

THE DETERMINANTS AND IMPACTS OF HISTORICAL TREATY-MAKING IN CANADA

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Spring 2023

March 31, 2023

INTRODUCTION AND MOTIVATION

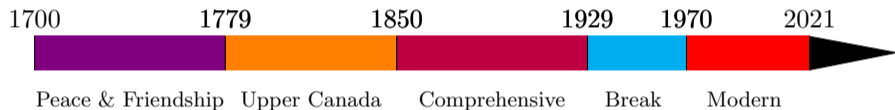
- ▶ For nearly 300 years, Indigenous nations and European powers have engaged in treaty-making within the borders of present-day Canada
- ▶ These treaties formed the colonial legal basis for colonization of Indigenous lands for settlement and continue to define the ongoing relationship between Canada and Indigenous nations
- ▶ Treaties are only signed in some regions, theoretically clarifying property rights
- ▶ Treaties establish the “rules of the game” with substantial variation in the both their scope and terms

Pathway: Institutions & property rights differ across Indigenous communities → Potentially different paths of development

WHAT WE DO

- ▶ In this work, we seek to understand how these institutions have affected long-run economic outcomes. We consider:
 - ▶ **The Determinants of Treaty-making:**
 - ① What factors influenced the signing of a historical treaty?
 - ② Was the content of treaties impacted by the actors' respective bargaining power or transaction costs?
 - ▶ **The Long Run Impacts of Treaty-making:**
 - ③ Has treaty-making impacted the long-run economic development of Indigenous communities?
 - ④ If so then what explains any observed long-run differences in economic outcomes between treaty and non-treaty communities?

A TIMELINE OF TREATY-MAKING IN CANADA



Treaty Content

Treaty Example 1

Treaty Example 2

Royal Proclamation

Treaty Map

POTENTIAL DETERMINANTS OF TREATIES

| | Value of Treaty (C) | Power to Exert Force (C) | Value of Treaty (I) | Power to Exert Force (I) | Prob Sign (net) | Treaty Terms (I) |
|--------------------------------------|---------------------|--------------------------|---------------------|--------------------------|-----------------|------------------|
| Log(Ruggedness) | ↓ | ↓ | ? | ↑ | ↓ | ↑ |
| Area of Territory (KM ²) | ↑ | ↑ | ↑ | ↓ | ↑ | ? |
| Renewable Resource Abundance | ? | ? | ↓ | ↑ | ↓ | ↑ |
| Renewable Resource Loss | ? | ? | ↑ | ↓ | ↑ | ↓ |
| Non-Renewable Resource Abundance | ↑ | N | N | N | ↑ | ↑ |
| Information Sharing | N | N | ? | ↑ | ? | ↑ |

Notes: “C” refers to “Colonial Power”, “I” refers to “Indigenous Power”, “N” refers to no implication, and “?” refers to the implication being uncertain.

EXPECTED LONG-RUN OUTCOMES

Given that the *Indian Act* oversees how the state interacts with First Nations → should treaties have any impact?

Positive effect:

- ▶ Clarification of property rights may encourage development
- ▶ Provision of capital or public goods

Negative effect:

- ▶ Unfair agreements signed under duress may be related to underdevelopment over time
- ▶ Indigenous claims to property rights may be more valuable in unceded territories today
- ▶ Otherwise fair agreements may not have had conditions met

DATA AND METHODS

Data:

- ▶ Treaties: categorization of key clauses and timing from treaty texts Sentiment
- ▶ Determinants: variety of historical determinants and controls that we construct from secondary sources Map bison fur trade colonial
- ▶ Long-run outcomes: individuals from the 2016 Census, including labour market outcomes, cultural outcomes, and demographic controls

Methods:

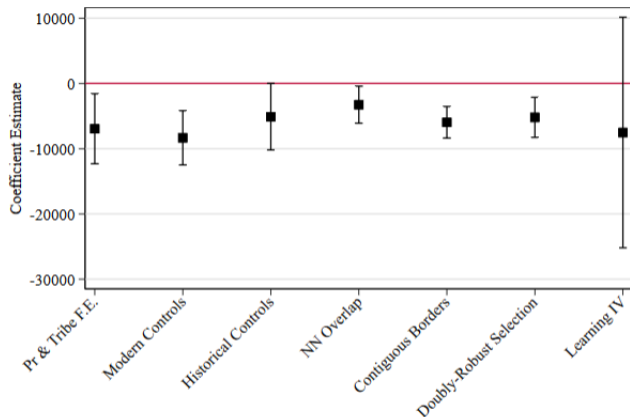
- ▶ Determinants: OLS specifications
- ▶ Long-run outcomes: contiguous border fixed effects conditional on determinants, variety of robustness checks Contiguous Borders

