

Modern Agreements and Income Inequality Within Indigenous Communities

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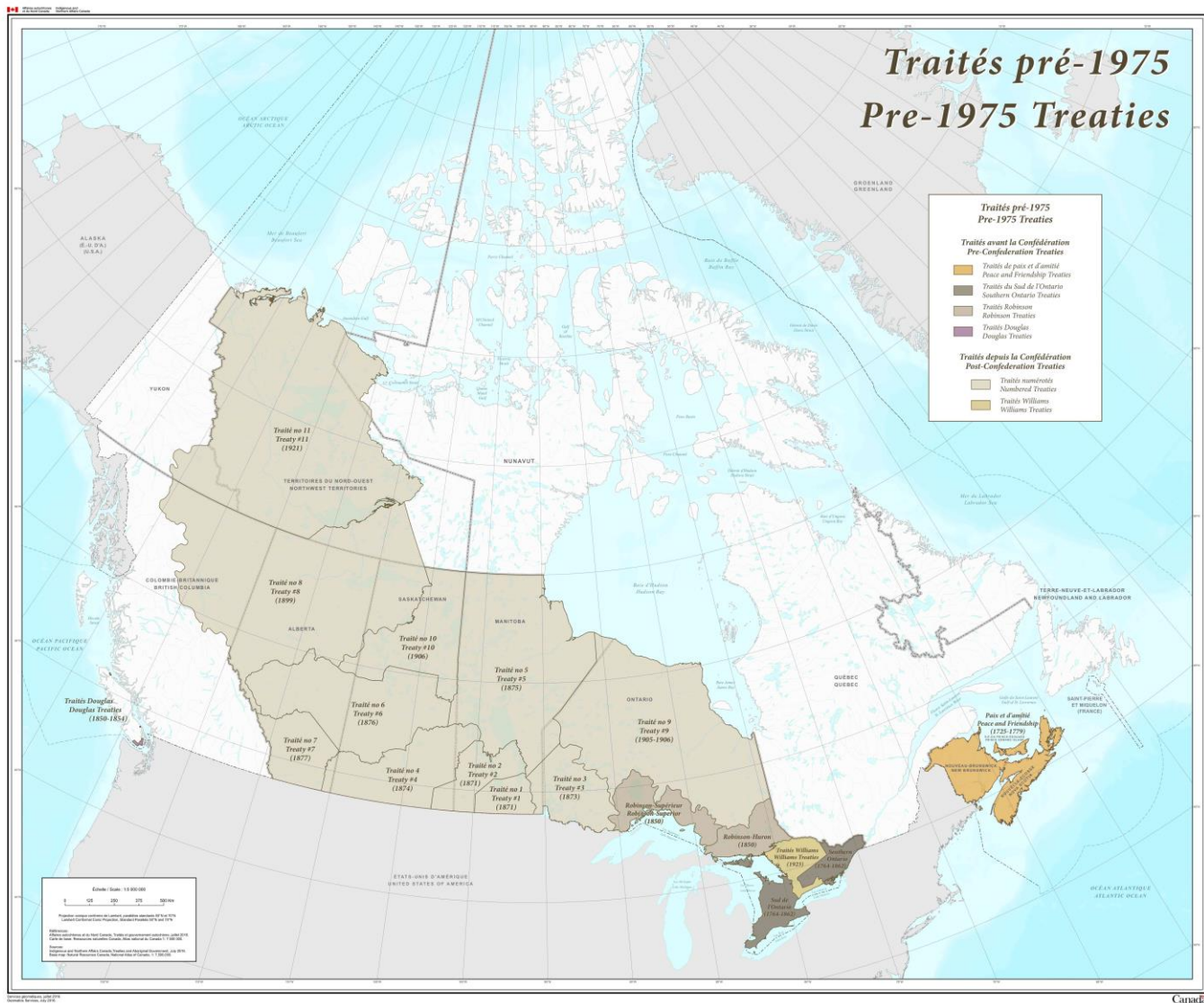
Motivation

- In Canada, modern treaties allow Indigenous groups to govern their internal affairs and assume greater responsibility and control over the decision-making that affects their communities.
- There has been a great deal of energy expended on negotiating such agreements
- There has been less work that assesses the impact of such agreements on economic outcomes (See for example Aragón 2015, Pendakur and Pendakur 2018)

- In this paper, we use Census (1991-2016) and NHS (2011) data to measure how modern agreements and opt-in arrangements affect
 - Earnings at the household level
 - CSD level overall income inequality, and
 - CSD level inter-group income inequality (between indigenous and non-indigenous residents)
- We control for both community and year effects using diff-in-diff methods.

