An Analysis of the Socio-economic Outcomes of Aboriginal Peoples living in Communities Associated with Self-Government Agreements, 1991-2011[1]

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List of Acronyms

AANDC	Aboriginal Affairs and Northern Development Canada
CLCA	Comprehensive Land Claim Agreement
CSD	Census Subdivisions
CWB	Community Well-Being
EPMRB	Evaluation, Performance Measurement and Review Branch
FNFMA	*First Nations Fiscal Management Act*
FNLMA	*First Nations Land Management Act*
NHS	National Household Survey
SGA	Self-Government Agreement

Executive Summary

This study was commissioned to support the *Evaluation of the Impacts of Self-Government Agreements,* conducted by the Evaluation, Performance Measurement and Review Branch (EPMRC) of Aboriginal Affairs and Northern Development Canada (AANDC). It draws upon data from the Canadian Census (1991-2006) and National Household Survey (NHS) (2011) to compare outcomes for people living in Aboriginal Census Subdivisions (CSDs) with Self-Government Agreements (SGAs) to those of people living in Aboriginal communities with Comprehensive Land Claim Agreements (CLCAs), opt-in legislation or no agreement or opt-in legislation. The method controls for both time and place effects.

The sample includes 15 SGAs associated with 41 Aboriginal CSDs. The comparison group includes 6 CLCAs (without SGAs) comprised of 68 CSDs, 52 First Nation Fiscal Management Act (FNFMAs) and 28 First Nation Land Management Act (FNLMA) arrangements associated with 137 Aboriginal CSDs as well as roughly 800 Aboriginal CSDs without an agreement or arrangement.

Method:

We use a "difference in difference" regression approach. This analytic technique allows us to focus our attention on how *differences* in arrangements in a given community correlate with *differences* in the well-being of individual community residents. This approach allows us to control for differences across communities that are fixed over time, but which may determine what arrangement they are under.

We conduct analysis at three levels:

- Individual characteristics: Total individual income, individual income from wages and salaries, and labour force attachment
- Household characteristics: total household income, household government transfer income, and crowding
- CSD characteristics using Community Well-being (CWB) Index scores as well as component scores.

Analyses are conducted for both the total population in an Aboriginal CSD and the Aboriginal Identity population.

Findings:

<u>Individual Level Effects:</u>

Individual Total Income:

After controlling for age, education and marital status, household size, and official language knowledge as well as Aboriginal status we find positive effects on incomes from SGAs and CLCAs, and smaller effects on incomes from FNLMAs and FNFMAs.

- Living in a community that attains SGA does not affect the individual total income of women. However, the individual total incomes of women are 38% higher if their community attains a CLCA.
- The individual total incomes for men are 11% higher if their community attains a SGA, and 26% higher if their community attains a CLCA.
- Aboriginal status makes a difference:
    - Unregistered Aboriginal men living in a CSD that attains an SGA see an increase in income of 41% .
    - Unregistered Aboriginal women living in a community that attains a CLCA see an income increase of 35%, and registered Indian women see an income increase of 44% (For Aboriginal men the differences are +20 and +39% respectively)
    - Overall, it appears that SGAs raise the incomes of Aboriginal men but SGAs do not have significant effect on Aboriginal women or non-Aboriginal people.
    - CLCAs in contrast, raise the total incomes substantially across all groups.

Individual Income from Wages and Salaries:

Looking at the population who works for someone else, and after controlling for the same set of independent characteristics, attainment of an SGA does not have a significant impact for women, but increase men's earnings by 6%.

However, attainment of CLCA increases wages and salaries by 23% for women and 9% for men. FNFMAs are associated with an 11% earnings decline for men but there is no significant impact for women.

Labour Force Attachment:

Living in a community that attains an SGA has a small positive impact on the labour force attachment (working more than 25 weeks) of Aboriginal persons living in that community but a negative impact on that of non-Aboriginal men. CLCAs see a small increase for non-Aboriginal men. FNFMAs and FNLMAS do not have an impact on the labour force attachment of Aboriginal persons but show a small decline a decline for non-Aboriginal people.

Living in CSD that attains SGA does not affect the probability of working fulltime full year for Aboriginal persons, but it lowers that probability for non-Aboriginal people. Living in a CSD that attains a CLCA does not affect Aboriginal people but it does increase the probability of working full time full year for non-Aboriginal people. Living in a CSD with an FNFMA and FNLMA decreases the probability of working fulltime full year for non-Aboriginal men but FNLMA is positive for Aboriginal men.

Household Total Income:

Attainment of an SGA lowers household total incomes of non-Aboriginal people. Attainment of an SGA increases the household total incomes of unregistered Aboriginal women and men by 27%, but does not affect the household total incomes of registered Aboriginal women and men.

Attainment of a CLCA raises the household incomes of Aboriginal and non-Aboriginal people, thus both groups benefit in terms of household incomes but non-Aboriginal persons benefit more.

Household Income from Government Transfers:

SGAs decrease government transfer income to Aboriginal women by 9%. For un registered Aboriginal men, SGAs may increase government transfer income by 28%. CLCAs in contrast increase government transfer income by a large magnitude (about 60% higher for Aboriginal residents). FNFMAs and FNLMAs increase government transfer to non-Aboriginal men.

Crowding:

SGAs do not affect the crowding of non-Aboriginal persons, but reduce crowding for Aboriginal people. In contrast, CLCAs reduce crowding for non-Aboriginal people more than for Aboriginal people.

Community Level Impacts:

Having an SGA increases the CWB total score by about 4 points for Aboriginal residents and five points for all residents. There are also increased CWB scores for housing, income and labour force activity. Having a CLCA increases the CWB total score by about 3 points for Aboriginal residents including Improved CWB scores for income
Having a FNLMA decreases the CWB score by about 2 points for Aboriginal residents including decreased labour force activity.

In Summary:

Of the four agreement types, attainment of SGAs and CLCAs are most strongly correlated with improved outcomes for Aboriginal people. SGAs tend to improve the outcomes of unregistered Aboriginal persons more than those of registered Aboriginal persons; CLCAs tend to improve the outcomes of registered Aboriginal persons more than those of unregistered Aboriginal persons, and to improve the outcomes of non-Aboriginal persons most of all. Attainment of SGAs increases Aboriginal household total incomes by increasing individual labour force activity and earnings of both women and men; in contrast, attainment of CLCAs increases household total incomes in large measure by increasing household government transfer income.

1. Objectives

This study was commissioned to support the *Evaluation of the Impacts of Self-Government Agreements,* which is being conducted by the Evaluation, Performance Measurement and Review Branch (EPMRB) of Aboriginal Affairs and Northern Development Canada (AANDC).[3] It draws upon data from the Canadian Census (1991-2006) and National Household Survey (NHS) (2011) to examine how individual and community level socio-economic outcomes vary across Aboriginal communities (census subdivisions) with and without self-government agreements.

We look at differences across communities with agreements and arrangements that provide Aboriginal communities with varying degrees of access, responsibilities and authorities outside or within the *Indian Act* compared to communities without such arrangements. Self-government agreements (SGAs) set out arrangements for Aboriginal groups to govern their internal affairs and assume greater responsibility and control over decision-making that affects their communities.

The study measures socio-economic outcomes for communities associated with self-government agreements at the individual and community levels. Outcomes for these CSDs are compared to Aboriginal CSDs without a self-government agreement including those associated with stand-alone comprehensive land claims agreements (CLCAs), and Aboriginal CSDs associated with two opt-in legislation – *the First Nations Land Management Act* (FNLMA) and *First Nations Fiscal Management Act* (FNFMA).

Prior to examining the study's findings, the following two sections provide a more detailed over view of the study's sample, control groups and methodology.

[3] AANDC. Audit and Evaluation Sector, Evaluation and Performance Measurement Branch, *Terms of Reference: Evaluation of the Impacts of Self-Government Agreements,1570-7/14078*, April 25, 2014.

2. Overview: Agreements and Opt-in Legislation

2.1 Self-Government Agreements

Self-government agreements set out arrangements for Aboriginal groups to govern their internal affairs and assume greater responsibility and control over the decision-making that affects their communities. In general, self-government agreements address the structure and accountability of Aboriginal governments, their law-making powers, and financial arrangements as well as their responsibilities for providing programs and services to their members.

There are three main types of SGAs in effect:

- SGAs associated with Comprehensive Land Claim Agreements
- Stand-alone SGAs,
- Sectoral SGA .

- ***Self-Government Agreements with Comprehensive Land Claim Agreements***

There are currently 16, SGAs in effect that have been negotiated in conjunction with comprehensive land claim agreements. There are mostly in the Yukon and British Columbia.

- ***Stand-alone Self-Government Agreements***

There are currently 3 stand-alone SGAs have been negotiated in British Columbia and Manitoba. The Sechelt First Nation was the first to reach such an agreement, in 1986; Westbank First Nation followed in 2004 (both in British Columbia) and the Sioux Valley Dakota Nation Self-Government Agreement came into effect in 2014 in Manitoba.

- ***Sectoral Self-government Agreement***

There has only been one sectoral self-government agreement. The Mi'kmaq Education Acts (federal and provincial) served to replace *Indian Act* provisions with respect to education for 10 First Nations in Nova Scotia when passed in 1999.