→ variation at the **community-band** level

DETERMINANTS OF SIGNING A TREATY

- ▶ Treaties are more likely to be signed in nations with: **Signing**
 - ▶ less rugged terrain, rapid bison loss, fur trading activity, and neighbors who did not sign
- ▶ Timing matters for strength of correlations **Timing**
 - ▶ gradual bison loss less likely to sign during gradual depletion
 - ▶ rapid bison loss more likely to sign during time period of slaughter
 - ▶ fur trade less likely to sign during periods of high demand
 - ▶ more likely to sign in same year as geographic neighbours
- ▶ Mixed evidence for treaty clauses **Clauses**
- ▶ Treaty sentiment is worst for nations that would have had greater bargaining power (rugged terrain, gradual bison loss, etc) **Treaty Sentiment**

LONG-RUN IMPACTS ON TOTAL INCOME



Coefficient estimates and 95% confidence intervals suggest that treaty communities have \$7,000 lower income than non-treaty Indigenous communities. Supplementary analysis suggests this is the result of differences in employment income. [Robustness](#)

LONG-RUN IMPACTS ON SOURCES OF INCOME

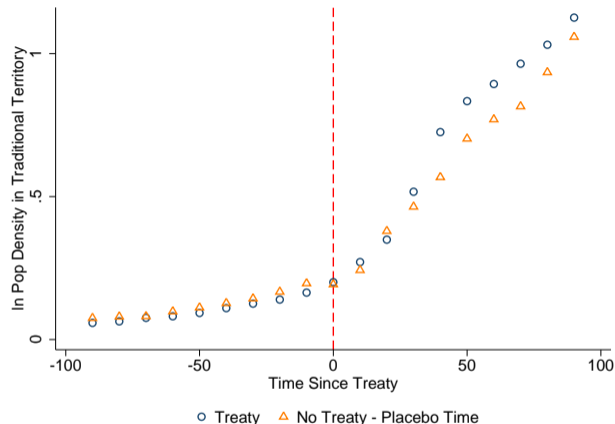
| | (1) | (2) | (3) | (4) | (5) |
|----------------|-------------------------|-------------------------|-------------------------|-----------------------|---------------------|
| | Total | After Tax | Employment | Investment | Government |
| | Income | Income | Income | Income | Transfers |
| Signed Treaty | -6938.6*** (1683.02) | -4732.1*** (1079.27) | -5354.7*** (1601.15) | -790.2*** (263.67) | -272.93 (382.40) |
| Adjusted R^2 | 0.041 | 0.046 | 0.041 | 0.008 | 0.038 |

Notes: All columns are estimated using the contiguous border strategy and condition on the full set of historical determinants and additional controls. Number of observations are suppressed for confidentiality reasons. Standard errors clustered by geographic tribe grouping are in parentheses. * $p < .10$, ** $p < .05$, *** $p < .01$

MECHANISMS

- ▶ What is the pathway of transmission for this result?
- ▶ Not due to:
 - ▶ differences in age, pr(employed), non-Indigenous presence, occupational composition, community type, isolation, education, migration Alternative Mechanisms
- ▶ The most like candidate is the intersection of land cession and Indigenous property rights:
 - ▶ Strengthening of Indigenous property rights in unceded lands, following the 1982 patriation of the constitution may drive income disparities

MECHANISMS: IMPACT ON SETTLEMENT

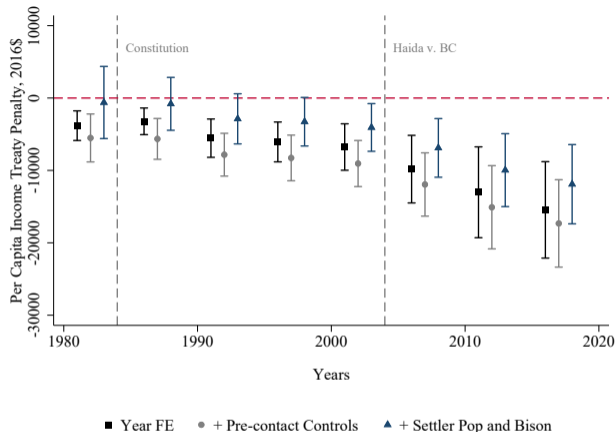


Average population density for all nations who signed a treaty normalized around the earliest date the treaty was signed and the average population density for all nations who did not sign a treaty with the data normalized around the average date treaties were signed.

