% of Total Population	Aboriginal Population	Total Population	% of Total Population	Aboriginal Population	Total Population[3]	% of Total Population	Aboriginal Population	Total Population	% of Total Population
Canada[1]	1,066,500	########	3.55	1,166,600	########	3.58	1,268,500	33,909,700	3.740818	1,390,200	########	3.91
Ontario[1]	214,600	########	1.88	230,700	########	1.82	245,800	13,374,700	1.837798	262,900	########	1.85
Quebec[1]	96,400	7,237,479	1.33	104,200	7,641,600	1.36	111,800	7,841,400	1.425766	120,300	8,052,000	1.49
BC[1]	181,200	3,907,738	4.64	192,800	4,302,900	4.48	203,700	4,545,000	4.481848	215,200	4,841,700	4.44
Alberta[1]	167,900	2,974,807	5.64	186,600	3,295,000	5.66	205,800	3,483,200	5.90836	228,800	3,703,000	6.18
Manitoba	159,400	1,119,583	14.24	176,300	1,183,100	14.90	193,900	1,214,800	15.96148	216,000	1,258,300	17.17
Sask.[1]	138,300	978,933	14.13	154,900	991,500	15.62	173,400	982,000	17.65784	197,800	977,900	20.23
Atlantic Provinces	57,200	2,285,729	2.50	63,300	2,343,400	2.70	69,600	2,359,600	2.949652	76,900	2,378,900	3.23
NWT	20,600	37,360	55.14	23,000	43,600	52.75	25,400	31,500	80.63492	28,300	49,400	57.29
Yukon	7,200	28,674	25.11	8,000	37,600	21.28	8,800	38,100	23.09711	9,900	32,200	30.75
Nunavut	23,700	26,745	88.61	26,800	30,200	88.74	30,100	31,100	96.78457	34,100	32,100	106.23

[4]

Note:
1) Excludes data from incompletely enumerated Indian reserves and Indian settlements, 2006
2) Actual Aboriginal population in 2001, the values for 2006, 2011 and 2017 are projections
3)Projection for the general population is Scenario 3, which uses medium growth and medium migration trends
4) Projections for the native population are higher than those of the general population
Source: Statistics Canada, 2006 Census of Population.
Statistics Canada. 2007. Population and dwelling counts, for Canada provinces and territories, 2006 and 2001 censuses. Population and Dwelling Count Highlight Tables. 2006 Census.
Statistics Canada Catalogue no. 97-550-XWE2006002. Ottawa. Released March 13, 2007.
http://www12.statcan.ca/english/census06/data/popdwell/Table.cfm?T=101&SR=1&S=4&O=D&RPP=25&PR=0&CMA=0
Statistics Canada Population Projections for Canada, Provinces and Territories, 91-520-XIE
http://www.statcan.ca/english/freepub/91-520-XIE/0010591-520-XIE.pdf
Statistics Canada Projections of the Aboriginal Population, Canada, Provinces and Territories, 91-547-XIE
http://www.statcan.ca/english/freepub/91-547-XIE/91-547-XIE2005001.pdf

Appendix Table 21: Aboriginal Population as a Proportion of the General Population, Projection Scenario S

	2001			2006			2011			2017		
	Aboriginal Population[2]	Total Population	% of Total Population	Aboriginal Population	Total Population	% of Total Population	Aboriginal Population	Total Population[3]	% of Total Population	Aboriginal Population	Total Population	% of Total Population
Canada[1]	1,066,500	30,007,094	3.55	1,182,100	32,547,200	3.63	1,308,200	33,909,700	3.86	1,420,000	35,537,600	4.00
Ontario[1]	214,600	11,410,046	1.88	233,600	12,682,000	1.84	252800	13,374,700	1.89	276500	14,212,100	1.95
Quebec[1]	96,400	7,237,479	1.33	105,200	7,641,600	1.38	114500	7,841,400	1.46	126100	8,052,000	1.57
British	181,200	3,907,738	4.64	195,400	4,302,900	4.54	210000	4,545,000	4.62	227500	4,841,700	4.70
Alberta[1]	167,900	2,974,807	5.64	188,900	3,295,000	5.73	211800	3,483,200	6.08	241100	3,703,000	6.51
Manitoba	159,400	1,119,583	14.24	179,000	1,183,100	15.13	200900	1,214,800	16.54	230600	1,258,300	18.33
Sask.[1]	138,300	978,933	14.13	157,400	991,500	15.87	179900	982,000	18.32	211400	977,900	21.62
Atlantic Provinces	57,200	2,285,729	2.50	64,200	2,343,400	2.74	71700	2,359,600	3.04	81200	2,378,900	3.41
Northwest Territories	20,600	37,360	55.14	23,300	43,600	53.44	26400	31,500	83.81	30400	49,400	61.54
Yukon Territory	7,200	28,674	25.11	8,200	37,600	21.81	9300	38,100	24.41	10800	32,200	33.54
Nunavut	23,700	26,745	88.61	27,000	30,200	89.40	30900	31,100	99.36	36200	32,100	112.77 [4]

Note:
1) Excludes data from incompletely enumerated Indian reserves and Indian settlements, 2006
2) Actual Aboriginal population in 2001, the values for 2006, 2011 and 2017 are projections
3)Projection for the general population is Scenario 3, which uses medium growth and medium migration trends
4)Projected Aboriginal population is higher than the projections for the total population

Source: Statistics Canada, 2001 Census of Population.
Statistics Canada. 2007. Population and dwelling counts, for Canada provinces and territories, 2001 census. Population and Dwelling Count Highlight Tables. 2001 C
Statistics Canada Catalogue no. 97-550-XWE2006002. Ottawa. Released March 13, 2007.
http://www12.statcan.ca/english/census06/data/popdwell/Table.cfm?T=101&SR=1&S=4&O=D&RPP=25&PR=0&CMA=0
Statistics Canada Population Projections for Canada, Provinces and Territories, 91-520-XIE
http://www.statcan.ca/english/freepub/91-520-XIE/0010591-520-XIE.pdf
Statistics Canada Projections of the Aboriginal Population, Canada, Provinces and Territories, 91-547-XIE
http://www.statcan.ca/english/freepub/91-547-XIE/91-547-XIE2005001.pdf

Appendix Table 22: Projections of Population, Participation Rate and Labour Force, Canada, Provinces and Territories, 2001 and 2017

Panel A: Canada, 15+

	2001	2017	% Change 2001-2017	Absolute Change 2001-2017
Total Population[1,4]	24,281,560	30,057,800	23.8	5,776,240
Aboriginal Population[2,5]	715,500	1,013,900	41.7	298,400
Non-Aboriginal Population	23,566,060	29,043,900	23.2	5,477,840
% of pop that is Identity	2.95	3.37	14.5	0.43
Total Labour Force[3,6]	16,109,770	19,296,000	19.8	3,186,230
Aboriginal Labour Force	439,317	Scenario-Dependent	-	-
Non-Aboriginal Labour Force	15,670,453	-	-	-
Total Participation Rate[1,6]	66.4	65.5	-1.4	-0.9
Aboriginal Participation Rate[2]	61.4	Scenario-Dependent	-	-
Non-Aboriginal Participation	66.6	-	-	-
Total Employment Rate[1, 9]	61.5	61.5	-	-
Aboriginal Employment Rate[2]	49.7	Scenario-Dependent	-	-
Non- Aboriginal Employment	61.9	61.9	-	-

Panel B: Canada, Population aged 15-64

	2001	2017	% Change 2001-2017	Absolute Change 2001-2017
Total Population[1,4]	20,393,010	24,070,000	18.0	3,676,990
Aboriginal Population[2,5]	673,000	921,400	36.9	248,400
Non-Aboriginal Population	19,720,010	23,148,600	17.4	3,428,590
% of pop that is Identity Aboriginal	3.30	3.83	16.0	0.53
Total Labour Force[7]	16,061,535	18,223,397	13.5	2,161,862
Aboriginal Labour Force	420,692	Scenario-Dependent	-	-
Non-Aboriginal Labour Force	15,640,842	-	-	-
Total Participation Rate[8]	75.7	-	-	-
Aboriginal Participation Rate[8]	62.5	Scenario-Dependent	-	-
Non-Aboriginal Participation Rate	76.1	-	-	-

Panel C: Atlantic Provinces (NS, NB, NFLD, PEI)

	2,001.0	2,017	% Change 2001-2017	solute Change 2001-20
Total Population[1,4]	1,875,185	2,054,600	9.6	179,415
Aboriginal Population[2,5]	40,700	57,800	42.0	17,100
Non-Aboriginal Population	1,834,485	1,996,800	8.8	162,315
% of pop that is Identity	2.17	2.81	29.6	0.64
Total Labour Force	1,155,114	1,265,634	9.6	110,520
Aboriginal Labour Force	24,868	Scenario-Dependent	-	-
Non-Aboriginal Labour Force	1,130,246	-	-	-
Total Participation Rate[1,9]	61.6	61.6	-	-
Aboriginal Participation Rate[2]	61.1	Scenario-Dependent	-	-
Non-Aboriginal Participation	61.6	-	-	-
Total Employment Rate[1, 9]	53.1	53.1	-	-
Aboriginal Employment Rate[2]	43.9	Scenario-Dependent	-	-
Non- Aboriginal Employment Rate[9]	53.3	53.3	-	-

Appendix Table 22: Projections of Population, Participation Rate and Labour Force, Canada, Provinces and Territories, 2001 and 2017

Panel D: Quebec, Population Aged 15+

	2001	2017	% Change 2001-2017	Absolute Change 2001-2017
Total Population[1,4]	5,945,900	6,877,600	15.7	931,700
Aboriginal Population[2,5]	67,300	74,200	10.3	6,900
Non-Aboriginal Population	5,878,600	6,803,400	15.7	924,800
% of pop that is Identity Aboriginal	1.13	1.08	-4.7	-0.05
Total Labour Force	3,817,268	4,415,419	15.7	598,151
Aboriginal Labour Force	41,322	Scenario-Dependent	-	-
Non-Aboriginal Labour Force	3,775,946	-	-	-
Total Participation Rate[1,9]	64.2	64.2	-	-
Aboriginal Participation Rate[2]	61.4	Scenario-Dependent	-	-
Non-Aboriginal Participation Rate[9]	64.2	-	-	-
Total Employment Rate[1, 9]	58.9	58.9	-	-
Aboriginal Employment Rate[2]	49.7	Scenario-Dependent	-	-
Non- Aboriginal Employment Rate[9]	59.0	59.0	-	-

Panel E: Ontario, Population Aged 15+

	2001	2017	% Change 2001-	Absolute Change
Total Population[1,4]	9,177,295	11,998,500	30.7	2,821,205
Aboriginal Population[2,5]	151,000	199,500	32.1	48,500
Non-Aboriginal Population	9,026,295	11,799,000	30.7	2,772,705
% of pop that is Identity Aboriginal	1.65	1.66	1.1	0.02
Total Labour Force	6,176,320	8,074,991	30.7	1,898,671
Aboriginal Labour Force	89,090	Scenario-Dependent	-	-
Non-Aboriginal Labour Force	6,087,230	-	-	-
Total Participation Rate[1,9]	67.3	67.3	-	-
Aboriginal Participation Rate[2]	59.0	Scenario-Dependent	-	-
Non-Aboriginal Participation Rate[9]	67.4	-	-	-
Total Employment Rate[1, 9]	64.6	64.6	-	-
Aboriginal Employment Rate[2]	55.1	Scenario-Dependent	-	-
Non- Aboriginal Employment Rate[9]	64.8	64.8	-	-

Panel F: Manitoba, Population Aged 15+

	2001	2017	% Change 2001-	Absolute Change
Total Population[1,4]	885,870	1,034,900	16.8	149,030
Aboriginal Population[2,5]	102,400	151,100	47.6	48,700
Non-Aboriginal Population	783,470	883,800	12.8	100,330
% of pop that is Identity Aboriginal	11.56	14.60	26.3	3.04
Total Labour Force	596,191	696,488	16.8	100,297
Aboriginal Labour Force	60,416	Scenario-Dependent	-	-
Non-Aboriginal Labour Force	535,775	-	-	-
Total Participation Rate[1,9]	67.3	67.3	-	-
Aboriginal Participation Rate[2]	59.0	Scenario-Dependent	-	-
Non-Aboriginal Participation Rate[9]	68.4	-	-	-
Total Employment Rate[1, 9]	63.3	63.3	-	-
Aboriginal Employment Rate[2]	47.8	Scenario-Dependent	-	-
Non- Aboriginal Employment Rate[9]	65.3	65.3	-	-

Appendix Table 22: Projections of Population, Participation Rate and Labour Force, Canada, Provinces and Territories, 2001 and 2017

Panel G: Saskatchewan, Population Aged 15+

	2001	2017	% Change 2001-2017	Absolute Change 2001-2017
Total Population[1,4]	771,710	803,600	4.1	31,890
Aboriginal Population[2,5]	84,100	135,000	60.5	50,900
Non-Aboriginal Population	687,610	668,600	-2.8	-19,010
% of pop that is Identity Aboriginal	10.90	16.80	54.2	5.90
Total Labour Force	523,219	544,841	4.1	21,621
Aboriginal Labour Force	45,835	Scenario-Dependent	-	-
Non-Aboriginal Labour Force	477,385	-	-	-
Total Participation Rate[1,9]	67.8	67.8	-	-
Aboriginal Participation Rate[2]	54.5	Scenario-Dependent	-	-
Non-Aboriginal Participation Rate[9]	69.4	-	-	-
Total Employment Rate[1, 9]	63.5	63.5	-	-
Aboriginal Employment Rate[2]	42.0	Scenario-Dependent	-	-
Non- Aboriginal Employment Rate[9]	66.1	66.1	-	-

Panel H: Alberta, Population Aged 15+

	2001	2017	% Change 2001-2017	Absolute Change 2001-2017
Total Population[1,4]	2,357,210	3,061,000	29.9	703,790
Aboriginal Population[2,5]	110,500	171,200	54.9	60,700
Non-Aboriginal Population	2,246,710	2,889,800	28.6	643,090
% of pop that is Identity Aboriginal	4.69	5.59	19.3	0.91
Total Labour Force	1,723,121	2,237,591	29.9	514,470
Aboriginal Labour Force	70,941	Scenario-Dependent	-	-
Non-Aboriginal Labour Force	1,652,180	-	-	-
Total Participation Rate[1,9]	73.1	73.1	-	-
Aboriginal Participation Rate[2]	64.2	Scenario-Dependent	-	-
Non-Aboriginal Participation Rate[9]	73.5	-	-	-
Total Employment Rate[1, 9]	69.3	69.3	-	-
Aboriginal Employment Rate[2]	54.6	Scenario-Dependent	-	-
Non- Aboriginal Employment Rate[9]	70.0	70.0	-	-

Panel I, British Columbia, Population Aged 15+

	2001	2017	% Change 2001-2017	Absolute Change 2001-2017
Total Population[1,4]	3,201,665	4,140,200	29.3	938,535
Aboriginal Population[2,5]	126,800	161,500	27.4	34,700
Non-Aboriginal Population	3,074,865	3,978,700	29.4	903,835
% of pop that is Identity Aboriginal	3.96	3.90	-1.5	-0.06
Total Labour Force	2,087,486	2,699,410	29.3	611,925
Aboriginal Labour Force	79,757	Scenario-Dependent	-	-
Non-Aboriginal Labour Force	2,007,728	-	-	-
Total Participation Rate[1,9]	65.2	65.2	-	-
Aboriginal Participation Rate[2]	62.9	Scenario-Dependent	-	-
Non-Aboriginal Participation Rate[9]	65.3	-	-	-
Total Employment Rate[1, 9]	59.6	59.6	-	-
Aboriginal Employment Rate[2]	48.7	Scenario-Dependent	-	-
Non- Aboriginal Employment Rate[9]	60.0	60.0	-	-

Appendix Table 22: Projections of Population, Participation Rate and Labour Force, Canada, Provinces and Territories, 2001 and 2017

Panel J: The Territories (Nunavut, Yukon, NWT), Population Aged 15+

	2001	2017	% Change 2001-	Absolute Change
Total Population[1,4]	72,530	87,200	20.2	14,670
Aboriginal Population[2,5]	32,800	49,100	49.7	16,300
% of pop that is Identity Aboriginal	45.22	56.31	24.5	11.08
Total Labour Force	50,553	60,778	20.2	10,225
Aboriginal Labour Force	20,664	Scenario-Dependent	-	-
Non-Aboriginal Labour Force	29,889	-	-	-
Total Participation Rate[1,9]	69.7	69.7	-	-
Aboriginal Participation Rate[2]	63.0	Scenario-Dependent	-	-
Non-Aboriginal Participation Rate[9]	75.2	-	-	-
Total Employment Rate[1, 9]	61.3	61.3	-	-
Aboriginal Employment Rate[2]	50.2	Scenario-Dependent	-	-
Non- Aboriginal Employment Rate[9]	70.5	70.5	-	-

Notes:
The participation and employment rates in the Atlantic provinces and the territories are calculated by taking the average of the employment rates of each individual territory and weighting each based on the working age population
Scenario 1: The participation rate of Aboriginals is 61.4 per cent in 2001. Projections for the Aboriginal labour force assume that the Aboriginal participation rate achieves parity with the non-Aboriginal employment rate by 2017 .
Scenario 2: Projections for the Aboriginal labour force assume that the participation rate of the non-Aboriginal population does not change from the 2001 rate of 66.6 per cent and the Aboriginal participation level for 2017 reaches the midpoint (64.0 per cent) between the Aboriginal (61.4 per cent) and the non-Aboriginal (66.6 per cent) participation rates for 2001.
Scenario 3: Projections for the Aboriginal labour assume that the participation rate of Aboriginals (61.4 per cent in 2001) and non-Aboriginals (66.6 per cent in 2001) remain constant.
Scenario 4: Projections assume that the Aboriginals attain the participation rate of the general population projected in Dungan and Murphy for 2017 (65.6 per cent).

Sources:
1) Statistics Canada, Census 2001
2) Census Aboriginal Population Profiles, Statisticis Canada, Census 2001
3) Average of Labour force over the 12 months in 2001, Statistics Canada
4) Statistics Canada Population Projections for Canada, Provinces and Territories, 91-520-XIE
5) Statistics Canada Projections of the Aboriginal Population, Canada, Provinces and Territories, 91-547-XIE
6) Projection uses the projected labour force given in Peter Dungan and Steve Murphy Long Term Outlook for the Canadian
7)Calculated using 2001 participation rates and 2001 and 2017 populations
8) Calculated from the Public Use Microdata files, Census 2001
9) The rate for 2017 is assumed to be the same as that of 2001.