Therefore, there are currently 20 self-government agreements currently in effect.[4] Because the latest available national level data date back to 2011, this study focuses on Aboriginal individuals and communities associated with SGAs that were signed prior to 2011. In all, 18 self-government agreements (SGAs) were in place by the end of 2010, 15 of which are included in this study.[5]

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[4] These included 16 comprehensive land claims agreements with related self-government agreements, three stand-alone self-government agreements, and one sectoral self-government agreement.

[5] Three SGAs were excluded from the sample:

- The 1998 Tr'ondëk Hwëch'in agreement was dropped because there were no people living in the CSD identified as being part of the agreement.
- The 2005 Kwanlin Dun agreement was dropped because it is part of the larger Whitehorse CSD.
- CSDs associated with the 1998 Little Salmon / Carmacks agreement were dropped because there were no Aboriginal identity respondents.

It should be noted that the details of the agreements vary within each type, in part because of the diversity of Aboriginal groups and their circumstances. Because there are relatively few SGAs, for the purposes of analysis, all three types of self-government agreements are rolled into a single category.

2.2 Comprehensive Land Claims Agreements without SGAs

Eight CLCAs without self-government were signed between 1976 and 2012 in Quebec, the Northwest Territories and Nunavut.

Only six CLCAs are included in this study. This is due to communities associated with the Nunavik Inuit Land Claims Agreement and Eeyou Martine Region Land Claims Agreement included within the James Bay and Northern Quebec Agreement.

2.3 Opt-in legislation

Opt-in legislation arrangements provide First Nations with the means to opt-out of certain provisions of the *Indian Act* and opt-in to alternative arrangements. This study considers two opt-in legislations models that had agreements in place during the study's time frame: the 1999 First Nations Land Management Act (FNLMA) and the 2006 First Nations Fiscal Management Act (FNFMA).

- FNLMA enables participating First Nations to opt out of the 34 land-related sections of the *Indian Act* and develop their own land codes to govern their lands and resources. This opens up a host of new economic opportunities for First Nations and Canadian businesses.
- FNFMA enables First Nations to opt into the property tax system so they are better positioned to promote economic growth and capitalize on solid business relationships, resulting in a better quality of life for community members.

Two First Nations opted into the FNLMA prior to concluding self-government agreements while seventy-five other First Nations had opted into either or both the FNLMA and FNFMA by 2011(for a total of 94 agreements). According to AANDC data, 27 more arrangements were adopted by First Nations between 2011 and 2014.

2.4 Summary

The sample includes 15 SGAs associated with 49 Aboriginal CSDs. The comparison group includes 6 CLCAs (without SGAs) comprised of 79 CSDs, 59 FNFMA and 35 FNLMA arrangements associated with 164 Aboriginal CSDs as well as roughly 800 Aboriginal CSDs without an agreement or arrangement. It should be noted that while there are communities who have opted into FNLMAs since 1996, communities with FNFMA legislation has only been in effect since 2007. It may, therefore be too early to see effects.

Table 1, below, provides the timing and number of CSDs affected by agreements or opt-in legislation. Appendix 1 (Table A1) provides information on regional distribution and a full list of First Nations involved in the opt-in legislation.[6]

One can see from Table 1 and Appendix 1 that different arrangements came into force at different times throughout our study period of 1991 to 2011. We use this variation in agreement type across time and space to assess how agreements affect the socio-economic outcomes of Aboriginal people.

***Table 1*: Type of agreement or arrangement, year and number of census subdivisions**

Type	Name / Province or Territory	Year	Number CSDs (2011)
Self-Government Agreements (SGAs) (n = 15)			
SGA with CLCA	Teslin Tlingit, Yukon	1995	3
	Champagne & Aishihik, Yukon		4
	Nacho Nyak Dun, Yukon		1
	Vuntut Gwitch'in , Yukon		1
	Selkirk, Yukon	1998	1
	Nisga'a, British Columbia	2000	1
	Ta'an Kwach'an, Yukon	2002	1
	Kluane, Yukon	2004	1
	Carcross Tagish, Yukon	2005	3
	Tlicho , NWT		4
	Labrador Inuit , NFLD and Labrador		5
	Tsawwassen , British Columbia	2009	1
Stand-alone SGAs	Sechelt, British Columbia	1986	2
	Westbank , British Columbia	2004	2
Sectoral SGA	Mi'kmaw Kina'Matnewey , Nova Scotia	1999	19
Total SGA census-subdivisions			***49***
Comprehensive Land Claims Agreements (n = 6 signatories / signatory groups)			
	James Bay Northern Quebec Agreement, Quebec	1975	32
	Northeastern Quebec Agreement, Quebec	1978	1
	Inuvialuit , NWT	1984	6
	Gwich'in , NWT	1992	4
	Nunavut	1993	31
	Sahtu Dene & Métis, NWT	1994	5
Total CLCA census-subdivisions			***79***
Opt-in Legislation			
First Nations Land Management Act (n = 35 First Nations)		1996	2
		1999	2
		2000	2
		2002	6

[6] A complete list of CSD codes associated with agreements and Opt-in legislation is available in the Appendix 2.

Type	Name / Province or Territory	Year	Number CSDs (2011)
		2003	7
		2004	4
		2005	15
		2007	4
		2008	3
		2009	7
		2010	9
First Nations Fiscal Management Act (n = 59 First Nations)		2007	57
		2008	32
		2009	3
		2010	11
Total opt-in census-subdivisions			***164***

Source: AANDC, EPMRB. See Appendix 1 for further detail

3. Method

Our objective is to investigate how the socio-economic outcomes of residents of Aboriginal communities differ across communities with different types of arrangements, and how they differ over time as arrangements for a particular Aboriginal community evolve. We thus compare outcomes for people living in Aboriginal CSDs with SGAs to those of people living in Aboriginal communities with CLCAs, opt-in legislation or no agreement or opt-in legislation. Similarly, we compare outcomes over time for people living in Aboriginal communities that attained agreements or opt-in arrangements.

The Strategic Research Directorate of AANDC provided a list of Aboriginal CSDs to us. In 2006, there were 1082 Aboriginal CSDs in Canada. This list was matched to a table provided by the EPMRB, which identifies the type of agreement, or legislation that a CSD had at each point in time. In order to use data over a long time period, we used Statistics Canada's CSD concordances to create a dataset with consistent community-definitions at the CSD level based on 2011 CSD names and numbers. We then used these to define the geographic areas that were affected by agreements. Finally, for our individual-level analysis, we matched these areas (at the CSD level) with their residents in the long-form census and NHS databases.

We conduct analysis at three levels:

- Individual characteristics
  - Total individual income
  - Individual income from wages and salaries
  - Labour force attachment
- Household characteristics
  - Total household income
  - Household government transfer income
  - Crowding
- Census Subdivision characteristics
  - Community Wellbeing Index scores
    - Total score
    - Education score
    - Labour force score
    - Income score
    - Housing score

Our basic identification strategy is to correlate these outcomes with the type of agreement or legislation in force in the community in which they live.

A stumbling block to the interpretation of such correlations is that the different arrangements might be driven by unmeasured factors that affect both outcomes and the probability of attaining agreements or opt-in arrangement. For example, the level of economic development in a community would affect both of these, and would thus induce a correlation between them. But, that correlation would not indicate the effect of the attainment of an agreement on the outcomes of individuals affected by the agreement.

We get around this problem via a standard "difference in difference" approach. That is, we focus our attention on how *differences* in arrangements in a given community correlate with *differences* in the well-being of individual community residents. This approach allows us to control for differences across communities that are fixed over time, but which may determine what arrangement they are under. Essentially, we can look at the change in outcome variables in communities that transition into these arrangements, and compare that to the change in well-being of residents of communities that do not transition into these arrangements over the same period.

To use a medical analogy, the idea of the difference-in-difference estimate is to consider implementation of a self-government arrangement as a *treatment* and to use the pre-implementation state as the *control*. We can then distinguish the treatment effect from a time effect by comparing to over-time change in the outcome variable in a treated community to the over-time change in the outcome variable in an untreated community. Additionally, we will control for other observed covariates in this regression approach.

We estimate regression models for our repeated cross-section data of individuals and panel of communities. Let $s=1,...,S$ index all of the Aboriginal communities as defined by AANDC. Let $t=1990,1995,2000,2005,2010$ be the income year for each census. We note that income data in the census long-form and NHS are for the previous year. Let $i=1,...,N$ index all the individuals in the repeated cross-sections formed by the census long-form and NHS databases. Although there are some individuals who fill out census long-forms in multiple years, we do not attempt to link them to make a true panel. However, at the level of the community s, these are panel data.

Let $A_{st} = \{A_{jst}\}^4_{j=1}$ be a vector of dummy variables for the agreement types indexed $j=1,...4$. These are indicator variables that a community has attained an agreement of type {SGA, CLCA, FNLMA, or FNFMA}. Agreements vary at the level of the community and year. We code each dummy variable as a *1* if the community had that agreement type or legislation in the previous year or earlier. Thus, a community with an agreement of type j in 1995 would have $A_{js,1995}=0$ and $A_{js,2000}=1$.

