Revitalizing Trade Dependencies: Analyzing the Influence of the 2018 Mexican Government Transition on Trade Patterns

Master Thesis

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Overview

- Investigate Mexico's relationship of political shifts and trade dynamics, focusing on the period of Morena's governance (2018 to present).

- Gravity Model and sector-specific trade indicators.

- Dataset of 220 million observations on trade flows between Mexico and rest of countries.

- Gravity Model findings reveal a **decrease** in bilateral trade during Morena's governance.

- Sector-specific analyses reveal distinct trade patterns across various sectors of the economy.

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Mexico's International Trade

- Mexico's international trade landscape presents a complex interplay between various regions and industries.
- Numerous trade agreements worldwide, signing approximately **13** agreements, including **NAFTA** with about **50** countries.
- Morena, the party that won presidential elections and a congressional majority in 2018:
  - Introduced a series of **protectionist** policies.
  - Policies marked a departure from the previous **pro-trade** stance.

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Data I

- The primary data sources for this study are the CEPII's **BACI** and **Gravity** databases.

- **BACI** database provides detailed yearly information on international bilateral trade by country (200) at the product-level (5000) and has 220 million observations.

- **Gravity** database incorporates socioeconomic indicators and other macroeconomic variables for both countries, including distance, gdp, etc.

- Political party variable: **Database of Political Institutions** which offers country-level political variables.

- All databases are yearly in panel format.

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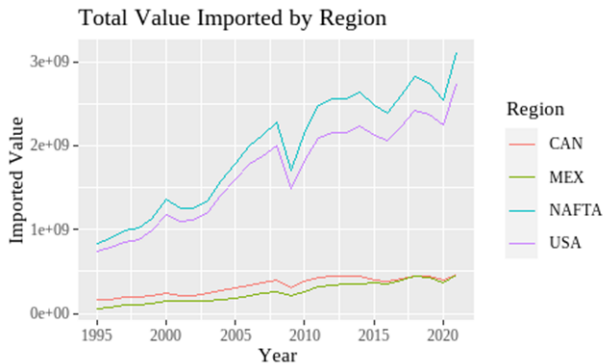
Data II

Figure: Total value imported by region

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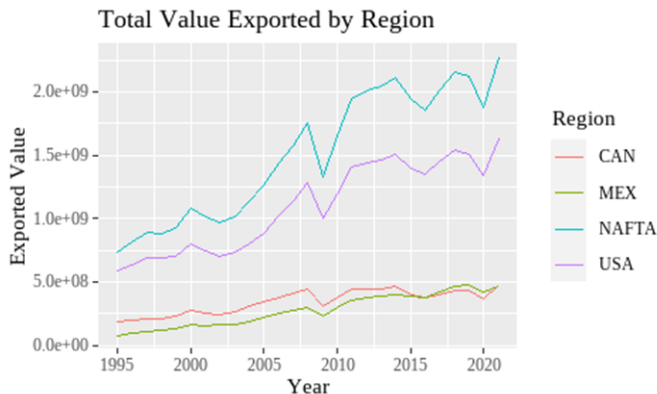○○○○○○○○○

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Data III

Figure: Total value exported by region

Gravity Models I

- First choice was to estimate the model initially using **OLS** in logarithmic form.

- To account for the heterogeneity among countries & years **Fixed Effects** and **Random Effects.**

- Robust standard errors.

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Gravity Models II

$$
\begin{aligned}
\log(C_{ijt}) =& \beta_0 + \beta_1 \log(Y_{it}) + \beta_2 \log(Y_{jt}) + \beta_3 \log(N_{it}) \\
& + \beta_4 \log(N_{jt}) + \beta_5 \log(D) + \beta_6(\text{contig}) + \beta_7(\text{comlang}) \\
& + \beta_8(\text{LA}) + \beta_9(\text{rta}) + \beta_{10}(\text{execme}) + \epsilon
\end{aligned}
$$

Where:

- $j = 1 \ldots 252$: Country trading with Mexico
- $i = $ Mexico
- $t = 1996 \ldots 2021$

Gravity Models III

	OLS	Fixed Effects	Random Effects
(Intercept)	-20.515 (16.598)		-15.946 (15.740)
loggdp_mex	-0.431 (0.258)*	-0.152 (0.252)	-0.195 (0.248)
loggdp_j	1.576 (0.103)***	1.420 (0.194)***	1.516 (0.095)***
logpop_mex	1.696 (1.311)	1.942 (1.506)	0.975 (1.265)
logpop_j	-0.399 (0.163)**	-0.726 (0.578)	-0.347 (0.149)**
log_dist_km	-0.947 (1.142)	10.892 (19.753)	-1.009 (1.093)
contig	1.711 (1.644)		1.701 (1.581)
LA	1.866 (1.431)		1.810 (1.388)
rta_FTA_&_EIA	-0.390 (0.185)**	-0.228 (0.196)	-0.232 (0.135)*
rta_none	-0.268 (0.324)	-0.149 (0.163)	-0.243 (0.141)*
execmePAN	3.627 (0.147)***	3.608 (0.142)***	3.610 (0.143)***
execmePRI	3.352 (0.137)***	3.332 (0.131)***	3.334 (0.130)***
Num.Obs.	4989	4989	4989
R^2	0.576	0.192	0.251
Adjusted R^2	0.575	0.156	0.249

standard errors in ()

Figure: Gravity Models Results

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Sector-Specific Indicators I

1. **Trade volumes:** Total value of goods exchanged.