Alternative Normalization

Event Study

MECHANISMS: PATRIATION OF THE CONSTITUTION



Using confidential micro data from the RDC, we find that the income penalty associated with signing a treaty widens substantially over time.

DISCUSSION AND CONCLUSION

- ▶ Historical treaties have meaningfully shaped the path of economic development for First Nations and we provide robust evidence that treaties are associated with substantially lower incomes for nations into the present
- ▶ This effect is primarily driven through a property rights channel and the premium to not signing a treaty is growing with time
- ▶ The distributional effects of stronger Indigenous property rights over unceded land appear to outweigh any effects associated with the obfuscation of property rights
- ▶ This is an important example of institutional drift in which small differences prior to colonization shape treaty-based institutions and, hence, long-run outcomes

APPENDIX



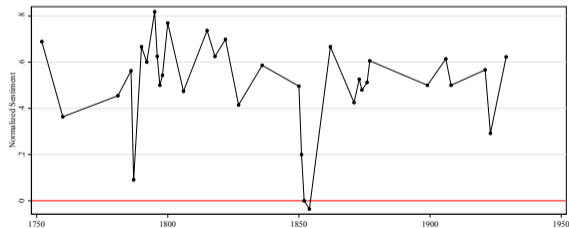
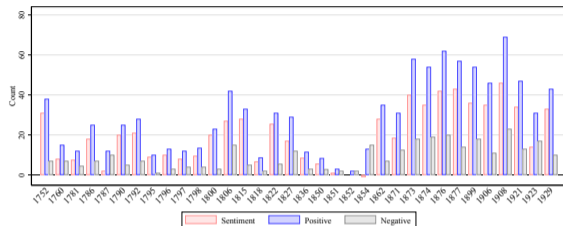


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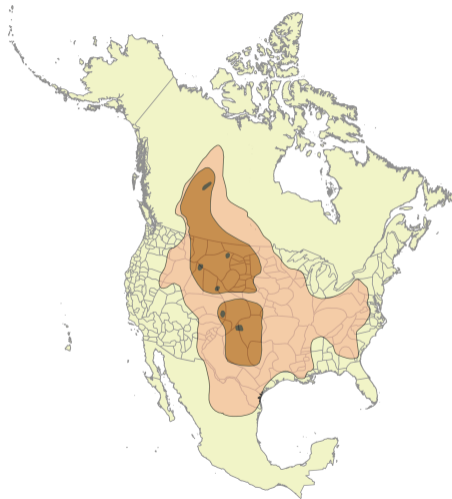
100 most frequent words (excluding stop words) in all treaty texts