Let X_{ist} be a vector of individual-level covariates and let X_{st} be a vector of community-level covariates. Our individual-level covariates include aboriginal identity (1 indicator), age (in 10 categories), education (in 14 categories, matched to 2006 codings which do not distinguish education levels among high-school non-completers), household size (a dummy for single-member households plus a scalar equal to household size less one), marital status (5 categories) and official language knowledge (4 categories). Our community-level covariates are comprised of average age and education (in years), and the log of population. Because we have community-dummies in community-level regressions, we do not include time-invariant characteristics of communities, such as distance from a metropolitan centre.

We run regressions of the form

$$Y_{ist} = X_{ist}\beta + A_{st}\gamma + \alpha_s + \delta_t + \varepsilon_{ist} ,$$

for individual-level outcome variables Y_{ist}, and of the form

$$Y_{st} = X_{st}\beta + A_{st}\gamma + \alpha_s + \delta_t + \varepsilon_{st} ,$$

for community-level outcome variables Y_{st}. For both individual-level and community-level regressions, we are interested in the estimates of the vector γ, which give the effect each type of agreement or opt-in arrangement on individual- or community-level outcomes.

All our regressions control for the individual covariates listed above. Additionally, they control for census year via year fixed effects (indicator variables for 1996, 2001, 2006 and 2011 census years) and they control for location via CSD fixed effects (about 1200 indicators, one for each CSD in the sample). Since we control for year, we can think of the regression estimates in terms of growth rates: how do the over-time growth rates of dependent variables differ between treated and untreated individuals? Since we control for CSD, we can think of this as a within-location thought experiment: how do the over-time growth rates of dependent variables differ for residents of a given CSD if that CSD gets an agreement?

We also consider the possibility that treatment effects are heterogeneous, by interacting the treatment indicator with other variables. For each dependent variable, we consider three models: first, a model where estimated treatment effects are averaged across all people; second, a model where treatment effects are considered separately for people with and without Aboriginal identity, to see if they have different gains or losses from agreements; and third, a model where treatment effects are considered separately for people with and without Aboriginal identity and who have and don't have registration under the Indian Act. For the third regression specification, we also include an indicator variable for registration under the *Indian Act*.

We have 7 dependent variables, 4 computed at the individual level and 3 computed at the household level. The individual-level dependent variables are: the natural logarithm of total annual individual income from the previous year; the natural logarithm of total annual individual earnings from the previous year; an indicator that the individual worked more than 25 weeks in the previous year; and an indicator that the individual worked full-time and full-year in the previous year. The household-level dependent variables are: the natural logarithm of total annual household income from the previous year; the natural logarithm of total annual government transfer income from the previous year; and the number of persons per room in the household in the current year. We use linear regression for all models, so the models with indicator dependent variables are interpreted as linear probability models wherein the coefficient estimate gives the difference in probability between treated and untreated individuals, and the models with logged dependent variables give approximately the proportionate impact of treatment.

All regression samples are restricted to individuals aged 25-64 who live in an Aboriginal community, whose household size is less than 13 (the 99th percentile of household size), and who live in the same CSD as they did 5 years ago. Additionally, individual total income and total earnings regressions exclude individuals with less than $100 in annual total income or annual total earnings, respectively. Finally, total earnings regressions

additionally exclude people attending school (full- or part-time) and people whose class of work is not primarily employed for wages and salaries.

All regressions are done separately for men and women, including those with household-level dependent variables. All regression estimates are provided with p-values that correspond to estimated heteroskedasticity-robust standard errors. These p-values may be interpreted as showing statistical significance: if p-values are less than 0.05, then the coefficients may be taken to be statistically significantly different from zero; otherwise not.

In order to run regressions with CSD-level variables, we needed to concord the agreement type of a CSD to the CSD over time. AANDC provided a list of 1082 Aboriginal CSDs based on 2006 CSD codes, however we have 2011 CSD codes for agreements. This would not be a problem if CSD codes were stable over time, however, they do change over time, often because of amalgamation or dissolution. We therefore used concordance tables from Statistics Canada that match CSD name and number changes across census and NHS periods to recode all CSD codes to 2011 CSD codes.[7]

The above approach allows us to assess the association between different types of agreements and both individual and collective (community level) outcomes. Specifically, we are able to measure the degree to which living or being affiliated with an Aboriginal community that has a self-government agreement is associated with differences in indicators such as employment probabilities, schooling probabilities or earnings. Further, these impacts are net of controlled characteristics such as age, size of community or type of work.

[7] Geocode concordance tables are available at: http://www.statcan.gc.ca/concepts/concordances-classifications-eng.htm

4. Findings

4.1 Individual level effects

Appendix 3 provides results from 42 regressions in which the dependent variables are different socio-economic measures and the independent variables include controls for individual characteristics (age, marital status, schooling, household size and official language knowledge), fixed effects (the census/NHS year and the CSD) as well as information on the kind of agreement or opt-in arrangement that a CSD has in a given census/NHS year. The dependent variables and sample restrictions are:

- Panel 1: the log of total income
    - sample: population age 25-64 living in an Aboriginal CSD, living in a household with fewer than 14 people, reporting more than $100 in annual income.
- Panel 2: the log of income from wages and salaries
    - Sample: same age, CSD and household size restrictions as above, not attending school, working for wages and salaries, reporting more than $100 in wages.
- Panel 3: the probability of working more than 25 weeks in the year prior to the census
    - Sample: same as for total income
- Panel 4: the probability of working full-time full-year
    - Sample: same as for total income
- Panel 5: the log of total household income
    - Sample: same as for total income
- Panel 6: the log of total income transfers from government
    - Sample: same as for total income, and
- Panel 7: the number of people per room
    - Sample: same as for total income

Income related variables on the Censuses and NHS refer to the previous year's income (for example, the annual income reported on the 2011 NHS is for the year 2010). If an agreement is signed in 2010 than having an agreement only accounts for part of the year. For this reason, we count an agreement as in force if and only if it was in force 2 years prior to the census year (that is, the year prior to the income year). This decision means that, for example, in 2011, the 8 FNFMAs signed in 2010 (a total of 11 CSDs) and the 4 FNLMAs signed in 2010 (9 CSDs) are not treated as in force for the 2011 NHS data on 2010 incomes.

One might worry that we are conflating the correlation between, for example, income and agreements with the tendency of higher-income bands to attain agreements with the Canadian federal government. However, this concern is unfounded. Since we include CSD-level fixed effects (indicator variables) in the model, all time-invariant characteristics of CSDs are accounted for. For example, suppose that bands living in CSDs with a lot of mineral resources had a greater incentive to work out CLCAs with the

federal government. Suppose also that these bands are richer due to their greater resource endowment. In a regression that did not include CSD fixed effects, we would spuriously associate the higher incomes of people in these bands to the agreements they signed, rather than to their resource endowments. But, in a regression with CSD fixed effects, the fixed effects pick up the income induced by greater resource endowments, and the agreement indicator variable picks up the marginal effect of attaining an agreement.[8]

Reading Appendix 3:

As stated, Appendix 3 shows results from 42 regressions. There are 7 basic dependent variables (noted above) covering a range of economic and social variables. Each of these is run separately for men and women. In addition, each regression is run three ways in order to identify different populations (identified as regression sets 1, 2 and 3):

- Regression set 1 is designed to identify broad impacts of living in a community with an agreement or arrangement for all residents in a census subdivision regardless of Aboriginal identity.
- Regression set 2 has the same set of controls as Regression set 2, but includes identifiers for Aboriginal identity. Thus, we can use this set of regressions to identify the impact of attaining an agreement or arrangement for non-Aboriginal and Aboriginal residents separately from each other.
- Regression set 3 breaks out the Aboriginal identity grouping into those with Registered Indian Status and those without Registered status but with Aboriginal identity. In this way it is possible to compare within the Aboriginal identity population and separate out the impact across the two groups, but still comparing to the non-Aboriginal population.

As described in Section 2, agreements are identified as 4 mutually exclusive indicator variables which give the type of arrangement attained:

- Self-Government Agreements (SGAs)[9]
- Comprehensive Land Claim Agreements (CLCAs)
- First Nations Land Management Act (FNLMAs) arrangements
- First Nations Fiscal Management Act (FNFMAs) arrangements.

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[8] Since we have CSD fixed effects, we can interpret these estimates in terms of growth rates: the incomes of men in CSDs that attained agreements grew 17 % faster (over a given 5 year intercensal period) than did the incomes of men in CSDs that did not attain agreements. Thinking about the results in terms of growth rates suggests that even with CSD fixed effects in the model, there remains at least one plausible avenue of misattribution of agreement effects. Suppose that different CSDs had different income growth rates, and those with faster income growth rates attained agreements. In this case, we would misattribute the sorting of income growth rates to agreements to the effect of agreement themselves. For the purposes of this paper, we will assume that inclusion of CSD fixed effects is sufficient to identify pure treatment effects of agreements on our various dependent variables, but it is nonetheless wise to maintain some degree of skepticism throughout.