A bit of background

- 2016 Indigenous population: 1.67 million persons (4.9% of population)
 - First Nations (977K), Métis (587K), Inuk (65K)
 - 745K are Registered or Treaty Indians
 - About half of registered Indians live in indigenous communities
- Educations tend to be low
- The Indian Act is extremely restrictive
 - Reserve land is communal property



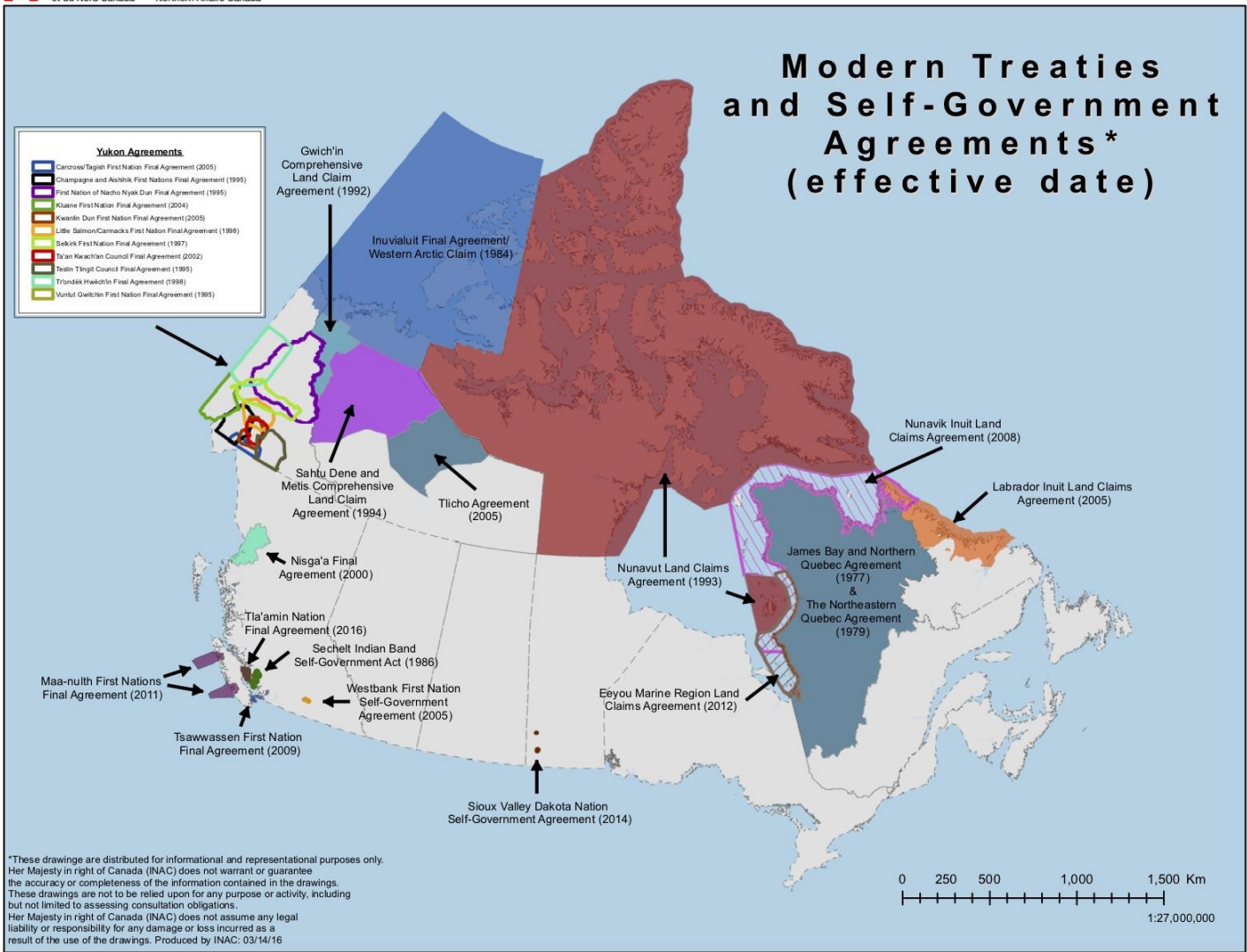
Modern Treaties

- Comprehensive Land Claims Agreement (CLCA)
- Self Government Agreement (SGA)*
- CLCA+SGA
- Opt-in arrangements**
 - First Nations Fiscal Management Act (FNFMA)
 - First Nations Land Management Act (FNLMA)
 - Both FNFMA and FNLMA

