SUNTEP

An Investment in Saskatchewan's Prosperity

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CONTENTS

LIST OF TABLES

LIST OF FIGURES

Executive Summary

This study focuses on the future of our province and a stark choice we are facing.

No one will be surprised that some of the poorest groups in Saskatchewan are made up of Indigenous people[1]. However, some of the most prosperous groups in the province are also made up of Indigenous people. The difference between these two groups is, in a word, education.

Saskatchewan's population is becoming increasingly Indigenous. That demographic evolution will continue and will accelerate over time.

We face a choice. Our growing Indigenous population can be mostly poor or mostly prosperous. Our choice is between poverty—accompanied in today's world by drug and alcohol abuse, crime, suicides, FASD, welfare dependence, poor physical and mental health, short lifespans, and despair—or prosperity. The difference between these futures for our province is, in a word, education.

SUNTEP, the Saskatchewan Urban Native Teacher Education Program, is instrumental in securing a prosperous future for our province because it teaches the teachers. SUNTEP graduates increase the level of educational attainment of our Indigenous population both by being Indigenous university graduates themselves but also through the effect in their roles as teachers.

Thus far there are over twelve hundred graduates of SUNTEP. These graduates are punching over their weight. On average, SUNTEP graduates are worth over ten million dollars each, at a minimum, in securing a prosperous future for our province.

Completing this analysis of our province will, frankly, be a bit of a journey; a bit of a slog. However, there are many interesting highlights along the way. For example, our province's Indigenous labour market is looking up. Although there are problems which need to be addressed, they are ones which Saskatchewan is well positioned to solve.

We show what is on the line financially as individuals make their educational choices. For example, the poorest group of people in Saskatchewan will be shown to be First Nations female dropouts. But, correspondingly, First Nations females are the group whose earnings increase by the most with education. The group in our province who earn the most—including both Indigenous and non-Indigenous groups—are Métis males with university degrees.

Education is a path out of poverty for Indigenous people.

As our population becomes increasingly Indigenous, the path which avoids a future of poverty for our province is, in two words, Indigenous education.

SECTION 1. Bridging the Indigenous Employment Gap in Saskatchewan: Progress and Challenges

The report begins with a general analysis of the market for Indigenous employees in Saskatchewan. That market spans the economy, with substantial numbers of Indigenous employees in every industry and in every occupational category in the province. Moreover, Indigenous employment is growing faster than total employment, as needs to be the case given the growth in the relative size of our Indigenous population. One challenge is that Indigenous employment is intertemporally unstable, following a path which can be made to increase rapidly but can also be made to decrease rapidly. Another is that there is a stubborn Indigenous Employment Gap: a large gap between the employment rates for Indigenous people and for non-Indigenous. That gap is not being closed fast enough given Saskatchewan's demographic reality. Alberta is doing a better job in closing the Indigenous Employment Gap, and so is Manitoba. Of the Prairie Provinces, we are dead last in a contest we cannot afford to lose.

SECTION 2. Bridging the Indigenous Employment Gap involves Bridging the Indigenous Education Gap

Section 2 includes an analysis of the effect of educational attainment on lifetime earnings. Analysing lifetime earnings, the poorest groups in the province are shown to be made up of Indigenous people, as noted above. But, the most prosperous groups—and the groups whose economic situation improves the most with education—are also shown to be Indigenous. We compute the future lifetime earnings (on average) for residents of Saskatchewan depending on their sex, whether they are non-Indigenous, Métis, or First Nations, and their level of education. In addition to earnings, there are also many nonmonetary benefits of education, which we also measure.

1 The Indigenous peoples of Saskatchewan consist of the Métis and First Nations, though there are also a very small number of Inuit.

Section 2 finishes with a lengthy analysis of the provincial benefit of Bridging the Indigenous Education Gap, the gap between the average level of educational attainment for the Indigenous and the non-Indigenous populations. Provincial benefit is the social benefit of education to residents of Saskatchewan. It consists of the monetary benefit to the individual, the monetary value of the nonmonetary benefit to the individual, as well as the external benefit to society.

That benefit is computed as the benefit if the Indigenous residents of Saskatchewan alive today had the same average level of educational attainment as that of Saskatchewan's non-Indigenous population. The benefit equals $137.3 billion dollars, measured in 2017 dollars. In this era when governments sometimes run deficits of billions of dollars, it is easy to lose track of how much money that represents for a province our size. By comparison, in 2015—the most recent year for which we have data—provincial Gross Domestic Product was $79.4 billion dollars. Gross Domestic Product measures the market value of everything we produce in this province. Bridging the Indigenous Education Gap is thus shown to be worth half again more than the total market value of everything we do in Saskatchewan.

SECTION 3. SUNTEP is Securing a Prosperous Future for Saskatchewan

The study has then laid the groundwork to address its main objective: analysing the impact of SUNTEP. There have been 1,238 graduates thus far. Just by being Indigenous people with university degrees, they have provided a total social benefit of $7.0 billion to the province. (As noted above, total social benefit consists of the monetary and nonmonetary individual benefit plus the external social benefit.) Some SUNTEP graduates have gone on to leadership positions and careers outside teaching, and many have made important contributions. However, the principal impact of SUNTEP graduates as measured in this study comes when they teach. Of the SUNTEP graduates, 978 have become teachers. Thus far in their careers, they have provided a total of 14,187 person years of teaching. After some discussion, the effect of that teaching is divided into three scenarios: high, medium, and low. The total social benefit of SUNTEP graduates is shown to be $40.0 billion in the high scenario, $20.2 billion in the medium, and $13.6 billion in the low.

SUNTEP graduates are literally worth their weight in gold. The total social benefit per SUNTEP graduate is $32.3 million in the high scenario, $16.3 million in the medium, and $11.0 million in the low. Thus, SUNTEP graduates are worth much more than their weight in gold. At current gold prices, an average-sized person is worth $3.2 million. So, in the low scenario SUNTEP graduates are worth three times their weight in gold; in the high, ten times.

In fact, the total social benefit to Saskatchewan of SUNTEP graduates exceeds these large amounts for two reasons. One reason is that the computation of the benefits of education, from Section 2 of the report, deliberately errs on the side of understating benefits. In addition, the total social benefit per SUNTEP graduate, from Section 3, only includes the value of their teaching through the end of the 2016-17 school year. As SUNTEP graduates teach additional years in the future, their worth per graduate will increase. And that increase will be orders of magnitude because, for example, a recent SUNTEP graduate has not yet had time to teach many (if any) years.

SECTION 4. Fiscal Implications for the Saskatchewan Provincial Government

The annual budgetary saving to the provincial government of Bridging the Indigenous Education Gap, or of Bridging the Indigenous Employment Gap, would be $427 million per year. Tax revenue would also be higher, as is shown in Section 5.

SECTION 5. Further Macroeconomic Impacts

This section shows that Bridging the Indigenous Education Gap would set off a boom that would be unprecedented in the history of our province: a boom that would not be followed by a bust.

SECTION 6. Thank you

SUNTEP is a nonpartisan Saskatchewan success story which has existed for a third of a century. It owes its success to a wide variety of individual people and organizations. Having shown in the report that SUNTEP is a valuable investment in our province's prosperity—that it has made us better off—this section acknowledges and thanks those involved.

SECTION 1. Bridging the Indigenous Employment Gap in Saskatchewan: Progress and Challenges

1.1 INDIGENOUS EMPLOYEES FULLY SPAN THE PROVINCIAL ECONOMY

In Saskatchewan, the composition of Indigenous employment, both by industry and by occupation, is different than many people suppose. And that composition has important implications for the future of our province.

Begin by examining employment by occupation in Saskatchewan, shown in Table 1.

Table 1. Employment in Saskatchewan by occupation

OCCUPATION	EMPLOYMENT DISTRIBUTION		EMPLOYMENT RATES	
	INDIGENOUS EMPLOYEES	NON-INDIGENOUS EMPLOYEES	INDIGENOUS POPULATION	NON-INDIGENOUS POPULATION
Managers	6.0%	8.0%	3.5%	7.6%
Professionals	9.6%	13.5%	5.7%	12.9%
Semi-professionals and technicians	8.2%	7.0%	4.8%	6.6%
Supervisors	4.0%	10.9%	2.3%	10.4%
Administrative and senior clerical personnel	3.4%	4.9%	2.0%	4.6%
Skilled sales and service personnel	3.7%	3.7%	2.2%	3.6%
Skilled crafts and trades workers	10.3%	8.5%	6.1%	8.1%
Clerical personnel	7.7%	9.0%	4.5%	8.6%
Intermediate sales and service personnel	13.5%	11.5%	8.0%	11.0%
Semi-skilled manual workers	10.4%	10.2%	6.2%	9.7%
Other sales and service personnel	15.6%	9.5%	9.2%	9.0%
Other manual workers	7.6%	3.4%	4.5%	3.2%

There are four columns of numbers in the above table. The first two columns show the distribution of employed individuals by occupation. For example, 6.0% of employed Indigenous people are employed in the category *managers* compared to 8.0% of employed non-Indigenous people. The remaining two columns show the employment rates by occupation.[2] For example, 3.5% of Indigenous people of labour force age are employed as *managers* compared to 7.6% of non-Indigenous people.

Compare the Indigenous with the non-Indigenous columns. There are of course differences, but there is greater similarity than many would expect. For example, although employed Indigenous people are less likely to be *managers* than non-Indigenous, the difference of 6.0% versus 8.0% is less than many would expect. Another example—the comparison for *professionals*, 9.6% versus 13.5% is less different than many would expect. One immediate implication of the similarity shown in Table 1 is that all of the occupations in Saskatchewan are dependent on the Indigenous labour force. Indigenous employees span all the occupations of the province—so every part of the provincial economy is fundamentally dependent on them.

Another implication of Table 1 is the importance of entry-level jobs to Indigenous people. Note that two of the three occupations for which Indigenous percentages considerably exceed non-Indigenous are *Other sales and service personnel* and *Other manual workers*, both of which tend to consist of entry level jobs. These jobs are critically important to Indigenous people, some of whom are entering the labour force following two or three generations of welfare dependence. (Readers may wish to pause and think about this for a moment. What would you personally think about employment if your parents, grandparents, and great-grandparents had all carved out lives for themselves from welfare?) Hence, entry-level jobs matter a lot to Indigenous people—and hence also to our province. They teach a person what a job is like and the advantages of getting a paycheck instead of the month-to-month existence of welfare. An immediate conclusion is that society should not fritter away entry level jobs with social policies which eliminate them either by bringing in guest workers to fill the jobs or by pricing the jobs into nonexistence by overly-generous increases in minimum wage rates.

And a shout-out is appropriate to the programs at the Dumont Technical Institute and elsewhere which increase the numbers of Indigenous students successfully completing post-secondary skills training courses. Note that the proportion of Indigenous employees in *Skilled crafts and trades workers* (10.3%) exceeds that for non-Indigenous (8.5%). This is good news for our province because it is a stark demonstration that educational programs targeted at Indigenous students are effective.

However important the above points are, the primary significance of Table 1 is different. To explain this significance, it is necessary to be somewhat politically incorrect for a moment. Many non-Indigenous people in Saskatchewan do not see Indigenous professionals in our province: they see the staggering drunk panhandler downtown but not the Indigenous professional couple who live down the block. It is as though successful Indigenous people are invisible to them. For example, an Indigenous friend who lives with her Indigenous husband in a prosperous neighbourhood in Saskatoon, tells me of a non-Indigenous neighbour who said—right to her face—that he "didn't know any Indians." The economic health of our province requires that our residents embrace—or at least not be blind to—the economic progress being made by Indigenous people right before their eyes. The above table reflects considerable progress.

Table 1 demonstrates that all of the occupations in Saskatchewan are dependent on Indigenous employees. But what about employment by industry? Table 2 shows the breakdown of employment of Indigenous and non-Indigenous employees by industry in Saskatchewan.

Just as before, the first two columns show the distribution of employed individuals. For example, 4.6% of employed Métis and First Nations individuals are employed in *Agriculture, forestry, fishing and hunting* compared to 12.3% of non-Indigenous employees. The second two columns show employment rates by industry. For example, 2.7% of Indigenous people of labour force age are employed in *Agriculture, forestry, fishing and hunting* compared to whereas 11.7% of non-Indigenous people.

2 *The employment rate is calculated using the total number of individuals of labour force age—defined by Statistics Canada to be age 15 and over. So the 3.5% employment rate shown for* managers *who are Métis and First Nations in the table means that, of all Indigenous residents of Saskatchewan who are age 15 and older, 3.5% are employed in the category* managers.

There are three very important observations to be made from Table 2.

First examine the entries for the *Mining and oil and gas extraction* industry. Note that employed Indigenous people are about a fifth less likely (take 2.7% and divide by 3.3%) to be employed in the industry than non-Indigenous people. For the whole labour force population, Indigenous people are only about half as likely (1.6% divided by 3.1%) to be employed in the industry. This is particularly telling because the *Mining and oil and gas extraction* industry includes Cameco. Cameco has a solid record of employing many Indigenous people, as shown in Howe (2009). That the Mining and oil and gas extraction industry itself is doing this poorly shows that there is a major firm in the industry with so few Indigenous employees that it offsets Cameco's record.

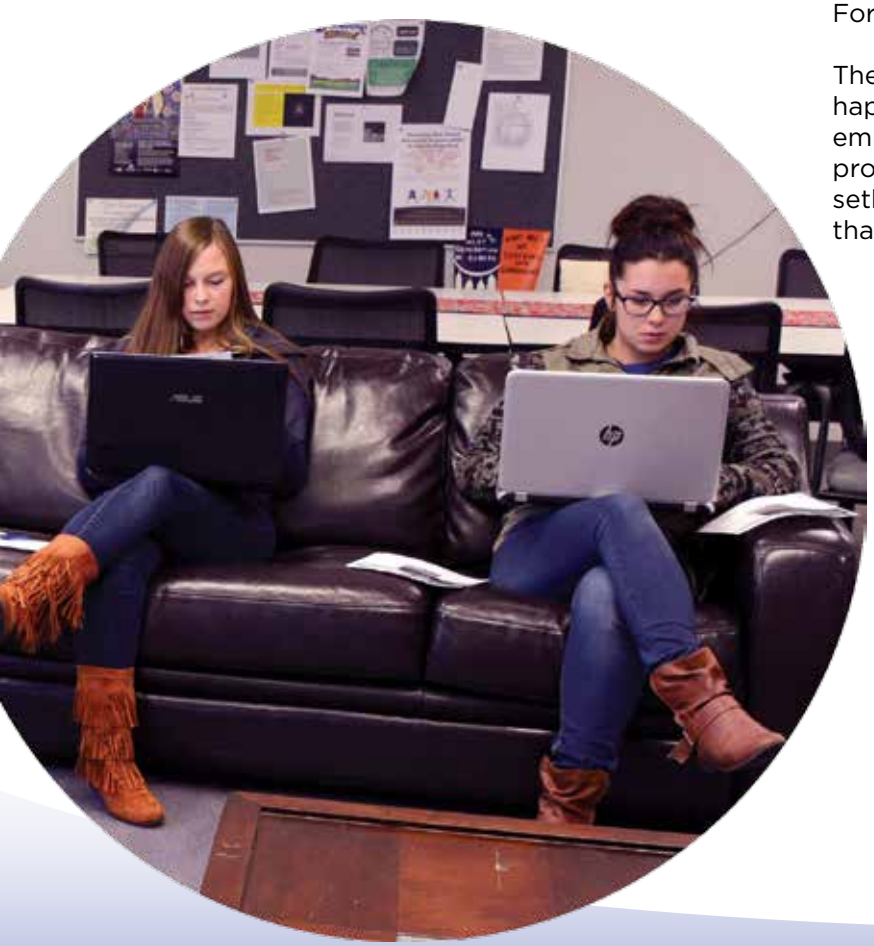
A similar observation can be made for the *Utilities* industry. Employed Indigenous people are about a third (take 0.5% and divide by 0.8%) less likely to work there. Overall, Indigenous people of labour force age are about two-thirds (0.3% divided by 0.8%) less likely to work there. In Saskatchewan, the utilities industry is dominated by the provincial Crown Corporations.