[9] Includes SGAs associated with Comprehensive Land Claim Agreements, Stand-alone SGAs and Sectoral SGAs

The comparison group is CSDs without one of those four types of agreements. As a roadmap then, if we talk about the differences between men and women overall, we are drawing results from Regression set 1. If we talk about Aboriginal identity and non-Aboriginal people, we are drawing results from Regression set 2. If we talk about registered or unregistered status we are drawing results from Regression set 3.

We note however that dividing the Aboriginal identity population by registered status results in a loss of significant results. This is likely because significance is a trade-off between population size and variance and as we divide up the population, the variance increases relative to population size. For this reason, the graphs are based on regression set 2, which looks at Aboriginal identity and non-Aboriginal population.

The results discussed below are drawn from Appendix 3.[10]

[10] Summarized tables below use data from Appendix 3 by making the following calculations. The interaction effects are additive, so to get the impact of living in a CSD with an SGA for women who are Aboriginal by identity, but not Registered , you add the coefficients for SGA + SGA*Aboriginal – 0.03 +0.18 =0.15. For Registered Indian women, you have to add the coefficients for: SGA+SGA*Aboriginal+SGA*Registered= -0.03 + 0.18 + (-0.17)= -0.02

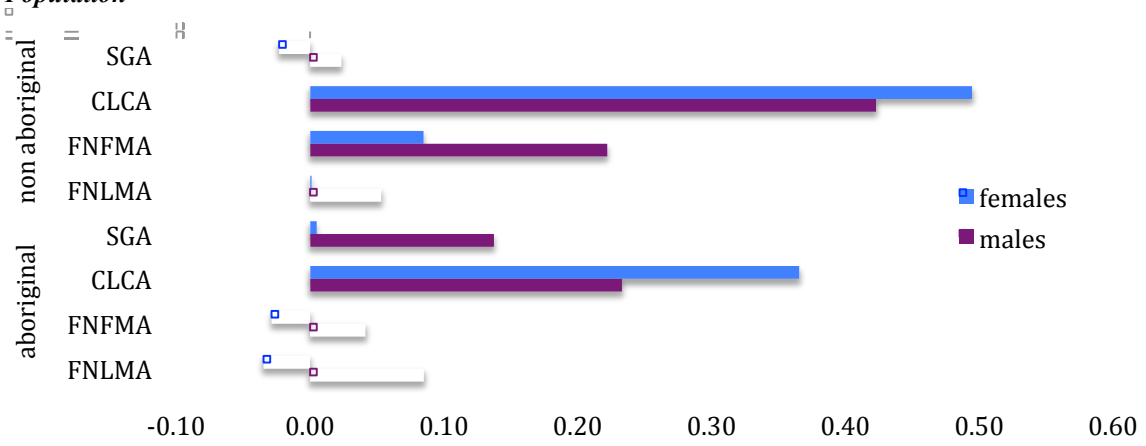
Panel 1: Total Income

Table 2: Summary of Findings for Total Income

Regression Set	Gender	SGA	CLCA	FNFMA	FNLMA
Regression Set 1					
Total Population	Male	11% increase	26% increase	10% increase	7% increase
	Female	-	38% increase	-	-
Regression Set 2					
Non-Aboriginal	Male	-	42% increase	22% increase	-
	Female	-	49% increase	8% increase	-
Aboriginal Identity	Male	13% increase	23% increase	-	-
	Female	-	36% increase	-	-
Regression Set 3					
Unregistered Aboriginal	Male	41% increase	20% increase	-	-
	Female	-	35% increase	-	-
Registered Aboriginal	Male	-	39% increase	-	-
	Female	-	44% increase	-	-

- equals no significant effects

Figure 1: Total Income- Regression Set 2- Non-Aboriginal Population and Aboriginal Identity Population[11]



[11]Note: Bars filled in if p-value is less than 0.05. Age, schooling, marital status, official language knowledge, household size, year and CDS included. Comparison group is residents of CSDs without agreement or arrangement.

Key Findings – Total Income

Attaining an SGA – main benefits to Aboriginal men
41% increase in total income for unregistered Aboriginal men
13% increase to Aboriginal identity men
No measureable effects on women's total income

Attaining a CLCA – substantial benefits across all groups
26% /38% increase in total income for male/female population
42%/49% increase in total income for male/female non-Aboriginal population
23% /36% increase in total income for male/female Aboriginal identity population
20%/35% increase in total income for male/female unregistered Aboriginal population
39%/44% increase in total income for male/female registered Aboriginal population

Attaining a FNFMA / FNLMA – FNFMA benefits non Aboriginal people
22% increase in total income for non-Aboriginal males under FNFMA
8% increase in total income for non-Aboriginal females under FNFMA

Looking first at Table 2 Regression Set 1, we see results for the average effect of the four distinct agreement types listed above on the log of individual total income for women and men as compared to those living in a CSD without an agreement. These agreement types are exclusive except that some CSDs have both FNLMAs and FNFMAs. For women, we see a very striking pattern. The individual total incomes of women are unaffected by SGAs, FNLMAs and FNFMAs. But, the individual total incomes of women are 38 % higher if their community attains a CLCA. For men, living in a CSD with an agreement is correlated with higher incomes. Men living in a CSD with a SGA see earnings 11% higher than those living in a CSD with no agreement or arrangement. As was the case for women, for men we see that CLCAs are associated with a 26% increase in individual total income, and that living in a CSD with an FNFMA or FNLMA is associated with an increase of 10% and 7% respectively.

However, the effects are uneven across groups (Regression sets 2 and 3). Looking at the results for FNLMAs and FNFMAs, neither opt-in legislation has any statistically significant effects for any Aboriginal group, but benefit the non-Aboriginal population. We see that the effect of living in a CSD with an SGA does differ by Aboriginal status (see Regression set 3) with unregistered Aboriginal males benefiting the most from SGA with an increase of 41%.

Turning to the effect of CLCAs on total incomes, we find substantial benefits across all groups. We find however, the effect is larger for non-Aboriginal persons as compared to Aboriginal persons. Non-Aboriginal women who live in an Aboriginal community that attains a CLCA, see an income increase of 49%, compared to 36% for Aboriginal identity women, and non-Aboriginal males see increase of 42% compared to Aboriginal identity males who see an income increase of 23%.

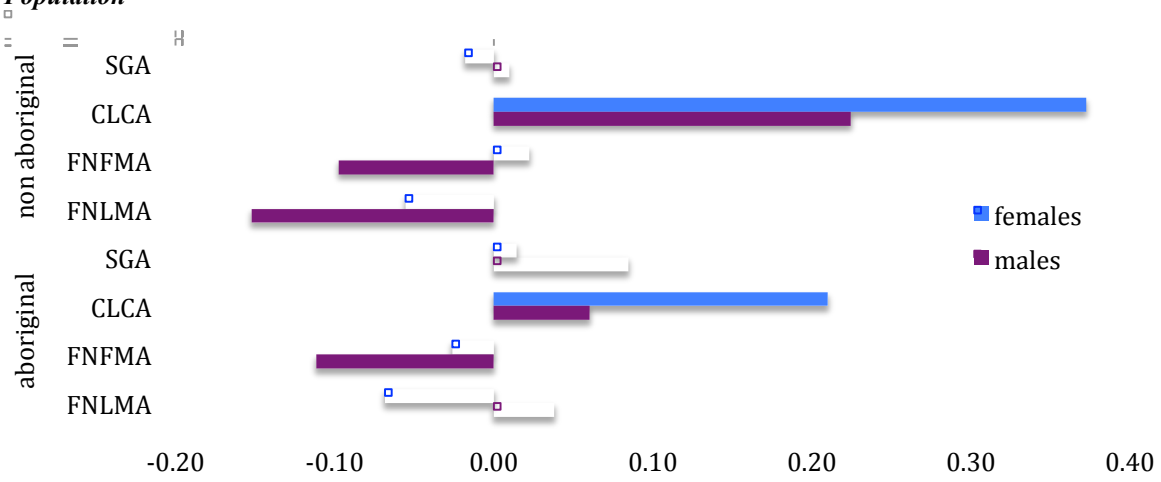
Panel 2: Income from Wages and Salaries

Table 3: Summary of Findings for Income from Wages and Salaries

Regression Set	Gender	SGA	CLCA	FNFMA	FNLMA
Regression Set 1					
Total Population	Male	6% increase	9% increase	11% decrease	-
	Female	-	23% increase	-	-
Regression Set 2					
Non Aboriginal	Male	-	22% increase	10% decrease	15% decrease
	Female	-	37% increase	-	-
Aboriginal Identity	Male	-	6% increase	11% decrease	-
	Female	-	21% increase	-	-
Regression Set 3					
Unregistered Aboriginal	Male	-	-	-	-
	Female	-	21% increase	-	-
Registered Aboriginal	Male	-	-	-	-
	Female	-	26% increase	-	-

- equals no significant effects

Figure 2: Income from Wages and Salaries- Non-Aboriginal Population and Aboriginal Identity Population[12]



[12]Note: Bars filled in if p-value is less than 0.05. Age, schooling, marital status, official language knowledge, household size, year and CDS included. Comparison group is residents of CSDs without agreement or arrangement.