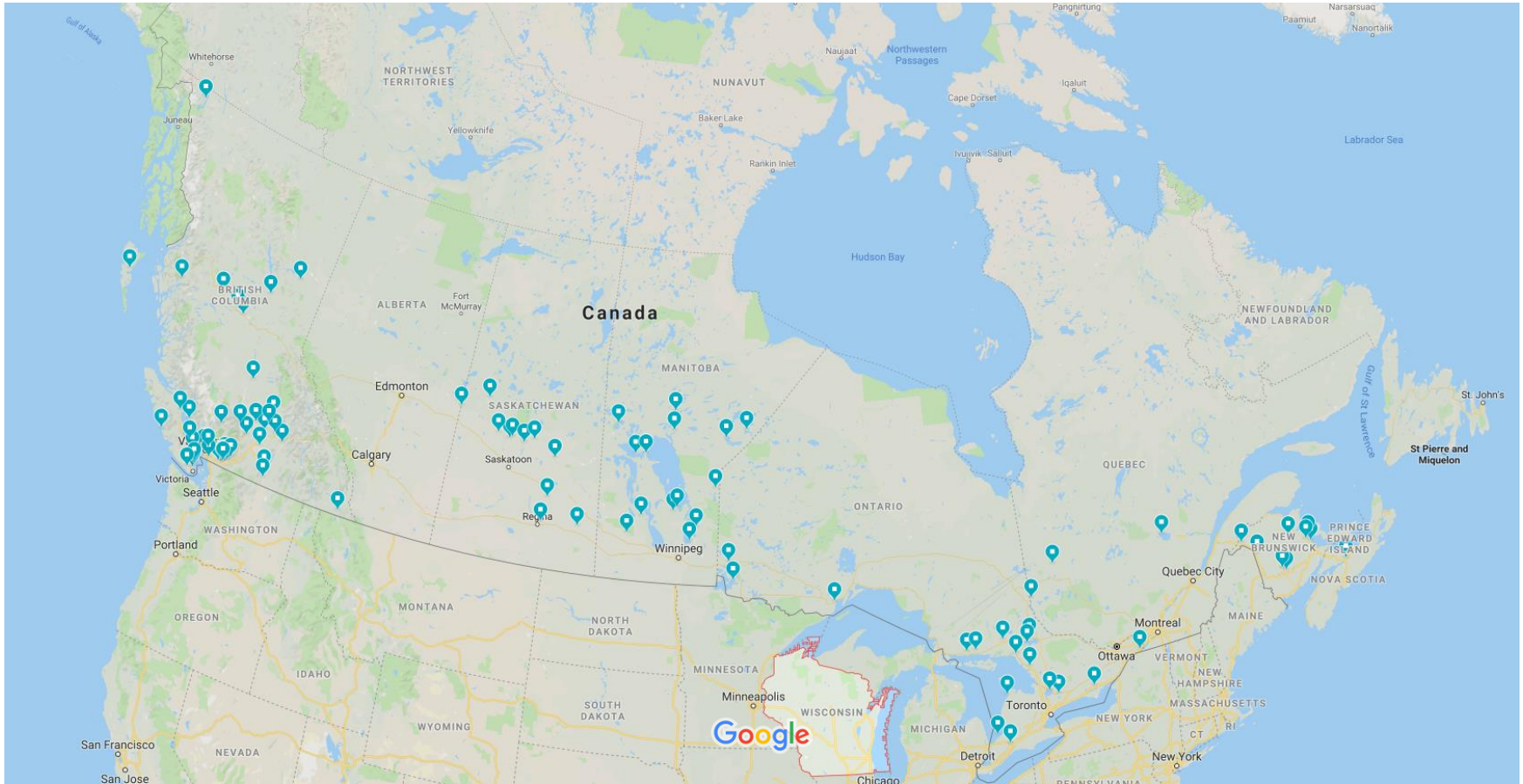
* Not included: sectoral self government agreement

** Not included: First Nations Commercial and Industrial Act (FNCIDA)

Modern Treaties and Self-Government Agreements* (effective date)



Opt-in arrangements



Map data ©2019 Google, INEGI 200 km

Findings

At the household level:

- Comprehensive land claims agreements (CLCAs) and Self Government Agreements raise incomes a lot for Indigenous households.
- Opt-in arrangements (land management and fiscal management) raise incomes for non-Indigenous households but not Indigenous households

At the CSD level:

- Communities that attain SGAs, CLCAs or Land management arrangements see a decrease in the Gini coefficient for income inequality of roughly 1 to 3 percentage points.