Appendix Table 23: Scenario-Based Projections of Aboriginal Labour Force in 2017, Canada, Provinces and Territories, Working Age Population unless otherwise noted

Panel A: Canada, 15+

	2001	2017	% Change 2001-2017	Absolute Change 2001-2017	Aboriginal contribution to increased labour force, %
Scenario 1					
Aboriginal Participation Rate	61.4	**61.4**	0.0	0.0	-
Aboriginal Labour Force	439,317	622,535	41.7	183,218	5.75
Scenario 2					
Aboriginal Participation Rate	61.4	**64.0**	4.2	2.6	-
Aboriginal Labour Force	439,317	648,712	47.7	209,395	6.57
Scenario 3					
Aboriginal Participation Rate	61.4	**66.6**	8.4	5.2	-
Aboriginal Labour Force	439,317	674,889	53.6	235,572	7.39
Scenario 4					
Aboriginal Participation Rate	61.4	**65.5**	6.7	4.1	-
Aboriginal Labour Force	439,317	664,105	51.2	224,788	7.05

Panel B: Canada, Population aged 15-64

	2001	2017	% Change 2001-2017	Absolute Change 2001-2017	Aboriginal contribution to increased labour force, %
Scenario 1					
Aboriginal Participation Rate	62.5	**62.5**	0.0	0.0	-
Aboriginal Labour Force	420,692	575,967	36.9	155,275	7.18
Scenario 2					
Aboriginal Participation Rate	62.5	**69.3**	10.9	6.8	-
Aboriginal Labour Force	420,692	638,576	51.8	217,884	10.08
Scenario 3					
Aboriginal Participation Rate	62.5	**76.1**	21.7	13.6	-
Aboriginal Labour Force	420,692	701,185	66.7	280,493	12.97

Panel C: Atlantic Provinces (NS, NB, NFLD, PEI), 15+

	2001	2017	% Change 2001-2017	Absolute Change 2001-	Aboriginal contribution to increased labour force,
Scenario 1					
Aboriginal Participation Rate	61.1	**61.1**	0.0	0.0	-
Aboriginal Labour Force	24,868	35,316	42.0	10,448	9.45
Scenario 2					
Aboriginal Participation Rate	61.1	**61.4**	0.4	0.3	-
Aboriginal Labour Force	24,868	35,464	42.6	10,596	9.59
Scenario 3					
Aboriginal Participation Rate	61.1	**61.6**	0.8	0.5	-
Aboriginal Labour Force	24,868	35,611	43.2	10,744	9.72

Panel D: Quebec, Population Aged 15+

	2001	2017	% Change 2001-2017	Absolute Change 2001-2017	Aboriginal contribution to increased labour force, %
Scenario 1					
Aboriginal Participation Rate	61.4	**61.4**	0.0	0.0	-
Aboriginal Labour Force	41,322	45,559	10.3	4,237	0.71
Scenario 2					
Aboriginal Participation Rate	61.4	**62.8**	2.3	1.4	-
Aboriginal Labour Force	41,322	46,609	12.8	5,287	0.88
Scenario 3					
Aboriginal Participation Rate	61.4	**64.2**	4.6	2.8	-
Aboriginal Labour Force	41,322	47,660	15.3	6,338	1.06

Appendix Table 23: Scenario-Based Projections of Aboriginal Labour Force in 2017, Canada, Provinces and Territories, Working Age Population unless otherwise noted

Panel E: Ontario, Population Aged 15+

	2001	2017	% Change 2001-2017	Absolute Change 2001-2017	Aboriginal contribution to increased labour force, %
Scenario 1					
Aboriginal Participation Rate	59.0	**59.0**	0.0	0.0	-
Aboriginal Labour Force	89,090	117,705	32.1	28,615	1.51
Scenario 2					
Aboriginal Participation Rate	59.0	**63.2**	7.2	4.2	-
Aboriginal Labour Force	89,090	126,123	41.6	37,033	1.95
Scenario 3					
Aboriginal Participation Rate	59.0	**67.4**	14.3	8.4	-
Aboriginal Labour Force	89,090	134,541	51.0	45,451	2.39

Panel F: Manitoba, Population Aged 15+

	2001	2017	% Change 2001-2017	Absolute Change 2001-2017	Aboriginal contribution to increased labour force, %
Scenario 1					
Aboriginal Participation Rate	59.0	**59.0**	0.0	0.0	-
Aboriginal Labour Force	60,416	89,149	47.6	28,733	28.65
Scenario 2					
Aboriginal Participation Rate	59.0	**63.7**	8.0	4.7	-
Aboriginal Labour Force	60,416	96,239	59.3	35,823	35.72
Scenario 3					
Aboriginal Participation Rate	59.0	**68.4**	15.9	9.4	-
Aboriginal Labour Force	60,416	103,329	71.0	42,913	42.79

Panel G: Saskatchewan, Population Aged 15+

	2001	2017	% Change 2001-2017	Absolute Change 2001-2017	Aboriginal contribution to increased labour force, %
Scenario 1					
Aboriginal Participation Rate	54.5	**54.5**	0.0	0.0	-
Aboriginal Labour Force	45,835	73,575	60.5	27,741	128.30
Scenario 2					
Aboriginal Participation Rate	54.5	**62.0**	13.7	7.5	-
Aboriginal Labour Force	45,835	83,651	82.5	37,816	174.90
Scenario 3					
Aboriginal Participation Rate	54.5	**69.4**	27.4	14.9	-
Aboriginal Labour Force	45,835	93,726	104.5	47,892	221.50

Panel H: Alberta, Population Aged 15+

	2001	2017	% Change 2001-2017	Absolute Change 2001-2017	Aboriginal contribution to increased labour force, %
Scenario 1					
Aboriginal Participation Rate	64.2	**64.2**	0.0	0.0	-
Aboriginal Labour Force	70,941	109,910	54.9	38,969	7.57
Scenario 2					
Aboriginal Participation Rate	64.2	**68.9**	7.3	4.7	-
Aboriginal Labour Force	70,941	117,903	66.2	46,962	9.13
Scenario 3					
Aboriginal Participation Rate	64.2	**73.5**	14.5	9.3	-
Aboriginal Labour Force	70,941	125,897	77.5	54,956	10.68

Appendix Table 23: Scenario-Based Projections of Aboriginal Labour Force in 2017, Canada, Provinces and Territories, Working Age Population unless otherwise noted

Panel I, British Columbia, Population Aged 15+

	2001	2017	% Change 2001-2017	Absolute Change 2001-2017	Aboriginal contribution to increased labour force, %
Scenario 1					
Aboriginal Participation Rate	62.9	**62.9**	0.0	0.0	-
Aboriginal Labour Force	79,757	101,584	27.4	21,826	3.57
Scenario 2					
Aboriginal Participation Rate	62.9	**64.1**	1.9	1.2	-
Aboriginal Labour Force	79,757	103,517	29.8	23,760	3.88
Scenario 3					
Aboriginal Participation Rate	62.9	**65.3**	3.8	2.4	-
Aboriginal Labour Force	79,757	105,451	32.2	25,694	4.20

Panel J: The Territories (Nunavut, Yukon, NWT), Population Aged 15+

	2001	2017	% Change 2001-2017	Absolute Change 2001-2017	Aboriginal contribution to increased labour force, %
Scenario 1					
Aboriginal Participation Rate	63.0	**63.0**	0.0	0.0	-
Aboriginal Labour Force	20,664	30,933	49.7	10,269	100.43
Scenario 2					
Aboriginal Participation Rate	63.0	**69.1**	9.7	6.1	-
Aboriginal Labour Force	20,664	33,936	64.2	13,272	129.80
Scenario 3					
Aboriginal Participation Rate	63.0	**75.2**	19.4	12.2	-
Aboriginal Labour Force	20,664	36,939	78.8	16,275	159.16

Notes:
Scenario 1: Projections for the Aboriginal labour assume that the participation rate of Aboriginals and non-Aboriginals remain constant.
Scenario 2: Projections for the Aboriginal labour force assume that the participation rate of the non-Aboriginal population does not change from the 2001 rate and the Aboriginal participation level for 2017 reaches the midpoint between the Aboriginal and the non-Aboriginal participation rates for 2001.
Scenario 3: Projections for the Aboriginal labour force assume that the Aboriginal participation rate achieves parity with the non-Aboriginal employment rate by 2017 .
Scenario 4: Projections assume that the Aboriginals attain the participation rate of the general population projected in Dungan and Murphy for 2017 (65.6 per cent).

Source: Appendix Table 22

Appendix Table 24: Scenario-Based Projections of Aboriginal Employment in 2017, Canada, Provinces and Territories, Working Age Population unless otherwise noted

Panel A: Canada, Working Age Population

	2001	2017	% Change 2001-2017	Absolute Change 2001-2017	Aboriginal contribution to increased labour force, %
Scenario 1					
Aboriginal Employment Rate	49.7	**49.7**	0.0	0.0	
Aboriginal Employment	355,604	503,908	41.7	148,305	-4.17
Scenario 2					
Aboriginal Employment Rate	49.7	**55.8**	12.2	6.1	-
Aboriginal Employment	355,604	565,545	59.0	209,941	5.91
Scenario 3					
Aboriginal Employment Rate	49.7	**61.9**	24.5	12.2	
Aboriginal Employment	355,604	627,181	76.4	271,577	-7.64

Panel C: Atlantic Provinces (NS, NB, NFLD, PEI)

	2001	2017	% Change 2001-2017	Absolute Change 2001-	Aboriginal contribution to increased labour
Scenario 1					
Aboriginal Employment Rate	43.9	**43.9**	0.0	0.0	-
Aboriginal Employment	17,867	25,374	42.0	7,507	7.88
Scenario 2					
Aboriginal Employment Rate	43.9	**48.6**	10.7	4.7	-
Aboriginal Employment	17,867	28,092	57.2	10,225	10.73
Scenario 3					
Aboriginal Employment Rate	43.9	**53.3**	21.4	9.4	-
Aboriginal Employment	17,867	30,810	72.4	12,942	13.59

Panel D: Quebec, Population Aged 15+

	2001	2017	% Change 2001-2017	Absolute Change 2001-2017	Aboriginal contribution to increased labour force, %
Scenario 1					
Aboriginal Employment Rate	49.7	**49.7**	0.0	0.0	
Aboriginal Employment	33,448	36,877	10.3	3,429	-0.62
Scenario 2					
Aboriginal Employment Rate	49.7	**54.4**	9.4	4.7	-
Aboriginal Employment	33,448	40,330	20.6	6,882	1.25
Scenario 3					
Aboriginal Employment Rate	49.7	**59.0**	18.7	9.3	
Aboriginal Employment	33,448	43,782	30.9	10,334	-1.88

Appendix Table 24: Scenario-Based Projections of Aboriginal Employment in 2017, Canada, Provinces and Territories, Working Age Population unless otherwise noted

Panel E: Ontario, Population Aged 15+

	2001	2017	% Change 2001-2017	Absolute Change 2001-2017	Aboriginal contribution to increased labour force, %
Scenario 1					
Aboriginal Employment Rate	55.1	**55.1**	0.0	0.0	
Aboriginal Employment	83,201	109,925	32.1	26,724	-1.47
Scenario 2					
Aboriginal Employment Rate	55.1	**59.9**	8.8	4.8	-
Aboriginal Employment	83,201	119,559	43.7	36,358	1.99
Scenario 3					
Aboriginal Employment Rate	55.1	**64.8**	17.5	9.7	
Aboriginal Employment	83,201	129,194	55.3	45,993	-2.52

Panel F: Manitoba, Population Aged 15+

	2001	2017	% Change 2001-2017	Absolute Change 2001-2017	Aboriginal contribution to increased labour force, %
Scenario 1					
Aboriginal Employment Rate	47.8	**47.8**	0.0	0.0	
Aboriginal Employment	48,947	72,226	47.6	23,279	-24.68
Scenario 2					
Aboriginal Employment Rate	47.8	**56.6**	18.3	8.8	-
Aboriginal Employment	48,947	85,467	74.6	36,519	38.71
Scenario 3					
Aboriginal Employment Rate	47.8	**65.3**	36.7	17.5	-
Aboriginal Employment	48,947	98,707	101.7	49,760	52.75

Panel G: Saskatchewan, Population Aged 15+

	2001	2017	% Change 2001-2017	Absolute Change 2001-2017	Aboriginal contribution to increased labour force, %
Scenario 1					
Aboriginal Employment Rate	42.0	**42.0**	0.0	0.0	-
Aboriginal Employment	35,322	56,700	60.5	21,378	105.57
Scenario 2					
Aboriginal Employment Rate	42.0	**54.1**	28.7	12.1	-
Aboriginal Employment	35,322	72,987	106.6	37,665	186.00
Scenario 3					
Aboriginal Employment Rate	42.0	**66.1**	57.5	24.1	-
Aboriginal Employment	35,322	89,275	152.7	53,953	266.43

Panel H: Alberta, Population Aged 15+

	2001	2017	% Change 2001-2017	Absolute Change 2001-2017	Aboriginal contribution to increased labour force, %
Scenario 1					
Aboriginal Employment Rate	54.6	**54.6**	0.0	0.0	-
Aboriginal Employment	60,333	93,475	54.9	33,142	6.80
Scenario 2					
Aboriginal Employment Rate	54.6	**62.3**	14.1	7.7	-
Aboriginal Employment	60,333	106,677	76.8	46,344	9.50
Scenario 3					
Aboriginal Employment Rate	54.6	**70.0**	28.2	15.4	-
Aboriginal Employment	60,333	119,879	98.7	59,546	12.21

Appendix Table 24: Scenario-Based Projections of Aboriginal Employment in 2017, Canada, Provinces and Territories, Working Age Population unless otherwise noted

Panel I, British Columbia, Population Aged 15+

	2001	2017	% Change 2001-2017	Absolute Change 2001-2017	Aboriginal contribution to increased labour force, %
Scenario 1					
Aboriginal Employment Rate	48.7	**48.7**	0.0	0.0	-
Aboriginal Employment	61,752	78,651	27.4	16,899	3.02
Scenario 2					
Aboriginal Employment Rate	48.7	**54.4**	11.7	5.7	-
Aboriginal Employment	61,752	87,815	42.2	26,064	4.66
Scenario 3					
Aboriginal Employment Rate	48.7	**60.0**	23.3	11.3	-
Aboriginal Employment	61,752	96,980	57.0	35,228	6.30

Panel J: The Territories (Nunavut, Yukon, NWT), Population Aged 15+

	2001	2017	% Change 2001-2017	Absolute Change 2001-2017	Aboriginal contribution to increased labour force, %
Scenario 1					
Aboriginal Employment Rate	50.2	**50.2**	0.0	0.0	-
Aboriginal Employment	16,466	24,648	49.7	8,183	90.99
Scenario 2					
Aboriginal Employment Rate	50.2	**60.3**	20.2	10.1	-
Aboriginal Employment	16,466	29,623	79.9	13,157	146.31
Scenario 3					
Aboriginal Employment Rate	50.2	**70.5**	40.4	20.3	-
Aboriginal Employment	16,466	34,598	110.1	18,132	201.63

Notes:
Scenario 1: Projections for the Aboriginal labour force assume that the Aboriginal employment rate achieves parity with the non-Aboriginal employment rate by 2017 .
Scenario 2: Projections for the Aboriginal labour force assume that the employment rate of the non-Aboriginal population does not change from the 2001 rate and the Aboriginal employment level for 2017 reaches the midpoint between the Aboriginal and the non-Aboriginal employment rates for 2001.
Scenario 3: Projections for the Aboriginal labour assume that the employment rate of Aboriginals and non-Aboriginals remain constant.

Source: Appendix Table 22

Appendix Table 25a: Projections of the Total and Aboriginal Labour Force, North American Indian, 2001, 2017

		2001	2017	% Change 2001-2017	Absolute Change 2001-2017	Aboriginal % Contribution in the change from 2001-2017
	Working Age Population*	24,281,560 [1]	30,057,800 [5]	23.79	5,776,240	
	North American Indian Working Age Population	467,800 [2]	717,700 [6]	53.42	249,900	4.33
	Non-North American Indian Working Age	23,813,760	29,340,100	23.21	5,526,340	
	% of Working Age Population that is Identity North American Indian	1.93	2.39	23.94	0.46	
	Total Participation Rate	66.4 [3]	66.4			
	Total Labour Force	16,122,956	19,958,379	23.79	3,835,423	
	Non-Aboriginal Participation Rate	66.6	66.6			
Scenario 1	North American Indian Participation Rate	54.6	54.6			
	Indian Labour Force	255,419	391,864	53.42	136,445	3.56
Scenario 2	North American Indian Participation Rate	54.6	60.6			
	North American Indian Labour	255,419	434,926	70.28	179,507	4.68
Scenario 3	North American Indian Participation Rate	54.6 [4]	66.6			
	North American Indian Labour	255,419	477,988	87.14	222,569	5.80

Note:

* Working Age Population is the population of Canada 15 years and over, the population projection for the general population is based on Scenario 3, the population projection for North American Indians is based on Scenario B

Assumption 1: The participation rate of North American Indians in Canada is 57 per cent in 2001. Projections for the North American Indian labour force assume that the participation rate of the non-Aboriginal population does not change from the 2001 rate of 66.6 per cent and that the North American Indian participation rate achieves parity with the employment rate of the general population by 2017.

Assumption 2: Projections for the North American Indian labour force assume that the participation rate of the non-Aboriginal population does not change from the 2001 rate of 66.6 per cent and the North American Indian participation level for 2017 reaches the midpoint (61.8 per cent) between the participation rates of the North American Indians (57 per cent) and the non-Aboriginal population (66.6

Assumption 3: Projections for the North American Indian labour force assume that the participation rate of North American Indians (57 per cent in 2001) and the non-Aboriginal population (66.6 per cent in

Sources:

2=PR&Code2=01&Data=Count&SearchText=Canada&SearchType=Begins&SearchPR=01&B1=All&Custom=

2) North American Indian working age population taken from Statisticis Canada Projections of the Aboriginal Population, 91-547-XIE
http://www.statcan.ca/english/freepub/91-547-XIE/91-547-XIE2005001.pdf

3) The participation rate of the general population

2=PR&Code2=01&Data=Count&SearchText=Canada&SearchType=Begins&SearchPR=01&B1=All&Custom=

4) Public Use Microdata, Statistics Canada

5) Statistics Canada Population Projections for Canada, Provinces and Territories, 91-520-XIE
http://www.statcan.ca/english/freepub/91-520-XIE/0010591-520-XIE.pdf

6) Statistics Canada Projections of the Aboriginal Population, Canada, Provinces and Territories, 91-547-
http://www.statcan.ca/english/freepub/91-547-XIE/91-547-XIE2005001.pdf

Appendix Table 25b: Projections of the Total and Aboriginal Labour Force, Metis, 2001, 2017

		2001	2017	% Change 2001-2017	Absolute Change 2001-2017	Aboriginal % Contribution in the change from 2001-2017
Scenario 1	Working Age Population*	24,281,560 [1]	30,057,800 [5]	23.79	5,776,240	
	Metis Working Age Population	218,400 [2]	289,600 [6]	32.60	71,200	1.23
	% of Working Age Population that is Metis	0.90	0.96	7.12	0.06	
	Total Participation Rate	66.4 [3]	66.4			
	Total Labour Force	16,122,956	19,958,379	23.79	3,835,423	
	Non-Aboriginal Working Age Populaiton	23,566,060	29,043,900	23.24	5,477,840	
	Non-Aboriginal Participation Rate	66.6	66.6			
	Metis Participation Rate	68.9 [4]	68.9			
	Metis Labour Force	150,478	199,534	32.60	49,057	1.28

Note:
* Working Age Population is the population of Canada 15 years and over, the population projection for the general population is based on Scenario 3, the population projection for Inuit is based on Scenario B

Assumption 1: The participation rate of Metis in Canada is 69 per cent in 2001. Projections for the Metis labour force assume that the participation rate of the non-Aboriginal population does not change from the 2001 rate of 66.6 per cent and that the participation rate of the Metis does not change either (69 per

Sources:

2=PR&Code2=01&Data=Count&SearchText=Canada&SearchType=Begins&SearchPR=01&B1=All&Custom=

2) Inuit working age population taken from Statistics Canada Projections of the Aboriginal Population, 91-547-XIE
http://www.statcan.ca/english/freepub/91-547-XIE/91-547-XIE2005001.pdf

3) The participation rate of the general population

2=PR&Code2=01&Data=Count&SearchText=Canada&SearchType=Begins&SearchPR=01&B1=All&Custom=

4) Participation rate of the Inuit population are taken form *Aboriginal People in Canada's Labour Market: Work and Unemployment, Today and Tomorrow* by Michael Mendelson and released by the Caledon Institute of Social Policy, 2004
http://www.caledoninst.org/Publications/PDF/471ENG.pdf

5) Statistics Canada Population Projections for Canada, Provinces and Territories, 91-520-XIE
http://www.statcan.ca/english/freepub/91-520-XIE/0010591-520-XIE.pdf

6) Statistics Canada Projections of the Aboriginal Population, Canada, Provinces and Territories, 91-547-X
http://www.statcan.ca/english/freepub/91-547-XIE/91-547-XIE2005001.pdf

Appendix Table 25c: Projections of the Total and Aboriginal Labour Force, Inuit, 2001, 2017

		2001	2017	% Change 2001-2017	Absolute Change 2001-2017	Aboriginal % Contribution in the change from 2001-2017
	Working Age Population*	24,281,560 [1]	30,057,800 [5]	23.79	5,776,240	
	Inuit Working Age Population	29,300 [2]	45,200 [6]	54.27	15,900	0.28
	Non-Inuit Working Age Population	24,252,260	30,012,600	23.75	5,760,340	
	% of Working Age Population that is Inuit	0.12	0.15	24.62	0.03	
	Total Participation Rate	66.4 [3]	66.4			
	Total Labour Force	16,122,956	19,958,379	23.79	3,835,423	
	Non-Aboriginal Participation Rate	66.6				
Scenario 3	Inuit Participation Rate	62.4	62.4			
	Inuit Labour Force	18,283	28,205	54.27	9,922	0.26
Scenario 2	Inuit Participation Rate	62.4	64.5			
	Inuit Labour Force	18,283	29,154	59.46	10,871	0.28
Scenario 1	Inuit Participation Rate	62.4 [4]	66.6			
	Inuit Labour Force	18,283	30,103	64.65	11,820	0.31

Note:
* Working Age Population is the population of Canada 15 years and over, the population projection for the general population is based on Scenario 3, the population projection for Inuit is based on Scenario B

Assumption 1: The participation rate of Inuit in Canada is 63 per cent in 2001. Projections for the Inuit labour force assume that the participation rate of the non-Aboriginal population does not change from the 2001 rate of 66.6 per cent and that the Inuit participation rate achieves parity with the participation rate of the non-Aboriginal population by 2017.
Assumption 2: Projections for the Inuit labour force assume that the participation rate of the non-Aborginal population does not change from the 2001 rate of 66.6 per cent and the Inuit participation level for 2017 reaches the midpoint (64.8 per cent) between the participation rates in 2001 of the Inuit (63 per cent) and the non-Aboriginal population (66.6 per cent).