Table 2. Employment in Saskatchewan by industry

INDUSTRY	EMPLOYMENT DISTRIBUTION		EMPLOYMENT RATES	
	INDIGENOUS EMPLOYEES	NON-INDIGENOUS EMPLOYEES	INDIGENOUS POPULATION	NON-INDIGENOUS POPULATION
Agriculture, forestry, fishing and hunting	4.6%	12.3%	2.7%	11.7%
Mining and oil and gas extraction	2.7%	3.3%	1.6%	3.1%
Utilities	0.5%	0.8%	0.3%	0.8%
Construction	10.2%	5.7%	6.1%	5.4%
Manufacturing	5.2%	6.1%	3.1%	5.8%
Wholesale trade	1.9%	3.8%	1.1%	3.6%
Retail trade	9.8%	11.3%	5.8%	10.7%
Transportation and warehousing	3.6%	4.4%	2.2%	4.2%
Information and cultural industries	1.6%	2.3%	0.9%	2.2%
Finance, insurance and real estate	2.2%	5.2%	1.3%	4.9%
Professional, scientific and technical services	1.4%	3.8%	0.8%	3.6%
Management of companies and enterprises	0.1%	0.1%	0.0%	0.1%
Administrative and support, waste management and remediation services	3.4%	2.8%	2.0%	2.6%
Educational services	8.7%	7.3%	5.2%	6.9%
Health care and social assistance	13.8%	11.2%	8.2%	10.6%
Arts, entertainment and recreation	3.6%	1.9%	2.2%	1.8%
Accommodation and food services	9.8%	6.7%	5.8%	6.4%
Other services (except public administration)	4.2%	5.2%	2.5%	4.9%
Public administration	12.8%	6.2%	7.6%	5.9%

All of the above firms—whether the large resource-extraction firms and the major Crown Corporations—have extensive, well-funded public relations campaigns to promote their records in employing Indigenous people. The table makes it starkly clear that there is a big difference between their public relations campaigns and reality. Our next analysis in this section documents some of the improvements—and challenges—which have emerged surrounding Indigenous employment in Saskatchewan. It should be noted, however, that the situation would be improved immeasurably if the major resource companies and crown corporations walked their talk with regard to Indigenous employment.

There is a final point before moving on—the above table shows that Indigenous employees are highly dependent on government employment. Employment in Educational services, Health care and social assistance, and Public administration accounts for over a third of Indigenous employment in Saskatchewan, though less than a quarter of non-Indigenous. This has the effect of making Indigenous employment in Saskatchewan highly dependent on government employment policies. As we will see in the next section, the result has been that some changes in government employment policies have decimated Indigenous employment in our province. And the word "decimated" in the previous sentence will be shown to not be an overstatement.



Tables 1 and 2 have shown data from 2006, so the data is over ten years old at this writing. Although things have changed somewhat since then, most of the principal insights remain true, and relevant. So, for example, the dependence of Indigenous employees on public sector employment and on the availability of entry-level jobs is largely unchanged in the intervening ten years. The reason for using the 2006 data is that its source is the Long Form of the Census of Canada. Stephen Harper's government eliminated the Long Form of the 2011 Census, and thus the 2011 data are not available. Although Justin Trudeau's government reintroduced the Long Form for the 2016 Census, the most relevant data for our purposes have not been released yet for 2016. In fact, these data—the microdata files from the 2016 Census—do not yet even have an announced release date. Following previous practice, these microdata files would be expected to be released in 2020. So until then, we are reliant on data from 2006.

However, we now want to examine how Saskatchewan is currently performing in employing Indigenous people, so we need to turn to more timely data. We will use data from Statistics Canada's monthly Labour Force Survey.

The next part of this section analyses what has happened over time to Métis and First Nations employment separately. We will see that gradual progress is being made, but there have been setbacks—one of which in particular was so major that the province still hasn't recovered.

GDI Represents the True Resilient Spirit of the Métis

by Mandi Reigh Elles, Teacher, Regina Public Schools

Tanishi! Dishinikashon Mandi Elles. Regina, Saskatchewan d'ooshchiin. Hello! My name is Mandi Elles. I'm from Regina, Saskatchewan. I am a Métis woman, mother, and educator. My family's rich Métis and First Nations roots extend from Lestock, Saskatchewan to Fort Belknap, Montana. I graduated from the Saskatchewan Urban Native Teacher Education Program (SUNTEP) Regina in 2012. I am the third graduate in my family and we are the first to obtain post-secondary degrees.

I work as a Cultural Arts educator at Seven Stones Community School. My aunt Dawne Elles is an Aboriginal Advocate teacher at Thom Collegiate while my cousin is employed on her reserve, Piapot First Nation. We have many other relatives that have completed Gabriel Dumont Institute (GDI) education and trades programs. Our individual experiences at GDI include crossing paths with many very special teachers and friends on our journey that have been true supporters of the successes in our lives and careers. SUNTEP/GDI provided us with a strong Métis culture-based educational experience that inspired us to incorporate our Indigenous knowledge into our everyday teaching practices.

SUNTEP was a very natural career choice for me. Lifelong learning is an extension of Métis culture within our family life and communities. My father's educational experience in Saskatchewan during the 1970s also led me to choose education as my life's work. As a young Indigenous child, he was disconnected from lessons and teachers and ran away from school many times. My own education was void of Métis and First Nations history and holistic learning until high school. I had many positive teachers who influenced me throughout my school years and many encouraged me to become a teacher. My family's stories are not uncommon today and many of our Indigenous students are still feeling lost at school. This is one important reason that motivates me to continue using Indigenous language and culture in my classroom. Students can relate to the lessons being taught, share background knowledge, and are able to make meaningful connections between school and their own lives. It is also an open invitation for all non-Indigenous students and teachers to become a part of the learning process while gaining insight into traditional Indigenous ways of knowing.

Working with family, students, colleagues, and Elders from many nations, I blend all of our traditional teachings, languages, and stories together to create a unique, holistic experience for my students. Our learning comes from the practical use of basic Michif-Cree language, hands-on land-based lessons, ceremony and plant medicine teachings from Elders. Our students and my own children are being nurtured by this natural way of connecting their spirits to Mother Earth and, in return, may learn a deep respect for themselves, others and the world around them. It is through this sharing of common values and teachings that we connect to our Indigenous students and strengthen their sense of pride and purpose. Our Indigenous students may choose to continue this work by becoming educators in the future. Although my daughter is far from university age, she has already begun to share Michif history and language lessons in her classroom!

Indigenous educators play an integral role in Canadian educational systems as the nation's goal is to promote reconciliation by bridging gaps between Indigenous and non-Indigenous people. Indigenous educators have the opportunity to construct those positive paths to bring people closer to create respectful partnerships in our country. Today, programs such as SUNTEP not only offer career opportunities, but also the gift of learning in an environment that honours and celebrates Indigenous history and pride. SUNTEP has also served as a powerful tool in the decolonization process for many families. We are the living descendants of fur trade voyageurs, Road Allowance and residential school survivors, proud warriors, language speakers, knowledge keepers, and natural healers. Who better to share our history and stories, by way of education, than us?

SUNTEP/GDI represents the true resilient spirit of Indigenous people past and present. It is the revitalization and preservation of our history, language and traditions that will carry our future generations to good ways of living.

Pimatishi, kishkayhta ekwa ahkameyimo. Live, learn and persevere/ Ekoshi.

1.2 BRIDGING THE INDIGENOUS EMPLOYMENT GAP: PROGRESS IS BEING MADE

Starting in June of 2004, Statistics Canada began to collect monthly data on provincial employment by Indigenous identity. The monthly series are collected as part of the long standing Labour Force Survey, the survey which is used to compute prominent series like employment and the unemployment rate.

The Indigenous employment series are not published by Statistics Canada, but made available on request. Three important caveats apply to the series. There are two adjustments that are made to deal with small sample sizes in the survey. The series are three-month moving averages. Moreover, the series are not available broken down by industry. In addition, because the Labour Force Survey does not extend onto First Nations reserves, the series excludes First Nations and Métis who are reserve residents.

Employment of Métis and First Nations from the Labour Force Survey are shown in Figure 1, along with total provincial employment. All are measured in thousands of person years of employment. Note that the scale for total employment is measured on the right axis whereas the scale for employment of Métis and First Nations is measured on the left. All three series show pronounced seasonality, though actually less seasonality over time due to intertemporal structural changes in the provincial economy. Total provincial employment was just a little under half a million person years at the start of the series, increasing over time. Métis employment increases from an initial value of 18.1 thousand person years. First Nations increases from an initial value of 11.3 thousand.

Thus, note that both Métis and First Nations Employment are small in magnitude compared to total employment, reflecting in part the fact that Indigenous people are currently in a minority provincially. But, as shown in Howe (2006), Indigenous people will become the majority in Saskatchewan by the middle of the 21st Century. And the economy will have to reflect this—or bear the consequences.

So....how is progress shown in Figure 1? The untrained eye may have difficulty spotting this, but note that both Métis and First Nations employment are growing at a faster rate than total employment. The absolute magnitude of the increases are less, of course, because the magnitudes of the series are so different. However, the rates of increase are greater. For example, the first full year of the employment data would stretch from June 2004 (when the series started) to May 2005. By focusing on a whole year rather than a month, we don't have to make seasonal adjustments. The most recent comparable year—twelve years later—stretches from June 2016 to May 2017. Over that time period, total provincial employment grew from 481.3 thousand to 568.7 thousand, for an average increase of 1.4% per year. Métis employment increased from 19.3 thousand to 29.0 thousand: an increase of 3.4% per year. First Nations employment increased from 10.9 thousand to 17.7 thousand: 4.2% per year.

So Indigenous employment is growing at a faster rate than total provincial employment, as needs to be the case as Saskatchewan's population becomes increasingly Indigenous.

Figure 1. Employment in Saskatchewan, thousands of person years, monthly, 2004-2017

1.3 BRIDGING THE INDIGENOUS EMPLOYMENT GAP: PROGRESS IS NOT FAST ENOUGH

However, progress is not being made fast enough. There are two distinct ways to see this problem.

Projections show that the demographic tipping point—the point when Saskatchewan's population is 50% Indigenous and 50% non-Indigenous will occur about 2050, as discussed in Howe (2006). By that time, Indigenous people need to make up a corresponding percentage—50%—of employment. So will this work out if the current rate of improvement in Indigenous employment is maintained? No. Extrapolating the percentage improvement since 2004 yields less than half the required 50%. If you extrapolate the improvement arithmetically, Indigenous employment grows to 13.4% by 2050. If you extrapolate geometrically, then 16.9%. Neither extrapolation is near the 50% required. Progress is being made, but not fast enough.

Another illuminating way of analysing the situation involves the use of employment rates. As noted above, employment rates show the proportion of the population of labour force age who are employed. Economists tend to emphasize employment rates rather than unemployment rates, because unemployment rates can be shown to have a downward bias. The bias, called the discouraged worker phenomenon, is discussed in most intermediate macroeconomics textbooks. The bias results from the fact that unemployed individuals have to be looking for a job in order to be counted as unemployed. Hence, when unemployed individuals become discouraged and give up looking for a job, they are no longer counted as unemployed. The bias is particularly strong for groups with a high unemployment rate, such as is the case of Indigenous people in Saskatchewan. Consequently, employment rates are typically more illuminating than unemployment rates.

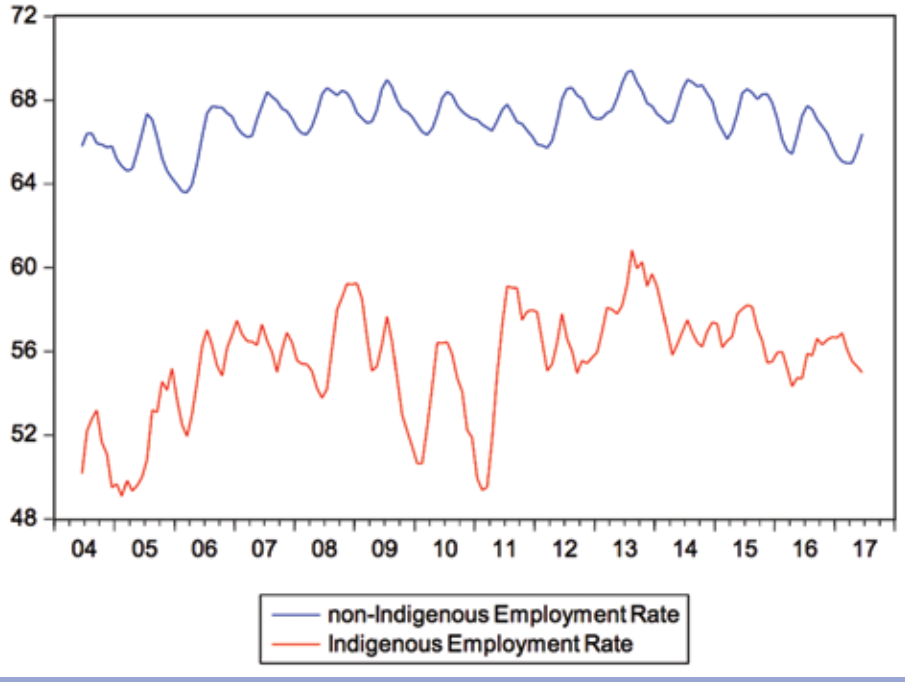
The employment rates for Saskatchewan's population is shown in Figure 2, with Indigenous and non-Indigenous people shown separately.

Note that Figure 2 compares Indigenous (both Métis and First Nations) and non-Indigenous people whereas Figure 1 compared Métis and First Nations separately to total societal data.

Examining Figure 2, begin by noting that the non-Indigenous employment rate varies but doesn't vary far from two-thirds: about two non-Indigenous people in three over labour force age are employed. This reflects the fact that typically non-Indigenous people migrate to where jobs are available, which puts a downward bound on their employment rate.