DATA: TREATY SENTIMENT

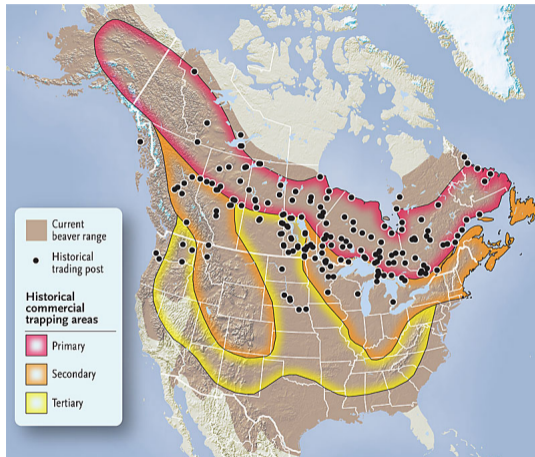




DATA: BISON RELIANCE



DATA: FUR TRADE



back

DATA: COLONIAL CONTROLS



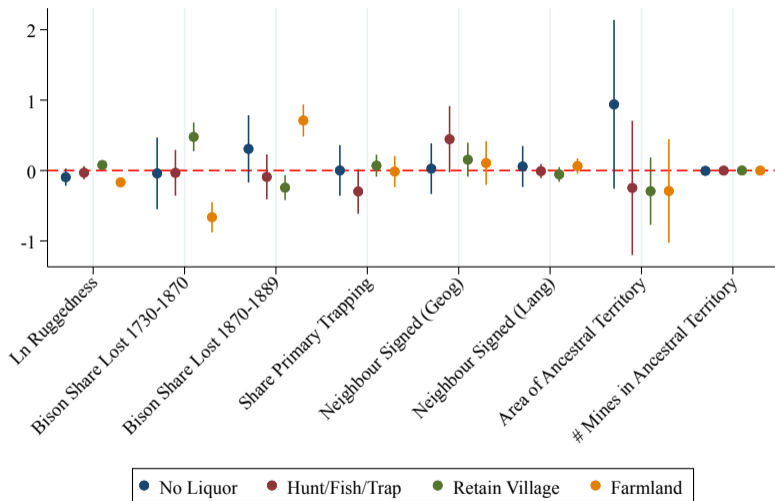
DETERMINANTS OF SIGNING A TREATY

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---------------------------------------|----------------------|---------------------|---------------------|---------------------|---------------------|------------------------|---------------------|-------------------------|
| Ln Ruggedness Ancestral Territory | -0.290*** (0.015) | | | | | | | -0.243*** (0.051) |
| Loss of Bison 1790-1870 | | -0.213 (0.174) | | | | | | -0.531*** (0.172) |
| Loss of Bison 1870-1889 | | 0.816*** (0.165) | | | | | | 0.677*** (0.140) |
| Primary Beaver Range | | | 0.407** (0.165) | | | | | 0.0913 (0.123) |
| Neighbor Signed | | | | -0.0858 (0.183) | | | | -0.212** (0.086) |
| Neighbor Signed (Same Language) | | | | 0.461** (0.180) | | | | 0.0895 (0.087) |
| Area of Ancestral Territory | | | | | 0.945*** (0.236) | | | 0.237 (0.513) |
| Length of Waterways in Territory (KM) | | | | | | 0.000221*** (0.000) | | -0.0000922 (0.000) |
| Closest Trading Post | | | | | | -0.000265 (0.000) | | -0.000481*** (0.000) |
| Ln Pop Closest Trading Post | | | | | | -0.0114 (0.035) | | 0.0198** (0.010) |
| Hist Trading Pop Missing | | | | | | 0.185 (0.236) | | 0.129** (0.065) |
| Pop Density 1800 | | | | | | 0.00659 (0.051) | | -0.0193 (0.044) |
| Closest Railway Station | | | | | | -0.000108 (0.000) | | -0.0000343 (0.000) |
| Never Had Rail in Territory | | | | | | -8.621 (7.200) | | -1.540 (3.467) |
| First Year Rail Entered | | | | | | -0.00442 (0.004) | | -0.000713 (0.002) |
| Tribe Spans U.S Border | | | | | | -0.158 (0.195) | | -0.0983 (0.061) |
| Historic Centralization | | | | | | | -0.163 (0.127) | 0.109 (0.094) |
| % Calories from Agriculture | | | | | | | -0.0566 (0.050) | 0.0133 (0.062) |
| Permanent/Semi Villages | | | | | | | -0.0180 (0.070) | 0.0589 (0.084) |
| No Individual Land Rights | | | | | | | -0.232* (0.128) | -0.0981* (0.058) |
| No wealth distinctions | | | | | | | 0.687*** (0.079) | 0.0681 (0.092) |
| Constant | 1.766*** (0.079) | 0.349*** (0.092) | 0.430*** (0.121) | 0.352*** (0.122) | 0.368*** (0.116) | 8.920 (7.196) | 0.214*** (0.072) | 2.970 (3.390) |
| Observations | 1134 | 1134 | 1134 | 1134 | 1134 | 1134 | 1134 | 1134 |
| Adjusted R ² | 0.641 | 0.285 | 0.105 | 0.161 | 0.132 | 0.314 | 0.479 | 0.798 |