Assumption 3: Projections for the Inuit Indian labour force assume that the participation rate of the Inuit (63 per cent in 2001) and the non-Aboriginal population (66.6 per cent in 2001) remain constant.

Sources:

2=PR&Code2=01&Data=Count&SearchText=Canada&SearchType=Begins&SearchPR=01&B1=All&Custom=

2) Inuit working age population taken from Statistics Canada Projections of the Aboriginal Population, 91-547-XIE
http://www.statcan.ca/english/freepub/91-547-XIE/91-547-XIE2005001.pdf

3) The participation rate of the general population

2=PR&Code2=01&Data=Count&SearchText=Canada&SearchType=Begins&SearchPR=01&B1=All&Custom=

4) Participation rate of the Inuit population are taken form *Aboriginal People in Canada's Labour Market: Work and Unemployment, Today and Tomorrow* by Michael Mendelson and released by the Caledon Institute of Social Policy, 2004
http://www.caledoninst.org/Publications/PDF/471ENG.pdf
5) Statistics Canada Population Projections for Canada, Provinces and Territories, 91-520-XIE
http://www.statcan.ca/english/freepub/91-520-XIE/0010591-520-XIE.pdf
6) Statistics Canada Projections of the Aboriginal Population, Canada, Provinces and Territories, 91-547-X
http://www.statcan.ca/english/freepub/91-547-XIE/91-547-XIE2005001.pdf

Appendix Table 26: The Percentage Contribution of Aboriginals in the Change in the Total Labour Force and the WAP from 2001-2017

		Labour Force with Participation Rates at			
	WAP	**Scenario 1**	**Scenario 2**	**Scenario 3**	**Scenario 4**
Canada	5.17	5.75	6.57	7.39	7.05
Atlantic Provinces	9.53	9.45	9.59	9.72	n.a.
Quebec	0.74	0.71	0.88	1.06	n.a.
Ontario	1.72	1.51	1.95	2.39	n.a.
Manitoba	32.68	28.65	35.72	42.79	n.a.
Saskatchewan	159.61	128.30	174.90	221.50	n.a.
Alberta	8.62	7.57	9.13	10.68	n.a.
British Columbia	3.70	3.57	3.88	4.20	n.a.
Territories	111.11	100.43	129.80	159.16	n.a.

Sources: Appendix table 22 and 23.

Appendix Table 27: The Percentage Contribution in the Change in the Number of Employed between 2001 and 2017

	% of the WAP that is Identity Aboriginal		% Contribution in the Total Number of Employed		
	2001	**2017**	**Scenario 1**	**Scenario 2**	**Scenario 3**
Canada	2.95	3.37	4.17	5.91	7.64
Atlantic Provinces	2.17	2.81	7.88	10.73	13.59
Quebec	1.13	1.08	0.62	1.25	1.88
Ontario	1.65	1.66	1.47	1.99	2.52
Manitoba	11.56	14.60	24.68	38.71	52.75
Saskatchewan	10.90	16.80	105.57	186.00	266.43
Alberta	4.69	5.59	6.80	9.50	12.21
British Columbia	3.96	3.90	3.02	4.66	6.30
Territories	45.22	56.31	90.99	146.31	201.63

Sources: Appendix table 22 and 24

Appendix Table 28: Projections of Output and Productivity in 2017 and 2001-2017 Growth Rates, According to 10 Scenarios for the Aboriginal Population

Base Scenario 1	2001	2017	A.A.G.R.
Canadian GDP (millions)	1,108,048	1,692,459	2.683
Total Employment in Canada (thousands)	14,946	18,486	1.337
Estimated GDP of Aboriginal Population (thousands	15,433	27,446	3.664
Canadian Labour Productivity	74,136	91,556	1.328

Base Scenario 2	2001	2017	A.A.G.R.	Difference with Base Scenario (A.A.G.R.)
Estimated GDP of Aboriginal Population (thousands	15,433	39,465	6.044	2.380
Total Canadian GDP (thousands)	1,108,048	1,704,479	2.728	0.045
Canadian Labour Productivity	74,136	91,872	1.350	0.022

Scenario 3	2001	2017	A.A.G.R.	Difference with Base Scenario (A.A.G.R.)
Estimated GDP of Aboriginal Population (thousands	15,433	31,611	4.583	0.920
Total Canadian GDP (thousands)	1,108,048	1,696,625	2.699	0.016
Canadian Labour Productivity	74,136	91,602	1.331	0.003

Scenario 4	2001	2017	A.A.G.R.	Difference with Base Scenario (A.A.G.R.)
Estimated GDP of Aboriginal Population (thousands	15,433	34,640	5.183	1.519
Total Canadian GDP (thousands)	1,108,048	1,699,653	2.710	0.027
Canadian Labour Productivity	74,136	91,462	1.321	-0.006

Scenario 5	2001	2017	A.A.G.R.	Difference with Base Scenario (A.A.G.R.)
Estimated GDP of Aboriginal Population (thousands	15,433	40,396	6.199	2.535
Total Canadian GDP (thousands)	1,108,048	1,705,410	2.732	0.049
Canadian Labour Productivity	74,136	92,076	1.364	0.036

Scenario 6	2001	2017	A.A.G.R.	Difference with Base Scenario (A.A.G.R.)
Estimated GDP of Aboriginal Population (thousands	15,433	44,349	6.820	3.156
Total Canadian GDP (thousands)	1,108,048	1,709,362	2.747	0.064
Canadian Labour Productivity	74,136	91,985	1.357	0.030

Scenario 7	2001	2017	A.A.G.R.	Difference with Base Scenario (A.A.G.R.)
Estimated GDP of Aboriginal Population (thousands	15,433	35,776	5.395	1.732
Total Canadian GDP (thousands)	1,108,048	1,700,790	2.714	0.032
Canadian Labour Productivity	74,136	91,648	1.334	0.006

Scenario 8	2001	2017	A.A.G.R.	Difference with Base Scenario (A.A.G.R.)
Estimated GDP of Aboriginal Population (thousands	15,433	38,465	5.874	2.210
Total Canadian GDP (thousands)	1,108,048	1,703,479	2.724	0.042
Canadian Labour Productivity	74,136	91,534	1.326	-0.002

Scenario 9	2001	2017	A.A.G.R.	Difference with Base Scenario (A.A.G.R.)
Estimated GDP of Aboriginal Population (thousands	15,433	45,499	6.991	3.327
Total Canadian GDP (thousands)	1,108,048	1,710,513	2.751	0.068
Canadian Labour Productivity	74,136	92,172	1.370	0.042

Scenario 10	2001	2017	A.A.G.R.	Difference with Base Scenario (A.A.G.R.)
Estimated GDP of Aboriginal Population (thousands	15,433	48,975	7.484	3.821
Total Canadian GDP (thousands)	1,108,048	1,713,988	2.764	0.081
Canadian Labour Productivity	74,136	92,098	1.365	0.037

Source: Appendix Tables 47 to 57

*Estimated GDP is twice the estimated employment income, since employment income is assumed to represent half of the Canad

Appendix Table 29: Projections of Output and Productivity in 2017 and 2001-2017 Growth Rates, According to 10 Scenarios for North American Indian Population

Base Scenario 1	2001	2017	A.A.G.R.
Canadian GDP (millions)	1,108,048	1,692,459	2.683
Total Employment in Canada (thousands)	14,946	18,486	1.337
North American Indian Employment Income as GDP (milli	8,507	16,379	4.180
Canadian Labour Productivity	74,136	91,556	1.328

Base Scenario 2	2001	2017	A.A.G.R.	Difference with Base Scenario (A.A.G.R.)
Estimated GDP of NAI Population (thousands)*	8,507	26,904	7.462	3.282
Total Canadian GDP (thousands)	1,108,048	1,702,984	2.723	0.040
Canadian Labour Productivity	74,136	91,747	1.341	0.013

Scenario 3	2001	2017	A.A.G.R.	Difference with Base Scenario (A.A.G.R.)
Estimated GDP of NAI Population (thousands)*	8,507	19,554	5.340	1.160
Total Canadian GDP (thousands)	1,108,048	1,695,635	2.695	0.012
Canadian Labour Productivity	74,136	91,576	1.329	0.001

Scenario 4	2001	2017	A.A.G.R.	Difference with Base Scenario (A.A.G.R.)
Estimated GDP of NAI Population (thousands)*	8,507	23,053	6.429	2.250
Total Canadian GDP (thousands)	1,108,048	1,699,134	2.708	0.025
Canadian Labour Productivity	74,136	91,402	1.317	-0.011

Scenario 5	2001	2017	A.A.G.R.	Difference with Base Scenario (A.A.G.R.)
Estimated GDP of NAI Population (thousands)*	8,507	26,224	7.290	3.110
Total Canadian GDP (thousands)	1,108,048	1,702,305	2.720	0.037
Canadian Labour Productivity	74,136	91,936	1.354	0.026

Scenario 6	2001	2017	A.A.G.R.	Difference with Base Scenario (A.A.G.R.)
Estimated GDP of NAI Population (thousands)*	8,507	30,987	8.415	4.235
Total Canadian GDP (thousands)	1,108,048	1,707,068	2.738	0.055
Canadian Labour Productivity	74,136	91,829	1.347	0.019

Scenario 7	2001	2017	A.A.G.R.	Difference with Base Scenario (A.A.G.R.)
Estimated GDP of NAI Population (thousands)*	8,507	22,729	6.335	2.156
Total Canadian GDP (thousands)	1,108,048	1,698,810	2.707	0.024
Canadian Labour Productivity	74,136	91,596	1.331	0.003

Scenario 8	2001	2017	A.A.G.R.	Difference with Base Scenario (A.A.G.R.)
Estimated GDP of NAI Population (thousands)*	8,507	26,082	7.253	3.074
Total Canadian GDP (thousands)	1,108,048	1,702,162	2.719	0.037
Canadian Labour Productivity	74,136	91,451	1.321	-0.007

Scenario 9	2001	2017	A.A.G.R.	Difference with Base Scenario (A.A.G.R.)
Estimated GDP of NAI Population (thousands)*	8,507	30,184	8.237	4.058
Total Canadian GDP (thousands)	1,108,048	1,706,265	2.735	0.052
Canadian Labour Productivity	74,136	91,998	1.358	0.030

Scenario 10	2001	2017	A.A.G.R.	Difference with Base Scenario (A.A.G.R.)
Estimated GDP of NAI Population (thousands)*	8,507	34,667	9.178	4.998
Total Canadian GDP (thousands)	1,108,048	1,710,748	2.752	0.069
Canadian Labour Productivity	74,136	91,912	1.352	0.025

Source: Appendix Tables 58 to 68

*Estimated GDP is twice the estimated employment income, since employment income is assumed to represent half of the Canadian GDP.

Appendix Table 30: Increase in Income of Aboriginals Assuming No Change in Educational Attainment, Base Scenario 1: No Increase in Employment Rates, and Employment Incomes Increase with Average Rate

		2001	2017			
Aboriginal Working Age Population		715,500	1,013,900			
GDP in 2001 dollars (thousands)		1,108,048,000	1,692,459,292			
Employment in Canada		14,946,158	18,485,547			
		2001	**2017**	**Income in 2001**	**Income in 2017**	**Absolute change in income**
Less than Grade 5	Share of the population	3.72	3.72			
	Average Income (persons with positive inc	14,774	18,541	63,359	112,678	49,319
	Number of aboriginals employed	4,289	6,077			
	Employment rate of aboriginals	16.1	16.1			
Grades 5 to 8	Share of the population	11.24	11.24			
	Average Income (persons with positive inc	16,425	20,614	316,938	563,642	246,704
	Number of aboriginals employed	19,296	27,343			
	Employment rate of aboriginals	24.0	24.0			
Grades 9 to 13	Share of the population	32.87	32.87			
	Average Income (persons with positive inc	16,007	20,088	1,400,450	2,490,559	1,090,109
	Number of aboriginals employed	87,492	123,980			
	Employment rate of aboriginals	37.2	37.2			
Secondary - high school graduation certificate	Share of the population	9.45	9.45			
	Average Income (persons with positive inc	21,681	27,210	915,098	1,627,409	712,311
	Number of aboriginals employed	42,207	59,809			
	Employment rate of aboriginals	62.4	62.4			
Trades certificate or diploma	Share of the population	3.92	3.92			
	Average Income (persons with positive inc	23,601	29,619	397,266	706,497	309,231
	Number of aboriginals employed	16,832	23,852			
	Employment rate of aboriginals	60.0	60.0			
College: With trades certificate or diploma	Share of the population	7.56	7.56			
	Average Income (persons with positive inc	27,033	33,926	1,002,728	1,783,250	780,522
	Number of aboriginals employed	37,093	52,563			
	Employment rate of aboriginals	68.6	68.6			
College: With college certificate or diploma	Share of the population	9.22	9.22			
	Average Income (persons with positive inc	25,423	31,906	1,197,960	2,130,451	932,491
	Number of aboriginals employed	47,120	66,772			
	Employment rate of aboriginals	71.4	71.4			
University: With university or college certificate or diplon	Share of the population	4.38	4.38			
	Average Income (persons with positive inc	25,806	32,386	559,290	994,641	435,351
	Number of aboriginals employed	21,673	30,712			
	Employment rate of aboriginals	69.1	69.1			
University: With bachelor or first professional degree	Share of the population	3.43	3.43			
	Average Income (persons with positive inc	33,081	41,517	636,115	1,131,266	495,151
	Number of aboriginals employed	19,229	27,248			
	Employment rate of aboriginals	78.3	78.3			
University: With certificate or diploma above bachelor lev	Share of the population	0.46	0.46			
	Average Income (persons with positive inc	38,005	47,697	87,516	155,638	68,122
	Number of aboriginals employed	2,303	3,263			
	Employment rate of aboriginals	69.3	69.3			
University: With master's degree[s]	Share of the population	0.57	0.57			
	Average Income (persons with positive inc	47,302	59,364	150,553	267,744	117,191
	Number of aboriginals employed	3,183	4,510			
	Employment rate of aboriginals	77.4	77.4			
University: With earned doctorate	Share of the population	0.07	0.07			
	Average Income (persons with positive inc	46,535	58,402	14,374	25,563	11,189
	Number of aboriginals employed	309	438			
	Employment rate of aboriginals	58.3	58.3			
College: Without trades or college certificate or diploma	Share of the population	8.75	8.75			
	Average Income (persons with positive inc	18,557	23,289	648,374	1,153,068	504,694
	Number of aboriginals employed	34,940	49,511			
	Employment rate of aboriginals	55.8	55.8			
University: Without certificate, diploma or degree	Share of the population	4.33	4.33			
	Average Income (persons with positive inc	17,779	22,312	326,359	580,397	254,038
	Number of aboriginals employed	18,357	26,012			
	Employment rate of aboriginals	59.2	59.2			

Source: Census 2001, Public Use Microdata Files. Estimation of 2017 WAP from Statistics Canada (2005) and GDP in 2017 from Dungan and Murphy (2007)
Note: The share of population in each education group is from the Census PUMF, while the total working age population absolute number is from Statistics Canada (2005).
To find the number of aboriginals in each group, the proportion was multiplied by the total number, and then to find the number with positive income, it was again multiplied by the ratio of persons with positive income to the total working age population for each educational group. The number of persons obtained in this way was then multiplied by average income to obtain the aggregate income in each group. The total increase in income between 2001 and 2017 is multiplied by two to find the corresponding increase in GDP, assuming that incomes represent about half of GDP.

Appendix Table 31: Increase in Income of Aboriginals Assuming No Change in Educational Attainment, Base Scenario 2: Employment Rates Increase to the 2001 level of non-Aboriginals and Income to the 2017 Level of non-Aboriginals

		2001	2017			
Aboriginal Working Age Population		715,500	1,013,900			
GDP in 2001 dollars (thousands)		1,108,048,000	1,692,459,292			
Employment in Canada		14,946,158	18,485,547			
		2001	**2017**	**Income in 2001**	**Income in 2017**	**Absolute change in income**
Less than Grade 5	Share of the population	3.72	3.72			
	Average Income (persons with positive in	14,774	26,859	63,359	206,822	143,463
	Number of aboriginals employed	4,289	7,700			
	Employment rate of aboriginals	16.1	20.4			
Grades 5 to 8	Share of the population	11.24	11.24			
	Average Income (persons with positive in	16,425	28,403	316,938	802,501	485,563
	Number of aboriginals employed	19,296	28,254			
	Employment rate of aboriginals	24.0	24.8			
Grades 9 to 13	Share of the population	32.87	32.87			
	Average Income (persons with positive in	16,007	26,396	1,400,450	4,169,853	2,769,403
	Number of aboriginals employed	87,492	157,975			
	Employment rate of aboriginals	37.2	47.4			
Secondary - high school graduation certificate	Share of the population	9.45	9.45			
	Average Income (persons with positive in	21,681	33,008	915,098	2,043,793	1,128,695
	Number of aboriginals employed	42,207	61,918			
	Employment rate of aboriginals	62.4	64.6			
Trades certificate or diploma	Share of the population	3.92	3.92			
	Average Income (persons with positive in	23,601	41,583	397,266	1,218,316	821,051
	Number of aboriginals employed	16,832	29,299			
	Employment rate of aboriginals	60.0	73.7			
College: With trades certificate or diploma	Share of the population	7.56	7.56			
	Average Income (persons with positive in	27,033	41,179	1,002,728	2,325,415	1,322,687
	Number of aboriginals employed	37,093	56,470			
	Employment rate of aboriginals	68.6	73.7			
College: With college certificate or diploma	Share of the population	9.22	9.22			
	Average Income (persons with positive in	25,423	40,957	1,197,960	2,891,791	1,693,832
	Number of aboriginals employed	47,120	70,606			
	Employment rate of aboriginals	71.4	75.5			
University: With university or college certificate or diplor	Share of the population	4.38	4.38			
	Average Income (persons with positive in	25,806	42,202	559,290	1,376,779	817,489
	Number of aboriginals employed	21,673	32,623			
	Employment rate of aboriginals	69.1	73.4			
University: With bachelor or first professional degree	Share of the population	3.43	3.43			
	Average Income (persons with positive in	33,081	54,378	636,115	1,481,693	845,578
	Number of aboriginals employed	19,229	27,248			
	Employment rate of aboriginals	78.3	78.3			
University: With certificate or diploma above bachelor le	Share of the population	0.46	0.46			
	Average Income (persons with positive in	38,005	56,975	87,516	204,156	116,640
	Number of aboriginals employed	2,303	3,583			
	Employment rate of aboriginals	69.3	76.1			
University: With master's degree[s]	Share of the population	0.57	0.57			
	Average Income (persons with positive in	47,302	66,008	150,553	300,399	149,845
	Number of aboriginals employed	3,183	4,551			
	Employment rate of aboriginals	77.4	78.1			
University: With earned doctorate	Share of the population	0.07	0.07			
	Average Income (persons with positive in	46,535	76,439	14,374	44,707	30,332
	Number of aboriginals employed	309	585			
	Employment rate of aboriginals	58.3	77.9			
College: Without trades or college certificate or diploma	Share of the population	8.75	8.75			
	Average Income (persons with positive in	18,557	30,402	648,374	1,791,204	1,142,830
	Number of aboriginals employed	34,940	58,917			
	Employment rate of aboriginals	55.8	66.4			
University: Without certificate, diploma or degree	Share of the population	4.33	4.33			
	Average Income (persons with positive in	17,779	29,546	326,359	875,007	548,648
	Number of aboriginals employed	18,357	29,616			
	Employment rate of aboriginals	59.2	67.4			

Source: Census 2001, Public Use Microdata Files. Estimation of 2017 WAP from Statistics Canada (2005) and GDP in 2017 from Dungan and Murphy (2007)
Note: The share of population in each education group is from the Census PUMF, while the total working age population absolute number is from Statistics Canada (2005).
To find the number of aboriginals in each group, the proportion was multiplied by the total number, and then to find the number with positive income, it was again multiplied by the ratio of persons with positive income to the total working age population for each educational group. The number of persons obtained in this way was then multiplied by average ir to obtain the aggregate income in each group. The total increase in income between 2001 and 2017 is multiplied by two to find the corresponding increase in GDP, assuming that incomes represent about half of GDP.