Key Findings – Income from Wages and Salaries

Attaining an SGA – does not significantly affect the wages and salaries of Aboriginal identity and non-Aboriginal residents

Attaining a CLCA – increases the earning of Aboriginal and non-Aboriginal residents – in particular the female population
9% /23% increase in total income for male/female population
22%/37% increase in total income for male/female non-Aboriginal population
6% / 21% increase in total income for male/female Aboriginal identity population
21%/26% increase in total income for female unregistered/registered Aboriginal population
No measureable effect for unregistered and registered Aboriginal male population

Attaining a FNFMA / FNLMA –
FNFMA generally decreases wages and salaries of Aboriginal and non-Aboriginal males with no measureable effects on women
FNLMA 15% decrease in wages and salaries for non-Aboriginal males with no measurable effects on other residents

Earnings are defined as wages and salaries and are primarily concerned with money earned from working for someone else. Results from Table 3 Regression Set 1 suggest that living in a CSD with an SGA neither increases nor decreases earnings from wages and salaries for women the coefficients are statistically insignificant but there is a 6% increase overall for men. Living in a CSD with a CLCA increases wages by 23% for women and 9% for men. FNFMAs lower wages for men by 11%.

Regression sets 2 and 3 assess heterogeneous treatment effects across Aboriginal groups for these different agreement types. Considering first SGAs, the estimates for women and men are very noisy, so that it is difficult to distinguish any statistically significant pattern. CLCAs raise incomes from wages and salaries for all people, but more for non-Aboriginal persons than for Aboriginal persons. Women benefit more than men in each group.

FNFMAs and FNLMAs are associated with lower earnings from wages and salaries. We see in Regression set 2 that both FNFMAs and FNLMAs reduce non-Aboriginal men's earnings from wages and salaries by 10% and 15% respectively. Aboriginal identity male income from wages and salaries in reduced 11% under FNFMA.

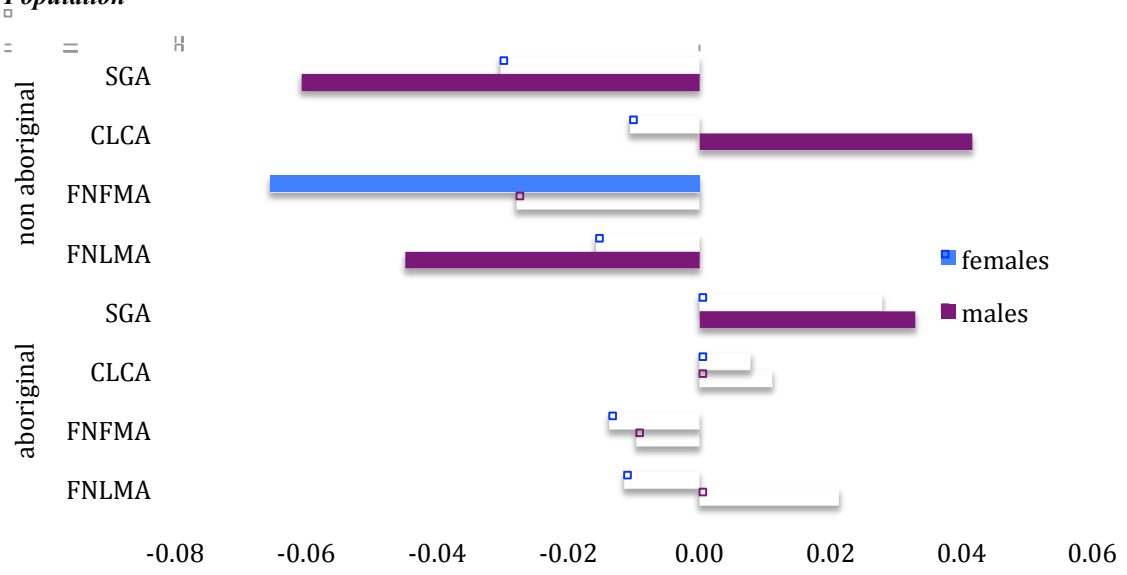
Panels 3 and 4: Labour Force Attachment

Table 4: Summary Table of Findings for Worked more than 25 Weeks

Regression Set	Gender	SGA	CLCA	FNFMA	FNLMA
Regression Set 1					
Total Population	Male	-	-	-	2% decrease
	Female	-	-	3% decrease	-
Regression Set 2					
Non Aboriginal	Male	6% decrease	4% increase	-	4% decrease
	Female	-	-	7% decrease	-
Aboriginal Identity	Male	3% increase	-	-	-
	Female	-	-	-	-
Regression Set 3					
Unregistered Aboriginal	Male	-	-	-	-
	Female	7% increase	-	-	-
Registered Aboriginal	Male	-	-	-	-
	Female	-	-	-	-

- equals no significant effects

Figure 3: Worked More Than 25 Weeks- Non-Aboriginal Population and Aboriginal Identity Population[13]



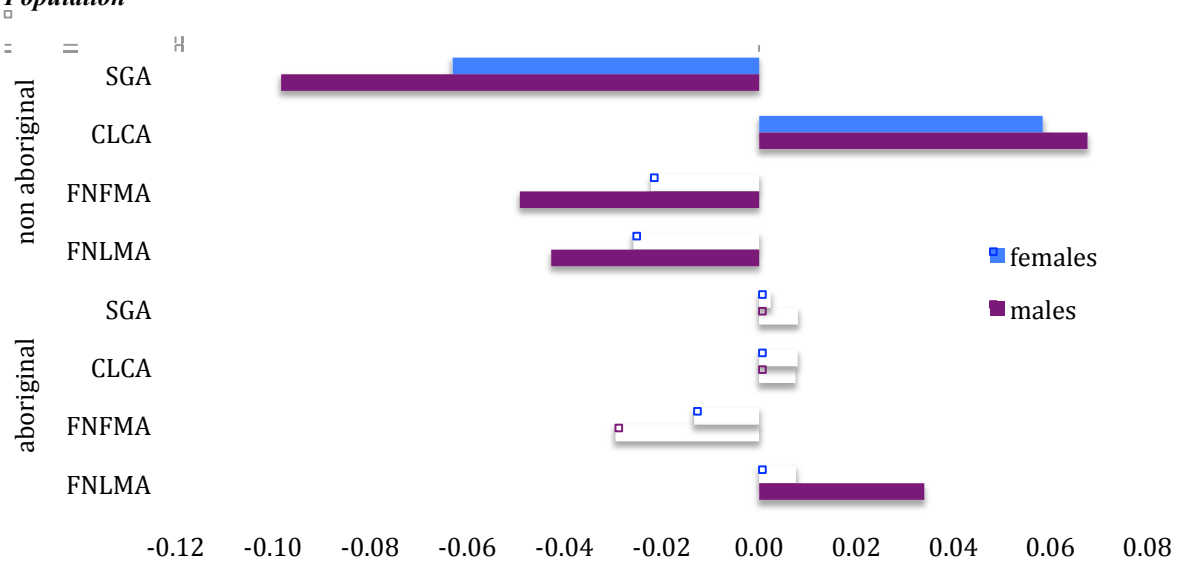
[13]Note: Bars filled in if p-value is less than 0.05. Age, schooling, marital status, official language knowledge, household size, year and CDS included. Comparison group is residents of CSDs without agreement or arrangement.

Table 5: Summary Table of Findings Working Full Time Full Year

Regression Set	Gender	SGA	CLCA	FNFMA	FNLMA
Regression Set 1					
Total Population	Male	2% decrease	-	3% decrease	-
	Female	-	-	-	-
Regression Set 2					
Non Aboriginal	Male	10% decrease	7% increase	5% decrease	4% decrease
	Female	6% decrease	6% increase	-	-
Aboriginal Identity	Male	-	-	-	3% increase
	Female	-	-	-	
Regression Set 3					
Unregistered Aboriginal	Male	-	-	-	-
	Female	-	-	-	-
Registered Aboriginal	Male	-	-	-	-
	Female	-	-	-	-

- equals no significant effects

Figure 4: Working Full Time Full Year - Non-Aboriginal Population and Aboriginal Identity Population[14]



[14]Note: Bars filled in if p-value is less than 0.05. Age, schooling, marital status, official language knowledge, household size, year and CDS included. Comparison group is residents of CSDs without agreement or arrangement.

Key Findings – Labour Force Attachment

Attaining an SGA
Decrease in attachment for the non-Aboriginal population

Attaining a CLCA
Increases in the probability of working full time full year for non-Aboriginal men and women (7% and 6% respectively)
No significant impact on the Aboriginal identity population.

Attaining a FNFMA / FNLMA –
Non-Aboriginal population is effected in a negative way with minimal impact on the Aboriginal population

Turning to labour force attachment (panels 3 and 4), we see a lot of variation across agreement and arrangement types. Results from Regression set 1 show that none of the agreement types have substantial effects, when we ignore the possibility of heterogeneous treatment effects. These agreement types reduce the fraction of people working more than 25 weeks by 1 to 3 percentage points, and reduce the fraction of people working full-time full-year by 1 to 3 percentage points.