Examining the figure further, it is evident that there is a fair amount of seasonal variation: employment rates are higher in the summer from students working over summer holidays. Moreover, there is a tendency for employment rates to grow when employment growth is robust, and to fall off otherwise. Currently, employment rates are tending to decrease in Saskatchewan with the end of the resource boom which started in 2006. Another cause of this decreasing trend is demographics—a consequence

Figure 2. Employment rates in Saskatchewan, percentage, monthly, 2004-2017



of the way the employment rate is calculated. The rate is calculated for the entire population older than labour force age, so for example a fully retired 75 year old is still in the labour force population but is not employed. Thus the aging of the baby-boom is causing the employment rate to decline somewhat over time.

Now examine the relationship between Indigenous and non-Indigenous employment rates. At the start of the period, the Indigenous rate was only about one-half, fully sixteen percentage points less than the non-Indigenous rate. But there was improvement; rapid improvement as these things go. Over the following five years, Indigenous people successfully entered the labour market, and over half of the difference between the two rates was eliminated by January of 2009. Then 2009 happened. Of Indigenous people who were employed in January of 2009, one in eight were to lose their jobs before January of 2010. An equiproportionate reduction in the non-Indigenous employment would have put sixty thousand people out of work in our province: one wonders whether it would have caused another Regina Riot. The year 2009 was a disaster for Indigenous employment, even though total employment in Saskatchewan increased. It is beside the point to go through the trio of government policies—both provincial and federal—which contributed to what happened in 2009, but they were a disaster for Indigenous employment in Saskatchewan.

The effect of 2009 can be seen in the above figure by noting how a half-decade of improvement was eliminated in a single year. In the middle of 2009, I could wake out of a dead sleep in the middle of the night worrying about what was going on. Then, at the start of 2010, the Indigenous employment rate began to increase again, suggesting perhaps that 2009 was an aberration. But, the rate plateaued and then dove again before the end of 2010. After recovering somewhat in 2011, the Indigenous employment rate has fluctuated around a slowly decreasing trend.

So, what is the interpretation of the above two figures: how is the Indigenous labour market in Saskatchewan performing? Figure 1 shows some improvement: Indigenous employment—both Métis and First Nations—is increasing. Figure 2 shows, however, that the increase isn't enough to employ the increasing Indigenous population. So Indigenous employment is growing but not fast enough relative to the population of labour force age. The province is doing some things right, but has to do more.

What more can be done? There are actually a myriad of possibilities. We have the advantage that elsewhere on the prairies—both in Alberta and Manitoba—they are doing a better job than Saskatchewan. What do we need to do differently? Look east toward Manitoba. Look west toward Alberta. What are they doing that is better? The next section makes that point with some care.

1.4 SASKATCHEWAN IS DOING A WORSE JOB OF EMPLOYING INDIGENOUS PEOPLE THAN MANITOBA OR ALBERTA

Relative to Indigenous employment, Saskatchewan currently has the same advantage that China had when it began to modernize its economy. Every country in the world—at least all of the developed ones—had technology that was superior to China. Consequently, China did not have to develop new technologies but merely had to adopt existing technologies. Developing new technologies is a slow and arduous process, so growth can be faster when existing technologies are adopted. So the Chinese economy could quickly modernize and grow at an extraordinary rate.[3] All it had to do was look around the world, see how other countries did things, and adopt their technology.

Table 3 shows the employment rates for Indigenous people in each of the three Prairie Provinces. It uses the Labour Force Survey, just as above. It shows summary statistics for the employment rate for each province for the entire period June 2004 through 2017, the period for which we have data.

Table 3. Indigenous employment rates of the Prairie Provinces, 2004 through 2017

	Alberta	Saskatchewan	Manitoba
Mean	63.33%	55.51%	58.78%
Median	63.51%	56.07%	58.89%
Highest	69.59%	60.83%	64.13%
Lowest	55.34%	49.09%	52.79%

The table shows four summary statistics for this period: the mean, median, maximum, and minimum. Note that, regardless of the summary statistic you use, Saskatchewan employment rate is the lowest of the three. Our mean employment rate is 7.82% less than Alberta's mean and 3.27% less than Manitoba's. Our median rate is 7.44% less than Alberta's median and 2.82% less than Manitoba's. Our highest was 8.76% less than Alberta's highest and 3.30% less than Manitoba's. Our lowest was 6.25% less than Alberta's lowest and 3.70% less than Manitoba's.

The above table represents waste. The wasted person years of labour that are reflected in the table can never be gotten back, but we can fix the problem going forward. Frankly, the first priority is to just look around: what are Alberta and Manitoba doing that we aren't? What additional educational programs should we adopt? Programs to incorporate FASD adults into the workforce? Programs to help adults in the difficult transition from welfare to work? Programs to help drug addicts and alcoholics?

The previous paragraph is different than the predictable call by an academic for yet another study. Things are being done right next door which are working. All we have to do is look to the east and to the west. What are they doing that we aren't?

3 China continued to grow fairly rapidly even after it had somewhat modernized. This is partly because China still had a way to go in modernizing, but also for reasons which would take us far away from the matters at hand.

1.5 TOTAL INDIGENOUS EMPLOYMENT IN SASKATCHEWAN IS SUBJECT TO WIDE SWINGS

Examining Indigenous employment in Saskatchewan, there are strikingly few cases of moderate growth, or moderate decline. Increases tend to be steep and decreases to be equally steep. In effect Indigenous employment in Saskatchewan follows a roller coaster ride. Why is that, and what does it mean for governmental policies? The roller coaster is shown particularly strongly in the summary statistics in Table 4.

Table 4. Absolute percentage change in employment, year over year, in Saskatchewan, 2004 through 2017

	Total	Métis	First Nations
Mean	1.70%	5.32%	8.70%
Median	1.41%	4.41%	6.17%
Highest	5.27%	16.67%	34.46%
Lowest	0.02%	0.34%	0.00%

The table, which covers the period for which we have monthly statistics, show the absolute value of the year-on-year percentage change in employment. Since it is year-on-year, it is not affected by seasonal variation. Since it is an absolute value, it measures volatility: an increase of 2% would contribute just as much as a decrease of 2%. Note that the mean absolute percentage change in total employment is 1.70% for Saskatchewan as a whole. But the mean absolute percentage change in Métis employment is three times greater, 5.32%. The mean absolute percentage change in First Nations employment is over five times greater, 8.70%. Similarly for the comparison of the other summary statistics in the table. Thus employment of Métis and First Nations people varies proportionately more than variation in total employment. Certainly, some difference would be expected because Indigenous employment is growing faster than total, but this is too extreme to be explained by the differences in overall growth.

Of course, aggregate employment varies over time in any economy, including that of Saskatchewan. There will always be: a trend caused by long-term economic growth or decline; cyclic variation caused by the cycle of resource booms and busts; as well as seasonal variation.[4,5] But examination of Saskatchewan's Indigenous employment shows that when Indigenous employment grows, it grows by a lot. When Indigenous employment drops, it drops by a lot. That dynamic instability is fundamental, and has important implications for government policy: policy changes which are expected to have small positive or negative effects will be amplified and made larger.

What is the size of the effect? A study, Howe (2009), examined what happens when there is change in Indigenous employment in Saskatchewan beyond what would be expected from previous trend, cyclic variation, and seasonality. What happens, in other words, if an additional Indigenous person is employed beyond what would be expected from the past data? There are a variety of forces which come into play. For example, there are role model effects on both sides of the labour market. A newly employed Indigenous person's friends and neighbours get to observe both a strategy which was successful in getting a job and also how beneficial it is for the newly employed to begin to receive a paycheck. Friends and neighbours may also get to observe successful strategies for dealing with the demands of employment whether they are arrangements for childcare while a parent is at work or even simply how to open bank accounts. There are also role model effects on the employer's side as well: other employers observe a successful strategy for employing Indigenous people. There are certainly other effects at play. The employer may promote a successful Indigenous employee to a better job, leaving the initial job to be filled again—perhaps by another Indigenous employee. In any case, from whatever the cause, the data show that there are *virtuous* circles whereby small positive changes in Indigenous employment are amplified.

4 *A fundamentally important theorem in statistics, Wold's Theorem, says that any time series—at least the ones of interest to economists—can be decomposed like this. A good coverage of this can be found in the economic forecasting textbook by Diebold (2007). This popular text recently went from being expensive to being free when the author posted it on line, declaring that he didn't want to place a $300 barrier in front of people who wanted to learn economic forecasting. The web address for the book is given in the reference section, below.*

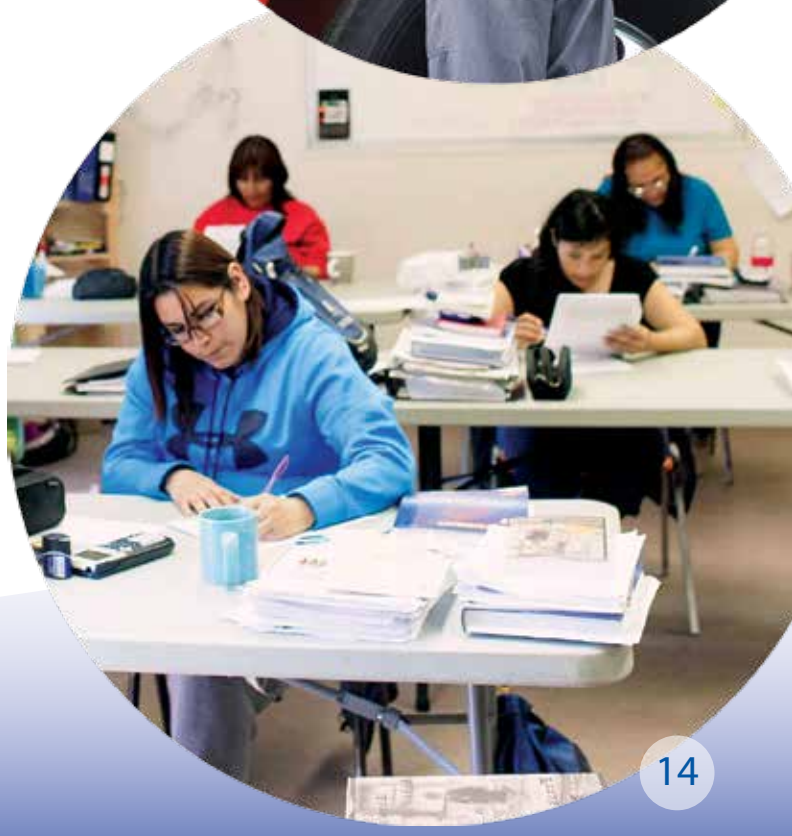
5 *The relative magnitudes of these three components change over time. For example, two of the large traditional causes of seasonality in employment in Saskatchewan are that farming follows a seasonal cycle as well as the annual surge of students looking for summer jobs. However, over time, farming employment has decreased in the province so the contribution of farming to the seasonal cycle has diminished. Moreover, increases in post-secondary tuition rates have led to students holding onto jobs year round, which has further decreased seasonal variation in employment provincially.*

What are the quantities? If an additional Indigenous person is employed (beyond that explained by trend, cycle, or seasonality), another 1.09682 Indigenous people will be employed in the following twelve months. So hiring an Indigenous employee represents a "two-for" to society: hire one and two get employed.

But there are also *vicious* circles which amplify negative fluctuations. What amplifies the job loss, causing the loss of one Indigenous job to bring about the loss of more? Although role model effects again play a role, the causes of the vicious circles typically relate not to the overall processes involved, but rather to the changing employer environment which brought about the decrease in the first place. Recall from the first section of this report that Indigenous employment in Saskatchewan is highly dependent on both public-sector employment as well as on the presence of entry-level jobs in the private sector. If the loss of a public-sector Indigenous employee is the result of changing priorities in government hiring strategies, then there likely will be more in the future. If the loss of an entry-level private sector Indigenous employee is the result of the government expanding the temporary foreign worker program—and employers shifting to the use of temporary foreign workers—then again there will be more losses in the future. So losing an Indigenous employee also represents a "two-for" to society: lose one and two lose their job.

However, regardless of the actual causes, the effects can be measured empirically—based on the data. The effects are symmetric. One additional employed Indigenous worker (beyond that explained by trend, cycle, or seasonality) will tend to be followed by another 1.09682 Indigenous hires in the next twelve months. One Indigenous job loss (again beyond that explained by trend, cycle, or seasonality) will tend to be followed by 1.09682 more Indigenous job losses in the next twelve months.

A roller coaster, however, is not a perfect analogy. Roller coasters always end up at exactly the same level that they start: when it goes up, the riders know that it will be coming down. The same is not true of Indigenous employment. There is not a cyclic component except that coming inherently from the underlying economy. When, other things being equal, Indigenous employment goes up, it will stay up until something—say a change in government policy—brings it down.



SUNTEP Prepared Me for Both Teaching and Non-Teaching Careers

by David Morin, Curriculum Developer, Gabriel Dumont Institute

My name is David Morin. I am Métis and grew up right along the Red River in St. Adolphe, Manitoba. My family moved to Nipawin, Saskatchewan when I was eleven years old. I had always wanted to be a teacher and so my dad told me about the Brandon University Northern Teacher Education Program (BUNTEP) in Manitoba. I was considering moving back to Manitoba, but wanted to explore my options in Saskatchewan first, which was how I discovered the Saskatchewan Urban Native Teacher Education Program (SUNTEP).

I needed student loans to attend post-secondary school, and the funding for tuition SUNTEP provided was a huge factor for me to even consider university. I applied to the Saskatoon location right out of high school and was accepted to start the Bachelor of Education degree program in 1998. SUNTEP was a great experience for me. The first thing I noticed upon arriving was the sense of community. There were 20 of us all having the same experience as opposed to 200 in the mainstream program. The small class size meant a lot to me as I had just moved away from home, and was quickly accepted into a new family. Friends I made on that first day nearly 20 years ago are still a part of my life. The faculty and staff were very supportive and welcoming. I can't thank Sheila Pocha, Linda Lysyk, Skip Kutz, Anne Boulton, and Ruth Bird-Anderson enough. Through SUNTEP, I was able to learn more about my history and culture. Métis content was entrenched in the program and has influenced who I am today.

I graduated from SUNTEP in 2002, and accepted a one-year replacement contract to teach Grade 6 in Turtleford, SK. I worked very hard that year, with up to 35 students in my class. I found the biggest challenge was having the time to reach each student in a large class. My teaching philosophy was to instill a love for life-long learning, emphasizing that learning doesn't stop when school does. After that year, I decided I needed to head back to Saskatoon where my soon-to-be wife was finishing a degree at the University of Saskatchewan. There were no available teaching positions open at that time, so I applied to the Gabriel Dumont Institute's Publishing Department and was hired as a research assistant. From there I moved up to a curriculum developer position and have been here almost 14 years.