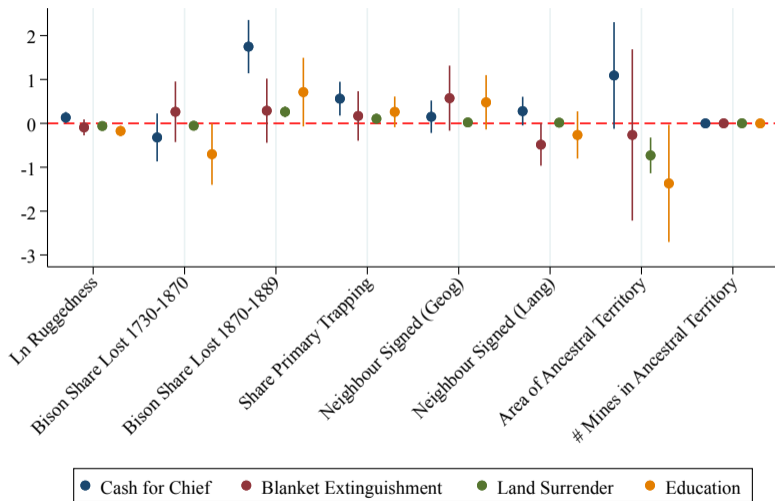
RESULTS: TIMING

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|----------------------------------------|------------------------|------------------------|-----------------------|------------------------|-----------------------|-------------------------|------------------------|------------------------|
| Loss of Bison 1730-1870 X 1(1730-1870) | -0.00605*** (0.002) | | | | | -0.00619*** (0.002) | -0.00789*** (0.002) | -0.00812*** (0.002) |
| Loss of Bison 1730-1870 | 0.00246 (0.002) | | | | | 0.00131 (0.003) | -0.00200 (0.003) | |
| Loss of Bison 1870-1889 X 1(1870-1889) | 0.0432*** (0.003) | | | | | 0.0239*** (0.008) | 0.0243*** (0.008) | 0.0237*** (0.008) |
| Loss of Bison 1870-1889 | 0.00118 (0.001) | | | | | 0.00248 (0.002) | 0.00266 (0.002) | |
| Share Trapping X Pre-1850 | | -0.00650** (0.003) | | | | -0.00462* (0.002) | -0.00461* (0.003) | -0.00451 (0.003) |
| Share Trapping | | 0.00608** (0.003) | | | | 0.00361 (0.003) | 0.000201 (0.003) | |
| Yrs Since (Geog) Neighbour Signed | | | 0.0000485* (0.000) | | | 0.0000830*** (0.000) | 0.0000454 (0.000) | -0.0000188 (0.000) |
| Neighbour Never Signed (Geog) | | | -0.00308 (0.004) | | | -0.00212 (0.004) | -0.00157 (0.003) | -0.00293 (0.004) |
| Neighbour Signed Same Year (Geog) | | | 0.0922* (0.053) | | | 0.0928* (0.053) | 0.0922* (0.053) | 0.0924* (0.054) |
| Yrs Since (Lang) Neighbour Signed | | | -0.000129* (0.000) | | | -0.0000915 (0.000) | -0.0000993 (0.000) | -0.0000741 (0.000) |
| Neighbour Never Signed (Lang) | | | -0.00321 (0.004) | | | -0.00101 (0.005) | -0.00130 (0.004) | -0.00237 (0.005) |
| Yrs Since (Lang) Neighbour Signed | | | -0.00394 (0.049) | | | -0.00483 (0.049) | -0.00490 (0.049) | -0.00540 (0.050) |
| Yrs Since Last Mine Discovery | | | | 0.000111*** (0.000) | | -0.0000194 (0.000) | 0.00000499 (0.000) | -0.0000124 (0.000) |
| No Mine Disc. Yet | | | | 0.00396 (0.003) | | 0.000435 (0.002) | 0.000159 (0.002) | 0.001144 (0.003) |
| Yrs Since Rail Entered Territory | | | | | -0.0000328 (0.000) | -0.00000719 (0.000) | 0.00000488 (0.000) | -0.00000518 (0.000) |
| Rail Has Not Entered Territory Yet | | | | | 0.00248*** (0.001) | 0.00113 (0.001) | 0.00195* (0.001) | -0.000521 (0.003) |
| Already Signed Treaty | -0.0103** (0.004) | -0.00663*** (0.002) | -0.0128*** (0.004) | -0.00617*** (0.002) | -0.00575** (0.002) | -0.0152*** (0.004) | -0.0179*** (0.004) | -0.0227*** (0.004) |
| Year F.E. | X | X | X | X | X | X | X | X |
| Historic Controls | | | | | | | X | |
| Tribe F.E. | | | | | | | | X |
| Observations | 261954 | 261954 | 261954 | 261954 | 261954 | 261954 | 261954 | 261954 |
| Adjusted R ² | 0.064 | 0.051 | 0.105 | 0.051 | 0.051 | 0.109 | 0.111 | 0.114 |

RESULTS: PR(CLAUSES)



