The Effects of Modern Treaties on Household Incomes in Aboriginal Communities

with Krishna Pendakur, Simon Fraser University
and Ravi Pendakur, University of Ottawa

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Our speakers today: Krishna and Ravi Pendakur

Krishna is Professor of Economics at Simon Fraser University. From 2007 to 2013, he was Co-Director of Metropolis British Columbia, Center of Excellence for Research on Immigration and Diversity, an interdisciplinary policy research center which connected academic researchers with policy-interested people in government and NGOs.

His research interests are in three major areas of empirical research: the measurement of well-being, poverty, discrimination and economic inequality; the estimation of consumer demand; semi-parametric and non-parametric econometrics.

Ravi is Professor of Public and International Affairs at the University of Ottawa.

Prior to joining the University of Ottawa, he spent 18 years as a researcher in a number of federal departments including, Multiculturalism and Citizenship, Canadian Heritage, and Human Resources and Social Development. His research focuses primarily on diversity, with a goal toward assessing the socioeconomic characteristics of language, immigrant and ethnic groups in Canada and other settler societies.
Thank you for joining in!

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Household Incomes in Aboriginal Communities Associated with Modern Agreements, 1991-2011

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Overview

• This study uses data from the Census (1991-2006) and National Household Survey (2011) to compare economic outcomes for households living in Aboriginal CSDs (as defined by INAC) with and without different types of agreements.

• We consider
  – self-government agreements (SGAs),
  – comprehensive land-claims agreements (CLCAs) and
  – First Nations Land Management and Fiscal Management Agreements (FNLMAS and FNFMAs).

• Diff-in-Diff controls for both time and place effects.

• Overall, we find positive effects on incomes from SGAs and CLCAs, and smaller effects on incomes from FNLMAs and FNFMAs.
Literature

- Pendakur and Pendakur (2011) map out Aboriginal income disparity in Canada, and show some convergence since 1995.

  - He shows that CLCAs raised incomes by about 30 per cent.

- The effects of other agreement types, the effects of agreements elsewhere in Canada, and the effects of agreements implemented after 2005 remain unstudied.

- These dimensions represent the value added of the present paper.
% difference in earnings between Aboriginal and British origin males, Canada, 1995 - 2005

Methodology 1

- We conduct analysis at the household level with data on incomes from 1990 - 2010
- Dependent variables (log and level):
  - Total household income,
  - Total household labour income
  - Household government transfer income
  - Household income from other sources
- Analyses are conducted for all households in
  - all Aboriginal census subdivisions (CSDs), as identified by Indigenous and Northern Affairs Canada (INAC)
- We consider both Aboriginal and non-Aboriginal households
  - Aboriginal households are defined as household with at least one person claiming Aboriginal identity
Methodology 2

• 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 2009
  – www.aadnc-aandc.gc.ca/eng/1100100032297/1100100032309

• Treatments: Types of agreements
  – Self Government Agreement
    • Sectoral (Mi'kmaq education agreement)
    • Standalone
    • With a Comprehensive Land Claims Agreement
  – Standalone Comprehensive Land Claims Agreement
  – Opt-ins
    • First Nations Fiscal Management Act
    • First Nations Land Management Act
    • Both FNFMA and FNLMA
Methodology 3

- 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.
Regression Model for household incomes

**Selection:**

**Households:**
- Living in an Aboriginal CSD (as defined by AANDC)
- Lived in the same CSD 5 years ago
- Permanent residents
- Eldest member 20-64
- Hhld size < 13

**Type of agreement:**
- Sectoral SGA
- Stand alone SGA
- SGA+CLCA
- CLCA
- Opt-in: FNLMFA FNFMFA or both
- No agreement (includes historic treaties)

**Household Characteristics:**
- Aboriginal 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/Bi, none)
- Household size

**Difference in Difference:**
- Census / NHS Year
  - 1991
  - 1996
  - 2001
  - 2006
  - 2011
- Census subdivision
  - About 1000

**Total income**
- Log of total income
- Total labour income
- Total government transfer income
- Total income from other sources
Interpretation (what does it mean?)

• After controlling for age, education, family status, household size, official language knowledge, Aboriginal status, CSD and year, what is the difference in average household income between communities that have an agreement and those that do not?