Appendix Table 32: Increase in Income of Aboriginals Assuming Aboriginals Eliminate Half of the 2001 Educational Attainment Gap, Scenario 3: No Change in Employment Rates, Employment Income Increase with Average Rate

		2001	2017			
Aboriginal Working Age Population		715,500	1,013,900			
GDP in 2001 dollars		1,108,048,000	1,692,459,292			
Employment in Canada		14,946,158	18,485,547			
		2001	**2017**	**Income in 2001**	**Income in 2017**	**Absolute change in income**
Less than Grade 5	Share of the population	3.72	2.93			
	Average Income (persons with positive ir	14,774	18,541	63,359	88,610	25,251
	Number of aboriginals employed	4,289	4,779			
	Employment rate of aboriginals	16.1	16.1			
Grades 5 to 8	Share of the population	11.24	9.39			
	Average Income (persons with positive ir	16,425	20,614	316,938	471,046	154,109
	Number of aboriginals employed	19,296	22,851			
	Employment rate of aboriginals	24.0	24.0			
Grades 9 to 13	Share of the population	32.87	27.04			
	Average Income (persons with positive ir	16,007	20,088	1,400,450	2,048,987	648,536
	Number of aboriginals employed	87,492	101,999			
	Employment rate of aboriginals	37.2	37.2			
Secondary - high school graduation certificate	Share of the population	9.45	11.84			
	Average Income (persons with positive ir	21,681	27,210	915,098	2,037,671	1,122,573
	Number of aboriginals employed	42,207	74,886			
	Employment rate of aboriginals	62.4	62.4			
Trades certificate or diploma	Share of the population	3.92	3.70			
	Average Income (persons with positive ir	23,601	29,619	397,266	667,262	269,996
	Number of aboriginals employed	16,832	22,528			
	Employment rate of aboriginals	60.0	60.0			
College: With trades certificate or diploma	Share of the population	7.56	7.10			
	Average Income (persons with positive ir	27,033	33,926	1,002,728	1,675,663	672,935
	Number of aboriginals employed	37,093	49,391			
	Employment rate of aboriginals	68.6	68.6			
College: With college certificate or diploma	Share of the population	9.22	10.71			
	Average Income (persons with positive ir	25,423	31,906	1,197,960	2,474,641	1,276,681
	Number of aboriginals employed	47,120	77,560			
	Employment rate of aboriginals	71.4	71.4			
University: With university or college certificate or diplo	Share of the population	4.38	5.20			
	Average Income (persons with positive ir	25,806	32,386	559,290	1,180,259	620,969
	Number of aboriginals employed	21,673	36,444			
	Employment rate of aboriginals	69.1	69.1			
University: With bachelor or first professional degree	Share of the population	3.43	7.12			
	Average Income (persons with positive ir	33,081	41,517	636,115	2,347,095	1,710,980
	Number of aboriginals employed	19,229	56,533			
	Employment rate of aboriginals	78.3	78.3			
University: With certificate or diploma above bachelor le	Share of the population	0.46	1.05			
	Average Income (persons with positive ir	38,005	47,697	87,516	351,059	263,544
	Number of aboriginals employed	2,303	7,360			
	Employment rate of aboriginals	69.3	69.3			
University: With master's degree[s]	Share of the population	0.57	1.65			
	Average Income (persons with positive ir	47,302	59,364	150,553	770,780	620,226
	Number of aboriginals employed	3,183	12,984			
	Employment rate of aboriginals	77.4	77.4			
University: With earned doctorate	Share of the population	0.07	0.32			
	Average Income (persons with positive ir	46,535	58,402	14,374	109,503	95,129
	Number of aboriginals employed	309	1,875			
	Employment rate of aboriginals	58.3	58.3			
College: Without trades or college certificate or diploma	Share of the population	8.75	7.57			
	Average Income (persons with positive ir	18,557	23,289	648,374	997,854	349,481
	Number of aboriginals employed	34,940	42,847			
	Employment rate of aboriginals	55.8	55.8			
University: Without certificate, diploma or degree	Share of the population	4.33	4.37			
	Average Income (persons with positive ir	17,779	22,312	326,359	585,039	258,679
	Number of aboriginals employed	18,357	26,221			
	Employment rate of aboriginals	59.2	59.2			

Source: Census 2001, Public Use Microdata Files. Estimation of 2017 WAP from Statistics Canada (2005) and GDP in 2017 from Dungan and Murphy (2007)
Note: The share of population in each education group is from the Census PUMF, while the total working age population absolute number is from Statistics Canada (2005).
To find the number of aboriginals in each group, the proportion was multiplied by the total number, and then to find the number with positive income, it was again multiplied by the ratio of persons with positive income to the total working age population for each educational group. The number of persons obtained in this way was then multiplied by average inc to obtain the aggregate income in each group. The total increase in income between 2001 and 2017 is multiplied by two to find the corresponding increase in GDP, assuming that incomes represent about half of GDP.

Appendix Table 33: Increase in Income of Aboriginals Assuming Aboriginals Eliminate Half of the 2001 Educational Attainment Gap, Scenario 4: Employment Rates Reach the 2001 Level of non-Aboriginals and Income Increases with Average Rate

		2001	2017			
Aboriginal Working Age Population		715,500	1,013,900			
GDP in 2001 dollars		1,108,048,000	1,692,459,292			
Employment in Canada		14,946,158	18,485,547			
		2001	**2017**	**Income in 2001**	**Income in 2017**	**Absolute change in income**
Less than Grade 5	Share of the population	3.72	2.93			
	Average Income (persons with positive ir	14,774	18,541	63,359	112,276	48,916
	Number of aboriginals employed	4,289	6,056			
	Employment rate of aboriginals	16.1	20.4			
Grades 5 to 8	Share of the population	11.24	9.39			
	Average Income (persons with positive ir	16,425	20,614	316,938	486,748	169,810
	Number of aboriginals employed	19,296	23,613			
	Employment rate of aboriginals	24.0	24.8			
Grades 9 to 13	Share of the population	32.87	27.04			
	Average Income (persons with positive ir	16,007	20,088	1,400,450	2,610,805	1,210,355
	Number of aboriginals employed	87,492	129,966			
	Employment rate of aboriginals	37.2	47.4			
Secondary - high school graduation certificate	Share of the population	9.45	11.84			
	Average Income (persons with positive ir	21,681	27,210	915,098	2,109,512	1,194,414
	Number of aboriginals employed	42,207	77,527			
	Employment rate of aboriginals	62.4	64.6			
Trades certificate or diploma	Share of the population	3.92	3.70			
	Average Income (persons with positive ir	23,601	29,619	397,266	819,620	422,355
	Number of aboriginals employed	16,832	27,672			
	Employment rate of aboriginals	60.0	73.7			
College: With trades certificate or diploma	Share of the population	7.56	7.10			
	Average Income (persons with positive ir	27,033	33,926	1,002,728	1,800,238	797,510
	Number of aboriginals employed	37,093	53,063			
	Employment rate of aboriginals	68.6	73.7			
College: With college certificate or diploma	Share of the population	9.22	10.71			
	Average Income (persons with positive ir	25,423	31,906	1,197,960	2,616,742	1,418,782
	Number of aboriginals employed	47,120	82,013			
	Employment rate of aboriginals	71.4	75.5			
University: With university or college certificate or diplo	Share of the population	4.38	5.20			
	Average Income (persons with positive ir	25,806	32,386	559,290	1,253,705	694,415
	Number of aboriginals employed	21,673	38,711			
	Employment rate of aboriginals	69.1	73.4			
University: With bachelor or first professional degree	Share of the population	3.43	7.12			
	Average Income (persons with positive ir	33,081	41,517	636,115	2,347,095	1,710,980
	Number of aboriginals employed	19,229	56,533			
	Employment rate of aboriginals	78.3	78.3			
University: With certificate or diploma above bachelor le	Share of the population	0.46	1.05			
	Average Income (persons with positive ir	38,005	47,697	87,516	385,507	297,991
	Number of aboriginals employed	2,303	8,082			
	Employment rate of aboriginals	69.3	76.1			
University: With master's degree[s]	Share of the population	0.57	1.65			
	Average Income (persons with positive ir	47,302	59,364	150,553	777,751	627,197
	Number of aboriginals employed	3,183	13,101			
	Employment rate of aboriginals	77.4	78.1			
University: With earned doctorate	Share of the population	0.07	0.32			
	Average Income (persons with positive ir	46,535	58,402	14,374	146,317	131,943
	Number of aboriginals employed	309	2,505			
	Employment rate of aboriginals	58.3	77.9			
College: Without trades or college certificate or diploma	Share of the population	8.75	7.57			
	Average Income (persons with positive ir	18,557	23,289	648,374	1,187,411	539,037
	Number of aboriginals employed	34,940	50,986			
	Employment rate of aboriginals	55.8	66.4			
University: Without certificate, diploma or degree	Share of the population	4.33	4.37			
	Average Income (persons with positive ir	17,779	22,312	326,359	666,074	339,715
	Number of aboriginals employed	18,357	29,852			
	Employment rate of aboriginals	59.2	67.4			

Source: Census 2001, Public Use Microdata Files. Estimation of 2017 WAP from Statistics Canada (2005) and GDP in 2017 from Dungan and Murphy (2007)
Note: The share of population in each education group is from the Census PUMF, while the total working age population absolute number is from Statistics Canada (2005).
To find the number of aboriginals in each group, the proportion was multiplied by the total number, and then to find the number with positive income, it was again multiplied by the ratio of persons with positive income to the total working age population for each educational group. The number of persons obtained in this way was then multiplied by average inc to obtain the aggregate income in each group. The total increase in income between 2001 and 2017 is multiplied by two to find the corresponding increase in GDP, assuming that incomes represent about half of GDP.

Appendix Table 34: Increase in Income of Aboriginals Assuming Aboriginals Eliminate Half of the 2001 Educational Attainment Gap, Scenario 5: Employment Rates Constant, Income Reaches 2017 level of non-Aboriginals

		2001	2017			
Aboriginal Working Age Population		715,500	1,013,900			
GDP in 2001 dollars		1,108,048,000	1,692,459,292			
Employment in Canada		14,946,158	18,485,547			
		2001	**2017**	**Income in 2001**	**Income in 2017**	**Absolute change in income**
Less than Grade 5	Share of the population	3.72	2.93			
	Average Income (persons with positive in	14,774	26,859	63,359	128,362	65,002
	Number of aboriginals employed	4,289	4,779			
	Employment rate of aboriginals	16.1	16.1			
Grades 5 to 8	Share of the population	11.24	9.39			
	Average Income (persons with positive in	16,425	28,403	316,938	649,031	332,094
	Number of aboriginals employed	19,296	22,851			
	Employment rate of aboriginals	24.0	24.0			
Grades 9 to 13	Share of the population	32.87	27.04			
	Average Income (persons with positive in	16,007	26,396	1,400,450	2,692,326	1,291,876
	Number of aboriginals employed	87,492	101,999			
	Employment rate of aboriginals	37.2	37.2			
Secondary - high school graduation certificate	Share of the population	9.45	11.84			
	Average Income (persons with positive in	21,681	33,008	915,098	2,471,874	1,556,776
	Number of aboriginals employed	42,207	74,886			
	Employment rate of aboriginals	62.4	62.4			
Trades certificate or diploma	Share of the population	3.92	3.70			
	Average Income (persons with positive in	23,601	41,583	397,266	936,764	539,498
	Number of aboriginals employed	16,832	22,528			
	Employment rate of aboriginals	60.0	60.0			
College: With trades certificate or diploma	Share of the population	7.56	7.10			
	Average Income (persons with positive in	27,033	41,179	1,002,728	2,033,909	1,031,181
	Number of aboriginals employed	37,093	49,391			
	Employment rate of aboriginals	68.6	68.6			
College: With college certificate or diploma	Share of the population	9.22	10.71			
	Average Income (persons with positive in	25,423	40,957	1,197,960	3,176,573	1,978,614
	Number of aboriginals employed	47,120	77,560			
	Employment rate of aboriginals	71.4	71.4			
University: With university or college certificate or diplo	Share of the population	4.38	5.20			
	Average Income (persons with positive in	25,806	42,202	559,290	1,538,003	978,712
	Number of aboriginals employed	21,673	36,444			
	Employment rate of aboriginals	69.1	69.1			
University: With bachelor or first professional degree	Share of the population	3.43	7.12			
	Average Income (persons with positive in	33,081	54,378	636,115	3,074,143	2,438,028
	Number of aboriginals employed	19,229	56,533			
	Employment rate of aboriginals	78.3	78.3			
University: With certificate or diploma above bachelor le	Share of the population	0.46	1.05			
	Average Income (persons with positive in	38,005	56,975	87,516	419,349	331,834
	Number of aboriginals employed	2,303	7,360			
	Employment rate of aboriginals	69.3	69.3			
University: With master's degree[s]	Share of the population	0.57	1.65			
	Average Income (persons with positive in	47,302	66,008	150,553	857,035	706,481
	Number of aboriginals employed	3,183	12,984			
	Employment rate of aboriginals	77.4	77.4			
University: With earned doctorate	Share of the population	0.07	0.32			
	Average Income (persons with positive in	46,535	76,439	14,374	143,324	128,949
	Number of aboriginals employed	309	1,875			
	Employment rate of aboriginals	58.3	58.3			
College: Without trades or college certificate or diploma	Share of the population	8.75	7.57			
	Average Income (persons with positive in	18,557	30,402	648,374	1,302,637	654,263
	Number of aboriginals employed	34,940	42,847			
	Employment rate of aboriginals	55.8	55.8			
University: Without certificate, diploma or degree	Share of the population	4.33	4.37			
	Average Income (persons with positive in	17,779	29,546	326,359	774,699	448,339
	Number of aboriginals employed	18,357	26,221			
	Employment rate of aboriginals	59.2	59.2			

Source: Census 2001, Public Use Microdata Files. Estimation of 2017 WAP from Statistics Canada (2005) and GDP in 2017 from Dungan and Murphy (2007)
Note: The share of population in each education group is from the Census PUMF, while the total working age population absolute number is from Statistics Canada (2005).
To find the number of aboriginals in each group, the proportion was multiplied by the total number, and then to find the number with positive income, it was again multiplied by the ratio of persons with positive income to the total working age population for each educational group. The number of persons obtained in this way was then multiplied by average inc to obtain the aggregate income in each group. The total increase in income between 2001 and 2017 is multiplied by two to find the corresponding increase in GDP, assuming that incomes represent about half of GDP.

Appendix Table 35: Increase in Income of Aboriginals Assuming Aboriginals Eliminate Half of the 2001 Educational Attainment Gap, Scenario 6: Employment Rates Reach 2001 Level of non-Aboriginals and Income the 2017 Level of non-Aboriginals

		2001	2017			
Aboriginal Working Age Population		715,500	1,013,900			
GDP in 2001 dollars (thousands)		1,108,048,000	1,692,459,292			
Employment in Canada		14,946,158	18,485,547			
		2001	**2017**	**Income in 2001**	**Income in 2017**	**Absolute change in income**
Less than Grade 5	Share of the population	3.72	2.93			
	Average Income (persons with positive ir	14,774	26,859	63,359	162,645	99,285
	Number of aboriginals employed	4,289	6,056			
	Employment rate of aboriginals	16.1	20.4			
Grades 5 to 8	Share of the population	11.24	9.39			
	Average Income (persons with positive ir	16,425	28,403	316,938	670,666	353,728
	Number of aboriginals employed	19,296	23,613			
	Employment rate of aboriginals	24.0	24.8			
Grades 9 to 13	Share of the population	32.87	27.04			
	Average Income (persons with positive ir	16,007	26,396	1,400,450	3,430,544	2,030,094
	Number of aboriginals employed	87,492	129,966			
	Employment rate of aboriginals	37.2	47.4			
Secondary - high school graduation certificate	Share of the population	9.45	11.84			
	Average Income (persons with positive ir	21,681	33,008	915,098	2,559,023	1,643,925
	Number of aboriginals employed	42,207	77,527			
	Employment rate of aboriginals	62.4	64.6			
Trades certificate or diploma	Share of the population	3.92	3.70			
	Average Income (persons with positive ir	23,601	41,583	397,266	1,150,658	753,392
	Number of aboriginals employed	16,832	27,672			
	Employment rate of aboriginals	60.0	73.7			
College: With trades certificate or diploma	Share of the population	7.56	7.10			
	Average Income (persons with positive ir	27,033	41,179	1,002,728	2,185,118	1,182,390
	Number of aboriginals employed	37,093	53,063			
	Employment rate of aboriginals	68.6	73.7			
College: With college certificate or diploma	Share of the population	9.22	10.71			
	Average Income (persons with positive ir	25,423	40,957	1,197,960	3,358,982	2,161,022
	Number of aboriginals employed	47,120	82,013			
	Employment rate of aboriginals	71.4	75.5			
University: With university or college certificate or diplo	Share of the population	4.38	5.20			
	Average Income (persons with positive ir	25,806	42,202	559,290	1,633,711	1,074,420
	Number of aboriginals employed	21,673	38,711			
	Employment rate of aboriginals	69.1	73.4			
University: With bachelor or first professional degree	Share of the population	3.43	7.12			
	Average Income (persons with positive ir	33,081	54,378	636,115	3,074,143	2,438,028
	Number of aboriginals employed	19,229	56,533			
	Employment rate of aboriginals	78.3	78.3			
University: With certificate or diploma above bachelor le	Share of the population	0.46	1.05			
	Average Income (persons with positive ir	38,005	56,975	87,516	460,498	372,982
	Number of aboriginals employed	2,303	8,082			
	Employment rate of aboriginals	69.3	76.1			
University: With master's degree[s]	Share of the population	0.57	1.65			
	Average Income (persons with positive ir	47,302	66,008	150,553	864,786	714,232
	Number of aboriginals employed	3,183	13,101			
	Employment rate of aboriginals	77.4	78.1			
University: With earned doctorate	Share of the population	0.07	0.32			
	Average Income (persons with positive ir	46,535	76,439	14,374	191,508	177,134
	Number of aboriginals employed	309	2,505			
	Employment rate of aboriginals	58.3	77.9			
College: Without trades or college certificate or diploma	Share of the population	8.75	7.57			
	Average Income (persons with positive ir	18,557	30,402	648,374	1,550,092	901,718
	Number of aboriginals employed	34,940	50,986			
	Employment rate of aboriginals	55.8	66.4			
University: Without certificate, diploma or degree	Share of the population	4.33	4.37			
	Average Income (persons with positive ir	17,779	29,546	326,359	882,005	555,646
	Number of aboriginals employed	18,357	29,852			
	Employment rate of aboriginals	59.2	67.4			

Source: Census 2001, Public Use Microdata Files. Estimation of 2017 WAP from Statistics Canada (2005) and GDP in 2017 from Dungan and Murphy (2007)
Note: The share of population in each education group is from the Census PUMF, while the total working age population absolute number is from Statistics Canada (2005).
To find the number of aboriginals in each group, the proportion was multiplied by the total number, and then to find the number with positive income, it was again multiplied by the ratio of persons with positive income to the total working age population for each educational group. The number of persons obtained in this way was then multiplied by average inc to obtain the aggregate income in each group. The total increase in income between 2001 and 2017 is multiplied by two to find the corresponding increase in GDP, assuming that incomes represent about half of GDP.