However, big differences emerge when we consider heterogeneous treatment effects. Because coefficients from Regression set 3 have large standard errors relative to the coefficient estimates, and therefore many insignificant parameter estimates, it is more instructive to consider Regression set 2. Here, we allow treatment effects to vary between non-Aboriginal persons and Aboriginal persons (and ignore possible variation between registered and unregistered Aboriginal persons). Here, we see that SGAs reduce the labour force attachment of non-Aboriginal persons and increase (slightly) the labour force attachment of Aboriginal persons. For example, the proportion of non-Aboriginal men working more than 25 weeks drops by 6 percentage points, but that of Aboriginal men rises by 3 percentage points (this increase is marginally statistically significant). We see a similar pattern for women. We also observe that the negative impacts of FNFMAs and FNLMAs on labour force attachment are driven in large measure by reductions in the labour force attachment of non-Aboriginal workers, not of Aboriginal workers. (This is seen in the positive and significant coefficients on Aboriginal interactions with these arrangements.)

CLCAs show a different pattern. Here, we see that non-Aboriginal workers gain substantially in labour force attachment, but Aboriginal workers do not. For example, the proportion of non-Aboriginal women and men in full-time full-year work increases by 6 and 7 percentage points, respectively, when their community attains a CLCA. But, the full-time full-year probabilities of Aboriginal people don't change in response to the attainment of a CLCA.

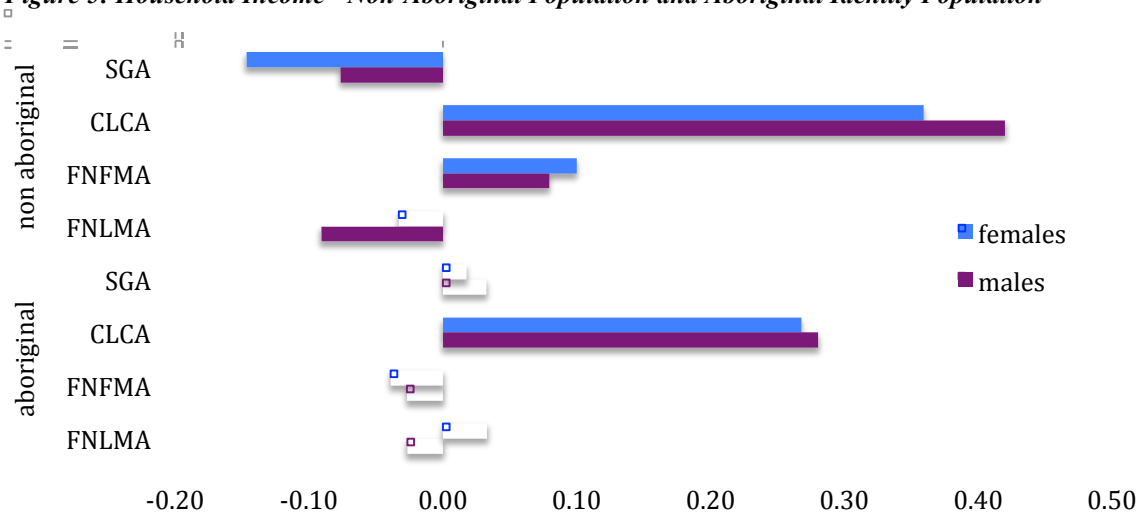
Panel 5: Household Income

Table 6: Summary of Findings for Household Incomes

Regression Set	Gender	SGA	CLCA	FNFMA	FNLMA
Regression Set 1					
Total Population	Male	-	30% increase	-	6% decrease
	Female	-	28% increase	-	-
Regression Set 2					
Non Aboriginal	Male	8% decrease	42% increase	8% increase	9% decrease
	Female	15% decrease	36% increase	10% increase	-
Aboriginal Identity	Male	-	28% increase	-	-
	Female	-	27% increase	-	-
Regression Set 3					
Unregistered Aboriginal	Male	27% increase	23% increase	-	-
	Female	27% increase	24% increase	-	-
Registered Aboriginal	Male	-	47% increase	-	-
	Female	-	39% increase	-	-

- equals no significant effects

Figure 5: Household Income - Non-Aboriginal Population and Aboriginal Identity Population[15]



[15]Note: Bars filled in if p-value is less than 0.05. Age, schooling, marital status, official language knowledge, household size, year and CDS included. Comparison group is residents of CSDs without agreement or arrangement.

Key Findings – Household Income

Attaining an SGA
Decreases the household income of non-Aboriginal population by 8% for men and 15% for women
Increases the household total incomes of unregistered Aboriginal women and men by 27%

Attaining a CLCA – increases the earning of Aboriginal and non-Aboriginal residents
30% /28% increase in household income for male/female population
42%/36% increase in household income for male/female non-Aboriginal population
28%/27% increase in household income for male/female Aboriginal identity population
23%/24% increase in household income for male/female unregistered Aboriginal population
47%/39% increase in household income for male/female registered Aboriginal population

Attaining a FNFMA / FNLMA –
FNFMA increases household incomes for non-Aboriginal males and females – 8% and 10% with no measureable effects on other residents
FNLMA 9% decrease in household income for non-Aboriginal males with no measurable effects on other residents

Turning now to household income effects (Panel 5), Regression set 1, we see that living in a CSD with a CLCA has substantial effect on household incomes. The household incomes of women and men rise on average by 28 and 30 %, respectively. In contrast, household incomes do not increase at all for the other agreement types, and decrease in the case of FNLMAs.

Household income effects are estimated precisely enough that we can consider heterogeneous effects across non-Aboriginal persons and Aboriginal persons, and across registered and unregistered Aboriginal persons. Although the average effect of SGAs on incomes is about zero, we see negative effects for non-Aboriginal persons and positive effects for Aboriginal persons. Looking at Regression sets 2 and 3, living in a CSD with an SGA decreases household incomes for non-Aboriginal women by 15%, and 8% for non-Aboriginal men. In contrast SGAs have no statistically significant effect on the household incomes of registered Aboriginal women and men, and increase household incomes of unregistered Aboriginal women and men by 27%. .

For non-Aboriginal persons, CLCAs raise household incomes by 36% and 42%, respectively, for women and men and by a similar magnitude for registered Aboriginal women and men. However, for Aboriginal identity women and men, CLCAs raise incomes by 27% and 28%. Thus, both non-Aboriginal persons and Aboriginal persons benefit in terms of household incomes, but non-Aboriginal persons benefit more.

For FNFMAs and FNLMAs, the estimated heterogeneous treatment effects are less precise, with few estimated statistically significant coefficients. Consequently, we focus on Regression set 2. Here, we see that FNFMAs increase household incomes for non-Aboriginal women and men by 10% and 8%, respectively, but they do not affect household incomes for Aboriginal people. In contrast, FNLMAs decrease the household incomes of non-Aboriginal men by 9%, but do not affect the household incomes of Aboriginal men.

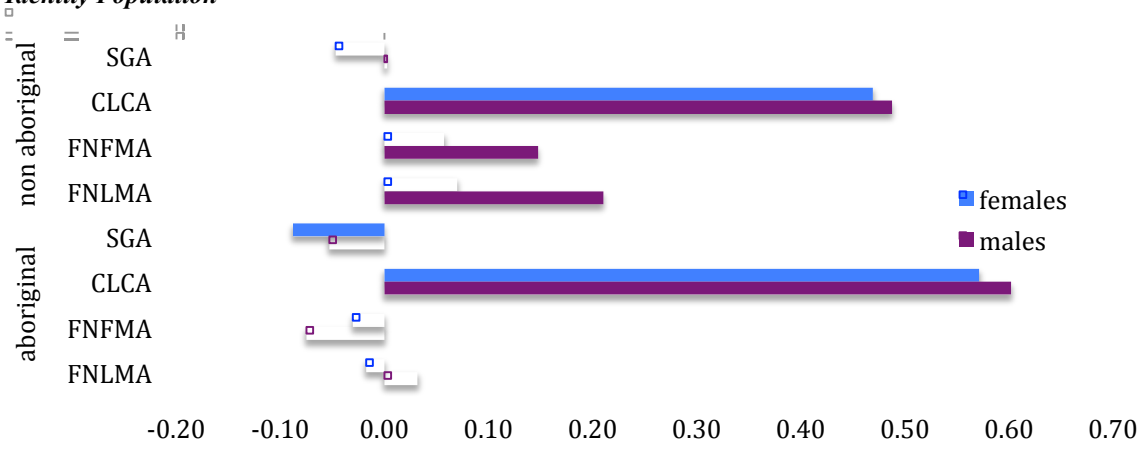
Panel 6: Household Income from Government Transfers

Table 7: Summary of Findings for Household Income from Government Transfers

Regression Set	Gender	SGA	CLCA	FNFMA	FNLMA
Regression Set 1					
Total Population	Male	-	59% increase	-	12% increase
	Female	7% decrease	57% increase	-	-
Regression Set 2					
Non Aboriginal	Male	-	49% increase	15% increase	21% increase
	Female	-	47% increase	-	-
Aboriginal Identity	Male	-	60% increase	-	-
	Female	9% decrease	57% increase	-	-
Regression Set 3					
Unregistered Aboriginal	Male	28% increase	59% increase	-	-
	Female	-	56% increase	-	-
Registered Aboriginal	Male	-	62% increase	-	-
	Female	-	63% increase	-	-

- equals no significant effects

Figure 6: Household Income from Government Transfers - Non-Aboriginal Population and Aboriginal Identity Population[16]



[16]Note: Bars filled in if p-value is less than 0.05. Age, schooling, marital status, official language knowledge, household size, year and CDS included. Comparison group is residents of CSDs without agreement or arrangement.