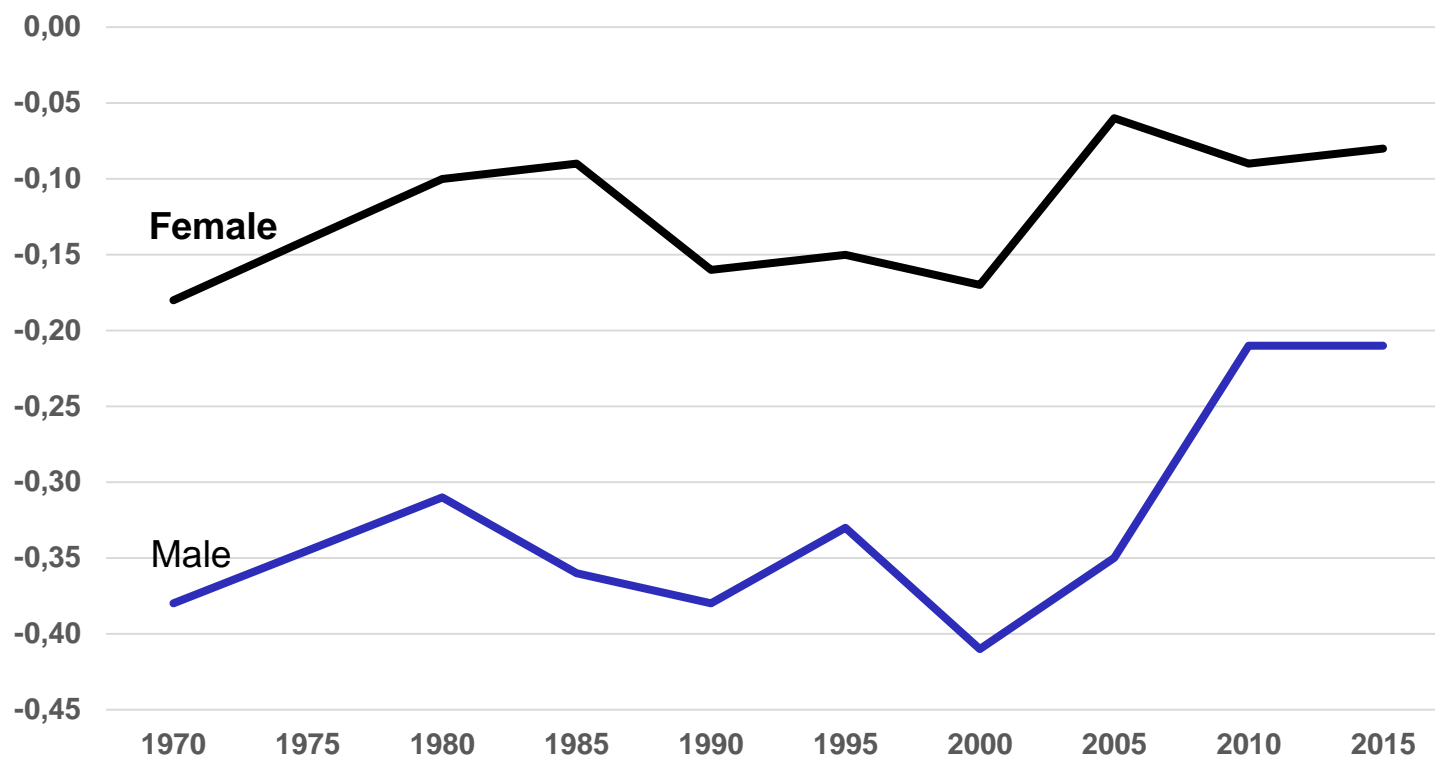
Literature: Inequality and Canada's Indigenous population

- Maxim et al (2001) use public use 1996 data and point to a general pattern of increase in measured disparity and polarization in income for all Indigenous groups in comparison to the non-Indigenous population. They also identify differentials within Indigenous subgroups.
- Drost and Richards (2006) show that inequality among Indigenous people in Canada is much greater than that among non-Indigenous people.
- Pendakur and Pendakur (2011) map out Indigenous income disparity in Canada, and show some convergence since 1995.
- Lamb (2013) links disparity to identity

Literature on modern agreements:

- Substantial research on the goals and processes associated with modern treaties and opt in arrangements (see for example: Alcantara 2008, Black 2008, Boutilier 2016, Chadwick 2014, Holub et al 2012, Wright and White 2012)
- Less work on outcomes associated with agreements:
 - Aragon (2015) investigates how household incomes respond to the attainment of Comprehensive Land Claim Agreements (CLCAs) using census data from BC, Yukon and NWT over 1991 to 2006.
 - He shows that CLCAs raise incomes by about 30%.
 - Pendakur and Pendakur (2018) add to these findings by studying the effects of additional agreement types, the effects of agreements elsewhere in Canada, and the effects of agreements implemented after 2005.
- In comparison with those papers, we focus on a different outcome variable: income inequality

% earnings differentials Indigenous workers vs Canadian-born European-origin men and women 1970 – 2015, controlling for personal characteristics



Note: data point for 1975 is extrapolated because there is no income question in the 1976 Census
 Models control for age, schooling, official language knowledge, marital status, and Census Metropolitan Area.
 Source: regression estimates from 1971 – 2016 censuses as well as 2011 NHS