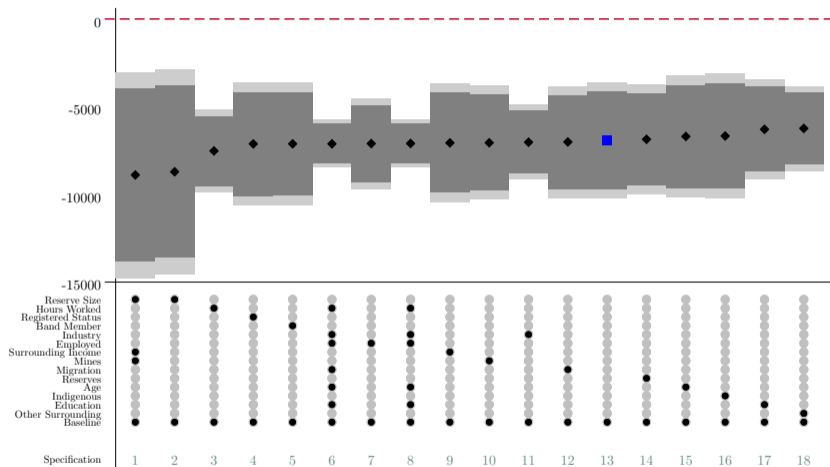
RESULTS: PR(CLAUSES)



RESULTS: TREATY SENTIMENT

| | (1) | (2) |
|------------------------------------------------|----------------------|-----------------------|
| Log(Avg. Ruggedness) | -0.0794** (0.032) | -0.0534*** (0.012) |
| Loss of Bison 1730-1870 | -0.197** (0.079) | -0.291*** (0.051) |
| Loss of Bison 1870-1889 | 0.155 (0.128) | 0.178*** (0.061) |
| Share Trapping Range | 0.0378 (0.067) | 0.155* (0.089) |
| Neighbour Signed (Geog) | -0.0558 (0.082) | -0.0778 (0.077) |
| Neighbour Signed (Lang) | 0.0492 (0.046) | 0.0353 (0.036) |
| Area of Ancestral Territory (KM ²) | 0.0950 (0.175) | 0.166 (0.174) |
| Number of Mines in Territory | -0.000471 (0.000) | 0.000982** (0.000) |
| Any Gold 1915 | 0.132 (0.115) | 0.171*** (0.052) |
| Any Silver 1915 | 0.106 (0.075) | -0.383** (0.157) |
| Controls | | X |
| Observations | 600 | 600 |
| Adjusted R^2 | 0.268 | 0.707 |

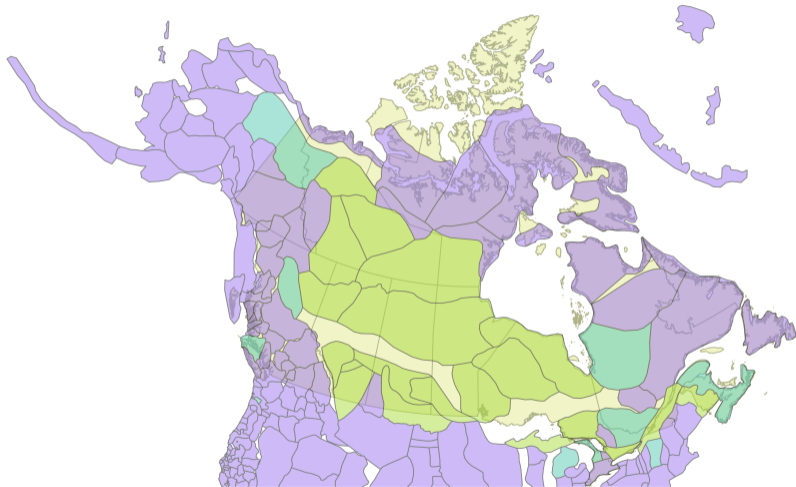
LONG-RUN IMPACTS ON TOTAL INCOME: ROBUSTNESS



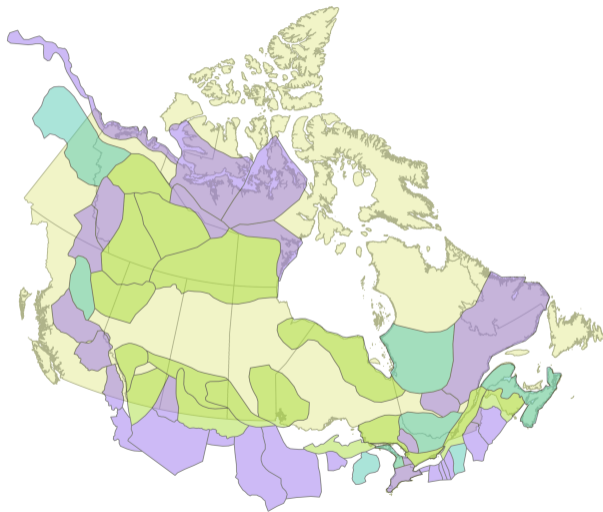
[back - long run results](#)