• Any statistically significant difference is ‘net of’ those characteristics.
  • any difference found is not a product of csd’s with agreements being better off before attaining an agreement and therefore being better off afterwards.

• Caveat: they may have different time trends
  • If communities that attain agreements have faster income growth regardless of their agreement status, then this interpretation is weakened.
Proportionate (log) effects on total household income
Dollar effects on total household income

- Sectoral SGA
- SGA
- CLCA+SGA
- CLCA
- FNFMA
- FNLMA
- FNFMA+FNLMA

Non-Aboriginal
Aboriginal
The log and level regressions sometimes “disagree”.

If incomes are log-normal, conditional on regressors, then the log- and level-regressions tell us about different features of the conditional income distribution.

We can take the coefficient from the log-regression as telling us proportionate effect on the conditional median income.

We can take the coefficient from the level-regression as telling us effect on conditional mean income.

If the median rises but the mean does not, then income inequality is lower.

E.g., FNLMA+FNFMA for Aboriginal households.
Dollar effects on total labour income

-35000 -25000 -15000 -5000 5000 15000 25000 35000

Sectoral SGA
SGA
CLCA+SGA
CLCA
FNFMA
FNLMA
FNFMA+FNLMA

non-Aboriginal
Aboriginal
Dollar effects on total transfer income

- Sectoral SGA
- SGA
- CLCA+SGA
- CLCA
- FNFMA
- FNLM
- FNFMA+FNLM

Bar chart showing dollar effects. The x-axis represents dollar amounts ranging from -4500 to 4500, and the y-axis represents different sectors and combinations of sectors. The bars indicate the impact on non-Aboriginal and Aboriginal income.
Income growth, controlling for HHLD characteristics, 1990-2010
Dollar effects on total household income - treated hhlds only

Sectoral SGA

SGA

CLCA+SGA

CLCA

FNFMA

FNLMA

FNFMA+FNLMA

-40 000,00
-20 000,00
-0
20 000,00

Not Aboriginal hhld
Aboriginal hhld
Proportional (log) effects on total household income - treated hhlds only
Dollar effects on total household income - different effects over time

[Diagram showing various categories such as Sectoral SGA, SGA, CLCA+SGA, CLCA, and FNLMA with bars indicating changes in income over time, with census after treatment and subsequent censuses indicated.]
Proportional (log) effects on total household income - different effects over time
Conclusions: Total household income

- SGAs come in 3 flavours and they are different
  - The total incomes of Aboriginal households increase if a CSD attains an SGA in combination with a CLCA
  - Sectoral and Standalone SGAs either reduce or do not affect the incomes of Aboriginal households
- Standalone CLCAs increase Aboriginal HHLD incomes a lot, and non-Aboriginal HHLD incomes even more
- Opt-in arrangements are a mixed bag
  - We have the most precise estimates for FNFMAs
    - These reduce Aboriginal and increase non-Aboriginal HHLD incomes
Conclusions 2: Labour income

- For Aboriginal households:
  - Labour income rises a lot with the attainment of CLCA+SGA and even more with a standalone CLCA
- For non-Aboriginal households:
  - Labour income is unaffected by the attainment of a CLCA+SGA, and rises enormously with a standalone CLCA
- FNFMAs appear to slightly reduce the labour incomes of Aboriginal HHLDs
Conclusions 3: Transfer income

• For Aboriginal households:
  • Transfer income rises somewhat with the attainment of CLCA+SGA and substantially with a standalone CLCA
• For non-Aboriginal households
  • Transfer income is unaffected by the attainment of a CLCA+SGA, and rises substantially with a standalone CLCA
• FNFMAs appear to reduce transfer income for both Aboriginal and non-Aboriginal HHLDs
• Is it possible that under an SGA an Aboriginal community can more effectively direct gains in labour and transfer income to its Aboriginal constituents?
Conclusions: time trends

• Looking at all Aboriginal communities we saw big income gains after the attainment of CLCAs and CLCAs in combination with SGAs.
• Those communities that attained agreements had big gains after 2000 – much bigger than those that did not attain agreements.
  • These gains drive our findings.
  • If you just look at communities that attained agreements between 1989 and 2009, we only see a positive income effect for standalone CLCAs.
• This could be a product of:
  • The fact that these agreements are complex and time consuming. This requires building social and economic capital that other communities are not driven to build