Methodology 1

- Our basic identification strategy is to correlate outcomes in CSDs that have a treaty or are unceded, with those that attained an agreement between 1989 and 2014
- We conduct analysis **at the household and community level (CSD) using** 1991 – 2016 Census data
- Dependent variables:
 - log of total household income;
 - Gini coefficient for total household income (CSD level only)
- Sample: all Indigenous communities (CSDs), as identified by Indigenous and Northern Affairs Canada
- We consider communities as a whole, and communities divided into Indigenous and non-Indigenous sub-communities
 - Indigenous households are defined as households with at least one person claiming Indigenous identity

Methodology 2

- A stumbling block to the interpretation of cross-sectional correlations between agreement types and incomes is that there might be unmeasured factors that drive both household incomes and the probability of attaining agreements.
- We get around this problem via a standard “**difference in difference**” approach. That is, we ask: “how do the over-time changes in individual- or community-level outcomes differ between communities that attained agreements and communities that did not”.
 - We do this by adding fixed effects for each CSD and for each time period
- This approach allows us to control for differences across communities that are fixed over time, but which may determine what agreement they are under.
- This means that we are able to isolate the impact of having an agreement independent of how well the community was doing before getting an agreement.

Model

SAMPLE:

- Living in an Indigenous CSD (as defined by AANDC)
- Lived in the same CSD 5 years ago
- Permanent resident
- Eldest member 20-64
- Hhld size < 13

Type of agreement:

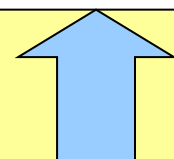
- Stand alone SGA
- SGA+CLCA
- CLCA
- Opt-in: FNLMA FNFMA or both
- No modern agreement

- Indigenous status*
- Family type (8 categories)
- Schooling of most educated person (13 categories)
- Age of oldest person (9 categories)
- Official Language of the hhld (E/F/Bil, none)
- Household size

Difference in Difference:

- Census / NHS Year
 - 1991
 - 1996
 - 2001
 - 2006
 - 2011
 - 2016
- Census subdivision
 - About 1000 CSDs (by Indigenous Status)



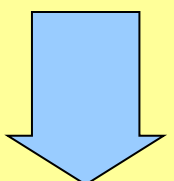


HHL D level:

- Log of total income
- Components of total income

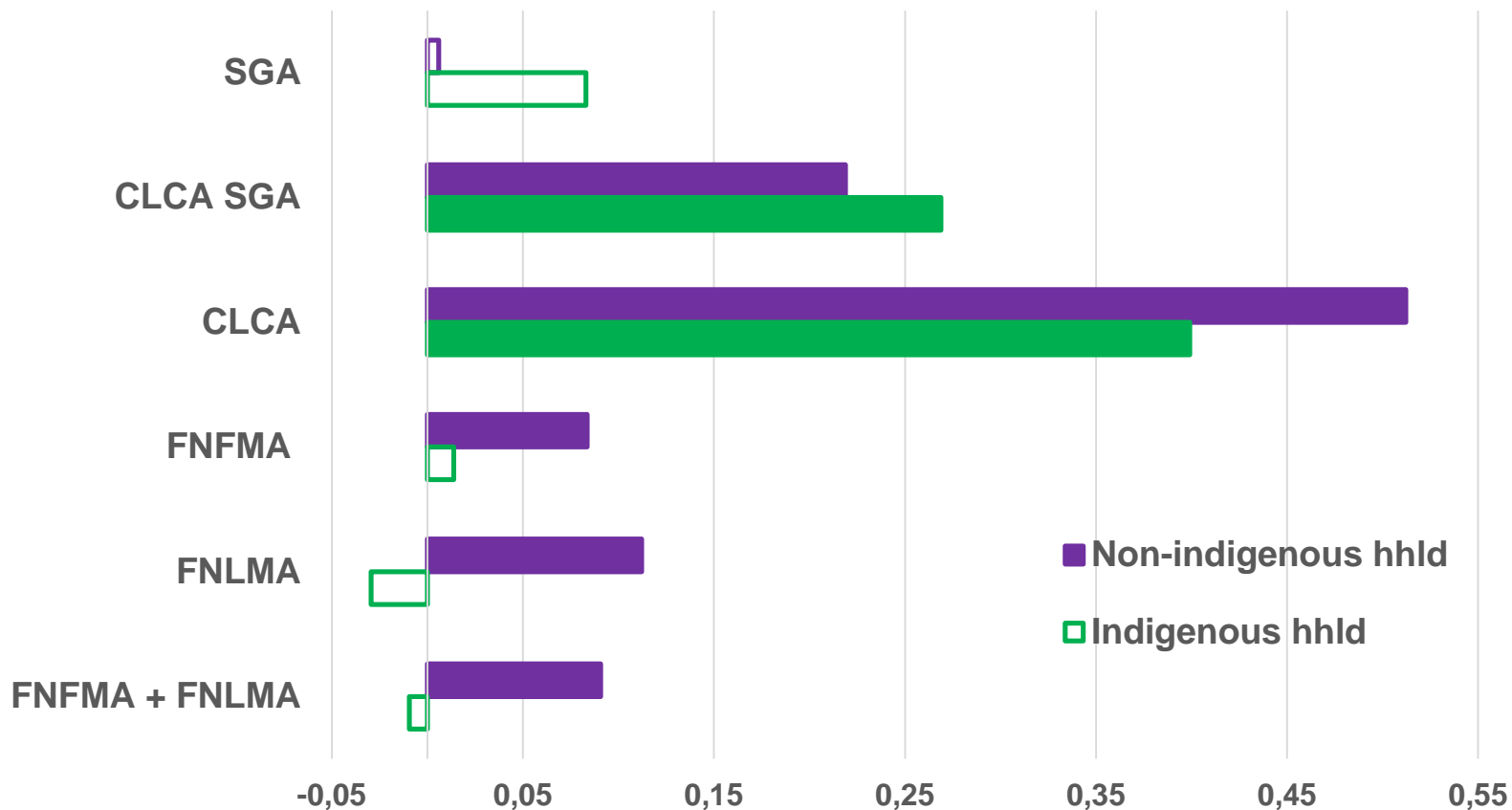
CSD level:

- Average log of total income
- Gini coef for total income



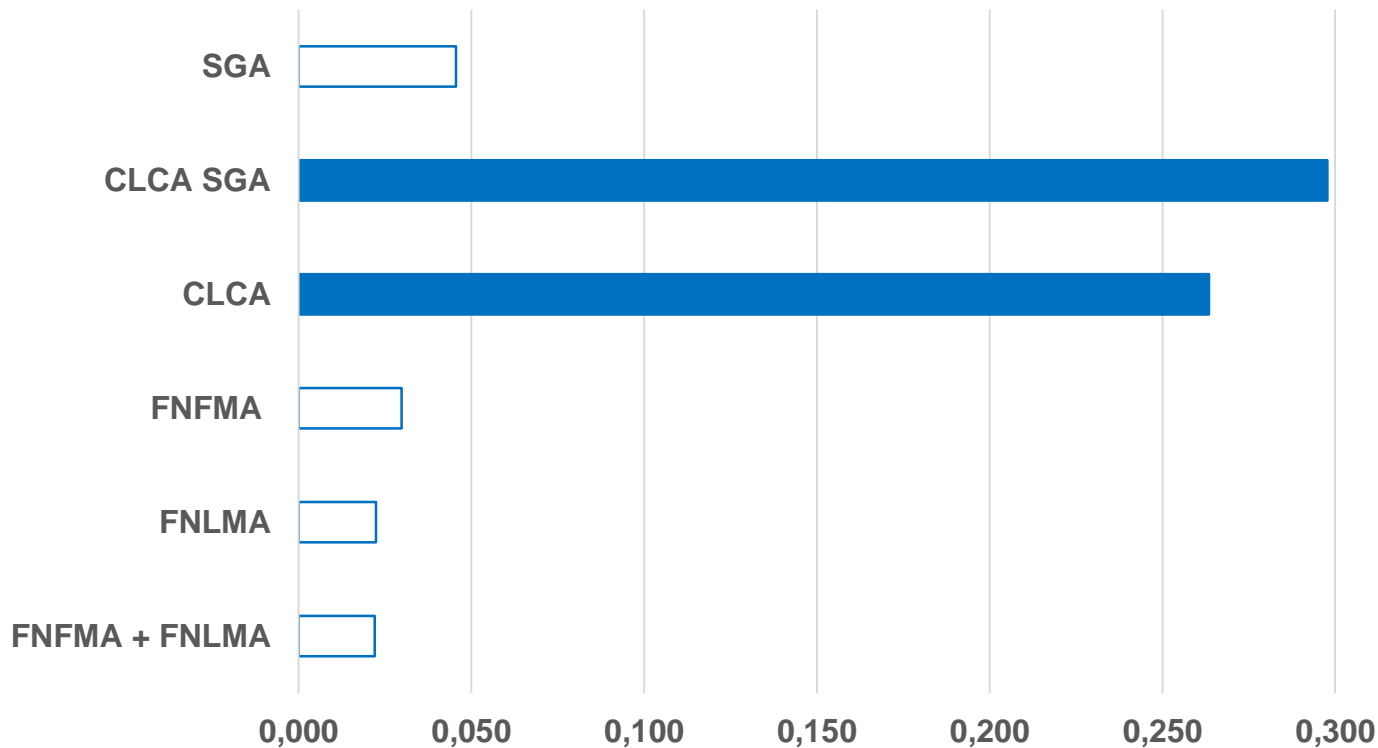
Descriptives			Households	Census Subdivision (community)	
Observations (across all census periods)			557,750	5,029	
Dependent variables	Household income		54,966	47,346	
	Gini Index			0.39	
Independent vars	Indigenous hhld			0.79	
	Hhld size		3.49	3.78	
	Age of oldest hhld member	20-29		0.21	0.22
		30-39		0.11	0.20
		40-49		0.20	0.26
		50-59		0.24	0.23
		60-64		0.26	0.09
	Highest level of schooling in the	LT highschool		0.26	0.31
		Highschool		0.17	0.21
		Trades		0.04	0.17
		College		0.21	0.19
		University		0.17	0.12
	Marital status	Unmarried no kids no elders		0.19	0.18
		Married no kids no elders		0.17	0.13
		Unmarried w elders		0.02	0.02
		Unmarried w kids		0.14	0.16
Unmarried w kids & elders			0.01	0.02	
Married w elders			0.04	0.03	
Married w kids			0.40	0.44	
	Married w kids and elders		0.02	0.03	
	Treated CSD			0.48	