While I did not continue on in the classroom, I do feel that having Indigenous teachers in the classroom is very important. Much like the work I do now in ensuring that Métis students can see themselves in literature in the school library, those same students need to see Métis faces at the front of the classroom. Role models are crucial in promoting self-confidence and success. I was lucky enough to be a role model for my younger brother, who also graduated from SUNTEP, and is currently teaching in Saskatoon, continuing the cycle by being a role model to his hundreds of students. He recently completed his Masters of Education focused on Indigenous education, which will benefit not only his students and colleagues, but education in Saskatchewan as a whole.

In my current role with Gabriel Dumont Institute, I'm still able to use what I learned through SUNTEP. I often find myself in front of students and teachers, giving presentations on Métis history and culture. Whether it's teaching how to fingerweave, or giving a workshop on how to incorporate Métis resources into the classroom, the confidence I have in myself is a direct result of my growth in SUNTEP. Since joining the Publishing Department, I have had the pleasure to work on over 50 books that help promote and preserve Métis culture. I've been able to help promote and preserve the Michif language with many Elders, including Norman Fleury and Harriet St. Pierre. I've been able to contribute to websites, apps, and other technologies. I have also been able to fly in a helicopter over Batoche, and be there when Fish Creek was officially renamed to its original Métis place name of Tourond's Coulee. All of this was possible because of SUNTEP.

SECTION 2. Bridging the Employment Gap involves Bridging the Indigenous Education Gap

We live in the Information Age. In the Information Age, people are employed and paid largely based on what they know. The average level of education for Indigenous people in Saskatchewan is less than that for non-Indigenous people.[6] Consequently, in order to successfully Bridge the Indigenous Employment Gap, Saskatchewan must proceed by successfully Bridging the Indigenous Education Gap. But in order to address the Education Gap, people must be motivated to seek an education and their motivation has to be commensurate to the considerable challenges they sometimes face. Of course, more than motivation is required: for example programs must be available to improve the odds of success for those who seek an education. Nonetheless, in order for individuals to make the sacrifices necessary to educate themselves, in order for families to provide support, and in order for communities to help, people need to know how much is on the line.

We need to know how much is on the line in dollars and cents to inform the educational decisions made by the individual as well as by families and communities. An uneducated Indigenous person in Saskatchewan is one who will likely be poor whereas the educated will likely prosper.

This is the Information Age, when education matters to everyone. However, relatively speaking there is a fundamental inequality: education is more important financially for Indigenous people than for non-Indigenous. That inequality is not fair, but it is common to society and arises frequently for non-Indigenous people, too. For example, I had the good fortune of attending a good university—one of the places that rich American families send their children to school. However, many of my classmates were not committed to education and a lot of enjoyable partying happened. I recall sitting at my desk one day preparing belatedly for a calculus exam when it occurred to me that I was in a very different position than my schoolmates because they were from rich families and I wasn't. They could goof off and still live very prosperous lives, but I needed to do well. That realization made me study harder. The resulting education changed my life for the better. In fact, I got the last laugh because I now earn more than many of my partying schoolmates.

Indigenous people in Saskatchewan are in the same position. Although our circumstances are different, they too live in a society of people who are on average wealthier than they are. So education matters more to them, too. My hope is that Indigenous people take full advantage of education and, like me, get the last laugh.

So, how much difference can education make? Measured in cold, hard cash, it matters more than many realize.

How much is on the line when people make their educational choices in Saskatchewan? An earlier study of mine, Howe (2011), computes future lifetime earnings for Saskatchewan residents who had their fifteenth birthday in 2011. Lifetime earnings depend on whether you are male or female and whether you are Métis, First Nations, or non-Indigenous. There have been important economic changes in the past six years and one purpose of this section is to update those calculations.

In this study, there are two major adjustments to the results of the earnings calculations. The earlier study was expressed in 2011 dollars. The amounts will be adjusted to 2017 dollars. Amounts expressed in 2017 dollars will be somewhat greater than in 2011 dollars, because a dollar in 2017 is worth somewhat less than it was in 2011 due to inflation—even though the rate of inflation in the intervening years was quite moderate. Also, in the meantime, there has been wage growth. That, too, will be adjusted for.

In this study, lifetime earnings are computed for a Saskatchewan resident who has their fifteenth birthday sometime in 2017. The computations show the lifetime earnings of the individual: how much they (on average) will make in their lifetimes expressed in constant 2017 dollars. Some readers will want to know that the amounts have been discounted back to a present value using a real (as opposed to nominal) interest rate of 3%.

6 *This has been extensively documented for Saskatchewan. See, for example, the discussion in Howe (2011).*

So how much money will Saskatchewan residents make in their lifetimes? It depends on their level of education. We focus on four levels of education, on individuals who:

• drop out prior to receiving a high school diploma and do not subsequently obtain high school equivalency;

• obtain a high school diploma either by graduation or by completing high school equivalency, with no further formal education;

• complete a program at a non-university post-secondary institution, with no further formal education; or

• receive a Bachelor's degree or higher.

The four categories are fairly self-explanatory. Note for the third that a non-university post-secondary institution includes business colleges, technical schools, and formal apprenticeship programs. The fourth includes all education levels beyond the Bachelor's, including the Master's and Doctorate, although a Bachelor's degree is the most common level of educational attainment for people in this category.

These computations are all performed for the lifetime earnings of a hypothetical Saskatchewan resident who turns fifteen years old in 2017. Individuals are assumed to follow the usual pattern of retirement, but are computationally forced into retirement at age 70 if they have not previously retired.[7] So income is earned during the period from 2017 to 2071, following the usual patterns for people at each of the above four levels of education, depending on whether they are male or female and whether they are Métis, First Nations, or non-Indigenous. Thus there are 24 hypothetical individuals whose working lives are studied: two (male or female) times four (education levels) times three (Métis, First Nations, or non-Indigenous).

[7] The earnings results are largely insensitive to the assumption that retirement is computationally forced at age 70 for those who haven't retired yet. The reason for this insensitivity is two-fold. One reason is that higher income individuals are empirically more likely to retire earlier, so those left working at 70 have lower average earnings. Also, the results are reported as discounted present values, so that money in the future is discounted. There is more about discounted present value in Section 2.2, below. The actual reason that retirement was forced at age 70 is that there was little choice: there are few enough individuals who continue working past that age that there was not a large enough group of such individuals in the microdata files to provide a meaningful sample.

The detailed assumptions made in the calculations of lifetime earnings were designed to under-estimate incomes. So it is important to understand that the following estimates are, in fact, underestimates.

So what is the usual pattern of a lifetime trip through the labour market for the above 24 people? The lifetime trip has to specify for each of the 24 individuals, annually by age: unemployment rates, labour force participation rates, survival rates, average wage rates in 2017 dollars, and retirement rates. Each one of these things is fascinating (at least to an economist like me) and could, of itself, be the subject of a lengthy discussion. Howe (2011) discusses the intertemporal dynamics and presents a guidebook summary of how, for example, the labour force participation rate of a Saskatchewan female differs from that of a male and how it depends on education and whether an individual is Métis, First Nations, or non-Indigenous.

Those who are unfamiliar with earnings data are usually surprised at some of the empirical results. For example, which sex earns more from education, males or females? We are all familiar with the fact that in Canada males tend to earn more than females. But education turns the tables. Without an education, females make a lot less than males, but with education that difference largely goes away. Consequently, females make more money from education than males because they get two financial benefits: the increased earnings which we all (on average) get from education in the Information Age plus the increase that results from catching up with the earnings of males. So who earns more from education, males or females? Females!

And the same thing applies to Indigenous people. Without an education, Indigenous people (both Métis and First Nations) are economically marginalized and do not earn very much over their lives. Again, however, education turns the tables, and there is little difference between the earnings of an educated Indigenous and non-Indigenous person. So Indigenous people get two financial benefits from education: the increased earnings which we all (on average) get from education in the Information Age plus the increase that results from catching up with the earnings of non-Indigenous people. So who earns more from education, Indigenous or non-Indigenous people? Indigenous!

In fact, Indigenous females receive the highest financial benefit from their education of any group in Saskatchewan. They receive a triple financial benefit from education: catching up with males, catching up with non-Indigenous people, as well as receiving the increase in earnings we all (on average) receive from education in the Information Age.

Another surprise for many comes from the fact that wage rates are growing healthily in Saskatchewan. Real wages per worker (so removing the effects of inflation as well as the effects of changes in the size of the labour force) have been increasing healthily. Even in the 1990s, when the province was dealing with the cut-backs necessary to avoid the bankruptcy which nearly resulted from Devine debt, real wages per worker grew at a healthy rate of 0.7% per year. In the first decade of the 21st Century, they grew by 2.5% per year. Thus far in the second decade of the 21st Century, they grew by 1.8% per year.

What of the sensational media stories about stagnant (or even decreasing!) wage rates? Many of these are from the United States, where the labour market is quite different than Canada's. Examined in detail, however, many of these stories simply cherry-pick statistics. They tend to compare apples and oranges by comparing the labour market experiences of young people who are just starting out to those of their parents who tend to be in their prime earning years. They often leave out benefits, which are usually negotiated to grow at a faster rate due to their preferential tax treatment. They tend to leave out the effect of an employer giving an employee a raise by moving them to a higher-paying job. More importantly, they tend to leave out the effect of an employee giving themselves a raise by changing to a higher-paying job—which is a particularly large source of earnings growth. My own rate of salary increase would be minimal if you were to compare the salary of my first job—as a minimum wage clerk in a sporting-goods store—with what similar clerks are paid today. But the increase that is of interest, both to me and to society, is the comparison with what I actually get paid today as an economist.

The rule of thumb is that with reasonable economic growth, each generation will have a material standard of living which is about twice that of their parents' generation and hence about four times that of their grandparents'.

The sensational media stories about stagnating wages are common because they serve the interests of two major groups: employers which find them useful in negotiating with their employees, as well as the unions which find them useful in recruiting.

That being said, the study projected that the future annual growth rate in overall real wage rates per person would be 0.6%, its smallest defensible value. I believe that the future wage growth will exceed this, but felt that the higher rates which I expect would produce earnings data that would not look credible to most readers. Just as our earnings rates today would surprise our grandparents' generation.[8]

Thus, the reader should bear in mind that the following earnings numbers are designed to be underestimates, as pointed out above. Readers should expect that average earnings will be greater than the following numbers show.

8 *Or perhaps one doesn't have to look back as far as grandparents. One time my mother asked me how much I earn. I told her and it was the one of the few times in my life I have seen her shocked into silence. I hasten to add that my earnings are not high for an economist; my students regularly earn more than I do when they are in the labour market—and some take delight in telling me their salaries to observe my reaction. Perhaps I react to hearing their earnings like my mother reacted to mine. Though I am* never *actually shocked into silence!*

2.1 THE BENEFITS OF EDUCATION TO THE INDIVIDUAL

So, how much will a Saskatchewan resident earn in their lifetime? As discussed above, it depends on: whether they are male or female; whether they are non-Indigenous, Métis, or First Nations; and their level of education.

Table 5 shows for the earnings non-Indigenous people.

Table 5. Lifetime earnings of a non-Indigenous resident of Saskatchewan

	Male	Female
Drops out of school prior to receiving a high school diploma, and does not subsequently obtain high school equivalency	$812,171	$409,076
Obtains a high school diploma either by graduation or by subsequently completing high school equivalency, with no further formal education	$1,153,665	$699,551
Completes a program at a non-university post-secondary institution (e.g. a technical school), with no further formal education	$1,427,546	$876,351
Receives a Bachelor's degree or higher	$1,848,052	$1,702,783

Examine the above table and note that (on average) males earn more than females at all levels of education. The highest paid non-Indigenous person in Saskatchewan is a male with a university degree. Notice how the difference between male and female earnings decreases with more education. For non-Indigenous people, a female dropout earns only 50 cents for every dollar earned by a male dropout. But, for those with a university degree the financial penalty for being female decreases: she earns 92 cents for every dollar he does. They both earn more but her earnings partly catch up. We turn to the implications of that below after considering Métis earnings and then First Nations.

Next examine the table for Métis in Saskatchewan.

Table 6. Lifetime earnings of a Métis resident of Saskatchewan

	Male	Female
Drops out of school prior to receiving a high school diploma, and does not subsequently obtain high school equivalency	$640,427	$304,713
Obtains a high school diploma either by graduation or by subsequently completing high school equivalency, with no further formal education	$1,142,479	$714,159
Completes a program at a non-university post-secondary institution (e.g. a technical school), with no further formal education	$1,455,781	$924,828
Receives a Bachelor's degree or higher	$1,951,761	$1,776,553

Now the comparisons become more complicated.

Métis females still make less than males at all levels of education, but again the difference decreases with more education.

Comparing Métis earnings to those of non-Indigenous people. Note that Métis dropouts are even more marginalized—and even poorer—than non-Indigenous dropouts. But note that there is a point where, with education, Métis earnings catch up and surpass non-Indigenous. The earnings of a Métis female with a high school diploma exceed those of a similarly educated non-Indigenous female; and continue to exceed for further levels of education.[9] A Métis male, on the other hand, has to complete a post-secondary program, either university or non-university, in order to have earnings which surpass a similarly educated non-Indigenous male.

In fact, the highest earning person (on average) in Saskatchewan—comparing everyone whether Indigenous or non-Indigenous people—is a Métis male with a university degree.

As has been noted repeatedly above, Indigenous people have a greater financial incentive to embrace education than non-Indigenous people. Without an education, Indigenous people should expect to be poor, even poorer than uneducated non-Indigenous people. With an education, however, the tables are turned.

But we are getting ahead of ourselves. What about First Nations people? First Nations earnings are shown in Table 7.

9 *That comparison can be even starker elsewhere on the prairies. For example, in a study of Indigenous employment earnings in Alberta, Howe (2013) found that 100% of the Alberta Métis females in his data sample who had a Master's degree or higher were in the labour force and their unemployment rate was 0%. That analysis of Alberta was hence complicated by the question of how to deal with the extremes of an estimated labour force participation rate of 100% and unemployment rate of 0%.*

Table 7. Lifetime earnings of a First Nations resident of Saskatchewan

	Male	Female
Drops out of school prior to receiving a high school diploma, and does not subsequently obtain high school equivalency	$424,111	$236,970
Obtains a high school diploma either by graduation or by subsequently completing high school equivalency, with no further formal education	$933,409	$562,073
Completes a program at a non-university post-secondary institution (e.g. a technical school), with no further formal education	$1,170,930	$887,635
Receives a Bachelor's degree or higher	$1,721,824	$1,620,022

Note that the lowest-paid person in Saskatchewan (on average) is a First Nations female dropout. Again, note that females earn less than males at all levels of education, but that the difference decreases with more education.

In fact a First Nations female dropout earns only $236,970 in her entire life, which is not much to live on. This reflects that they have very few opportunities for generating income or improving health and safety. That would be a part of any explanation of some First Nations female dropouts who become sex workers, or are more financially dependent on their partners and hence have greater difficulty escaping domestic violence.

Also, note that the above tables show that First Nations males and females earn less than their equally educated counterparts who are Métis or non-Indigenous.