[back - mechanisms](#)

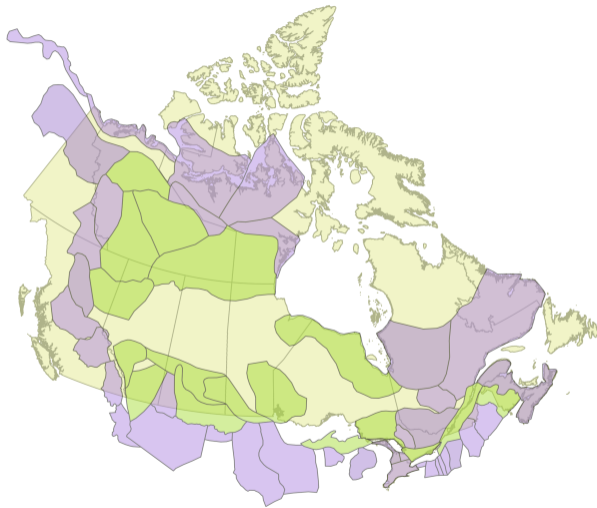
EMPIRICAL APPROACH: CONTIGUOUS BORDERS



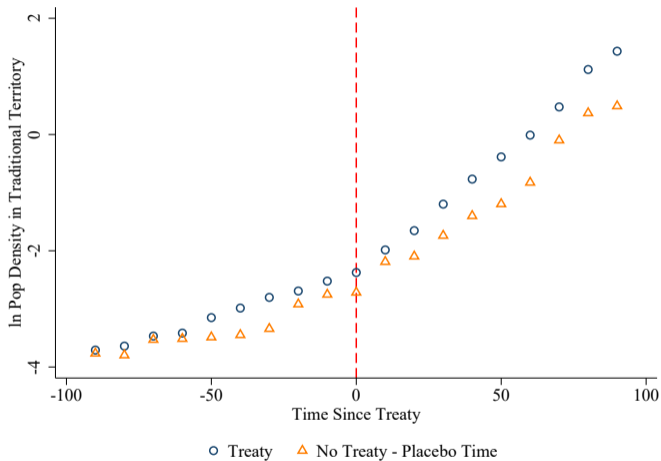
EMPIRICAL APPROACH: CONTIGUOUS BORDERS



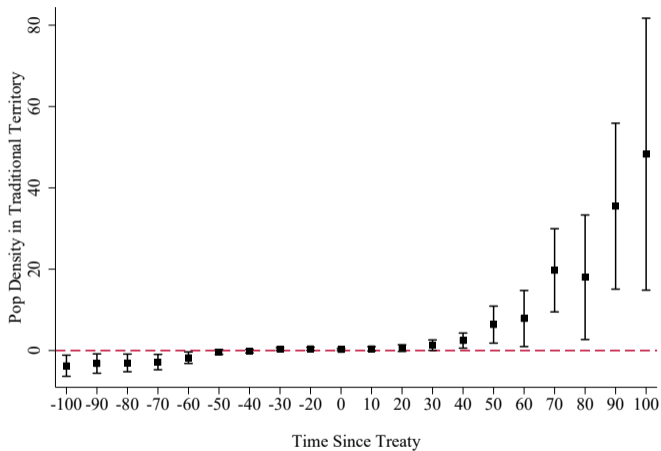
EMPIRICAL APPROACH: CONTIGUOUS BORDERS



SETTLEMENT: ALTERNATIVE NORMALIZATION

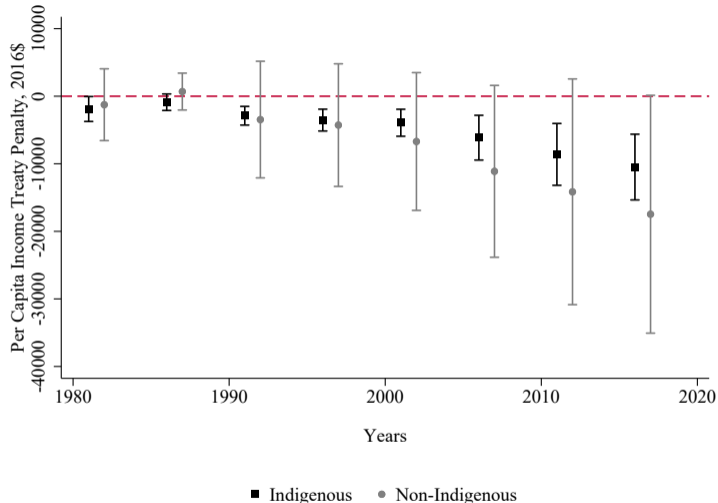


SETTLEMENT: EVENT STUDY

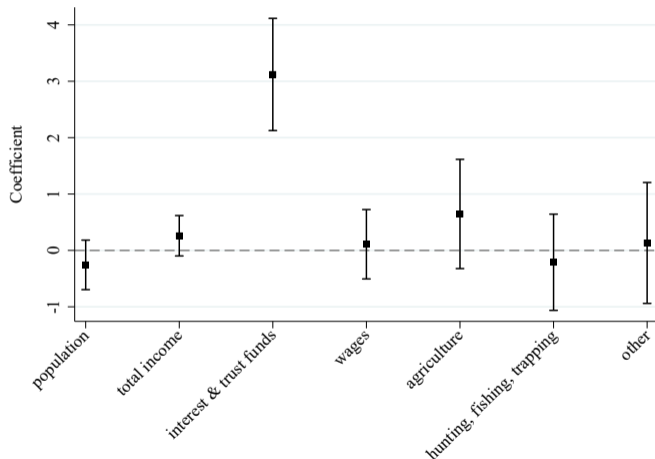


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TREATY INCOME EFFECTS BY INDIGENEITY



LOG DIFFERENCES IN OUTCOMES BETWEEN 1921 AND 1939 AND SIGNING A TREATY



THE IMPACT OF TREATY CLAUSES ON INCOME AND LABOUR FORCE PARTICIPATION

| | (1) Total Income | (2) After Tax Income | (3) Employment Income | (4) Investment Income | (5) Government Transfers | (6) Not in Labour Force |
|-------------------|-------------------------|----------------------------|-----------------------------|-----------------------------|--------------------------------|-------------------------------|
| No Liquor | -2264.3 (1856.120) | -1962.2 (1656.980) | -1943.5 (1601.297) | 89.28 (89.553) | -460.0** (206.034) | 0.0432 (0.038) |
| Hunt/Trap/Fish | -4178.8 (2795.639) | -3881.5* (2283.134) | -3502.6 (2454.819) | -40.03 (160.182) | -638.3 (512.832) | -0.0230 (0.038) |
| Retain Village | -97.90 (2492.534) | 585.4 (2183.891) | -116.6 (2099.070) | -382.7*** (124.198) | 377.7 (662.609) | 0.0233 (0.032) |