Appendix Table 36: Increase in Income of Aboriginals Assuming Aboriginals Eliminate the 2001 Gap in Educational Attainment, Scenario 7: No Change in Employment Rates, Employment Income Increase with Average Rate

		2001	2017			
Aboriginal Working Age Population		715,500	1,013,900			
GDP in 2001 dollars		1,108,048,000	1,692,459,292			
Employment in Canada		14,946,158	18,485,547			
		2001	**2017**	**Income in 2001**	**Income in 2017**	**Absolute change in income**
Less than Grade 5	Share of the population	3.72	2.13			
	Average Income (persons with positive ir	14,774	18,541	63,359	64,542	1,182
	Number of aboriginals employed	4,289	3,481			
	Employment rate of aboriginals	16.1	16.1			
Grades 5 to 8	Share of the population	11.24	7.54			
	Average Income (persons with positive ir	16,425	20,614	316,938	378,451	61,513
	Number of aboriginals employed	19,296	18,359			
	Employment rate of aboriginals	24.0	24.0			
Grades 9 to 13	Share of the population	32.87	21.22			
	Average Income (persons with positive ir	16,007	20,088	1,400,450	1,607,414	206,964
	Number of aboriginals employed	87,492	80,017			
	Employment rate of aboriginals	37.2	37.2			
Secondary - high school graduation certificate	Share of the population	9.45	14.22			
	Average Income (persons with positive ir	21,681	27,210	915,098	2,447,932	1,532,835
	Number of aboriginals employed	42,207	89,964			
	Employment rate of aboriginals	62.4	62.4			
Trades certificate or diploma	Share of the population	3.92	3.49			
	Average Income (persons with positive ir	23,601	29,619	397,266	628,027	230,762
	Number of aboriginals employed	16,832	21,203			
	Employment rate of aboriginals	60.0	60.0			
College: With trades certificate or diploma	Share of the population	7.56	6.65			
	Average Income (persons with positive ir	27,033	33,926	1,002,728	1,568,075	565,347
	Number of aboriginals employed	37,093	46,220			
	Employment rate of aboriginals	68.6	68.6			
College: With college certificate or diploma	Share of the population	9.22	12.20			
	Average Income (persons with positive ir	25,423	31,906	1,197,960	2,818,831	1,620,871
	Number of aboriginals employed	47,120	88,347			
	Employment rate of aboriginals	71.4	71.4			
University: With university or college certificate or diplo	Share of the population	4.38	6.02			
	Average Income (persons with positive ir	25,806	32,386	559,290	1,365,877	806,587
	Number of aboriginals employed	21,673	42,175			
	Employment rate of aboriginals	69.1	69.1			
University: With bachelor or first professional degree	Share of the population	3.43	10.81			
	Average Income (persons with positive ir	33,081	41,517	636,115	3,562,924	2,926,809
	Number of aboriginals employed	19,229	85,818			
	Employment rate of aboriginals	78.3	78.3			
University: With certificate or diploma above bachelor le	Share of the population	0.46	1.63			
	Average Income (persons with positive ir	38,005	47,697	87,516	546,481	458,965
	Number of aboriginals employed	2,303	11,457			
	Employment rate of aboriginals	69.3	69.3			
University: With master's degree[s]	Share of the population	0.57	2.73			
	Average Income (persons with positive ir	47,302	59,364	150,553	1,273,816	1,123,262
	Number of aboriginals employed	3,183	21,458			
	Employment rate of aboriginals	77.4	77.4			
University: With earned doctorate	Share of the population	0.07	0.56			
	Average Income (persons with positive ir	46,535	58,402	14,374	193,443	179,069
	Number of aboriginals employed	309	3,312			
	Employment rate of aboriginals	58.3	58.3			
College: Without trades or college certificate or diploma	Share of the population	8.75	6.40			
	Average Income (persons with positive ir	18,557	23,289	648,374	842,641	194,267
	Number of aboriginals employed	34,940	36,182			
	Employment rate of aboriginals	55.8	55.8			
University: Without certificate, diploma or degree	Share of the population	4.33	4.40			
	Average Income (persons with positive ir	17,779	22,312	326,359	589,680	263,321
	Number of aboriginals employed	18,357	26,429			
	Employment rate of aboriginals	59.2	59.2			

Source: Census 2001, Public Use Microdata Files. Estimation of 2017 WAP from Statistics Canada (2005) and GDP in 2017 from Dungan and Murphy (2007)
Note: The share of population in each education group is from the Census PUMF, while the total working age population absolute number is from Statistics Canada (2005).
To find the number of aboriginals in each group, the proportion was multiplied by the total number, and then to find the number with positive income, it was again multiplied by the ratio of persons with positive income to the total working age population for each educational group. The number of persons obtained in this way was then multiplied by average inc to obtain the aggregate income in each group. The total increase in income between 2001 and 2017 is multiplied by two to find the corresponding increase in GDP, assuming that incomes represent about half of GDP.

Appendix Table 37: Increase in Income of Aboriginals Assuming Aboriginals Eliminate the 2001 Gap in Educational Attainment, Scenario 8: Employment Rates Reach the 2001 Level of non-Aboriginals and Income Increases with Average Rate

		2001	2017			
Aboriginal Working Age Population		715,500	1,013,900			
GDP in 2001 dollars		1,108,048,000	1,692,459,292			
Employment in Canada		14,946,158	18,485,547			
		2001	**2017**	**Income in 2001**	**Income in 2017**	**Absolute change in income**
Less than Grade 5	Share of the population	3.72	2.13			
	Average Income (persons with positive in	14,774	18,541	63,359	81,779	18,420
	Number of aboriginals employed	4,289	4,411			
	Employment rate of aboriginals	16.1	20.4			
Grades 5 to 8	Share of the population	11.24	7.54			
	Average Income (persons with positive in	16,425	20,614	316,938	391,066	74,128
	Number of aboriginals employed	19,296	18,971			
	Employment rate of aboriginals	24.0	24.8			
Grades 9 to 13	Share of the population	32.87	21.22			
	Average Income (persons with positive in	16,007	20,088	1,400,450	2,048,156	647,706
	Number of aboriginals employed	87,492	101,957			
	Employment rate of aboriginals	37.2	47.4			
Secondary - high school graduation certificate	Share of the population	9.45	14.22			
	Average Income (persons with positive in	21,681	27,210	915,098	2,538,161	1,623,063
	Number of aboriginals employed	42,207	93,280			
	Employment rate of aboriginals	62.4	64.7			
Trades certificate or diploma	Share of the population	3.92	3.49			
	Average Income (persons with positive in	23,601	29,619	397,266	676,176	278,910
	Number of aboriginals employed	16,832	22,829			
	Employment rate of aboriginals	60.0	64.6			
College: With trades certificate or diploma	Share of the population	7.56	6.65			
	Average Income (persons with positive in	27,033	33,926	1,002,728	1,684,652	681,924
	Number of aboriginals employed	37,093	49,656			
	Employment rate of aboriginals	68.6	73.7			
College: With college certificate or diploma	Share of the population	9.22	12.20			
	Average Income (persons with positive in	25,423	31,906	1,197,960	2,980,697	1,782,737
	Number of aboriginals employed	47,120	93,420			
	Employment rate of aboriginals	71.4	75.5			
University: With university or college certificate or diplo	Share of the population	4.38	6.02			
	Average Income (persons with positive in	25,806	32,386	559,290	1,450,874	891,583
	Number of aboriginals employed	21,673	44,799			
	Employment rate of aboriginals	69.1	73.4			
University: With bachelor or first professional degree	Share of the population	3.43	10.81			
	Average Income (persons with positive in	33,081	41,517	636,115	3,562,924	2,926,809
	Number of aboriginals employed	19,229	85,818			
	Employment rate of aboriginals	78.3	78.3			
University: With certificate or diploma above bachelor le	Share of the population	0.46	1.63			
	Average Income (persons with positive in	38,005	47,697	87,516	600,104	512,588
	Number of aboriginals employed	2,303	12,582			
	Employment rate of aboriginals	69.3	76.1			
University: With master's degree[s]	Share of the population	0.57	2.73			
	Average Income (persons with positive in	47,302	59,364	150,553	1,285,336	1,134,783
	Number of aboriginals employed	3,183	21,652			
	Employment rate of aboriginals	77.4	78.1			
University: With earned doctorate	Share of the population	0.07	0.56			
	Average Income (persons with positive in	46,535	58,402	14,374	258,477	244,103
	Number of aboriginals employed	309	4,426			
	Employment rate of aboriginals	58.3	77.9			
College: Without trades or college certificate or diploma	Share of the population	8.75	6.40			
	Average Income (persons with positive in	18,557	23,289	648,374	1,002,713	354,339
	Number of aboriginals employed	34,940	43,055			
	Employment rate of aboriginals	55.8	66.4			
University: Without certificate, diploma or degree	Share of the population	4.33	4.40			
	Average Income (persons with positive in	17,779	22,312	326,359	671,359	345,000
	Number of aboriginals employed	18,357	30,089			
	Employment rate of aboriginals	59.2	67.4			

Source: Census 2001, Public Use Microdata Files. Estimation of 2017 WAP from Statistics Canada (2005) and GDP in 2017 from Dungan and Murphy (2007)
Note: The share of population in each education group is from the Census PUMF, while the total working age population absolute number is from Statistics Canada (2005).
To find the number of aboriginals in each group, the proportion was multiplied by the total number, and then to find the number with positive income, it was again multiplied by the ratio of persons with positive income to the total working age population for each educational group. The number of persons obtained in this way was then multiplied by average inc to obtain the aggregate income in each group. The total increase in income between 2001 and 2017 is multiplied by two to find the corresponding increase in GDP, assuming that incomes represent about half of GDP.

Appendix Table 38: Increase in Income of Aboriginals Assuming Aboriginals Eliminate the 2001 Gap in Educational Attainment, Scenario 9: Employment Rates Constant, Income Reaches 2017 level of non-Aboriginals

		2001	2017			
Aboriginal Working Age Population		715,500	1,013,900			
GDP in 2001 dollars		1,108,048,000	1,692,459,292			
Employment in Canada		14,946,158	18,485,547			
		2001	**2017**	**Income in 2001**	**Income in 2017**	**Absolute change in income**
Less than Grade 5	Share of the population	3.72	2.13			
	Average Income (persons with positive ir	14,774	26,859	63,359	93,496	30,137
	Number of aboriginals employed	4,289	3,481			
	Employment rate of aboriginals	16.1	16.1			
Grades 5 to 8	Share of the population	11.24	7.54			
	Average Income (persons with positive ir	16,425	28,403	316,938	521,449	204,511
	Number of aboriginals employed	19,296	18,359			
	Employment rate of aboriginals	24.0	24.0			
Grades 9 to 13	Share of the population	32.87	21.22			
	Average Income (persons with positive ir	16,007	26,396	1,400,450	2,112,109	711,658
	Number of aboriginals employed	87,492	80,017			
	Employment rate of aboriginals	37.2	37.2			
Secondary - high school graduation certificate	Share of the population	9.45	14.22			
	Average Income (persons with positive ir	21,681	33,008	915,098	2,969,557	2,054,460
	Number of aboriginals employed	42,207	89,964			
	Employment rate of aboriginals	62.4	62.4			
Trades certificate or diploma	Share of the population	3.92	3.49			
	Average Income (persons with positive ir	23,601	41,583	397,266	881,682	484,417
	Number of aboriginals employed	16,832	21,203			
	Employment rate of aboriginals	60.0	60.0			
College: With trades certificate or diploma	Share of the population	7.56	6.65			
	Average Income (persons with positive ir	27,033	41,179	1,002,728	1,903,320	900,592
	Number of aboriginals employed	37,093	46,220			
	Employment rate of aboriginals	68.6	68.6			
College: With college certificate or diploma	Share of the population	9.22	12.20			
	Average Income (persons with positive ir	25,423	40,957	1,197,960	3,618,393	2,420,434
	Number of aboriginals employed	47,120	88,347			
	Employment rate of aboriginals	71.4	71.4			
University: With university or college certificate or diplo	Share of the population	4.38	6.02			
	Average Income (persons with positive ir	25,806	42,202	559,290	1,779,882	1,220,592
	Number of aboriginals employed	21,673	42,175			
	Employment rate of aboriginals	69.1	69.1			
University: With bachelor or first professional degree	Share of the population	3.43	10.81			
	Average Income (persons with positive ir	33,081	54,378	636,115	4,666,593	4,030,478
	Number of aboriginals employed	19,229	85,818			
	Employment rate of aboriginals	78.3	78.3			
University: With certificate or diploma above bachelor le	Share of the population	0.46	1.63			
	Average Income (persons with positive ir	38,005	56,975	87,516	652,785	565,270
	Number of aboriginals employed	2,303	11,457			
	Employment rate of aboriginals	69.3	69.3			
University: With master's degree[s]	Share of the population	0.57	2.73			
	Average Income (persons with positive ir	47,302	66,008	150,553	1,416,363	1,265,810
	Number of aboriginals employed	3,183	21,458			
	Employment rate of aboriginals	77.4	77.4			
University: With earned doctorate	Share of the population	0.07	0.56			
	Average Income (persons with positive ir	46,535	76,439	14,374	253,189	238,815
	Number of aboriginals employed	309	3,312			
	Employment rate of aboriginals	58.3	58.3			
College: Without trades or college certificate or diploma	Share of the population	8.75	6.40			
	Average Income (persons with positive ir	18,557	30,402	648,374	1,100,016	451,642
	Number of aboriginals employed	34,940	36,182			
	Employment rate of aboriginals	55.8	55.8			
University: Without certificate, diploma or degree	Share of the population	4.33	4.40			
	Average Income (persons with positive ir	17,779	29,546	326,359	780,845	454,486
	Number of aboriginals employed	18,357	26,429			
	Employment rate of aboriginals	59.2	59.2			

Source: Census 2001, Public Use Microdata Files. Estimation of 2017 WAP from Statistics Canada (2005), and GDP in 2017 and real wage growth from 2001 to 2017 from Dungan a
Note: The share of population in each education group is from the Census PUMF, while the total working age population absolute number is from Statistics Canada (2005).
To find the number of aboriginals in each group, the proportion was multiplied by the total number, and then to find the number with positive income, it was again multiplied by the ratio of persons with positive income to the total working age population for each educational group. The number of persons obtained in this way was then multiplied by average inc to obtain the aggregate income in each group. The total increase in income between 2001 and 2017 is multiplied by two to find the corresponding increase in GDP, assuming that incomes represent about half of GDP.

Appendix Table 39: Increase in Income of Aboriginals Assuming Aboriginals Eliminate the 2001 Gap in Educational Attainment, Scenario 10: Employment Rates Reach 2001 Level of non-Aboriginals and Income the 2017 Level of non-Aboriginals

		2001	2017			
Aboriginal Working Age Population		715,500	1,013,900			
GDP in 2001 dollars		1,108,048,000	1,692,459,292			
Employment in Canada		14,946,158	18,485,547			
		2001	**2017**	**Income in 2001**	**Income in 2017**	**Absolute change in income**
Less than Grade 5	Share of the population	3.72	2.13			
	Average Income (persons with positive ir	14,774	26,859	63,359	118,467	55,108
	Number of aboriginals employed	4,289	4,411			
	Employment rate of aboriginals	16.1	20.4			
Grades 5 to 8	Share of the population	11.24	7.54			
	Average Income (persons with positive ir	16,425	28,403	316,938	538,830	221,893
	Number of aboriginals employed	19,296	18,971			
	Employment rate of aboriginals	24.0	24.8			
Grades 9 to 13	Share of the population	32.87	21.22			
	Average Income (persons with positive ir	16,007	26,396	1,400,450	2,691,235	1,290,785
	Number of aboriginals employed	87,492	101,957			
	Employment rate of aboriginals	37.2	47.4			
Secondary - high school graduation certificate	Share of the population	9.45	14.22			
	Average Income (persons with positive ir	21,681	33,008	915,098	3,079,012	2,163,914
	Number of aboriginals employed	42,207	93,280			
	Employment rate of aboriginals	62.4	64.7			
Trades certificate or diploma	Share of the population	3.92	3.49			
	Average Income (persons with positive ir	23,601	41,583	397,266	949,278	552,012
	Number of aboriginals employed	16,832	22,829			
	Employment rate of aboriginals	60.0	64.6			
College: With trades certificate or diploma	Share of the population	7.56	6.65			
	Average Income (persons with positive ir	27,033	41,179	1,002,728	2,044,820	1,042,092
	Number of aboriginals employed	37,093	49,656			
	Employment rate of aboriginals	68.6	73.7			
College: With college certificate or diploma	Share of the population	9.22	12.20			
	Average Income (persons with positive ir	25,423	40,957	1,197,960	3,826,172	2,628,212
	Number of aboriginals employed	47,120	93,420			
	Employment rate of aboriginals	71.4	75.5			
University: With university or college certificate or diplo	Share of the population	4.38	6.02			
	Average Income (persons with positive ir	25,806	42,202	559,290	1,890,642	1,331,352
	Number of aboriginals employed	21,673	44,799			
	Employment rate of aboriginals	69.1	73.4			
University: With bachelor or first professional degree	Share of the population	3.43	10.81			
	Average Income (persons with positive ir	33,081	54,378	636,115	4,666,593	4,030,478
	Number of aboriginals employed	19,229	85,818			
	Employment rate of aboriginals	78.3	78.3			
University: With certificate or diploma above bachelor le	Share of the population	0.46	1.63			
	Average Income (persons with positive ir	38,005	56,975	87,516	716,839	629,324
	Number of aboriginals employed	2,303	12,582			
	Employment rate of aboriginals	69.3	76.1			
University: With master’s degree[s]	Share of the population	0.57	2.73			
	Average Income (persons with positive ir	47,302	66,008	150,553	1,429,173	1,278,619
	Number of aboriginals employed	3,183	21,652			
	Employment rate of aboriginals	77.4	78.1			
University: With earned doctorate	Share of the population	0.07	0.56			
	Average Income (persons with positive ir	46,535	76,439	14,374	338,309	323,935
	Number of aboriginals employed	309	4,426			
	Employment rate of aboriginals	58.3	77.9			
College: Without trades or college certificate or diploma	Share of the population	8.75	6.40			
	Average Income (persons with positive ir	18,557	30,402	648,374	1,308,980	660,606
	Number of aboriginals employed	34,940	43,055			
	Employment rate of aboriginals	55.8	66.4			
University: Without certificate, diploma or degree	Share of the population	4.33	4.40			
	Average Income (persons with positive ir	17,779	29,546	326,359	889,003	562,643
	Number of aboriginals employed	18,357	30,089			
	Employment rate of aboriginals	59.2	67.4			

Source: Census 2001, Public Use Microdata Files. Estimation of 2017 WAP from Statistics Canada (2005), and GDP in 2017 and real wage growth from 2001 to 2017 from Dungan a
Note: The share of population in each education group is from the Census PUMF, while the total working age population absolute number is from Statistics Canada (2005).
To find the number of aboriginals in each group, the proportion was multiplied by the total number, and then to find the number with positive income, it was again multiplied by the ratio of persons with positive income to the total working age population for each educational group. The number of persons obtained in this way was then multiplied by average inc to obtain the aggregate income in each group. The total increase in income between 2001 and 2017 is multiplied by two to find the corresponding increase in GDP, assuming that incomes represent about half of GDP.