Before leaving the above tables, a point should be made that marriage effectively sums the numbers up. If, for example, a First Nations couple allows a pregnancy to force them to drop out of high school, they are condemning themselves—plus their child and any future children—to a life of poverty. If instead they find a way to finish high school and go on to university, the two of them together will earn more than $3 million. Finishing high school may involve sacrifices and doing university may be hard. The support of family and community may be required. But the payoff is great—the couple earn over three million dollars, which is what is best financially for the couple and for their children.

So the above tables show that the highest paid people in Saskatchewan (on average) are Métis males with a university degree and the lowest are First Nations female dropouts. However, that is stated in absolute terms—for total earnings. What about the relative effect of education itself? Who earns the most from getting an education?

Using the above tables, it is straightforward to measure the monetary benefit of obtaining an education: just compute how much earnings increase with education. Those benefits are shown in Table 8. Of course, the benefit depends on whether you are male or female and on whether you are non-Indigenous, Métis, or First Nations.

Examine Table 8 with care. Who earns the most from completing a high school diploma (or subsequently getting high school equivalency)? Whether we are discussing males or females, Indigenous people earn more from finishing high school than non-Indigenous people. For example, if a male gets his high school diploma, then his earnings increase by $502,052 if he is Métis, $509,298 if he is First Nations, or $341,493 if he is non-Indigenous. Now, the $341,493 increase for non-Indigenous males is nothing to sneeze at—over a third of a million dollars—but the increase for Indigenous males is greater.

Another example. If a male goes on to technical school, his earnings increase by $815,354 if he is Métis, $746,819 if he is First Nations, or $615,374 if he is non-Indigenous. Again, the increase for non-Indigenous males—over half a million dollars—is nothing to sneeze at, but the increase for Indigenous males is greater.

Table 8 shows that the single most lucrative educational choice is university. For example, compare the earnings of females. If a female attends university, her earnings increase by $1,471,840 if she is Métis, $1,383,052 if she is First Nations, or $1,293,707 if she is non-Indigenous.

The person in Saskatchewan whose earnings (on average) increase by the most from education—comparing everyone whether Indigenous or non-Indigenous—is a Métis female with a university degree.

Table 8. The individual monetary benefit of education in Saskatchewan

	Male	Female
NON-INDIGENOUS		
Increase from completing high school instead of dropping out	$341,493	$290,475
Increase from completing high school and then going on to technical school	$615,374	$467,275
Increase from completing high school and then going on to university	$1,035,880	$1,293,707
MÉTIS		
Increase from completing high school instead of dropping out	$502,052	$409,446
Increase from completing high school and then going on to technical school	$815,354	$620,115
Increase from completing high school and then going on to university	$1,311,335	$1,471,840
FIRST NATIONS		
Increase from completing high school instead of dropping out	$509,298	$325,103
Increase from completing high school and then going on to technical school	$746,819	$650,664
Increase from completing high school and then going on to university	$1,297,713	$1,383,052

Note from Table 8 that when a Métis male drops out of high school he is throwing away $502,052. All of the adults reading this know that is a lot of money—over half a million dollars—but my experience is that young people oftentimes don't. For one thing, parents do not usually talk about their incomes around their children due to concern that their children will tell others. The only income information young people receive may be media reports of the salaries of sports figures and movie stars: so the above amounts may seem like a drop in the bucket. Howe (2011) used pickup trucks to help young people visualize large amounts of money.

A similar exercise works here too. A brand new top-of-the-line Ford F-150 XLT 4x4 Supercab with a 5 liter engine will set you back about $40,000 after some dickering with the salesperson. So for a Métis male to drop out of school is like owning a dozen of these trucks and one-by-one pushing them off a cliff. Similar calculations can be done for all of the numbers in the table. For example, a Métis female who drops out as opposed to finishing high school and then doing university lowers her lifetime earnings by $1,471,840; that is like her owning a fleet of three dozen of these trucks and pushing them off a cliff.

Or what about cellphones? The most powerful cellphone available from Amazon.ca will set you back $949.99. That is a lot of money for a cellphone but this model is a beauty! (Having read the reviews, I plan to buy one for myself just as soon as I have an extra grand to spend on a phone.) For a Métis male to drop out of school is like owning 528 of these superb phones, and throwing them off the Borden Bridge. For a Métis female to drop out as opposed to finishing high school and then doing university is like owning 1,549 of them and taking a sledge hammer to each and every one.

The amounts shown in Table 8 are impressive. However, they are only the tip of the iceberg because they only show the monetary benefits of education. In addition, there are also important nonmonetary benefits. There is a large literature detailing the nonmonetary benefits which (on average) accrue from education. More education results in longer, healthier lives, presumably because education teaches an individual how to make better personal decisions. (For example, educated individuals are less likely to smoke, use drugs, or abuse alcohol.) More education results in increased personal status, both at work and elsewhere. More education results in jobs that are more satisfying: more likely to deal with interesting issues, interesting ideas, and interesting people. It might seem that more education would correspond to jobs with higher stress, and hence higher personal stress. But, the effect goes in the opposite direction: more education lowers levels of personal stress presumably because the additional earnings make living easier. More education tends to result in more stable marriages. More education for a parent tends to lead to children who are, themselves, more successful in life.

Before going on, the reader should ask themselves how much it would be worth to them personally to have more years of life, a healthier life, a happier marriage, less stress, and to be visited by more successful children. For most of us, these benefits would be worth a lot—almost priceless. An analysis by Oreopoulos and Salvanes (2011) computed the monetary value of the nonmonetary benefits of education.[10] The authors showed that the monetary value of the nonmonetary benefits of education equals three times the monetary benefit. So the total benefit of education to the individual, including both the monetary and nonmonetary, is obtained by taking the monetary benefit and adding three times it for the nonmonetary.

Table 9 shows the total individual benefit, both monetary and nonmonetary, of education in Saskatchewan.

If the numbers in Table 9 don't knock your socks off, then you are made of sterner stuff than I am! It is not every day that you can follow a path in life that can reasonably be expected to lead to a payoff of over five million dollars, like university is shown to have in the above table for Métis and First Nations males and females.

10 *It would be possible to go on and on about the genius of the analysis by Oreopoulos and Salvanes. How could one possibly compute a monetary value to individuals of nonmonetary benefits as varied as marriage stability and having successful children? How could you possibly then weight these by the effect on them of education? The authors used a database of observations of individuals including each individual's education level as well as their earnings and their own subjective assessment of their happiness. The authors then computed the effect of education on earnings, the effect of education on happiness, and then the effect of earnings on happiness. The nonmonetary benefit of education was obtained as the increase in happiness from education beyond what is explained by increased earnings. The monetary value of the nonmonetary benefit of education was computed as the additional earnings necessary to "buy" that additional happiness. The article, in addition to being breathtaking, has been pathbreaking. For example, since its publication seven years ago—which is a short time as these things go in academe—the article has been cited by over 400 other academic articles.*

But it is even more than that if you think about household, as opposed to individual, benefits. If, for example, a Métis couple finishes high school and then goes on to university, they will receive a benefit—both monetary and nonmonetary—that is the sum of those shown in the above table. Their lifetime payoff is over ten million dollars.

That ten million dollar payoff partly explains the growing tendency of households to be made up of equally educated adults. It used to be the case that households tended to include one adult who was more educated (typically male) and one who was less educated (typically female), which had the effect of averaging out household earnings. Today, however, households are more likely to include equally educated adults; a person with a university degree is more likely to partner with another person with a university degree and relish the prosperous life that results.

Table 9. Total individual benefit, both monetary and nonmonetary, of education in Saskatchewan

	Male	Female
NON-INDIGENOUS		
Increase from completing high school instead of dropping out	$1,365,972	$1,161,901
Increase from completing high school and then going on to technical school	$2,461,496	$1,869,100
Increase from completing high school and then going on to university	$4,143,522	$5,174,829
MÉTIS		
Increase from completing high school instead of dropping out	$2,008,209	$1,637,785
Increase from completing high school and then going on to technical school	$3,261,417	$2,480,461
Increase from completing high school and then going on to university	$5,245,339	$5,887,360
FIRST NATIONS		
Increase from completing high school instead of dropping out	$2,037,192	$1,300,411
Increase from completing high school and then going on to technical school	$2,987,276	$2,602,658
Increase from completing high school and then going on to university	$5,190,850	$5,532,207

Well into my fourth decade as a professor, I have also observed a growing further tendency of people to partner with those who not only are equally educated but who also have equally lucrative educational specializations. This report focuses on averages, but not all Bachelor's degrees are equally lucrative. Do we have the household averaging out that would result if high-earning graduates (e.g., physicians) married low-earning graduates (e.g., philosophers)? No, increasingly not.

In today's Canada—in the Information Age—young people who don't get a good formal education should expect to live a life of poverty. But getting an education represents a path away from poverty. Everyone should try to follow that path as far as it can take them. Even when the path is difficult, as it sometimes is, they should try. They should try hard. Very hard.

Through SUNTEP, I finished the Journey my Mother Started

by Lorna Regan, Teacher, Saskatchewan Rivers Public School Division

I am an educator, mother, friend, and relative from Green Lake, Saskatchewan. My mother was Métis and my father was from Flying Dust First Nation. I am a teacher with the Saskatchewan Rivers Public School Division in the Prince Albert area.

Prior to getting my teaching certification, I sat on an Aboriginal Head Start board at the Mocikitaw Preschool in Green Lake, and was a Role Model for the Prince Albert Métis Fall Festival. Later, I worked at the Northern Lights School Division (NLSD) as a tutor where I also coordinated a community and school literacy program.

While I was at NLSD, the superintendent told me about an NLSD program that could pay for my teacher education degree as well as my tutor wages. In return, I would be expected to take up a teaching position at any of the NLSD schools upon earning my education degree and teacher certification for up to eight years. After great consideration, I declined the offer. I had heard great things about the Saskatchewan Urban Native Teacher Education Program (SUNTEP) and it was on the top of my post-secondary education list.

On a cold January day about 12 years ago, I moved to Prince Albert to prepare for the start of my Bachelor of Education Degree through SUNTEP. I graduated in 2010 with distinction.

With its small classes, SUNTEP is a family-oriented program that lends a huge amount of support when needed. There were classmates who wanted to abandon their studies for personal reasons, but they persevered and graduated. There was so much encouragement, helping hands, hugs, and Elders. SUNTEP is a wonderful and safe place to attend university. It is culturally enriching and everyone is acknowledged and appreciated. I don't know where I'd be today without SUNTEP.

I had no idea that my mother contributed to a thesis, in which one of my Native Studies professors wrote about my home community. The history of my people, and my life path became more vivid while I was at SUNTEP and it opened my eyes to who I am and where my roots lie.

I lacked self-confidence when I was younger. But my mother told me, "Don't be shy, ask questions, be persistent, and be assertive." She enrolled in the bachelor of education program at the Northern Teacher Education Program (NORTEP), in La Ronge

but withdrew because it was hard to be away from her family. Years later, SUNTEP gave me the opportunity to finish the journey that my mother started. I became the first in my immediate family to earn a university degree.

It is important to have Indigenous teachers in our schools. One Indigenous student in grade eight recently said to me in class, "Can you say another sentence for me?" I said, "I came to your classroom today to teach." He said, "Nice, thank you!" Meanwhile, I'm still confused, but he and his friend are looking at me as if wanting me to say more. The friend said to me, "Do you know why he asked you that?" I said, "No, why?" And the boy asking me to say a sentence said, "Because I like the way Indigenous women teachers sound when they talk." I said, "Oh, okay, well that's very nice of you to say that. Thank you." So I spent some time talking with these two boys who I found out were in foster care. They were asking me questions such as, where I was from, if I knew so and so, if I was Cree, and so forth. They were very respectful and attentive listeners. I know Indigenous students like to see Indigenous teachers in the schools. They have told me so, and said that they feel safe to tell me their personal stories.

Every child is gifted by the Creator and can learn to their fullest potential, no matter what obstacles they may face. I encourage my students to ask questions, participate in discussions and group activities, and do their best. As a teacher, it is my job to find the proper level of instruction that can give them the greatest opportunity for success.

2.2 AN ASIDE ON UNDISCOUNTED LIFETIME EARNINGS

All of the lifetime earnings shown in this report are "discounted present values." That is all well and good for many readers, who are both comfortable with discounting and frankly would be uncomfortable with anything else. But that comfort is not shared by all of the intended readers of this report. So a word about discounting.

For example, Table 6, above says that the lifetime earnings of a Métis male with university degree is (on average) $1,951,761. Since that is a discounted present value, it means is that—considering interest payments—you would have to set aside $1,951,761 today to pay him the income stream that he will earn over his lifetime.[11]

That discounted present value is computed as follows. Suppose that notationally his annual earnings start in year 0 when he has his fifteenth birthday and end in year 55, when he turns 70. Denote his earnings in year t by E_t. Denote the interest rate by *r*.[12] Whereas the undiscounted value of earnings would equal $E_0 + E_1 + \ldots + E_{55}$, the discounted present value of lifetime earnings is obtained as follows.

$$E_0 + \frac{E_1}{(1+r)^1} + \frac{E_2}{(1+r)^2} + \cdots + \frac{E_{55}}{(1+r)^{55}}$$

The logical appeal of discounting future earnings is that a dollar in the future is not worth a dollar today. For example, a dollar in 55 years is only worth $\frac{1}{(1+r)^{55}}$ today because that is the amount of money you would have to set aside today in order to have a dollar in 55 years given that the interest rate is *r* and assuming annual compounding.

For example, with an interest rate of 3%, a dollar in 55 years is only worth about 20 cents today (since $\frac{\$1}{(1.03)^{55}}$ = $0.1968). That is the amount you would have to set aside today in order to have $1 in 55 years with an interest rate of 3%.[13] Although discounting is appropriate in numerous situations, including assessing social policy (which is why it is used throughout this report), it is not appropriate for individuals who do not discount their own futures. Is a dollar of your consumption in the future worth less to you than a dollar today? It is certainly for some people, but many do not feel like that for their personal decisions. And, interestingly, it is not possible to logically say that they are wrong because it depends on their preferences regarding the future.

So what is the value of lifetime earnings for those who do not discount their own futures? A good approximation is to take the earnings shown in Tables 5, 6, and 7 and multiply by 2.15.

So, for example, a Métis male who gets his university degree will (on average) have total undiscounted lifetime earnings of a little over $4 million. A Métis female who gets her university degree will (on average) have total undiscounted lifetime earnings of a little under $4 million. A Métis couple who both get university degrees will thus have undiscounted household earnings of about $8 million. If you include the (undiscounted) monetary value of the nonmonetary benefit of education, that amount for the household is $32 million in 2017 dollars.

It is worth emphasizing again that the lifetime earnings computed in this study were done using assumptions which would understate earnings. Those assumptions were made, in part, because more realistic assumptions lead to amounts which many would find unbelievably large. So bear in mind that $32 million is actually an underestimate.