Key Findings – Household Income from Government Transfers

Attaining an SGA
Reduces government transfers to Aboriginal identity women by 9%
Increases government transfers to unregistered Aboriginal males by 28%
No effect on the non-Aboriginal population

Attaining a CLCA – increases the government transfers of Aboriginal and non-Aboriginal residents
59% /57% increase in government transfers for male/female population
49%/47% increase in government transfers for male/female non-Aboriginal population
60%/57% increase in government transfers for male/female Aboriginal identity population
59%/56% increase in government transfers for male/female unregistered Aboriginal population
62%/63% increase in government transfers for male/female registered Aboriginal population

Attaining a FNFMA / FNLMA –
Increase government transfer to non-Aboriginal men – FNFMA 15%, FNLMA 21%
No measurable effects on the Aboriginal population

Results from Panel 6 consider household total government transfer income. SGAs appear to reduce government transfer income by 9% for Aboriginal identity women, but do not affect transfers for non-Aboriginal men and women. Government transfers for unregistered Aboriginal men increase by 28% after attaining an SGA.

CLCAs, in contrast, increase government transfer income by a very large magnitude. For non-Aboriginal women and men, CLCAs raise household government transfer income by about 47% and 49% respectively. For registered Aboriginal women and men, this effect is even larger, with increases of about 63% and 62% respectively.

Opt-in arrangements do not appear to have an impact on government transfers for Aboriginal persons, but increase transfers for non-Aboriginal men.

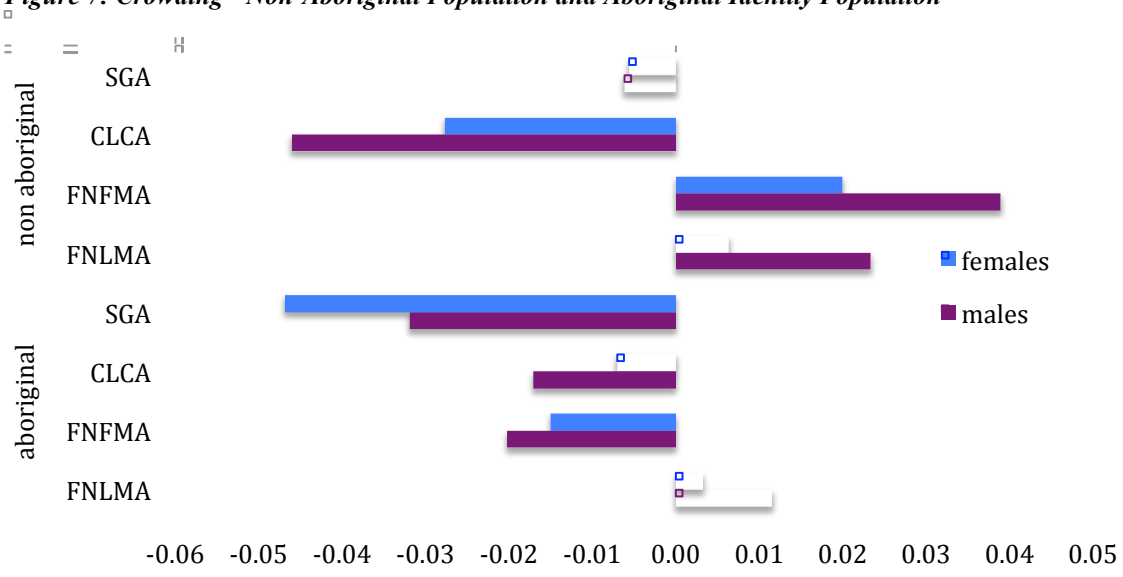
Panel 7: Crowding

Table 8: Summary of Findings for Income from Crowding

Regression Set	Gender	SGA	CLCA	FNFMA	FNLMA
Regression Set 1					
Total Population	Male	3% decrease	2% decrease	-	2% increase
	Female	4% decrease	-	-	1% increase
Regression Set 2					
Non Aboriginal	Male	-	5% decrease	4% increase	2% increase
	Female	-	3% decrease	2% increase	-
Aboriginal Identity	Male	3% decrease	2% decrease	2% decrease	-
	Female	5% decrease	-	2% decrease	-
Regression Set 3					
Unregistered Aboriginal	Male	7% decrease	-	-	-
	Female	8% decrease	-	-	-
Registered Aboriginal	Male	-	-	-	-
	Female	4% decrease	-	-	-

- equals no significant effects

Figure 7: Crowding - Non-Aboriginal Population and Aboriginal Identity Population[17]



[17]Note: Bars filled in if p-value is less than 0.05. Age, schooling, marital status, official language knowledge, household size, year and CDS included. Comparison group is residents of CSDs without agreement or arrangement.

Key Findings - Crowding

Attaining an SGA
Do not affect the crowding of non-Aboriginal persons, but reduce crowding for Aboriginal people

Attaining a CLCA
Reduce crowding for non-Aboriginal people more than for Aboriginal people

Attaining a FNFMA / FNLMA –
Increase crowding for non-Aboriginal population and decrease crowding for Aboriginal identity population

The effects on crowding are small, but statistically significant. Here, we see that attainment of an SGA reduces crowding by 3% for Aboriginal men and 5% for Aboriginal women, but does not affect crowding for the non-Aboriginal population. CLCAs, on the other hand reduce crowding for Aboriginal and non-Aboriginal groups. The impact of opt-in arrangements varies by type with FNFMAs being associated with a small reduction in crowding for Aboriginal person and increased crowding for non-Aboriginal population. FNLMAs do not have a significant impact on crowding for Aboriginal persons, but increase crowding a little for the non-Aboriginal population.

4.2 Community level effects

As stated in the methodology, we also conducted an analysis at the level of the Census Subdivision. This involved aggregating the characteristics of individuals living in Aboriginal CSDs (as defined by AANDC) to the CSD and running a series of regressions controlling for CSD, rather than individual characteristics as well as the type of agreement or opt-in legislation that a CSD has.

In these analyses we use the Community Well-being (CWB) methodology to define outcomes. As stated by AANDC:

> The Community Well-Being (CWB) Index is a means of examining the well-being of individual Canadian communities. Various indicators of socio-economic well-being, including education, labour force activity, income and housing, were derived from Statistics Canada's Census of Population and combined to give each community a well-being "score". These scores are used to compare well-being across First Nations and Inuit communities with well-being in other Canadian communities over time. [18]

The methodological details for computing the CWB are provided by AANDC.[19] We used those guidelines to compute the CWB total and component scores for 1991, 1996, 2001, 2006 and 2011.[20] These scores are then used as dependant variables in a set of regressions assessing outcomes in Aboriginal communities with or without an agreement or opt-in arrangement.

The CWB score was also computed for specific SGA agreements in order to assess the degree to which different agreements had different outcomes.

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[18] https://www.aadnc-aandc.gc.ca/eng/1100100016579/1100100016580

[19] https://www.aadnc-aandc.gc.ca/eng/1100100016585/1100100016598

[20] We do not use the same population restrictions as AANDC in calculating the CWB scores largely because our analysis is dominantly multivariate as compared to tabular. For example, AANDC only calculates CWB component scores for communities containing at least 40 households and 250 individuals. We calculate component scores for all communities regardless of population and use those scores in the regression analyses (http://www.aadnc-aandc.gc.ca/eng/1345816651029/1345816742083#chp1)

Results from regressions on CWB scores

Appendix 4 shows selected regression coefficients from 10 regressions (2 models by 5 Community Well-being scores), in which we assess the impact by type of agreement (SGA, CLCA, FNLM or FNFMA). These regressions differ from previous regressions because the unit of analysis is the CSD as compared to the individual.

There are 2 regressions: one for all residents, and one for only aboriginal residents. In this way it is possible to assess the impact of having an agreement for both Aboriginal and non-Aboriginal residents.