Appendix Table 40: Increase in Income of North American Indians (NAI) Assuming No Change in Educational Attainment, Base Scenario 1: No Increase in Employment Rates, and Employment Incomes Increase with Average Rate

		2001	2017			
North American Indian Working Age Population		467,800	717,700			
GDP in 2001 dollars (thousands)		1,108,048,000	1,692,459,292			
Employment in Canada		14,946,158	18,485,547			
		2001	**2017**	**Income in 2001**	**Income in 2017**	**Absolute change in income**
Less than Grade 5	Share of the population	4.31	4.31			
	Average Income (persons with positive ir	14,813	18,591	40,577	78,129	37,551
	Number of NAI employed	2,739	4,203			
	Employment rate of aboriginals	13.6	13.6			
Grades 5 to 8	Share of the population	12.60	12.60			
	Average Income (persons with positive ir	15,232	19,117	181,866	350,169	168,303
	Number of NAI employed	11,939	18,318			
	Employment rate of aboriginals	20.3	20.3			
Grades 9 to 13	Share of the population	33.39	33.39			
	Average Income (persons with positive ir	15,317	19,222	752,474	1,448,832	696,358
	Number of NAI employed	49,128	75,373			
	Employment rate of aboriginals	31.5	31.5			
Secondary - high school graduation certificate	Share of the population	8.71	8.71			
	Average Income (persons with positive ir	21,130	26,518	497,090	957,108	460,019
	Number of NAI employed	23,526	36,093			
	Employment rate of aboriginals	57.7	57.7			
Trades certificate or diploma	Share of the population	4.06	4.06			
	Average Income (persons with positive ir	20,527	25,762	225,453	434,092	208,640
	Number of NAI employed	10,983	16,850			
	Employment rate of aboriginals	57.8	57.8			
College: With trades certificate or diploma	Share of the population	6.66	6.66			
	Average Income (persons with positive ir	24,362	30,574	488,406	940,388	451,982
	Number of NAI employed	20,048	30,757			
	Employment rate of aboriginals	64.3	64.3			
College: With college certificate or diploma	Share of the population	8.39	8.39			
	Average Income (persons with positive ir	23,907	30,003	651,269	1,253,969	602,700
	Number of NAI employed	27,242	41,794			
	Employment rate of aboriginals	69.4	69.4			
University: With university or college certificate or diplo	Share of the population	4.49	4.49			
	Average Income (persons with positive ir	23,963	30,074	339,043	652,802	313,759
	Number of NAI employed	14,148	21,706			
	Employment rate of aboriginals	67.4	67.4			
University: With bachelor or first professional degree	Share of the population	3.16	3.16			
	Average Income (persons with positive ir	32,654	40,981	365,096	702,964	337,868
	Number of NAI employed	11,181	17,153			
	Employment rate of aboriginals	75.7	75.7			
University: With certificate or diploma above bachelor le	Share of the population	0.38	0.38			
	Average Income (persons with positive ir	39,254	49,264	43,990	84,699	40,709
	Number of NAI employed	1,121	1,719			
	Employment rate of aboriginals	62.5	62.5			
University: With master's degree[s]	Share of the population	0.52	0.52			
	Average Income (persons with positive ir	45,306	56,859	81,147	156,243	75,096
	Number of NAI employed	1,791	2,748			
	Employment rate of aboriginals	74.1	74.1			
University: With earned doctorate	Share of the population	0.08	0.08			
	Average Income (persons with positive ir	50,200	63,002	8,958	17,248	8,290
	Number of NAI employed	178	274			
	Employment rate of aboriginals	49.9	49.9			
College: Without trades or college certificate or diploma	Share of the population	8.81	8.81			
	Average Income (persons with positive ir	18,102	22,718	389,462	749,880	360,418
	Number of NAI employed	21,515	33,009			
	Employment rate of aboriginals	52.2	52.2			
University: Without certificate, diploma or degree	Share of the population	4.46	4.46			
	Average Income (persons with positive ir	17,568	22,048	188,458	362,862	174,404
	Number of NAI employed	10,727	16,458			
	Employment rate of aboriginals	51.4	51.4			

Source: Census 2001, Public Use Microdata Files. Estimation of 2017 WAP from Statistics Canada (2005) and GDP in 2017 from Dungan and Murphy (2007)
Note: The share of population in each education group is from the Census PUMF, while the total working age population absolute number is from Statistics Canada (2005).
To find the number of aboriginals in each group, the proportion was multiplied by the total number, and then to find the number with positive income, it was again multiplied by the ratio of persons with positive income to the total working age population for each educational group. The number of persons obtained in this way was then multiplied by average inc to obtain the aggregate income in each group. The total increase in income between 2001 and 2017 is multiplied by two to find the corresponding increase in GDP, assuming that incomes represent about half of GDP.

Appendix Table 41: Increase in Income of North American Indians (NAI) Assuming No Change in Educational Attainment, Base Scenario 2: Employment Rates Increase to the 2001 level of non-Aboriginals and Income to the 2017 Level of non-Aboriginals

		2001	2017			
North American Indian Working Age Population		467,800	717,700			
GDP in 2001 dollars (thousands)		1,108,048,000	1,692,459,292			
Employment in Canada		14,946,158	18,485,547			
		2001	**2017**	**Income in 2001**	**Income in 2017**	**Absolute change in income**
Less than Grade 5	Share of the population	4.31	4.31			
	Average Income (persons with positive in	14,813	26,859	40,577	169,352	128,774
	Number of NAI employed	2,739	6,305			
	Employment rate of aboriginals	13.6	20.4			
Grades 5 to 8	Share of the population	12.60	12.60			
	Average Income (persons with positive in	15,232	28,403	181,866	636,739	454,873
	Number of NAI employed	11,939	22,418			
	Employment rate of aboriginals	20.3	24.8			
Grades 9 to 13	Share of the population	33.39	33.39			
	Average Income (persons with positive in	15,317	26,396	752,474	2,997,969	2,245,495
	Number of NAI employed	49,128	113,578			
	Employment rate of aboriginals	31.5	47.4			
Secondary - high school graduation certificate	Share of the population	8.71	8.71			
	Average Income (persons with positive in	21,130	33,008	497,090	1,333,090	836,001
	Number of NAI employed	23,526	40,387			
	Employment rate of aboriginals	57.7	64.6			
Trades certificate or diploma	Share of the population	4.06	4.06			
	Average Income (persons with positive in	20,527	41,583	225,453	782,477	557,024
	Number of NAI employed	10,983	18,817			
	Employment rate of aboriginals	57.8	64.6			
College: With trades certificate or diploma	Share of the population	6.66	6.66			
	Average Income (persons with positive in	24,362	41,179	488,406	1,451,241	962,835
	Number of NAI employed	20,048	35,242			
	Employment rate of aboriginals	64.3	73.7			
College: With college certificate or diploma	Share of the population	8.39	8.39			
	Average Income (persons with positive in	23,907	40,957	651,269	1,861,357	1,210,088
	Number of NAI employed	27,242	45,447			
	Employment rate of aboriginals	69.4	75.5			
University: With university or college certificate or diplo	Share of the population	4.49	4.49			
	Average Income (persons with positive in	23,963	42,202	339,043	997,396	658,353
	Number of NAI employed	14,148	23,634			
	Employment rate of aboriginals	67.4	73.4			
University: With bachelor or first professional degree	Share of the population	3.16	3.16			
	Average Income (persons with positive in	32,654	54,378	365,096	965,092	599,997
	Number of NAI employed	11,181	17,748			
	Employment rate of aboriginals	75.7	78.3			
University: With certificate or diploma above bachelor le	Share of the population	0.38	0.38			
	Average Income (persons with positive in	39,254	56,975	43,990	119,205	75,216
	Number of NAI employed	1,121	2,092			
	Employment rate of aboriginals	62.5	76.1			
University: With master's degree[s]	Share of the population	0.52	0.52			
	Average Income (persons with positive in	45,306	66,008	81,147	191,279	110,132
	Number of NAI employed	1,791	2,898			
	Employment rate of aboriginals	74.1	78.1			
University: With earned doctorate	Share of the population	0.08	0.08			
	Average Income (persons with positive in	50,200	76,439	8,958	32,662	23,703
	Number of NAI employed	178	427			
	Employment rate of aboriginals	49.9	77.9			
College: Without trades or college certificate or diploma	Share of the population	8.81	8.81			
	Average Income (persons with positive in	18,102	30,402	389,462	1,276,196	886,734
	Number of NAI employed	21,515	41,977			
	Employment rate of aboriginals	52.2	66.4			
University: Without certificate, diploma or degree	Share of the population	4.46	4.46			
	Average Income (persons with positive in	17,568	29,546	188,458	637,800	449,342
	Number of NAI employed	10,727	21,587			
	Employment rate of aboriginals	51.4	67.4			

Source: Census 2001, Public Use Microdata Files. Estimation of 2017 WAP from Statistics Canada (2005) and GDP in 2017 from Dungan and Murphy (2007)
Note: The share of population in each education group is from the Census PUMF, while the total working age population absolute number is from Statistics Canada (2005).
To find the number of aboriginals in each group, the proportion was multiplied by the total number, and then to find the number with positive income, it was again multiplied by the ratio of persons with positive income to the total working age population for each educational group. The number of persons obtained in this way was then multiplied by average inc to obtain the aggregate income in each group. The total increase in income between 2001 and 2017 is multiplied by two to find the corresponding increase in GDP, assuming that incomes represent about half of GDP.

Appendix Table 42: Increase in Income of North American Indians (NAI) Assuming Elimination of Half the 2001 Gap in Educational Attainment, Scenario 3: No Change in Employment Rates, Employment Income Increase with Average Rate

		2001	2017			
North American Indian Working Age Population		467,800	717,700			
GDP in 2001 dollars		1,108,048,000	1,692,459,292			
Employment in Canada		14,946,158	18,485,547			
		2001	**2017**	**Income in 2001**	**Income in 2017**	**Absolute change in income**
Less than Grade 5	Share of the population	4.31	3.22			
	Average Income (persons with positive ir	14,813	18,591	40,577	58,408	17,831
	Number of NAI employed	2,739	3,142			
	Employment rate of aboriginals	13.6	13.6			
Grades 5 to 8	Share of the population	12.60	10.07			
	Average Income (persons with positive ir	15,232	19,117	181,866	279,963	98,097
	Number of NAI employed	11,939	14,645			
	Employment rate of aboriginals	20.3	20.3			
Grades 9 to 13	Share of the population	33.39	27.30			
	Average Income (persons with positive ir	15,317	19,222	752,474	1,184,736	432,262
	Number of NAI employed	49,128	61,634			
	Employment rate of aboriginals	31.5	31.5			
Secondary - high school graduation certificate	Share of the population	8.71	11.47			
	Average Income (persons with positive ir	21,130	26,518	497,090	1,259,748	762,659
	Number of NAI employed	23,526	47,506			
	Employment rate of aboriginals	57.7	57.7			
Trades certificate or diploma	Share of the population	4.06	3.77			
	Average Income (persons with positive ir	20,527	25,762	225,453	403,436	177,983
	Number of NAI employed	10,983	15,660			
	Employment rate of aboriginals	57.8	57.8			
College: With trades certificate or diploma	Share of the population	6.66	6.65			
	Average Income (persons with positive ir	24,362	30,574	488,406	939,159	450,753
	Number of NAI employed	20,048	30,717			
	Employment rate of aboriginals	64.3	64.3			
College: With college certificate or diploma	Share of the population	8.39	10.30			
	Average Income (persons with positive ir	23,907	30,003	651,269	1,539,289	888,020
	Number of NAI employed	27,242	51,304			
	Employment rate of aboriginals	69.4	69.4			
University: With university or college certificate or diplo	Share of the population	4.49	5.25			
	Average Income (persons with positive ir	23,963	30,074	339,043	764,368	425,324
	Number of NAI employed	14,148	25,416			
	Employment rate of aboriginals	67.4	67.4			
University: With bachelor or first professional degree	Share of the population	3.16	6.98			
	Average Income (persons with positive ir	32,654	40,981	365,096	1,554,528	1,189,432
	Number of NAI employed	11,181	37,933			
	Employment rate of aboriginals	75.7	75.7			
University: With certificate or diploma above bachelor le	Share of the population	0.38	1.01			
	Average Income (persons with positive ir	39,254	49,264	43,990	222,619	178,629
	Number of NAI employed	1,121	4,519			
	Employment rate of aboriginals	62.5	62.5			
University: With master's degree[s]	Share of the population	0.52	1.63			
	Average Income (persons with positive ir	45,306	56,859	81,147	491,298	410,151
	Number of NAI employed	1,791	8,641			
	Employment rate of aboriginals	74.1	74.1			
University: With earned doctorate	Share of the population	0.08	0.32			
	Average Income (persons with positive ir	50,200	63,002	8,958	71,857	62,899
	Number of NAI employed	178	1,141			
	Employment rate of aboriginals	49.9	49.9			
College: Without trades or college certificate or diploma	Share of the population	8.81	7.60			
	Average Income (persons with positive ir	18,102	22,718	389,462	647,163	257,701
	Number of NAI employed	21,515	28,487			
	Employment rate of aboriginals	52.2	52.2			
University: Without certificate, diploma or degree	Share of the population	4.46	4.43			
	Average Income (persons with positive ir	17,568	22,048	188,458	360,441	171,983
	Number of NAI employed	10,727	16,348			
	Employment rate of aboriginals	51.4	51.4			

Source: Census 2001, Public Use Microdata Files. Estimation of 2017 WAP from Statistics Canada (2005) and GDP in 2017 from Dungan and Murphy (2007)
Note: The share of population in each education group is from the Census PUMF, while the total working age population absolute number is from Statistics Canada (2005).
To find the number of aboriginals in each group, the proportion was multiplied by the total number, and then to find the number with positive income, it was again multiplied by the ratio of persons with positive income to the total working age population for each educational group. The number of persons obtained in this way was then multiplied by average inc to obtain the aggregate income in each group. The total increase in income between 2001 and 2017 is multiplied by two to find the corresponding increase in GDP, assuming that incomes represent about half of GDP.

Appendix Table 43: Increase in Income of North American Indians (NAI) Assuming Elimination of Half the 2001 Gap in Educational Attainment, Scenario 4: Employment Rates Reach the 2001 Level of non-Aboriginals and Income Increases with Average Rate

		2001	2017			
North American Indian Working Age Population		467,800	717,700			
GDP in 2001 dollars		1,108,048,000	1,692,459,292			
Employment in Canada		14,946,158	18,485,547			
		2001	**2017**	**Income in 2001**	**Income in 2017**	**Absolute change in income**
Less than Grade 5	Share of the population	4.31	3.22			
	Average Income (persons with positive in	14,813	18,591	40,577	87,632	47,055
	Number of NAI employed	2,739	4,714			
	Employment rate of aboriginals	13.6	20.4			
Grades 5 to 8	Share of the population	12.60	10.07			
	Average Income (persons with positive in	15,232	19,117	181,866	342,638	160,772
	Number of NAI employed	11,939	17,924			
	Employment rate of aboriginals	20.3	24.8			
Grades 9 to 13	Share of the population	33.39	27.30			
	Average Income (persons with positive in	15,317	19,222	752,474	1,785,260	1,032,786
	Number of NAI employed	49,128	92,875			
	Employment rate of aboriginals	31.5	47.4			
Secondary - high school graduation certificate	Share of the population	8.71	11.47			
	Average Income (persons with positive in	21,130	26,518	497,090	1,409,599	912,510
	Number of NAI employed	23,526	53,157			
	Employment rate of aboriginals	57.7	64.6			
Trades certificate or diploma	Share of the population	4.06	3.77			
	Average Income (persons with positive in	20,527	25,762	225,453	513,997	288,544
	Number of NAI employed	10,983	19,952			
	Employment rate of aboriginals	57.8	73.7			
College: With trades certificate or diploma	Share of the population	6.66	6.65			
	Average Income (persons with positive in	24,362	30,574	488,406	1,076,094	587,689
	Number of NAI employed	20,048	35,196			
	Employment rate of aboriginals	64.3	73.7			
College: With college certificate or diploma	Share of the population	8.39	10.30			
	Average Income (persons with positive in	23,907	30,003	651,269	1,673,817	1,022,548
	Number of NAI employed	27,242	55,788			
	Employment rate of aboriginals	69.4	75.5			
University: With university or college certificate or diplo	Share of the population	4.49	5.25			
	Average Income (persons with positive in	23,963	30,074	339,043	832,234	493,190
	Number of NAI employed	14,148	27,673			
	Employment rate of aboriginals	67.4	73.4			
University: With bachelor or first professional degree	Share of the population	3.16	6.98			
	Average Income (persons with positive in	32,654	40,981	365,096	1,608,401	1,243,306
	Number of NAI employed	11,181	39,248			
	Employment rate of aboriginals	75.7	78.3			
University: With certificate or diploma above bachelor le	Share of the population	0.38	1.01			
	Average Income (persons with positive in	39,254	49,264	43,990	270,911	226,921
	Number of NAI employed	1,121	5,499			
	Employment rate of aboriginals	62.5	76.1			
University: With master's degree[s]	Share of the population	0.52	1.63			
	Average Income (persons with positive in	45,306	56,859	81,147	518,101	436,954
	Number of NAI employed	1,791	9,112			
	Employment rate of aboriginals	74.1	78.1			
University: With earned doctorate	Share of the population	0.08	0.32			
	Average Income (persons with positive in	50,200	63,002	8,958	112,148	103,190
	Number of NAI employed	178	1,780			
	Employment rate of aboriginals	49.9	77.9			
College: Without trades or college certificate or diploma	Share of the population	8.81	7.60			
	Average Income (persons with positive in	18,102	22,718	389,462	822,996	433,534
	Number of NAI employed	21,515	36,227			
	Employment rate of aboriginals	52.2	66.4			
University: Without certificate, diploma or degree	Share of the population	4.46	4.43			
	Average Income (persons with positive in	17,568	22,048	188,458	472,773	284,315
	Number of NAI employed	10,727	21,443			
	Employment rate of aboriginals	51.4	67.4			

Source: Census 2001, Public Use Microdata Files. Estimation of 2017 WAP from Statistics Canada (2005) and GDP in 2017 from Dungan and Murphy (2007)
Note: The share of population in each education group is from the Census PUMF, while the total working age population absolute number is from Statistics Canada (2005).
To find the number of aboriginals in each group, the proportion was multiplied by the total number, and then to find the number with positive income, it was again multiplied by the ratio of persons with positive income to the total working age population for each educational group. The number of persons obtained in this way was then multiplied by average inc to obtain the aggregate income in each group. The total increase in income between 2001 and 2017 is multiplied by two to find the corresponding increase in GDP, assuming that incomes represent about half of GDP.

Appendix Table 44: Increase in Income of North American Indians (NAI) Assuming Elimination of Half the 2001 Gap in Educational Attainment, Scenario 5: Employment Rates Constant, Income Reaches 2017 level of non-Aboriginals

		2001	2017			
North American Indian Working Age Population		467,800	717,700			
GDP in 2001 dollars		1,108,048,000	1,692,459,292			
Employment in Canada		14,946,158	18,485,547			
		2001	**2017**	**Income in 2001**	**Income in 2017**	**Absolute change in income**
Less than Grade 5	Share of the population	4.31	3.22			
	Average Income (persons with positive in	14,813	26,859	40,577	84,384	43,806
	Number of NAI employed	2,739	3,142			
	Employment rate of aboriginals	13.6	13.6			
Grades 5 to 8	Share of the population	12.60	10.07			
	Average Income (persons with positive in	15,232	28,403	181,866	415,958	234,092
	Number of NAI employed	11,939	14,645			
	Employment rate of aboriginals	20.3	20.3			
Grades 9 to 13	Share of the population	33.39	27.30			
	Average Income (persons with positive in	15,317	26,396	752,474	1,626,863	874,389
	Number of NAI employed	49,128	61,634			
	Employment rate of aboriginals	31.5	31.5			
Secondary - high school graduation certificate	Share of the population	8.71	11.47			
	Average Income (persons with positive in	21,130	33,008	497,090	1,568,088	1,070,998
	Number of NAI employed	23,526	47,506			
	Employment rate of aboriginals	57.7	57.7			
Trades certificate or diploma	Share of the population	4.06	3.77			
	Average Income (persons with positive in	20,527	41,583	225,453	651,197	425,744
	Number of NAI employed	10,983	15,660			
	Employment rate of aboriginals	57.8	57.8			
College: With trades certificate or diploma	Share of the population	6.66	6.65			
	Average Income (persons with positive in	24,362	41,179	488,406	1,264,912	776,507
	Number of NAI employed	20,048	30,717			
	Employment rate of aboriginals	64.3	64.3			
College: With college certificate or diploma	Share of the population	8.39	10.30			
	Average Income (persons with positive in	23,907	40,957	651,269	2,101,236	1,449,967
	Number of NAI employed	27,242	51,304			
	Employment rate of aboriginals	69.4	69.4			
University: With university or college certificate or diplo	Share of the population	4.49	5.25			
	Average Income (persons with positive in	23,963	42,202	339,043	1,072,619	733,576
	Number of NAI employed	14,148	25,416			
	Employment rate of aboriginals	67.4	67.4			
University: With bachelor or first professional degree	Share of the population	3.16	6.98			
	Average Income (persons with positive in	32,654	54,378	365,096	2,062,710	1,697,614
	Number of NAI employed	11,181	37,933			
	Employment rate of aboriginals	75.7	75.7			
University: With certificate or diploma above bachelor le	Share of the population	0.38	1.01			
	Average Income (persons with positive in	39,254	56,975	43,990	257,463	213,474
	Number of NAI employed	1,121	4,519			
	Employment rate of aboriginals	62.5	62.5			
University: With master's degree[s]	Share of the population	0.52	1.63			
	Average Income (persons with positive in	45,306	66,008	81,147	570,351	489,204
	Number of NAI employed	1,791	8,641			
	Employment rate of aboriginals	74.1	74.1			
University: With earned doctorate	Share of the population	0.08	0.32			
	Average Income (persons with positive in	50,200	76,439	8,958	87,184	78,226
	Number of NAI employed	178	1,141			
	Employment rate of aboriginals	49.9	49.9			
College: Without trades or college certificate or diploma	Share of the population	8.81	7.60			
	Average Income (persons with positive in	18,102	30,402	389,462	866,075	476,613
	Number of NAI employed	21,515	28,487			
	Employment rate of aboriginals	52.2	52.2			
University: Without certificate, diploma or degree	Share of the population	4.46	4.43			
	Average Income (persons with positive in	17,568	29,546	188,458	483,014	294,555
	Number of NAI employed	10,727	16,348			
	Employment rate of aboriginals	51.4	51.4			

Source: Census 2001, Public Use Microdata Files. Estimation of 2017 WAP from Statistics Canada (2005) and GDP in 2017 from Dungan and Murphy (2007)
Note: The share of population in each education group is from the Census PUMF, while the total working age population absolute number is from Statistics Canada (2005).
To find the number of aboriginals in each group, the proportion was multiplied by the total number, and then to find the number with positive income, it was again multiplied by the ratio of persons with positive income to the total working age population for each educational group. The number of persons obtained in this way was then multiplied by average inc to obtain the aggregate income in each group. The total increase in income between 2001 and 2017 is multiplied by two to find the corresponding increase in GDP, assuming that incomes represent about half of GDP.