It is also worth commenting on the source of the considerable difference between the discounted and the undiscounted values. Discounting implies that the distant future is discounted more heavily, because $\frac{1}{(1+r)^t}$ is smaller for larger values of the variable *t*. A person who is 15 now, like those in this study, will not be into their prime earning years for another 25 years or so. By that time their earnings are discounted by $\frac{1}{(1.03)^{25}}$ = .477606 so each dollar of earnings has a discounted present value of less than 50 cents. Without discounting, on the other hand, a dollar in the future is worth a dollar.

11 Recall that these are all measured in constant 2017 dollars, so the effect of inflation is excluded.
12 As noted above, this is a real interest rate as opposed to a nominal one because earnings are measured in constant dollars.
13 Most intermediate microeconomics texts discuss discounted present values. They include both further discussion and also extensions of the above formula to handle interest rates which vary over time and other forms of compounding than annual.

2.3 THE BENEFITS OF BRIDGING THE INDIGENOUS EDUCATION GAP TO SASKATCHEWAN

Howe (2011) (henceforward in Section 2.3, referred to as the "original study") measures the benefit to Saskatchewan of Bridging the Indigenous Education Gap. That benefit was measured by computing the effect of bridging that gap if it were to be done for all Indigenous adults alive at that time. The original study measures the effect on the province if Indigenous people had the same average levels of educational attainment as non-Indigenous people.

The most important sources of data for the original study were the microdata files for the Censuses of 1996, 2001, and 2006, which are obtained by Statistics Canada from the long form of the Census. As discussed earlier in this report, Stephen Harper's government eliminated the long form from the Census of 2011, eliminating that treasure-trove of data. Although Justin Trudeau's government reinstated the long form for the Census of 2016, it will still be a number of years before the microdata files will be released following the usual pattern of census releases. In fact, the precise date for the release of the microdata files for the Census of 2016 is far enough in the future that it has yet to be announced. However, the microdata files are usually the last to be released—usually about four year after the Census. So it is reasonable to expect that the microdata files from 2016 Census will not be released until 2020. In the meantime, however, it is possible to update the results from the original study based on other data sources.

How can the earlier result be updated? One result from the original study was that the individual monetary benefit—the increase in earnings which would accrue to the educated individual—of Bridging the Indigenous Education Gap would be $16.2 billion measured in 2011 dollars. That amount would be different if it could be calculated today. There are six fundamental reasons for the difference.

1. The increase in the population of Indigenous people. The larger the population, the greater the increase in earnings from Bridging the Indigenous Education Gap.

2. The increase in overall wage rates. Since 2011, wage rates have increased provincially, which would cause the increase in earnings to be revised upward.

3. Changes in the age distribution of Indigenous people. Over time the average age of the Indigenous population is increasing, moving a larger proportion of Indigenous people toward their prime earnings years. This would cause the increase in earnings to be revised upward.

4. Changes in the distribution of wage rates among employees with different levels of education. As we move further into the Information Age, both educational requirements and the rewards to education are increasing. This would cause the increase in earnings to be revised upward.

5. Changes in the relative size of the Indigenous education gap. For example, proportionally how many more Métis males with Bachelor's degrees are required in order to bridge the gap? The relative size of the overall Indigenous education gap grew during the ten year period between the census years of 1996 and 2006, based on an analysis of the microdata files from the censuses of those years. (The average level of educational attainment of the Indigenous population of Saskatchewan grew during that period, but that of the non-Indigenous population grew faster, increasing the relative size of the gap.) Without the microdata files, it is not known what happened in Saskatchewan to the relative level of Indigenous educational attainment after 2006.

6. Changes in the labour force characteristics of Indigenous people at different levels of educational attainment.

Certainly the resolution items 3 through 6 will be very intriguing, but they cannot be resolved until the release of the microdata files from the Census of 2016. In any case, it is reasonable to expect that the numerical revision will be dominated by the effects of items 1 and 2. And the effects of items 1 and 2—which do not depend on the microdata files—can be done now.

That is the purpose of the current section, to update the total benefit of Bridging the Indigenous Education Gap to adjust it for the changes in prices, wage rates, and growth in the Indigenous population.

So, how have wage rates in Saskatchewan increased since 2011? During that period, nominal wages grew by 2.7% per year. At the same time, prices grew by 1.8% per year, so real wages grew by 0.9% per year. In the original study, the assumption was made that future growth in the real wage rate would be 0.65% per year. It was noted in that report, however, that future wage growth would likely be higher, but the lower forecast value was adopted to make the results appear more plausible to the reader. As expected, the actual growth of real wages turned out to be higher than the forecast value of 0.65%, so the earnings numbers have to be revised upward by that higher growth rate in the revision. However, the reader who compares the results to the original study will note that the earnings numbers have been raised by the growth in nominal—not real—wage rates, as is appropriate in order to convert from 2011 to 2017 dollars.

To make it clear, the forecast rate of growth in the real wage rate beyond 2017 is left at 0.65%, as in the original study, but the actual growth rate is used in adjusting from 2011 to 2017.

The Indigenous population of Saskatchewan has grown since 2011. The benefit of Bridging the Indigenous Education Gap is computed as the benefit of having the same level of educational attainment for the existing Indigenous as the non-Indigenous population. Thus growth in the size of the Indigenous population would cause the benefit to increase. The growth in the Indigenous population of Saskatchewan between 2011 and 2017 was 1.9% per year. In order to obtain that value, the actual 2011 value was extrapolated upward to account for the projected increase of the Indigenous population of Saskatchewan, from Statistics Canada (2015).

The above assumptions are consistent with the objective of making the following results yield underestimates of the benefit. The reader should bear in mind that, although the following results show large benefits, they are underestimates.

So, what would be the increase in provincial earnings from Bridging the Indigenous Education Gap? Take Table 5 from page 32 of the original study. Multiply by 1.1715 to adjust for the increase in wage rates and prices between 2011 and 2017. Also multiply by 1.3053 to adjust for the increase in the Indigenous population.[14] The result is in Table 10, which shows the monetary benefit of that would result from Bridging the Indigenous Education Gap.

Note that the three "terminal" categories in Table 10 refer to people who achieve that level of educational attainment, and go no further. So, for example, the category "High School Diploma, Terminal" refers to those who earn their high school diploma (or high school equivalence), but do not go on for further formal education.

14 *The alert reader will notice that the population adjustment factor is greater than would seem to be explained by the above. The reason is that the original study used the Indigenous population from the Census of 2006. So the above factor also adjusts for the population increase from 2006 to 2011.*

Table 10. Increase in lifetime earnings from Bridging the Indigenous Education Gap in Saskatchewan

High School Diploma, Terminal	$3,943,273,905
Technical School Diploma, Terminal	$5,563,811,686
Bachelor's Degree or Higher	$15,197,943,053
Total	$24,705,028,643

The above table shows that the monetary benefit of Bridging the Indigenous Education Gap over the lifetime of today's Indigenous population is $24.7 billion dollars. Historically the highest level of Saskatchewan's total Gross Domestic Product was in 2015, the most recent year for which we have data. The level of Gross Domestic Product, from all sources, that year equaled $79.4 billion. So the monetary benefit of Bridging the Gap equals about a third of the total value of annual provincial GDP.

In addition, as explained above, there is a nonmonetary benefit of education to the individual, which is equal to three times the monetary benefit. Adjusting for that, the combined monetary and nonmonetary benefit of bridging the Indigenous Education Gap is given in Table 11.

Table 11. Increase in lifetime earnings plus the nonmonetary benefit from Bridging the Indigenous Education Gap in Saskatchewan

High School Diploma, Terminal	$15,773,095,619
Technical School Diploma, Terminal	$22,255,246,742
Bachelor's Degree or Higher	$60,791,772,210
Total	$98,820,114,572

As discussed in the original study, there is also an external social benefit of increased formal education which is external to the individual. These external benefits are the ones which many would regard as the most important benefits of education. The external benefits are extraordinary and varied. With higher levels of education, rates of criminality and welfare dependence decline. With higher levels of education, people are more civic minded, so there is more volunteering, greater participation in politics, and higher voter participation rates. With higher levels of education, childcare is improved—which is a benefit which is external to the educated parent insofar as the child's life is improved although the parent typically receives some internal benefit too (and that was a portion of the nonmonetary benefit of education, above). With higher levels of education, rates of teen pregnancy are reduced. Moreover, with higher levels of education, health is improved which is an external benefit to society to the extent to which society pays the cost of the individual's healthcare. As discussed in the original study, the amount of the external social benefit equals 14/9 of the monetary benefit. Consequently, the total social benefit of Bridging the Indigenous Education Gap is given in Table 12.

Table 12. Social benefit (earnings plus nonmonetary benefit plus external social benefit) from Bridging the Indigenous Education Gap in Saskatchewan

High School Diploma, Terminal	$21,907,077,249
Technical School Diploma, Terminal	$30,910,064,920
Bachelor's Degree or Higher	$84,433,016,959
Total	$137,250,159,128

So, the benefit to Saskatchewan, including the monetary and nonmonetary benefit to the individual as well as the external social benefit, is $137.3 billion. That is an immense amount of money in a province this size. It is more than half-again higher than the highest value of Gross Domestic Product in the history of the province. Using the latest population estimate for Saskatchewan, 1,161,365 that benefit is $118 thousand per capita. The benefit for an average family of four would be just under half a million dollars.

Examining the breakdown in the benefit by credential, the largest payoff is for university, but the payoff to our province of just raising the number of terminal Indigenous high school diplomas to be the same proportion as for the non-Indigenous population is $21.9 billion. Just of itself, that is equal to more than a quarter of the highest value of provincial Gross Domestic Product recorded in Saskatchewan's history.

Saskatchewan's growing Indigenous population can consist of mostly poor people—in today's world that means drug and alcohol abuse, crime, suicides, FASD, welfare dependence, poor physical health, poor mental health, short lifespans, and despair. And those words would increasingly come to describe our province. Or the growing Indigenous population can consist of mostly prosperous people. The difference between these two futures for our province is, in two words, indigenous education.

I am thankful for the SUNTEP Program

by Darren McDougall, Vice-Principal, Prince Albert Catholic School Division

My name is Darren McDougall and I am the Vice-Principal at St. Michael's Community School in Prince Albert Saskatchewan. I grew up in Prince Albert and attended university in Saskatoon through the Saskatchewan Urban Native Teacher Education Program (SUNTEP). I had always thought of becoming a teacher since I was in grade school. So when I heard good things about SUNTEP from my cousin who had just completed a Bachelor of Education degree through SUNTEP, I knew that SUNTEP was the right place for me. Further, the small classes, emphasis on Métis history and culture, and financial support offered by the Gabriel Dumont Institute were very appealing, so I decided to apply with SUNTEP.

Growing up I always knew I was Métis, but did not know why or what being Métis meant. The SUNTEP program takes you on a journey to discover who the Métis people are. My favourite part of that journey was learning Métis and First Nations history. In my second year of SUNTEP, we were given the opportunity to go to Winnipeg and explore the Hudson's Bay Company Archives and other historic records, including church records, as part of research on our family history. It was there that I found out my family had strong Métis roots in Red River. My family was displaced from their land and participated in the Red River Resistance of 1869-70 and we also had ties in the Battle of Batoche of 1885. The most gratifying part of learning about my family history was sharing what I had learned with my Dad and family. It gave us a sense of who we are and where we came from.

The SUNTEP program also helped me to understand that every person has a story. This includes the quiet or shy student in the classroom who may sometimes be overlooked. As an educator, I find that it is important to reach out and build relationships with your students. We were taught that when trust is formed, learning can begin. I have seen this in practice.

I graduated from SUNTEP Saskatoon in 2004, and after teaching for eight years, I began looking toward furthering my education and obtaining a second degree in Native Studies. I finished two classes through the University of Saskatchewan when an opportunity emerged: Gabriel Dumont Institute was bringing a community-based Master of Education program to Prince Albert. It was important to me that the program was offered in Prince Albert. That is where I live and work. So, I promptly applied and was accepted in the inaugural class of the Gabriel Dumont Institute's first master's program. Soon after

graduating with the Master of Education degree in 2015, I applied and was appointed as Vice-Principal with the Prince Albert Catholic School Division.

The master's program taught us that it is crucial to build relationships with not only students but families as well. After being an administrator at St. Michael's Community School for one year, I recognized the importance of building relationships. Gaining the trust of the students and families is imperative to have a successful and positive school atmosphere.

I do not know where I would be today if I was not teaching. I am forever thankful for the opportunity the SUNTEP program gave me and to Gabriel Dumont Institute for bringing the Master of Education program to Prince Albert. Without either program, I am not positive that I would have ended up in the education field. Teaching is a huge part my life and I am grateful every single day for the opportunity to do so. From my own experience and from hearing the stories of other Indigenous teachers, it is evident that Saskatchewan's education system is better off because of Indigenous teachers. We need more Indigenous teachers, and I thank SUNTEP for what it does.

SECTION 3. SUNTEP is Securing a Prosperous Future for Saskatchewan

The first graduates of SUNTEP were in 1984, four years after its start, and there were a dozen graduates that year. Then the number graduating in 1985 grew to 17. Then there were another 27 graduates in 1986. SUNTEP continued to grow, graduating an average of about three dozen people per year. In the first third of a century of its existence, through 2017, it has produced 1,238 graduates. These graduates–who equal only about a tenth of one percent of our provincial population—are punching over their weight in securing a prosperous future for our province. As explained above, Saskatchewan's future prosperity relies on Bridging the Indigenous Employment Gap. Today, in the Information Age, that means we have to succeed in our efforts to Bridge the Indigenous Education Gap. Each individual SUNTEP graduate will be shown in this section to be worth multiple-millions of dollars in that effort.

Part of the impact of SUNTEP is straightforward to figure out at this point. Of the 1,238 graduates, 223 were male and 1,015 were female. Referring to Table 6, it is straightforward to compute the increase in earnings for Métis males and females who receive a Bachelor's degree instead of stopping with a high school diploma: subtract earnings with only a high school diploma from earnings with a Bachelor's degree. That increase is $1,951,761 - $1,142,479 = $809,282 for males and $1,776,553 - $714,159 = $1,062,394 for females.[15] Take both amounts and add a multiple of three times the increase in earnings to represent the nonmonetary benefit of education to the individual. Also add a multiple of 14/9 times the increase in earnings to represent the external social benefit of education. Sum the product of the result for males times 223 and the result for females times 1,015. The results are shown in Table 13.

The table shows that the social benefit of SUNTEP graduates, only regarding them as Indigenous people with a Bachelor's degree, is almost $7 billion.

Table 13. Social benefit (earnings plus nonmonetary benefit plus external social benefit) of the graduates of SUNTEP, regarding them only as Indigenous university graduates

Male	$1,002,611,064
Female	$5,990,721,139
Total	$6,993,332,203

However, Table 13 omits the most important social benefit of SUNTEP graduates. The majority of SUNTEP graduates become teachers. And, teachers teach! The benefit of having Indigenous teachers are many. For example, after graduation, both Indigenous and non-Indigenous graduates will live much of their adult lives in a province where there is an Indigenous majority, as explained in Howe (2006). Having an Indigenous teacher presents all students with a positive representation, which can be extremely valuable in a context where media stories frequently involve the negative. Moreover, having an Indigenous teacher will help prepare students for their adult lives where many of the authority figures will be Indigenous.[16] Saskatchewan's evolving demographics—as we move toward an Indigenous majority—will fundamentally change our province and require profound changes in our individual perceptions and expectations: having an Indigenous teacher helps transform attitudes.