Household level results assessing the relationship between agreement type and the log of household income 1990-2015



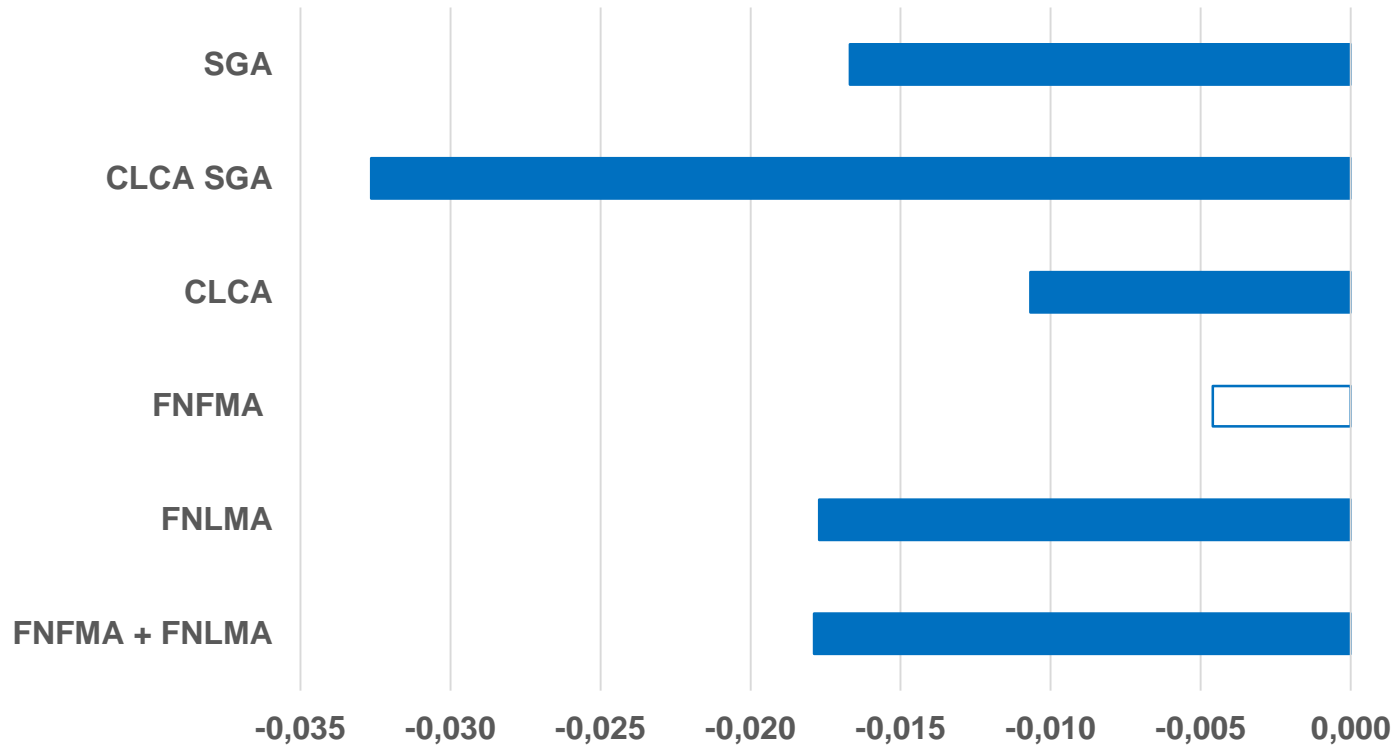
Filled in bar represents significance at 0.05 level

Results assessing the **CSD** level relationship between agreement type and the **log of hhld income** 1990-2015