Appendix Table 45: Increase in Income of North American Indians (NAI) Assuming Elimination of Half the 2001 Gap in Educational Attainment, Scenario 6: Employment Rates Reach 2001 Level of non-Aboriginals and Income the 2017 Level of non-Aboriginals

		2001	2017			
North American Indian Working Age Population		467,800	717,700			
GDP in 2001 dollars (thousands)		1,108,048,000	1,692,459,292			
Employment in Canada		14,946,158	18,485,547			
		2001	**2017**	**Income in 2001**	**Income in 2017**	**Absolute change in income**
Less than Grade 5	Share of the population	4.31	3.22			
	Average Income (persons with positive in	14,813	26,859	40,577	126,605	86,028
	Number of NAI employed	2,739	4,714			
	Employment rate of aboriginals	13.6	20.4			
Grades 5 to 8	Share of the population	12.60	10.07			
	Average Income (persons with positive in	15,232	28,403	181,866	509,078	327,212
	Number of NAI employed	11,939	17,924			
	Employment rate of aboriginals	20.3	24.8			
Grades 9 to 13	Share of the population	33.39	27.30			
	Average Income (persons with positive in	15,317	26,396	752,474	2,451,494	1,699,020
	Number of NAI employed	49,128	92,875			
	Employment rate of aboriginals	31.5	47.4			
Secondary - high school graduation certificate	Share of the population	8.71	11.47			
	Average Income (persons with positive in	21,130	33,008	497,090	1,754,617	1,257,527
	Number of NAI employed	23,526	53,157			
	Employment rate of aboriginals	57.7	64.6			
Trades certificate or diploma	Share of the population	4.06	3.77			
	Average Income (persons with positive in	20,527	41,583	225,453	829,657	604,205
	Number of NAI employed	10,983	19,952			
	Employment rate of aboriginals	57.8	73.7			
College: With trades certificate or diploma	Share of the population	6.66	6.65			
	Average Income (persons with positive in	24,362	41,179	488,406	1,449,344	960,939
	Number of NAI employed	20,048	35,196			
	Employment rate of aboriginals	64.3	73.7			
College: With college certificate or diploma	Share of the population	8.39	10.30			
	Average Income (persons with positive in	23,907	40,957	651,269	2,284,877	1,633,608
	Number of NAI employed	27,242	55,788			
	Employment rate of aboriginals	69.4	75.5			
University: With university or college certificate or diplo	Share of the population	4.49	5.25			
	Average Income (persons with positive in	23,963	42,202	339,043	1,167,854	828,810
	Number of NAI employed	14,148	27,673			
	Employment rate of aboriginals	67.4	73.4			
University: With bachelor or first professional degree	Share of the population	3.16	6.98			
	Average Income (persons with positive in	32,654	54,378	365,096	2,134,195	1,769,099
	Number of NAI employed	11,181	39,248			
	Employment rate of aboriginals	75.7	78.3			
University: With certificate or diploma above bachelor le	Share of the population	0.38	1.01			
	Average Income (persons with positive in	39,254	56,975	43,990	313,314	269,324
	Number of NAI employed	1,121	5,499			
	Employment rate of aboriginals	62.5	76.1			
University: With master’s degree[s]	Share of the population	0.52	1.63			
	Average Income (persons with positive in	45,306	66,008	81,147	601,467	520,320
	Number of NAI employed	1,791	9,112			
	Employment rate of aboriginals	74.1	78.1			
University: With earned doctorate	Share of the population	0.08	0.32			
	Average Income (persons with positive in	50,200	76,439	8,958	136,069	127,110
	Number of NAI employed	178	1,780			
	Employment rate of aboriginals	49.9	77.9			
College: Without trades or college certificate or diploma	Share of the population	8.81	7.60			
	Average Income (persons with positive in	18,102	30,402	389,462	1,101,386	711,923
	Number of NAI employed	21,515	36,227			
	Employment rate of aboriginals	52.2	66.4			
University: Without certificate, diploma or degree	Share of the population	4.46	4.43			
	Average Income (persons with positive in	17,568	29,546	188,458	633,545	445,087
	Number of NAI employed	10,727	21,443			
	Employment rate of aboriginals	51.4	67.4			

Source: Census 2001, Public Use Microdata Files. Estimation of 2017 WAP from Statistics Canada (2005) and GDP in 2017 from Dungan and Murphy (2007)
Note: The share of population in each education group is from the Census PUMF, while the total working age population absolute number is from Statistics Canada (2005).
To find the number of aboriginals in each group, the proportion was multiplied by the total number, and then to find the number with positive income, it was again multiplied by the ratio of persons with positive income to the total working age population for each educational group. The number of persons obtained in this way was then multiplied by average inc to obtain the aggregate income in each group. The total increase in income between 2001 and 2017 is multiplied by two to find the corresponding increase in GDP, assuming that incomes represent about half of GDP.

Appendix Table 46: Increase in Income of North American Indians (NAI) Assuming Elimination of the 2001 Gap in Educational Attainment, Scenario 7: No Change in Employment Rates, Employment Income Increase with Average Rate

		2001	2017			
North American Indian Working Age Population		467,800	717,700			
GDP in 2001 dollars		1,108,048,000	1,692,459,292			
Employment in Canada		14,946,158	18,485,547			
		2001	**2017**	**Income in 2001**	**Income in 2017**	**Absolute change in income**
Less than Grade 5	Share of the population	4.31	2.13			
	Average Income (persons with positive ir	14,813	18,591	40,577	38,687	-1,890
	Number of NAI employed	2,739	2,081			
	Employment rate of aboriginals	13.6	13.6			
Grades 5 to 8	Share of the population	12.60	7.54			
	Average Income (persons with positive ir	15,232	19,117	181,866	209,757	27,891
	Number of NAI employed	11,939	10,973			
	Employment rate of aboriginals	20.3	20.3			
Grades 9 to 13	Share of the population	33.39	21.22			
	Average Income (persons with positive ir	15,317	19,222	752,474	920,641	168,167
	Number of NAI employed	49,128	47,895			
	Employment rate of aboriginals	31.5	31.5			
Secondary - high school graduation certificate	Share of the population	8.71	14.22			
	Average Income (persons with positive ir	21,130	26,518	497,090	1,562,389	1,065,299
	Number of NAI employed	23,526	58,919			
	Employment rate of aboriginals	57.7	57.7			
Trades certificate or diploma	Share of the population	4.06	3.49			
	Average Income (persons with positive ir	20,527	25,762	225,453	372,779	147,327
	Number of NAI employed	10,983	14,470			
	Employment rate of aboriginals	57.8	57.8			
College: With trades certificate or diploma	Share of the population	6.66	6.65			
	Average Income (persons with positive ir	24,362	30,574	488,406	937,930	449,525
	Number of NAI employed	20,048	30,677			
	Employment rate of aboriginals	64.3	64.3			
College: With college certificate or diploma	Share of the population	8.39	12.20			
	Average Income (persons with positive ir	23,907	30,003	651,269	1,824,608	1,173,339
	Number of NAI employed	27,242	60,814			
	Employment rate of aboriginals	69.4	69.4			
University: With university or college certificate or diplo	Share of the population	4.49	6.02			
	Average Income (persons with positive ir	23,963	30,074	339,043	875,933	536,890
	Number of NAI employed	14,148	29,126			
	Employment rate of aboriginals	67.4	67.4			
University: With bachelor or first professional degree	Share of the population	3.16	10.81			
	Average Income (persons with positive ir	32,654	40,981	365,096	2,406,091	2,040,996
	Number of NAI employed	11,181	58,712			
	Employment rate of aboriginals	75.7	75.7			
University: With certificate or diploma above bachelor le	Share of the population	0.38	1.63			
	Average Income (persons with positive ir	39,254	49,264	43,990	360,539	316,549
	Number of NAI employed	1,121	7,319			
	Employment rate of aboriginals	62.5	62.5			
University: With master's degree[s]	Share of the population	0.52	2.73			
	Average Income (persons with positive ir	45,306	56,859	81,147	826,353	745,205
	Number of NAI employed	1,791	14,533			
	Employment rate of aboriginals	74.1	74.1			
University: With earned doctorate	Share of the population	0.08	0.56			
	Average Income (persons with positive ir	50,200	63,002	8,958	126,466	117,508
	Number of NAI employed	178	2,007			
	Employment rate of aboriginals	49.9	49.9			
College: Without trades or college certificate or diploma	Share of the population	8.81	6.40			
	Average Income (persons with positive ir	18,102	22,718	389,462	544,446	154,984
	Number of NAI employed	21,515	23,966			
	Employment rate of aboriginals	52.2	52.2			
University: Without certificate, diploma or degree	Share of the population	4.46	4.40			
	Average Income (persons with positive ir	17,568	22,048	188,458	358,020	169,562
	Number of NAI employed	10,727	16,238			
	Employment rate of aboriginals	51.4	51.4			

Source: Census 2001, Public Use Microdata Files. Estimation of 2017 WAP from Statistics Canada (2005) and GDP in 2017 from Dungan and Murphy (2007)
Note: The share of population in each education group is from the Census PUMF, while the total working age population absolute number is from Statistics Canada (2005).
To find the number of aboriginals in each group, the proportion was multiplied by the total number, and then to find the number with positive income, it was again multiplied by the ratio of persons with positive income to the total working age population for each educational group. The number of persons obtained in this way was then multiplied by average inc to obtain the aggregate income in each group. The total increase in income between 2001 and 2017 is multiplied by two to find the corresponding increase in GDP, assuming that incomes represent about half of GDP.

Appendix Table 47: Increase in Income of North American Indians (NAI) Assuming Elimination of the 2001 Gap in Educational Attainment, Scenario 8: Employment Rates Reach the 2001 Level of non-Aboriginals and Income Increases with Average Rate

		2001	2017			
North American Indian Working Age Population		467,800	717,700			
GDP in 2001 dollars		1,108,048,000	1,692,459,292			
Employment in Canada		14,946,158	18,485,547			
		2001	**2017**	**Income in 2001**	**Income in 2017**	**Absolute change in income**
Less than Grade 5	Share of the population	4.31	2.13			
	Average Income (persons with positive in	14,813	18,591	40,577	58,044	17,467
	Number of NAI employed	2,739	3,122			
	Employment rate of aboriginals	13.6	20.4			
Grades 5 to 8	Share of the population	12.60	7.54			
	Average Income (persons with positive in	15,232	19,117	181,866	256,715	74,849
	Number of NAI employed	11,939	13,429			
	Employment rate of aboriginals	20.3	24.8			
Grades 9 to 13	Share of the population	33.39	21.22			
	Average Income (persons with positive in	15,317	19,222	752,474	1,387,299	634,825
	Number of NAI employed	49,128	72,172			
	Employment rate of aboriginals	31.5	47.4			
Secondary - high school graduation certificate	Share of the population	8.71	14.22			
	Average Income (persons with positive in	21,130	26,518	497,090	1,750,945	1,253,856
	Number of NAI employed	23,526	66,029			
	Employment rate of aboriginals	57.7	64.7			
Trades certificate or diploma	Share of the population	4.06	3.49			
	Average Income (persons with positive in	20,527	25,762	225,453	416,297	190,844
	Number of NAI employed	10,983	16,160			
	Employment rate of aboriginals	57.8	64.6			
College: With trades certificate or diploma	Share of the population	6.66	6.65			
	Average Income (persons with positive in	24,362	30,574	488,406	1,074,686	586,281
	Number of NAI employed	20,048	35,150			
	Employment rate of aboriginals	64.3	73.7			
College: With college certificate or diploma	Share of the population	8.39	12.20			
	Average Income (persons with positive in	23,907	30,003	651,269	1,984,073	1,332,804
	Number of NAI employed	27,242	66,128			
	Employment rate of aboriginals	69.4	75.5			
University: With university or college certificate or diplo	Share of the population	4.49	6.02			
	Average Income (persons with positive in	23,963	30,074	339,043	953,705	614,662
	Number of NAI employed	14,148	31,712			
	Employment rate of aboriginals	67.4	73.4			
University: With bachelor or first professional degree	Share of the population	3.16	10.81			
	Average Income (persons with positive in	32,654	40,981	365,096	2,489,477	2,124,381
	Number of NAI employed	11,181	60,747			
	Employment rate of aboriginals	75.7	78.3			
University: With certificate or diploma above bachelor le	Share of the population	0.38	1.63			
	Average Income (persons with positive in	39,254	49,264	43,990	438,749	394,759
	Number of NAI employed	1,121	8,906			
	Employment rate of aboriginals	62.5	76.1			
University: With master's degree[s]	Share of the population	0.52	2.73			
	Average Income (persons with positive in	45,306	56,859	81,147	871,435	790,288
	Number of NAI employed	1,791	15,326			
	Employment rate of aboriginals	74.1	78.1			
University: With earned doctorate	Share of the population	0.08	0.56			
	Average Income (persons with positive in	50,200	63,002	8,958	197,377	188,418
	Number of NAI employed	178	3,133			
	Employment rate of aboriginals	49.9	77.9			
College: Without trades or college certificate or diploma	Share of the population	8.81	6.40			
	Average Income (persons with positive in	18,102	22,718	389,462	692,371	302,909
	Number of NAI employed	21,515	30,477			
	Employment rate of aboriginals	52.2	66.4			
University: Without certificate, diploma or degree	Share of the population	4.46	4.40			
	Average Income (persons with positive in	17,568	22,048	188,458	469,598	281,139
	Number of NAI employed	10,727	21,299			
	Employment rate of aboriginals	51.4	67.4			

Source: Census 2001, Public Use Microdata Files. Estimation of 2017 WAP from Statistics Canada (2005) and GDP in 2017 from Dungan and Murphy (2007)
Note: The share of population in each education group is from the Census PUMF, while the total working age population absolute number is from Statistics Canada (2005).
To find the number of aboriginals in each group, the proportion was multiplied by the total number, and then to find the number with positive income, it was again multiplied by the ratio of persons with positive income to the total working age population for each educational group. The number of persons obtained in this way was then multiplied by average inc to obtain the aggregate income in each group. The total increase in income between 2001 and 2017 is multiplied by two to find the corresponding increase in GDP, assuming that incomes represent about half of GDP.

Appendix Table 48: Increase in Income of North American Indians (NAI) Assuming Elimination of the 2001 Gap in Educational Attainment, Scenario 9: Employment Rates Constant, Income Reaches 2017 level of non-Aboriginals

		2001	2017			
North American Indian Working Age Population		467,800	717,700			
GDP in 2001 dollars		1,108,048,000	1,692,459,292			
Employment in Canada		14,946,158	18,485,547			
		2001	**2017**	**Income in 2001**	**Income in 2017**	**Absolute change in income**
Less than Grade 5	Share of the population	4.31	2.13			
	Average Income (persons with positive in	14,813	26,859	40,577	55,892	15,315
	Number of NAI employed	2,739	2,081			
	Employment rate of aboriginals	13.6	13.6			
Grades 5 to 8	Share of the population	12.60	7.54			
	Average Income (persons with positive in	15,232	28,403	181,866	311,649	129,783
	Number of NAI employed	11,939	10,973			
	Employment rate of aboriginals	20.3	20.3			
Grades 9 to 13	Share of the population	33.39	21.22			
	Average Income (persons with positive in	15,317	26,396	752,474	1,264,211	511,737
	Number of NAI employed	49,128	47,895			
	Employment rate of aboriginals	31.5	31.5			
Secondary - high school graduation certificate	Share of the population	8.71	14.22			
	Average Income (persons with positive in	21,130	33,008	497,090	1,944,803	1,447,714
	Number of NAI employed	23,526	58,919			
	Employment rate of aboriginals	57.7	57.7			
Trades certificate or diploma	Share of the population	4.06	3.49			
	Average Income (persons with positive in	20,527	41,583	225,453	601,714	376,261
	Number of NAI employed	10,983	14,470			
	Employment rate of aboriginals	57.8	57.8			
College: With trades certificate or diploma	Share of the population	6.66	6.65			
	Average Income (persons with positive in	24,362	41,179	488,406	1,263,257	774,852
	Number of NAI employed	20,048	30,677			
	Employment rate of aboriginals	64.3	64.3			
College: With college certificate or diploma	Share of the population	8.39	12.20			
	Average Income (persons with positive in	23,907	40,957	651,269	2,490,717	1,839,448
	Number of NAI employed	27,242	60,814			
	Employment rate of aboriginals	69.4	69.4			
University: With university or college certificate or diplo	Share of the population	4.49	6.02			
	Average Income (persons with positive in	23,963	42,202	339,043	1,229,176	890,133
	Number of NAI employed	14,148	29,126			
	Employment rate of aboriginals	67.4	67.4			
University: With bachelor or first professional degree	Share of the population	3.16	10.81			
	Average Income (persons with positive in	32,654	54,378	365,096	3,192,654	2,827,558
	Number of NAI employed	11,181	58,712			
	Employment rate of aboriginals	75.7	75.7			
University: With certificate or diploma above bachelor le	Share of the population	0.38	1.63			
	Average Income (persons with positive in	39,254	56,975	43,990	416,971	372,981
	Number of NAI employed	1,121	7,319			
	Employment rate of aboriginals	62.5	62.5			
University: With master's degree[s]	Share of the population	0.52	2.73			
	Average Income (persons with positive in	45,306	66,008	81,147	959,319	878,171
	Number of NAI employed	1,791	14,533			
	Employment rate of aboriginals	74.1	74.1			
University: With earned doctorate	Share of the population	0.08	0.56			
	Average Income (persons with positive in	50,200	76,439	8,958	153,440	144,482
	Number of NAI employed	178	2,007			
	Employment rate of aboriginals	49.9	49.9			
College: Without trades or college certificate or diploma	Share of the population	8.81	6.40			
	Average Income (persons with positive in	18,102	30,402	389,462	728,613	339,151
	Number of NAI employed	21,515	23,966			
	Employment rate of aboriginals	52.2	52.2			
University: Without certificate, diploma or degree	Share of the population	4.46	4.40			
	Average Income (persons with positive in	17,568	29,546	188,458	479,770	291,311
	Number of NAI employed	10,727	16,238			
	Employment rate of aboriginals	51.4	51.4			

Source: Census 2001, Public Use Microdata Files. Estimation of 2017 WAP from Statistics Canada (2005), and GDP in 2017 and real wage growth from 2001 to 2017 from Dungan a
Note: The share of population in each education group is from the Census PUMF, while the total working age population absolute number is from Statistics Canada (2005).
To find the number of aboriginals in each group, the proportion was multiplied by the total number, and then to find the number with positive income, it was again multiplied by the ratio of persons with positive income to the total working age population for each educational group. The number of persons obtained in this way was then multiplied by average inc to obtain the aggregate income in each group. The total increase in income between 2001 and 2017 is multiplied by two to find the corresponding increase in GDP, assuming that incomes represent about half of GDP.