However, in the context of this study, the most relevant economic benefit of an Indigenous teacher arises when the teacher is a role model: when Indigenous students see themselves in their teacher and decide to persevere in education. Howe (2011) undertook an extensive review of the literature seeking guidance on how to quantify this effect. Although there is a large literature—much generated in the United States to

15 *Note that these numbers provide another example that a female on average earns less than an equally educated male but also has a greater increase in her earnings from education. The above figures show that Métis earnings on average are lower for a female than a male comparing both those with only a high school diploma and also comparing those with a Bachelor's degree. Nonetheless, as illustrated by these numbers, a female receives a greater increase in her earnings with education.*

16 *I will indulge myself by taking this opportunity to again express my own personal hope to still be alive when our province has its first Indigenous premier. That day will certainly come: Saskatchewan's demographics dictate it. I hope that I am still alive to celebrate, and I have a bottle of Champagne waiting. (That is literally true.) Though, it would be even better to be alive when we have our first Indigenous premier when most people just take that for granted.*

analyse the effects of minority teachers on minority students—its conclusions are difficult to apply for this study. Most studies focus on test scores instead of on educational attainment, and hence are irrelevant to the current context. Many studies focus on school catchment areas rather than on specific groups of students, so these studies are irrelevant, too. That literature review concluded that although there is certainty about the existence of a positive effect of minority teachers on the educational attainment of their minority students, there is uncertainty about its quantitative size.

How often does an Indigenous teacher influence an Indigenous student to further their formal education? Although many adult readers will recall teachers whose influence changed their lives, how often does this happen for a particular teacher? The conclusion after completing the literature review was to use three plausible values, corresponding to high, medium, and low scenarios. In the low scenario, it was supposed that such a situation arose for a given Indigenous teacher once every decade; in the medium, once every five years; and in the high, once every two years. The students were assumed to have an equal probability of being male or female, and an equal probability of being Métis or First Nations. The effect was assumed to be equally likely to involve completing high school, technical school, or university.

Of the 1,238 SUNTEP graduates, 978 have become teachers. Through the end of academic year 2016-2017, they provided a total of 14,187 person years of teaching. In the high scenario, this influenced 7,093 students; in the medium, 2,837 students; and in the low, 1,419 students. Lifetime earnings of these students increase by an average of $836,899 per student, which is the average over: the effects of schooling on earnings across all three levels of schooling beyond being a dropout; over male and female; and over Métis and First Nations students. Table 14 shows the increase in earnings of the influenced students in each of the three scenarios.

Table 14. Increase in the lifetime earnings of students who were influenced by teachers from SUNTEP through 2017

High	$5,936,961,506
Medium	$2,374,282,463
Low	$1,187,559,681

The increase in the lifetime earnings of Indigenous students who were influenced by teachers from SUNTEP is $5.9 billion in the high scenario, $2.4 billion in the medium scenario, and $1.2 billion in the low scenario.

However, as discussed above, there are other social benefits to education—nonmonetary individual benefits and external social benefits. For those, you add three times the monetary benefit to obtain the nonmonetary individual benefit and add 14/9 times the monetary benefit to obtain the external social benefit. Table 15 shows the total social benefit of the Indigenous students who have been influenced by their teachers from SUNTEP.

Table 15. Social benefit (increase in lifetime earnings, nonmonetary benefit, and external social benefit) of students who were influenced by teachers from SUNTEP through 2017

High	$32,983,119,478
Medium	$13,190,458,128
Low	$6,597,553,783

Thus the total social benefit of Indigenous student who have been influenced by teachers from SUNTEP through 2017 is $33.0 billion in the high scenario, $13.2 billion in the medium scenario, and $6.6 billion in the low scenario.

The total social benefit of SUNTEP is obtained as the sum of the Table 13 and Table 15, the sum of the benefit of the SUNTEP graduates influencing students plus their benefit from being Indigenous university graduates themselves. That is shown in Table 16.

Table 16. Social benefit to Saskatchewan of SUNTEP graduates through 2017

High	$39,976,451,681
Medium	$20,183,790,331
Low	$13,590,885,986

So the total social benefit to Saskatchewan of the SUNTEP graduates is $40.0 billion in the high scenario, $20.2 billion in the medium scenario, and $13.6 billion in the low scenario. To see how large those numbers are in a province the size of ours, as noted above, the highest level of Gross Domestic Product thus far in the history of Saskatchewan is $79.4 billion.

How much does Saskatchewan benefit from individual SUNTEP graduates? Table 17 is obtained from Table 16 by dividing by the number of graduates, 1,238.

Table 17. Social benefit to Saskatchewan per graduate of SUNTEP

High	$32,291,156
Medium	$16,303,546
Low	$10,978,099

So the total benefit to Saskatchewan per graduate of SUNTEP is $32.3 million in the high scenario, $16.3 million in the medium scenario, and $11.0 million in the low scenario.

I have spent a half-century of my life performing computational economic analyses. Every computation has certain inherent limitations. Table 17 includes the total social benefit per SUNTEP graduate only for their teaching as it has occurred up to the end of the 2016-17 academic year. As they teach in the future, there will be more benefits to our province, and each graduate of SUNTEP will be worth even more. Hence, the social benefit will be even more than shown in Table 17.

However, some readers may wonder about the possibility that the social benefits shown above are overestimates despite my zealous efforts to make them underestimates. In performing this analysis I have consistently made assumptions which would minimize the size of the measured benefits, so the above are certainly underestimates. But what if I had a REALLY bad day. (To err is human, after all, and most economists try to be as human as our profession allows.) I cannot imagine my computations ever being overestimates by as much as 50%, but let's be devil's advocate and ask what if they are? Then, even under the low scenario, the benefit to Saskatchewan per SUNTEP graduate is $5.5 million each, which is still an enormous amount of money per graduate. Even in this case, SUNTEP graduates are worth literally more than their weight in gold.

In dealing with Indigenous education, our province faces a stark choice. We can have a prosperous future or a future dominated by poverty and despair. SUNTEP graduates are crucial in securing a prosperous future because of their roles as Indigenous teachers. SUNTEP is crucial because it teaches the teachers.

SECTION 4. Fiscal Implications for the Saskatchewan Provincial Government

The fiscal implications for the Saskatchewan provincial government of Bridging the Indigenous Education Gap are substantial and affect both revenue and expenditure. This section addresses expenditure and Section 5 includes revenue, along with a variety of macroeconomic variables. Section 5 of the report concludes that Bridging the Indigenous Education Gap increases provincial government revenue by $12.0 billion. Thus far in its existence, SUNTEP is shown to have increased government revenue in the range of $1.2 billion in the low scenario to $3.5 billion in the high.

The revenue calculations are fairly straightforward as these things go, though complicated in that Métis do not get the tax breaks available to Registered Indians. Also, note that the increased revenues in the previous paragraph are lifetime effects. They are the effect of Bridging the Education Gap—so they are the refer to increasing the level of educational attainment of Indigenous people alive today and then measuring what would be different over their lifetimes. Thus the revenue shown in Section 5 is a lifetime effect on revenue. On the other hand, expenditure savings computed in this section are measuring the annual effect.

Computing the expenditure savings is fraught with difficulty although it is clear that savings would be substantial.

Although it is accepted that governments in Canada spend more per person on Indigenous than on non-Indigenous people, there is so little available data that it is challenging to measure the magnitude.[17] The lack of data may be unexpected to many readers given how closely our lives today are observed, quantified, and recorded. However, the data problem is straightforward: when a Canadian accesses most government services their Indigenous identity is not documented. For example, when a Canadian goes to a hospital due to a medical emergency, their Indigenous identity is neither solicited nor recorded. Moreover, although many organizations encourage Indigenous employees to self-identify (as, for example, most educational institutions do) many are wary of doing so for fear of lowered expectations and reduced opportunities. It is thus unsurprising that there is only a scant literature which attempts to assess the size of the spending difference.

Further complicating estimation on the expenditure side is that the expenditure difference is due to a wide variety of factors. Some differences are due to the remote locations of many reserves and other Indigenous communities, as well as language barriers, making it expensive to provide government services. Demographics also play a role: the average age of the Indigenous population is younger than the non-Indigenous which increases the expense of government services. Some of the additional expenses are related to Treaty obligations, which apply less to some Indigenous groups, such as Métis, than to others. Finally, some are related to the socio-economic characteristics of the Indigenous population. Only those last would be directly affected by Bridging the Indigenous Education Gap. How much money is involved?

Howe (2013) includes a thorough review of the scant literature on the saving of government expenditure. The conclusion of that review is that that provincial governments in Canada spend 57% more per capita on Indigenous people, and that an improvement in socio-economic status to equal that of the non-Indigenous population would reduce that percentage by half. So the socio-economic improvements associated with Bridging the Indigenous Education Gaps (or Bridging the Indigenous Employment Gap) would reduce provincial government expenditure by 28.5% per capita for the Indigenous population of Saskatchewan.

How much money is that? Thus far in the 21st Century, annual expenditure by the Provincial government of Saskatchewan has been $8,109.65 per capita in 2007 dollars. Saving 28.5% for each Indigenous resident of Saskatchewan would amount to $2,311.25 each. Using the previous extrapolation of Saskatchewan's Indigenous identity population to equal 185 thousand in 2017, the annual saving for the budget of the provincial government of Saskatchewan would be $427 million, measured in 2007 dollars. That saving equals a bit more than 5% of the average of total provincial government expenditure thus far in the 21st Century. On an annual basis, that is a large saving.

And the large saving will get even larger with a growing Indigenous population. The annual saving of $427 million is computed using the Indigenous population in 2017, so it will grow with the growth in that population.

17 *Measurement is further complicated by the fact that in some areas—such as education—less is spent per capita.*

SECTION 5. Further Macroeconomic Impacts

People reading economic impact analyses expect for metrics to include the major macroeconomic aggregates like Gross Domestic Product, personal disposable income, aggregate employment, and the like. Although the preceding analysis has included earnings, a major component of GDP on the income side of the social income and product accounts, it has not included GDP itself. The purpose of this section is to factor GDP and some other prominent macroeconomic aggregates into the analysis. In addition, this section measures the impacts on the tax revenue of the provincial government.

If Saskatchewan were to stop wasting its Indigenous human resources, it would cause the provincial economy to boom. The previous sections have shown that the boom would be large. However, it can also be expected to be unique in the history of Saskatchewan booms in that it would not be followed by a bust.

All previous booms in Saskatchewan have had causes which are external to the province in that they were not caused by the provincial economy itself. All of the booms have had one of three causes: a technological development, an abnormally high resource price, or a resource discovery. An example of a boom caused by a technological development followed the development of the Blairmore Ring. Its development caused the potash boom of the middle 1960s, as mines were developed and shafts were sunk exploiting the new technology. An example of a boom caused by a high resource price occurred when the United States began to sell wheat to the Soviet Union in the early 1970s, causing the price of wheat to rise and setting off a boom in rural Saskatchewan. An example of a resource discovery boom would be the discovery and development of the Bakken oil deposit.

Although they are from different sources, all of these booms have one thing in common in that they end in a bust. In fact, every boom in Saskatchewan's 100+ years of existence has been followed by a bust. Why is that? One common view among laypeople in Saskatchewan is to attribute the bust to eventual price decreases. Although it is certainly true that price decreases can affect the timing of a bust, the bust would happen anyway—its actual cause lies elsewhere.

The reason that resource booms have inevitably been followed by busts in Saskatchewan is actually an immediate consequence of the variation in the labour versus capital intensity of resource industries. With very few exceptions, resource industries are labour intensive in their capital expansion phase but then capital intensive in operation. For example, it requires a lot of people to build a potash mine, but then fewer to operate it. A resource boom occurs during the expansion phase—because it causes a boom in the demand for labour, bringing workers and their families into the province. But the expansion phase is inevitably followed by the operation phase, in which those jobs largely go away, along with the workers and their families. That is a bust. Note that it would occur regardless of a decrease in a resource price. Booms and busts are, simply put, part of the inherent dynamics of a resource economy. The reader may find it useful to think of the boom as resulting from construction workers and their families moving to the province, and then leaving when the construction work is largely done.[18]

The boom that would be unleashed by Saskatchewan no longer wasting its Indigenous human resources would be fundamentally different. Resource booms and busts occur due to forces on the demand side—in particular forces which cause large increases or decreases in the demand for labour. The effect of no longer wasting Indigenous human resources would be a major change on the supply side; that would be an unprecedented change in our province's economic history.

To understand what the effect would be, we need to consider what happened in rural Saskatchewan starting with the dawning of the Information Age. It was thought by some that the Information Age would be the savior of rural Saskatchewan. Frankly, they had some good arguments, and it might have been. The Information Age would emphasize trade in services and also weaken the linkage between where an employer is located and where an employee works. Employees could work in rural Saskatchewan—or wherever they wished to live—while being employed by firms physically located elsewhere.

The reader should pause and think about that for a moment because it corresponds to a very different mindset than has been appropriate for Saskatchewan in the past. With the Information Age, there has been a revolutionary change in how regional populations are determined. Previously they were determined by

18 *Currently in Saskatchewan, just examining employment in the construction industry shows that the boom that is currently turning to a bust in our province still has a long way to go. Starting midway through the boom, construction workers grew to exceed the number of people employed in agriculture. In Saskatchewan! Although construction employment is currently trending downward, construction employment is still somewhat kept up as some ongoing projects are completed. As those projects are finished, construction workers will increasingly migrate to provinces where there are construction jobs.*

where firms were located: for example if you wished to work in the auto industry then you had to live near an auto firm. Although worker's locational preferences certainly entered in, they were somewhat secondary. Workers moved to where firms were located. With the Information Age, location is increasingly determined by where workers prefer to live. The computer analyst who works all day at her computer—having her meetings by Skype, receiving her directives by email, and emailing her analyses to her employer—can live anywhere there is high speed internet. Computer help centres and call centres can be set up overnight anywhere, though they also require high speed internet. Instead of workers moving to where the jobs are, jobs increasingly move to where workers want to live.[19]

Or rather, due to the educational demands of the Information Age, jobs move to where educated workers want to live.

So, it was thought that one aspect of the Information Age would be that jobs would move to rural Saskatchewan, because people wanted to live there. Before examining what actually happened in rural Saskatchewan, let's pause to consider what was also occurring with services.

The economy was expected to become more service oriented, and that has worked out as expected. The increased service orientation of Saskatchewan's economy is readily apparent. The top two employing industries provincially are both services. Moreover, in the majority of years since 2000, Saskatchewan has exported more services than all agricultural commodities combined. (In Saskatchewan!) Some of those exports are fairly prosaic: for example a hunter flies in from Ontario and hires a local guide. But most are not prosaic at all: examples include post-secondary education for non-residents, engineering consulting, legal work, computer analysis, and economic consulting.