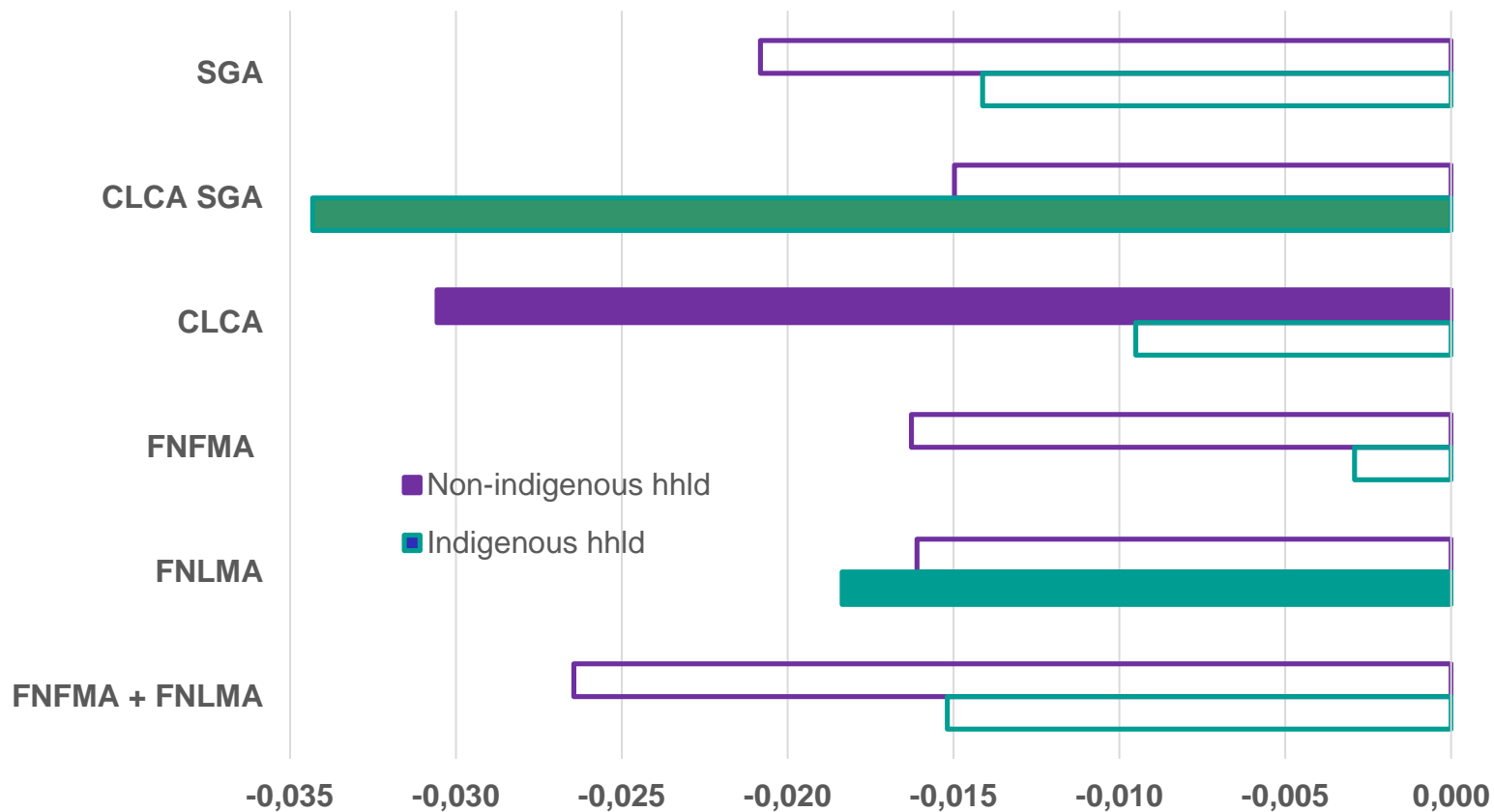
Filled in bars denote significance at 0.05 level

Results assessing the **CSD** level relationship between agreement type and **income inequality (Gini)** 1990-2015



Filled in bars denote significance at 0.05 level

Results assessing the **CSD** level relationship between agreement type and **income inequality (Gini)**, by group 1990-2015



Filled in bars denote significance at 0.05 level

Conclusions

- Over 1990 to 2015, modern agreements have reduced inequality in Indigenous communities.
 - Effects range from nothing to 3 percentage points reduction in Gini coefficient of income inequality
- Standalone CLCAs raise incomes for Indigenous households, but only reduce the Gini by 1 point.
- CLCA combined with SGA raises incomes and reduces the Gini by 3 points.

- Communities (CSDs) that attain SGAs, CLCAs or opt-in arrangements under FNLMA see a decrease in the Gini coefficient for income inequality of roughly 1 to 3 percentage points.
- Opt-ins don't seem to raise incomes. But, they do reduce inequality.
- Attainment of modern agreements may affect inter-group inequality.
 - Opt-in arrangements can reduce overall income inequality in a community.