As with the individual level regressions, these regressions control for both CSD and the census year. The results can be interpreted as the impact of having an agreement after controlling for population size and makeup (% old and % young), the CSD and the census year as compared to CSDs that are not subject to an agreement or arrangement. Keep in mind that the scores have a range of roughly 0-1, a 0.05 increase can be seen as quite substantial

Table 9: Summary of Findings for Regressions Assessing Community Well-Being Scores

Population Group	SGA	CLCA	FNFMA	FNLMA
CWB - Total				
All Residents	.04	-	-	-
Aboriginal Residents	.05	.03	-	-.02
CWB - Education				
All Residents	-	-	-	-
Aboriginal Residents	-	-	-	-
CWB - Housing				
All Residents	.04	-	-	-
Aboriginal Residents	.05	-	-	-
CWB - Income				
All Residents	.04	.06	-	-
Aboriginal Residents	.05	.07	-	-
CWB – Labour Force Activity				
All Residents	.05	-	-	
Aboriginal Residents	.06	-	-	-.04

- equals no significant effects

Key Findings – CWB Scores

Having an SGA

Increases the CWB total score by about 4 points for Aboriginal residents and five points for all residents

Increases CWB scores for housing, income and labour force activity

Having a CLCA

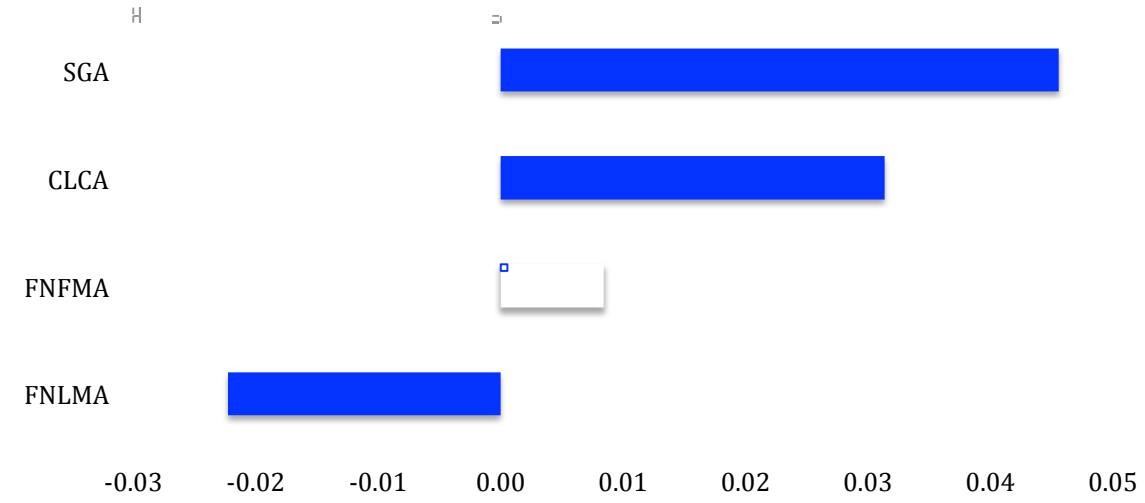
Increases the CWB total score by about 3 points for Aboriginal residents

Improves CWB scores for income

Having a FNLMA
Decreases the CWB score by about 2 points for Aboriginal residents – decreases labour force activity

Looking at the regression with only Aboriginal residents we see that having a SGA has a statistically significant impact of about 0.05 for the CWB total (the housing component, the income component and the labour force components, as compared to CSDs without any agreement or opt-in legislation. Keeping in mind that these differences are present after controlling for year and CSD effects, it appears that there is a real benefit to having an SGA. Having a CLCA increases the income score by 0.07 points but does not have a substantive impact on the other measures. Having an FNLMA or FNFMA generally does not have a statistically significant impact on CWB scores. However, communities with a FNLMA have lower labour force component scores as compared to communities without any agreement (-0.04) and lower CWB scores for Aboriginal residents.

Figure 7: Community Well-Being Index – Aboriginal Identity Population



Looking at the results for all residents we can see that attaining a SGA has a positive impact on the total CWB score as well as on the housing, income and labour force subcomponents of between .04 and .05 points. Attaining a CLCA has a substantial impact on the income subcomponent (0.06), however the impacts on other components are quite small. For other agreement types (FNLMA and FNFMA) the impact is not statistically significant on any of the CWB measures.

Results of CWB Scores by Agreement

Appendix 5 shows CWB scores for 15 SGA in 1991, 1996, 2001, 2006 and 2011. In each case the score is provided for the total population and the population that is Aboriginal by identity.

As can be seen, there was only one SGA in force in 1991. The score for the Sechelt total population was 60 and the score for the Aboriginal identity population in the Sechelt agreement was 57. This difference between the total population, which generally includes non-Aboriginal identity residents, and the Aboriginal identity population is consistent across almost all agreements, but the differential varies across agreements. As a point of comparison, the average CWB score for non-Aboriginal communities in 2011 was 79 and for First Nations communities it was 59.[21]

Looking at the CWB scores for individual agreements we see a lot of variance. Communities that saw substantive improvements in their scores include, Mi'kmaw Kina'Matnewey, Sechelt, Champagne and Aishihik, Nacho Nyak Dun, and Vuntut Gwitch'in. All these communities saw increases in their scores by at least 5 points. The score for the Aboriginal identity population covered by the Champagne and Aishihik Agreement increased by 13 points from 1996 to 2011 (63 in 1996 and 76 in 2011). Scores for Vuntut Gwitch'in increased by 11 points for the Aboriginal identity population (60 in 1996 and 71 in 2011). The score for the Aboriginal identity population in the Nacho Nyak Dun agreement increased by 7 points over the same period (63 in 1996 and 70 in 2011).

At the opposite end of the spectrum, the CWB score for the Aboriginal identity population covered by the Selkirk agreement fell by 9 points (from 68 in 2001 to 59 in 2011). Scores for the remaining 8 agreements whose life spanned more than one census period changed by 3 points or less.

The Tsawwassen Agreement came into effect in 2009. In 2011 the CWB score for the total population was 81, but the score for the Aboriginal Identity population was 72.

Overall, it is worth noting that the scores for SGA was almost always higher than the average score for First Nations communities in Canada. In 2006, the scores for the total populations ranged from 55 to 83 with only two SGAs having a lower score than the average for all First Nations (57). Appendix 6 provides details by agreement for component CWB Scores - education, labour force activity, income and housing,

[21] http://www.aadnc-aandc.gc.ca/eng/1345816651029/1345816742083#chp1

5. Conclusions

We find some striking patterns in the data. Consider first the effects of attainment of SGAs, CLCAs, FNLMAs and FNFMAs on incomes. Overall, we find positive effects on incomes from SGAs and CLCAs, and smaller effects on incomes from FNLMAs and FNFMAs.

The individual total incomes of women are unaffected by SGAs, FNLMAs and FNFMAs. But, the individual total incomes of women are 38% higher if their community attains a CLCA. The individual incomes of men are 11% higher if their community attains a SGA, and 26% higher if their community attains a CLCA. The individual incomes of men are 10% and 7% higher, respectively, if their community attains an FNLMA or FNFMA.

We find that SGAs raise incomes more for Aboriginal people than for non-Aboriginal people but CLCAs raise incomes more for non-Aboriginal people as compared to Aboriginal people.

For household income, we see a similar story. CLCAs raise household incomes the most, but more for non-Aboriginal and registered Aboriginal people as compared to unregistered Aboriginal residents. SGAs lower incomes for non-Aboriginal people and raise them for Aboriginal people. FNFMAs and FNLMAs are a mixed bag, and their coefficients are estimated less precisely.

Although total individual and household incomes go up, not all sources of income rise. SGAs do not have a large effect on earnings from wages and salaries, but CLCAs increase earnings from wages and salaries by 23% for women and 9% for men. In contrast, FNFMAs and FMLMAs may *decrease* earnings from wages and salaries. Labour force attachment (from which earnings are generated) follows similar patterns.

Government transfer income also responds. CLCAs, increase government transfer income by a very large magnitude. For non-Aboriginal women and men, CLCAs raise household government transfer income by about 47% and 49%, respectively. For Aboriginal women and men, this effect is even larger, with increases in the neighbourhood of 60%. SGAs do not have a significant impact on government transfers.

We find some responses in our crowding measures. SGAs do not affect the crowding of non-Aboriginal persons, but reduce crowding for Aboriginal people. In contrast, CLCAs reduce crowding for non-Aboriginal people more than for Aboriginal people. FNLMAs and FNFMAs increase crowding for non-Aboriginal persons and reduce crowding for Aboriginal persons.

We find that the CWB and all of its component indices rise when a community attains an SGA or a CLCA. But we find little or no response in these measures as a results of attaining an FNLMA or FNFMA. Overall, we find that community-level outcomes

increase similarly for Aboriginal members of Aboriginal communities and non-Aboriginal members of Aboriginal communities in response to the attainment of SGAs and CLCAs.

In summary, of the four agreement types, attainment of SGAs and CLCAs are most strongly correlated with improved outcomes for Aboriginal people. SGAs tend to improve the outcomes of unregistered Aboriginal persons more than those of registered Aboriginal persons. CLCAs tend to improve the outcomes of registered Aboriginal persons more than those of unregistered Aboriginal persons, and to improve the outcomes of non-Aboriginal persons most of all.

Attainment of SGAs increases Aboriginal household total incomes by increasing individual labour force activity and earnings of both women and men; in contrast, attainment of CLCAs increases household total incomes in large measure by increasing household government transfer income.

Appendices

Appendix 1: List of agreements by Province/Territory

Appendix 2: Complete list of CSDs associated with agreements or arrangements

Appendix 3: Partial results from 42 regression assessing socio-economic impacts of attaining an agreement controlling for type of agreement

Appendix 4: Partial results from 10 regressions assessing community well-being scores

Appendix 5: CWB Total scores for selected SGAs

Appendix 6: CWB component scores for selected SGAs