So, the anticipated transformation of the provincial economy to services has occurred. But rural Saskatchewan has not been saved because at the same time that the economy was becoming service-intensive, the same transformation was occurring to consumer spending. Consumer expenditures came to include an ever larger proportion of services. In the past, consumer expenditure on services made up about a third of total consumer spending, but that portion today is over half! The increase is especially remarkable in Canada because consumer expenditure on services here does not include most expenditure on health care which is mostly provided by government and paid for with taxes.

So, consumers spent an ever greater share of their expenditures on services. And these services were more readily available—available in much greater variety and quality—in urban areas. Yes, employees could more readily locate to where they wished to live, but they increasingly wished to live in urban areas due to the enhanced availability of services. That preference, in effect, preserved the economic dynamics of Saskatchewan: we continue to be a resource economy subject to the vagaries of externally caused booms which are followed by busts.

However, Indigenous people are statistically less likely to move in response to variation in economic activity. Perhaps due to stronger ties to the land or to community and family, they are less likely to move to where there are jobs. They are like the people in rural Saskatchewan were assumed to be at the start of the Information Age. With the Information Age—and the increasing decoupling of the location of the employee and the employer—jobs move to employees if they are appropriately educated. That would be just as some expected for rural Saskatchewan at the dawn of the Information Age. As shown by the economic measurements in this report, it would be a boom. But an unprecedented boom in Saskatchewan because there would be no reason for it to be followed by a bust.

There is an inherent limitation to the analysis in this section. It has to be emphasized that the following macroeconomic analysis is approximative. The Bridging of the Indigenous Education Gap correspond to an increase in the provincial supply of labour, so a microeconomic analysis would be more appropriate than macroeconomic. Macroeconomic analysis is best suited for the analysis of variations on the demand side—as caused, for example, by a resource boom or bust. In the current context, however, a macroeconomic analysis allows us to examine the variation in Gross Domestic Product and other major macroeconomic variables.

19 *As another example, this report is being researched and written while I sit in a cabin—with an internet connection—on an island far out on a huge lake in northern Saskatchewan. Why is the economic activity of this report located there? It is both because that is where I—the worker—prefer to be, and also because the technology of the Information Age allows it.*

So, what is the effect on GDP and its associated macroeconomic aggregates? Howe (2011) shows multipliers for the Provincial effect of increases in earnings. They are shown in Table 18, adjusted for changes that have occurred in the intervening years. It should be emphasized that they are long-term multipliers. They show the effects of a stimulus caused by an increase in provincial earnings, after the economy has had time to adjust to the stimulus.

Only constant dollar variables are reported. As noted, the dollar variables are either in 2007 constant dollars, to correspond with the current base year for constant dollar social product accounts in Canada, or in 2017 constant dollars, as has been used thus far in this study to measure income variables.

The first set of multipliers in Table 18 show the effect of a $1 increase in earnings on expenditure variables, measured in 2007 dollars. Gross Domestic Product increases by $1.0476. That increase is caused by the circular flow of income, the familiar positive feedback loop of macroeconomics: one person's expenditure increases another's income, which brings about further expenditure. That increase in GDP is mostly made up of increased consumption (from increased earnings) and increased government spending (from increased tax receipts), although there is some further investment in housing, infrastructure, and inventories. Note that the six expenditure items would cause GDP to increase by $1.8460, but the seventh—imports—show that .7985 of the increase is imported into the province (from the rest of Canada or the rest of the world). So GDP increases by the difference, $1.0476.

The second set of multipliers show the effect of a $1 increase in earnings on income variables, measured in 2017 dollars. Note that personal income increases by a little over $2 as a consequence. Part of that increase is due to the circular flow of income—note that wages and salaries increase by a total of $1.4761. But part is also due to increased savings: the resulting increase in personal wealth causes an attendant increase in interest and dividends. That is what is being shown in the $0.4444 increase in the category of other personal income. That increase underlines the fact that these multipliers are long term—after the economy has adjusted to a change. After all, the short term effect of increased income on interest and dividends would be close to zero because savings need time to accumulate and then further time is required to earn additional interest and dividends. Current transfers to government increase also, due both to taxes and to legally mandated tax-like payments like contributions to Employment Insurance and the Canada Pension Plan. Current transfers to persons increase—despite the decrease in welfare and employment insurance benefits caused by the increased earnings—due to the existence of programs (e.g. payments of CPP benefits) with benefit rates which increase with increased income. The net effect is that personal disposable income increases by $1.6677. The final multiplier in that set shows the effect on real personal disposable income in 2007 dollars is an increase of $1.2913. That compares to the first set of multipliers, where personal expenditure is shown to increase by $1.2142. The difference, of course, is the increase in savings, which brought about the increase in interest and dividends.

Table 18. Long-term Saskatchewan macroeconomic multipliers for an increase in earnings

VARIABLE	MULTIPLIER
EXPENDITURE VARIABLES IN 2007 DOLLARS	
Gross Domestic Product	1.0476
Personal Expenditure	1.2142
Gross Fixed Capital Formation, Housing	0.1564
Gross Fixed Capital Formation, TCU	0.0472
Gross Fixed Capital Formation, Government	0.0506
Value of the Physical Change in Inventories	0.0021
Government Current Expenditure, Provincial and Local	0.3756
Imports	0.7985
INCOME VARIABLES IN 2017 DOLLARS	
Personal Income	2.0871
Wages and Salaries	1.4761
Other Personal Income	0.4444
Current Transfers to Persons	0.1665
Current Transfers to Government	0.4194
Personal Disposable Income	1.6677
Personal Disposable Income in 2007 dollars	1.2913
MISCELLANEOUS VARIABLES	
Employment, person years	1.050×10^{-5}
Provincial Government Revenue in 2007 Dollars	0.4858

The next-to-last multiplier shows that an additional dollar of earnings brings about a small increase (per dollar) in provincial employment, 1.050×10^{-5}. Since $^{1}/_{1.050x10^{-5}} = 95{,}238$, this implies that $95 thousand of earnings generates one more person year of employment on the demand side. The final multiplier shows the effect of an additional dollar of earnings to be an increase in real revenue of the provincial government of $0.4858, which is reasonable given the size of the increase in economic activity. The reader may wonder if there is incompatibility shown by the provincial government revenue multiplier exceeding the size of the multiplier for transfers from persons to government (which includes taxes paid by persons to all levels of government, not just provincial). However, the results are compatible because the provincial variable includes business taxes in additional to personal.

Using the above multipliers, we can further assess the macroeconomic impacts of Bridging the Indigenous Education Gap and of SUNTEP. First note that it is in the nature of macroeconomics that we have to stop including both individual nonmonetary benefits and external social benefits. This is because macroeconomics focuses on the positive feedback loop of the circular flow of money. Note, however, that the nonmonetary benefits and the external social benefits certainly have their own positive feedback loops. For example, one of the external social benefits of more education is to lower the rates of teen pregnancy. But, as one teen couple uses contraceptives, it sets an example of sexual responsibility for others, causing further decreases in teen pregnancy. However, since macroeconomics is about the monetary feedback loop, all of the nonmonetary individual benefits and external social benefits of education are excluded from the analysis for the remainder of this section.

Section 3 demonstrated that the effect of Bridging the Indigenous Education Gap would be to increase provincial earnings by $24.7 billion dollars. What would be the macroeconomic effects of that change? Using the above multipliers, the macroeconomic impacts are as shown in Table 19.

Gross Domestic Product increases by $25.9 billion in 2007 constant dollars. The components of GDP which change the most are personal expenditure (increases $30.0 billion), government current expenditure (increases $9.2 billion), and imports (increases $19.7 billion). There are however, some changes in investment, principally housing and infrastructure.

Personal income increases by $51.6 billion. Wages and salaries make up the largest proportion of that increase, though the increase in other income makes up about a fifth of the increase due to increased wealth and the resulting increase in interest and dividends. After adding transfers to persons and subtracting transfers to government, personal disposable income increases by $41.2 billion in 2017 dollars, or $31.9 billion in 2007 dollars.

Employment would be higher by 259 thousand person years. Provincial government revenue would be higher by $12.0 billion 2007 dollars.

Table 19. Macroeconomic impact of Bridging the Indigenous Education Gap in Saskatchewan

VARIABLE	IMPACT
EXPENDITURE VARIABLES IN MILLIONS OF 2007 DOLLARS	
Gross Domestic Product	$25,880.07
Personal Expenditure	$29,995.84
Gross Fixed Capital Formation, Housing	$3,863.17
Gross Fixed Capital Formation, TCU	$1,166.10
Gross Fixed Capital Formation, Government	$1,250.18
Value of the Physical Change in Inventories	$51.22
Government Current Expenditure, Provincial and Local	$9,279.37
Imports	$19,725.83
INCOME VARIABLES IN MILLIONS OF 2017 DOLLARS	
Personal Income	$51,560.88
Wages and Salaries	$36,468.08
Other Personal Income	$10,979.09
Current Transfers to Persons	$4,113.71
Current Transfers to Government	$10,361.39
Personal Disposable Income	$41,199.34
Personal Disposable Income in millions of 2007 dollars	$31,902.67
MISCELLANEOUS VARIABLES	
Employment, thousands of person years	259.46
Provincial Government Revenue, millions of 2007 dollars	$12,001.95

Turn, now, from an analysis of the macroeconomic impact of Bridging the Indigenous Education Gap in Saskatchewan to an analysis of SUNTEP's contribution to that process through 2017. The focus changes, since Table 19 shows the lifetime effect throughout the lives of the current Indigenous population of Saskatchewan, whereas the computations of the effect of SUNTEP show the effect of the SUNTEP graduates, and their teaching, through 2017.

So, we continue with the same 2017 cut off that was used previously in the analysis. Section 3 was limited to an analysis of the impact of the SUNTEP graduates through the end of the 2016-17 academic year, and the impact of their teaching through that year also, although it included the increase in the lifetime earnings of students.

Hence, just as with Section 3, an important proviso is that further teaching in the future by current SUNTEP graduates will increase the social benefit per graduate, and will also increase the macroeconomic impact of SUNTEP itself. Similarly for future SUNTEP graduates.

Section 3, above, shows that the 1,238 graduates of SUNTEP thus far, regarding them strictly as Indigenous university graduates, have had a social benefit of $7.0 billion. However, only the increase in the earnings component of that benefit, $1.3 billion, is relevant to this macroeconomic analysis.[20] The above analysis shows in Table 14 that the increase in earnings of the Indigenous students who through 2017 have been influenced to continue their education by teachers from SUNTEP have increased earnings by $5.9 billion in the High scenario, $2.3 billion in the Medium, and $1.2 billion in the Low. The macroeconomic impact of these increases is shown in Table 20.

For ease of discussion, focus on the Medium scenario. The increase in earnings of $3.6 billion[21] results in GDP being $3.8 billion higher. That increase, just as before is mostly due to increases in personal and government expenditures, though there is some increase in spending on infrastructure, and is held back somewhat by the increase in imports. The increase in earnings results in personal income increasing by $7.6 billion, due to increases in wages and salaries and also increases in other income (due to increased wealth leading to higher income from interest and dividends). Adjust for transfers to and from persons, and the increase in personal disposable income is $6.1 billion. Employment is higher by 38 thousand person years. The revenue of the provincial government is higher by $1.8 billion dollars.

20 *To obtain this quantity, take the total benefit of $6,993,332,203 from Table 13 and compute the part that is the increase in earnings by dividing by (4 + 14/9).*

21 *The $3.6 billion is the sum of the $1.3 billion and $2.3 billion from the preceding paragraph.*

Table 20. Macroeconomic impact of SUNTEP through 2017

VARIABLE	SCENARIO		
	LOW	MEDIUM	HIGH
EXPENDITURE VARIABLES IN MILLIONS OF 2007 DOLLARS			
Gross Domestic Product	$2,562.72	$3,805.88	$7,538.01
Personal Expenditure	$2,970.27	$4,411.14	$8,736.80
Gross Fixed Capital Formation, Housing	$382.54	$568.11	$1,125.22
Gross Fixed Capital Formation, TCU	$115.47	$171.49	$339.65
Gross Fixed Capital Formation, Government	$123.80	$183.85	$364.14
Value of the Physical Change in Inventories	$5.07	$7.53	$14.92
Government Current Expenditure, Provincial and Local	$918.87	$1,364.61	$2,702.77
Imports	$1,953.31	$2,900.85	$5,745.48
INCOME VARIABLES IN MILLIONS OF 2017 DOLLARS			
Personal Income	$5,105.70	$7,582.46	$15,017.99
Wages and Salaries	$3,611.17	$5,362.94	$10,621.95
Other Personal Income	$1,087.18	$1,614.57	$3,197.85
Current Transfers to Persons	$407.35	$604.96	$1,198.19
Current Transfers to Government	$1,026.01	$1523.73	$3,017.93
Personal Disposable Income	$4,079.67	$6,058.71	$12,000.01
Personal Disposable Income in 2007 dollars	$3,159.09	$4,691.56	$9,292.20
MISCELLANEOUS VARIABLES			
Employment, thousands of person years	25.69	38.16	75.57
Provincial Government Revenue, millions of 2007 dollars	$1,188.47	$1,764.99	$3,495.77

SECTION 6. Thank you

SUNTEP is a nonpartisan Saskatchewan success story which has existed for a third of a century. It owes its success to a wide variety of individual people and organizations. Having shown in the report that SUNTEP is a valuable investment in our province's prosperity—that it has made us better off—this section acknowledges and thanks those involved.

Thank you to the provincial governments of Saskatchewan. SUNTEP has been supported by all of the provincial governments—from both ends of the political spectrum—spanning more than a third of a century. That third of a century included some periods of pronounced fiscal challenges, when the demands placed on public coffers far exceeded what was available. SUNTEP's continued funding through those challenging times reflects its vital importance to our province. Thank you to the premiers and the ministers for their support. And thanks to all the MLA's: both those who made up the governments and those who sat opposite.

Thank you to the farsighted people who founded SUNTEP and to those who continue to move it forward, as well as to the Métis Nation of Saskatchewan for its roles. The results of this study quantify just how much more prosperous our province is as a direct consequence of their efforts. We owe them our gratitude.

Thank you to the dedicated individuals who make up the staff of the ministries of education. Their continued support has been instrumental in ensuring SUNTEP's survival.

Thank you to the Gabriel Dumont Institute for its central roles in the creation, development, and ongoing operation of SUNTEP. And thank you to the people at the SUNTEP offices: the SUNTEP graduates speak particularly glowingly about their importance especially in keeping them motivated in seeking an education.

Thank you to the University of Saskatchewan and to the University of Regina for their roles in accommodating SUNTEP.

Thank you to the families and communities of the SUNTEP students, for their vitally important encouragement and support.

And, finally, thank you to the SUNTEP graduates themselves. They made the necessary sacrifices. They put in the late night hours. They persevered. They are worth more to our province than their weight in gold.

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