Appendix Table 49: Increase in Income of North American Indians (NAI) Assuming Elimination of the 2001 Gap in Educational Attainment, Scenario 10: Employment Rates Reach 2001 Level of non-Aboriginals and Income the 2017 Level of non-Aboriginals

		2001	2017			
North American Indian Working Age Population		467,800	717,700			
GDP in 2001 dollars		1,108,048,000	1,692,459,292			
Employment in Canada		14,946,158	18,485,547			
		2001	**2017**	**Income in 2001**	**Income in 2017**	**Absolute change in income**
Less than Grade 5	Share of the population	4.31	2.13			
	Average Income (persons with positive in	14,813	26,859	40,577	83,858	43,281
	Number of NAI employed	2,739	3,122			
	Employment rate of aboriginals	13.6	20.4			
Grades 5 to 8	Share of the population	12.60	7.54			
	Average Income (persons with positive in	15,232	28,403	181,866	381,417	199,551
	Number of NAI employed	11,939	13,429			
	Employment rate of aboriginals	20.3	24.8			
Grades 9 to 13	Share of the population	33.39	21.22			
	Average Income (persons with positive in	15,317	26,396	752,474	1,905,020	1,152,546
	Number of NAI employed	49,128	72,172			
	Employment rate of aboriginals	31.5	47.4			
Secondary - high school graduation certificate	Share of the population	8.71	14.22			
	Average Income (persons with positive in	21,130	33,008	497,090	2,179,512	1,682,422
	Number of NAI employed	23,526	66,029			
	Employment rate of aboriginals	57.7	64.7			
Trades certificate or diploma	Share of the population	4.06	3.49			
	Average Income (persons with positive in	20,527	41,583	225,453	671,957	446,504
	Number of NAI employed	10,983	16,160			
	Employment rate of aboriginals	57.8	64.6			
College: With trades certificate or diploma	Share of the population	6.66	6.65			
	Average Income (persons with positive in	24,362	41,179	488,406	1,447,448	959,042
	Number of NAI employed	20,048	35,150			
	Employment rate of aboriginals	64.3	73.7			
College: With college certificate or diploma	Share of the population	8.39	12.20			
	Average Income (persons with positive in	23,907	40,957	651,269	2,708,397	2,057,128
	Number of NAI employed	27,242	66,128			
	Employment rate of aboriginals	69.4	75.5			
University: With university or college certificate or diplo	Share of the population	4.49	6.02			
	Average Income (persons with positive in	23,963	42,202	339,043	1,338,311	999,268
	Number of NAI employed	14,148	31,712			
	Employment rate of aboriginals	67.4	73.4			
University: With bachelor or first professional degree	Share of the population	3.16	10.81			
	Average Income (persons with positive in	32,654	54,378	365,096	3,303,298	2,938,202
	Number of NAI employed	11,181	60,747			
	Employment rate of aboriginals	75.7	78.3			
University: With certificate or diploma above bachelor le	Share of the population	0.38	1.63			
	Average Income (persons with positive in	39,254	56,975	43,990	507,422	463,433
	Number of NAI employed	1,121	8,906			
	Employment rate of aboriginals	62.5	76.1			
University: With master's degree[s]	Share of the population	0.52	2.73			
	Average Income (persons with positive in	45,306	66,008	81,147	1,011,655	930,508
	Number of NAI employed	1,791	15,326			
	Employment rate of aboriginals	74.1	78.1			
University: With earned doctorate	Share of the population	0.08	0.56			
	Average Income (persons with positive in	50,200	76,439	8,958	239,476	230,517
	Number of NAI employed	178	3,133			
	Employment rate of aboriginals	49.9	77.9			
College: Without trades or college certificate or diploma	Share of the population	8.81	6.40			
	Average Income (persons with positive in	18,102	30,402	389,462	926,575	537,113
	Number of NAI employed	21,515	30,477			
	Employment rate of aboriginals	52.2	66.4			
University: Without certificate, diploma or degree	Share of the population	4.46	4.40			
	Average Income (persons with positive in	17,568	29,546	188,458	629,290	440,832
	Number of NAI employed	10,727	21,299			
	Employment rate of aboriginals	51.4	67.4			

Source: Census 2001, Public Use Microdata Files. Estimation of 2017 WAP from Statistics Canada (2005), and GDP in 2017 and real wage growth from 2001 to 2017 from Dungan a
Note: The share of population in each education group is from the Census PUMF, while the total working age population absolute number is from Statistics Canada (2005).
To find the number of aboriginals in each group, the proportion was multiplied by the total number, and then to find the number with positive income, it was again multiplied by the ratio of persons with positive income to the total working age population for each educational group. The number of persons obtained in this way was then multiplied by average inc to obtain the aggregate income in each group. The total increase in income between 2001 and 2017 is multiplied by two to find the corresponding increase in GDP, assuming that incomes represent about half of GDP.

Appendix Table 50: Average Educational Attainment and Employment Income by Identity Group and Sex, for All Persons Over 15 Years Old

	Males		Females		Total	
	Average Educational Attainment (years)	Average Employment Income (dollars)	Average Educational Attainment (years)	Average Employment Income (dollars)	Average Educational Attainment (years)	Average Employment Income (dollars)
Total Aboriginals	10.9	$15,966.91	11.3	$9,949.36	11.1	$12,866.14
North American Indians	10.7	$13,804.41	11.1	$9,018.37	10.9	$11,291.98
Metis	11.6	$20,237.03	11.8	$11,528.09	11.7	$15,910.43
Inuits	9.7	$16,093.03	9.9	$13,155.35	9.8	$14,614.60
Non-Aboriginal Population	12.7	$25,292.14	12.6	$14,452.95	12.7	$19,726.97
Percent Difference from Non-Aboriginals						
Total Aboriginals	14.25	36.87	10.90	31.16	12.53	34.78
North American Indians	16.19	45.42	12.18	37.60	14.09	42.76
Metis	9.00	19.99	6.38	20.24	7.70	19.35
Inuits	23.73	36.37	22.03	8.98	22.87	25.92

Percentage of the Wage Gap Explained by the Educational Attainment Gap

Males	Total Aboriginals	38.65
	North American Indians	35.64
	Metis	45.04
	Inuits	65.23
Females	Total Aboriginals	35.00
	North American Indians	32.39
	Metis	31.55
	Inuits	245.33
Total	Total Aboriginals	36.03
	North American Indians	32.96
	Metis	39.78
	Inuits	88.24

Appendix Table 51: Average Educational Attainment and Employment Income by Identity Group, for Persons Over 15 Years Old with Employment Income

	Average Educational Attainment (years)	Average Employment Income (dollars)
Total Aboriginals	11.1	$21,316.22
North American Indians	10.9	$20,100.48
Metis	11.7	$23,404.86
Inuits	9.8	$21,462.25
Non-Aboriginal Population	12.7	$30,847.50
Percent Difference from Non-Aboriginals		
Total Aboriginals	12.53	30.90
North American Indians	14.09	34.84
Metis	7.70	24.13
Inuits	22.87	30.42
Percentage of the Wage Gap Explained by the Educational Attainment Gap		
Total Aboriginals	40.56	
North American Indians	40.46	
Metis	31.90	
Inuits	75.16	

Appendix Table 52: Average Educational Attainment and Employment Income by Identity Group, for Persons over 15 Years Old who work Full-Time, Full-Year

	Average Educational Attainment (years)	Average Employment Income (dollars)
Total Aboriginals	11.1	$30,986.85
North American Indians	10.9	$29,857.17
Metis	11.7	$32,275.03
Inuits	9.8	$34,756.77
Non-Aboriginal Population	12.7	$38,408.65
Percent Difference from Non-Aboriginals		
Total Aboriginals	12.53	19.32
North American Indians	14.09	22.26
Metis	7.70	15.97
Inuits	22.87	9.51
Percentage of the Wage Gap Explained by the Educational Attainment Gap		
Total Aboriginals	64.85	
North American Indians	63.30	
Metis	48.20	
Inuits	240.52	

Appendix Table 53: Shift-Share Analysis For Aboriginal Canadians in 2001, Labour Market Outcomes Indicators

	Share of Population in 2001		Unemployment Rate* in 2001		Participation Rate in 2001		Employment rate in 2001		Income in 2001** ($2001)	
	Aboriginal Population (A)	Non-Aboriginal population (B)	Aboriginal Population (C)	Non-Aboriginal population (D)	Aboriginal Population (E)	Non-Aboriginal population (F)	Aboriginal Population (G)	Non-Aboriginal population (H)	Aboriginal Population (I)	Non-Aboriginal population (J)
Less than Grade 5	3.72	2.13	21.8	9.6	21.3	23.3	16.1	20.4	3,417	4,808
Grades 5 to 8	11.24	7.54	24.5	9.5	33.4	28.3	24	24.8	5,418	5,752
Grades 9 to 13	32.87	21.22	22.8	8.7	50.2	52.8	37.2	47.4	8,129	10,879
Secondary - high school graduation certificate	9.45	14.22	11.2	5.4	72.3	69.2	62.4	64.7	15,248	17,598
Trades certificate or diploma	3.92	3.49	17.1	5.4	76.0	69.2	60	64.6	17,225	21,384
College: With trades certificate or diploma	7.56	6.65	14.7	5.2	82.0	78.8	68.6	73.7	20,816	24,079
College: With college certificate or diploma	9.22	12.20	11.1	4.4	82.5	79.7	71.4	75.5	20,250	24,985
University: With university or college certificate or diploma	4.38	6.02	11.6	5.1	79.9	78.0	69.1	73.4	19,679	25,229
University: With bachelor or first professional degree	3.43	10.81	5.8	3.9	85.4	82.3	78.3	78.3	28,012	33,830
University: With certificate or diploma above bachelor level	0.46	1.63	8.8	3.3	76.0	79.3	69.3	76.1	30,910	33,932
University: With master's degree[s]	0.57	2.73	6.5	3.9	83.9	81.8	77.4	78.1	36,106	40,644
University: With earned doctorate	0.07	0.56	0.0	3.2	58.3	81.0	58.3	77.9	31,055	45,982
College: Without trades or college certificate or diploma	8.75	6.40	17.3	7.1	69.7	72.5	55.8	66.4	12,975	17,278
University: Without certificate, diploma or degree	4.33	4.40	17.9	8.5	75.0	75.2	59.2	67.4	13,082	17,769
Total	100	100	18.0	6.3	61.3	66.6	49.5	61.8	12,866	19,727
			B * C		B * E		B * G		B * I	
Total given non-Aboriginal educational attainment	-	-	15.2	-	67.7	-	56.7	-	16,113	-
% of the 2001 gap explained by educational attainment	-	-	23.9	-	122.0	-	57.9	-	47.3	-
			A* D		A* F		A* H		A* J	
Total given non-Aboriginal labour market outcome	-	-	7.2	-	60.7	-	55.8	-	16,002	-
% of the 2001 gap explained by differences in labour market outc	-	-	92.7	-	-11.7	-	51.0	-	45.7	-

* The total for unemployment does not match the total given on Appendix Table 12 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 gapo can be explained by educational attainment.

**Refers to average income of working population including persons without employment income

Source: Calculated from the 2001 census microdata files.

Appendix Table 54: Canadian GDP over the 2001-2017 Period Under Ten Scenarios

	GDP in Scenario 1 (millions)	GDP in Scenario 2 (millions)	GDP in Scenario 3 (millions)	GDP in Scenario 4 (millions)	GDP in Scenario 5 (millions)	GDP in Scenario 6 (millions)	GDP in Scenario 7 (millions)	GDP in Scenario 8 (millions)	GDP in Scenario 9 (millions)	GDP in Scenario 10 (millions)
2001	1,108,048	1,108,048	1,108,048	1,108,048	1,108,048	1,108,048	1,108,048	1,108,048	1,108,048	1,108,048
2002	1,137,774	1,138,277	1,137,949	1,138,076	1,138,316	1,138,481	1,138,123	1,138,236	1,138,529	1,138,674
2003	1,168,298	1,169,332	1,168,657	1,168,917	1,169,411	1,169,750	1,169,015	1,169,246	1,169,848	1,170,147
2004	1,199,640	1,201,233	1,200,193	1,200,595	1,201,356	1,201,878	1,200,745	1,201,101	1,202,029	1,202,490
2005	1,231,824	1,234,005	1,232,581	1,233,130	1,234,173	1,234,888	1,233,337	1,233,824	1,235,095	1,235,727
2006	1,264,870	1,267,670	1,265,842	1,266,548	1,267,887	1,268,804	1,266,813	1,267,438	1,269,071	1,269,883
2007	1,298,803	1,302,255	1,300,001	1,300,871	1,302,521	1,303,653	1,301,197	1,301,968	1,303,982	1,304,982
2008	1,333,647	1,337,782	1,335,082	1,336,124	1,338,102	1,339,458	1,336,515	1,337,439	1,339,853	1,341,052
2009	1,369,425	1,374,279	1,371,110	1,372,333	1,374,655	1,376,247	1,372,792	1,373,876	1,376,710	1,378,119
2010	1,406,164	1,411,772	1,408,109	1,409,523	1,412,206	1,414,046	1,410,053	1,411,306	1,414,581	1,416,210
2011	1,443,888	1,450,288	1,446,107	1,447,720	1,450,783	1,452,884	1,448,325	1,449,756	1,453,495	1,455,354
2012	1,482,623	1,489,854	1,485,131	1,486,953	1,490,414	1,492,788	1,487,637	1,489,253	1,493,478	1,495,580
2013	1,522,398	1,530,500	1,525,208	1,527,249	1,531,127	1,533,788	1,528,015	1,529,826	1,534,562	1,536,918
2014	1,563,240	1,572,255	1,566,366	1,568,637	1,572,952	1,575,914	1,569,489	1,571,505	1,576,776	1,579,398
2015	1,605,178	1,615,148	1,608,634	1,611,147	1,615,920	1,619,197	1,612,090	1,614,319	1,620,151	1,623,053
2016	1,648,241	1,659,212	1,652,044	1,654,808	1,660,062	1,663,669	1,655,846	1,658,300	1,664,719	1,667,914
2017	1,692,459	1,704,479	1,696,625	1,699,653	1,705,410	1,709,362	1,700,790	1,703,479	1,710,513	1,713,988
Annual Average Increase, per cent	2.683	2.728	2.699	2.710	2.732	2.747	2.714	2.724	2.751	2.764

Appendix Table 55: Potential Contribution of the Aboriginal Population to Canadian GDP over Base Scenario 1, 2001-2017

	Incremental Contribution in Scenario 1 (millions)	Incremental Contribution in Scenario 2 (millions)	Incremental Contribution in Scenario 3 (millions)	Incremental Contribution in Scenario 4 (millions)	Incremental Contribution in Scenario 5 (millions)	Incremental Contribution in Scenario 6 (millions)	Incremental Contribution in Scenario 7 (millions)	Incremental Contribution in Scenario 8 (millions)	Incremental Contribution in Scenario 9 (millions)	Incremental Contribution in Scenario 10 (millions)
2001	0	0	0	0	0	0	0	0	0	0
2002	0	503	175	302	542	707	349	462	755	900
2003	0	1,034	359	620	1,114	1,452	717	948	1,551	1,850
2004	0	1,593	553	954	1,716	2,237	1,105	1,461	2,389	2,850
2005	0	2,181	757	1,307	2,350	3,064	1,513	2,000	3,272	3,904
2006	0	2,800	972	1,678	3,017	3,934	1,942	2,568	4,201	5,012
2007	0	3,451	1,198	2,068	3,718	4,849	2,394	3,165	5,178	6,179
2008	0	4,135	1,435	2,477	4,455	5,811	2,868	3,792	6,205	7,405
2009	0	4,854	1,684	2,907	5,229	6,821	3,366	4,451	7,285	8,693
2010	0	5,608	1,946	3,359	6,042	7,882	3,889	5,143	8,418	10,046
2011	0	6,400	2,220	3,833	6,895	8,996	4,438	5,868	9,607	11,466
2012	0	7,231	2,508	4,330	7,790	10,164	5,013	6,630	10,855	12,956
2013	0	8,101	2,809	4,851	8,729	11,389	5,617	7,428	12,164	14,519
2014	0	9,014	3,125	5,397	9,712	12,673	6,249	8,265	13,535	16,157
2015	0	9,970	3,456	5,969	10,742	14,019	6,911	9,141	14,972	17,874
2016	0	10,971	3,803	6,567	11,821	15,428	7,605	10,059	16,478	19,673
2017	0	12,019	4,165	7,194	12,950	16,903	8,331	11,019	18,054	21,529
Total	**0**	**89,868**	**31,165**	**53,811**	**96,822**	**126,332**	**62,308**	**82,398**	**134,918**	**161,014**

Appendix Table 56: Potential Contribution of the Aboriginal Population to Canadian GDP over Base Scenario 2, 2001-2017

	Incremental Contribution in Scenario 1 (millions)	Incremental Contribution in Scenario 2 (millions)	Incremental Contribution in Scenario 3 (millions)	Incremental Contribution in Scenario 4 (millions)	Incremental Contribution in Scenario 5 (millions)	Incremental Contribution in Scenario 6 (millions)	Incremental Contribution in Scenario 7 (millions)	Incremental Contribution in Scenario 8 (millions)	Incremental Contribution in Scenario 9 (millions)	Incremental Contribution in Scenario 10 (millions)
2001	0	0	0	0	0	0	0	0	0	0
2002	-503	0	-329	-202	39	204	-154	-42	251	397
2003	-1,034	0	-675	-414	80	418	-317	-86	517	816
2004	-1,593	0	-1,040	-638	123	645	-488	-132	796	1,257
2005	-2,181	0	-1,424	-874	169	883	-668	-181	1,091	1,722
2006	-2,800	0	-1,828	-1,123	216	1,134	-858	-232	1,401	2,212
2007	-3,451	0	-2,253	-1,384	267	1,398	-1,058	-287	1,727	2,727
2008	-4,135	0	-2,700	-1,658	320	1,676	-1,267	-343	2,070	3,269
2009	-4,854	0	-3,170	-1,947	375	1,967	-1,488	-403	2,431	3,839
2010	-5,608	0	-3,663	-2,250	434	2,274	-1,719	-466	2,809	4,438
2011	-6,400	0	-4,180	-2,567	495	2,596	-1,962	-532	3,207	5,066
2012	-7,231	0	-4,723	-2,901	560	2,934	-2,217	-601	3,624	5,726
2013	-8,101	0	-5,292	-3,251	627	3,288	-2,485	-673	4,062	6,418
2014	-9,014	0	-5,889	-3,617	698	3,659	-2,765	-749	4,521	7,143
2015	-9,970	0	-6,514	-4,002	772	4,049	-3,059	-829	5,002	7,904
2016	-10,971	0	-7,169	-4,404	850	4,457	-3,366	-913	5,506	8,701
2017	-12,019	0	-7,854	-4,825	931	4,884	-3,689	-1,000	6,034	9,510
Total	**-89,868**	**0**	**-58,703**	**-36,056**	**6,955**	**36,464**	**-27,560**	**-7,469**	**45,051**	**71,146**

Appendix Table 57: Simple Example of Interaction Effect Between Increased Educational Attainment and Increased Labour Market Outcomes

	Aboriginal Share	Non-Aboriginal Share	Employment Income of Aboriginal	Employment Income of Non-Aboriginal
	A	**B**	**C**	**D**
Without High School diploma	0.5	0.2	20,000	22,000
	E	**F**	**G**	**H**
With High School Diploma	0.5	0.8	30,000	33,000

Base Scenario 1	Average Employment Income of Aboriginal (A*C + E*G)	25000

Base Scenario 1 + education	Average Employment Income of Aboriginal with no gap in educational attainment (B*C + F*G)	28000

Gain of education in case 1 **3000**

Base Scenario 2	Average Employment Income of Aboriginal without the Employment Income Gap (A*D + E*H)	27500

Base Scenario 2 + education	Average Employment Income of Non-Aboriginal (B*D + F*H)	30800

Gain of education in case 2 **3300**

Interaction Effect: **300**