2. **Herfindahl-Hirschman Index (HHI):** Market concentration between 0 & 1.

$$HHI = \sum_{i=1}^{n} s_i^2 \cdot w_j$$

3. **Substitutability:** Degree to which goods and services from different sectors can be used as substitutes for each other.

4. **Trade balance:** Difference between the value of a country's exports and the value of its imports.

5. **Country market shares per sector:** Trading country market shares.

Sector-Specific Indicators II

- Sector-specific indicators allow us to explore the underlying reasons for the observed trade patterns.
- Compare results with Canada, United States and NAFTA.
- Focus on the 6 most important sectors in Mexico based on value added in the corresponding order:
  1. Machinery/Electrical
  2. Transportation
  3. Mineral Products
  4. Miscellaneous
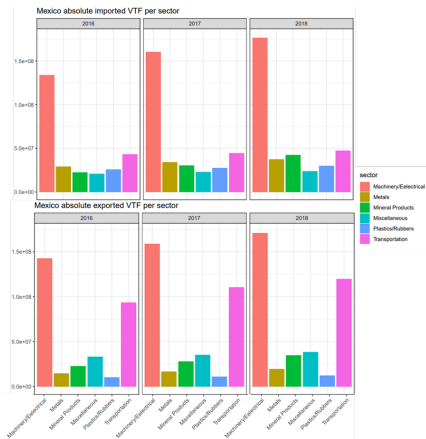 5. Metals
  6. Plastics/Rubbers

Mexico's Trade Volumes

Figure: Trade Volumes

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Mexico's HHI Indexes

Figure: HHI Index

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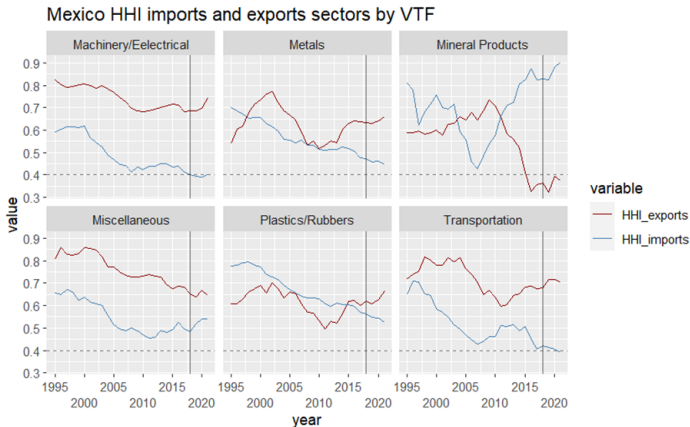○○

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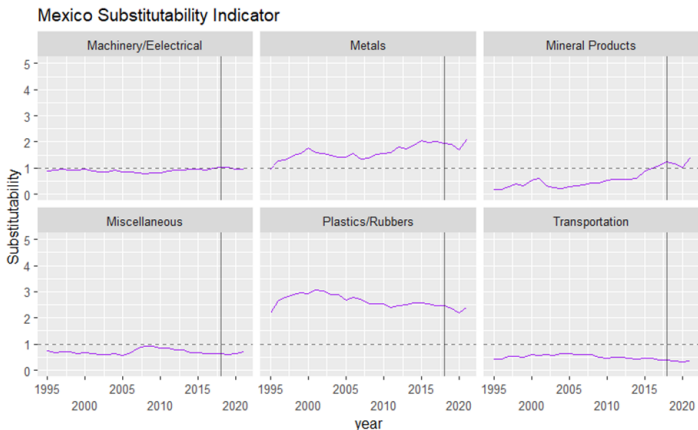○○○○

Mexico's Substitutability Indicator
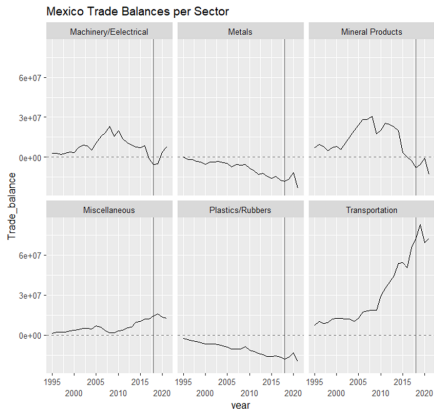

Figure: Substitutability

Mexico's Trade Balances

Figure: Trade Blance

Main Results Indicators

- **Machinery/Electrical** and **Mineral Products** sectors, we observed a significant increase in 2018 but there was already an increasing trend from previous years.

- **Miscellaneous** saw an increase in import concentration.

- **Machinery/Electrical**, **Metals** and **Plastic/Rubbers** saw a decrease in HHI which could potentially indicate a lessening dependency on imports, perhaps suggesting maybe an increased local production capacity.

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Summary

- Gravity model showed there was a substantial **decrease** in bilateral trade during Morena's governance.

- The sector-specific analyses elucidate that these impacts are **not uniform** across different sectors of the economy.

- Sectors like **Machinery/Electrical** and **Mineral Products** experienced considerable variations in trade.

- Varied responses across sectors underscore the complexity of trade dynamics, the multiple factors at play and the difficulty in estimating trade policy effects.

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Future Work

- Delve into a more **granular level** of analysis by examining the trade dynamics at the product level.

- Incorporation of different versions or extensions of the Gravity Model.

- Examine the influence of other significant factors on trade dynamics.

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Thank you for your attention!