| Contains Farmland | -501.8 (1997.142) | 517.5 (1812.100) | 8.886 (1904.898) | -326.7** (163.457) | 1155.7 (701.679) | -0.0190 (0.042) |
| Cash for Chief | 267.8 (1730.416) | 278.2 (1511.365) | 0.912 (1466.788) | 55.84 (86.091) | 141.1 (302.971) | 0.00201 (0.029) |
| Land Surrender | -5009.2** (2468.559) | -4754.7** (2330.623) | -4534.0** (2084.834) | 214.6** (88.612) | -869.6* (515.111) | 0.0613*** (0.022) |
| Education | 1691.1 (2213.636) | 939.1 (1926.979) | 1070.3 (2007.281) | 214.8 (154.285) | -463.1 (352.417) | -0.0168 (0.032) |
| Adjusted R^2 | 0.071 | 0.068 | 0.072 | 0.003 | 0.032 | 0.040 |

THE IMPACT OF TREATY TYPE ON INCOME AND EMPLOYMENT

| | (1) Total Income | (2) After Tax Income | (3) Employment Income | (4) Investment Income | (5) Government Transfers | (6) Not in Labour Force |
|----------------------|--------------------------|----------------------------|-----------------------------|-----------------------------|--------------------------------|-------------------------------|
| Comprehensive | -3248.6*** (827.733) | -2430.5*** (686.794) | -2360.0*** (844.421) | -299.1*** (83.763) | -358.0 (260.105) | -0.0283* (0.015) |
| Peace and Friendship | -10858.7** (4578.262) | -9676.5** (3985.031) | -6118.7 (4068.654) | -379.9** (178.422) | -4444.3*** (461.451) | 0.174*** (0.039) |
| Land Surrender | -7263.0*** (1756.279) | -6083.2*** (1576.579) | -6242.4*** (1698.083) | -164.6** (81.099) | -853.4*** (318.635) | 0.0404*** (0.014) |
| Adjusted R^2 | 0.071 | 0.068 | 0.071 | 0.003 | 0.032 | 0.040 |