

A Quantitative Analysis of Trade Cooperation Over Three Decades

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Over the Last Three Decades, the Apex and the Slowdown of Trade Growth

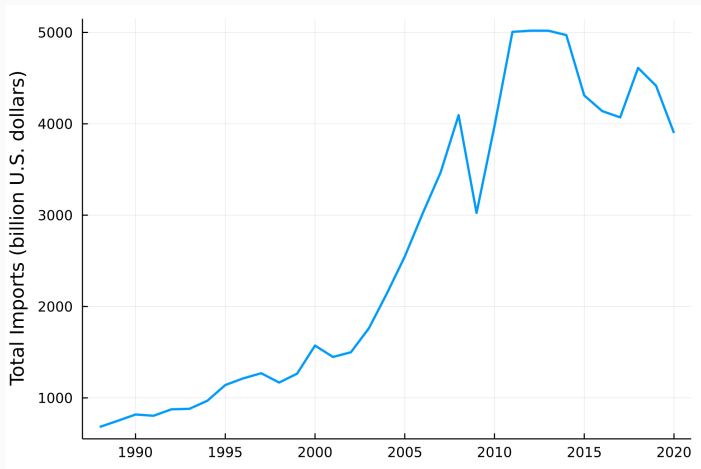


Figure 1: Goods Imports

Tariffs Remain at Historically Low Levels, Despite Globalization Backlashes

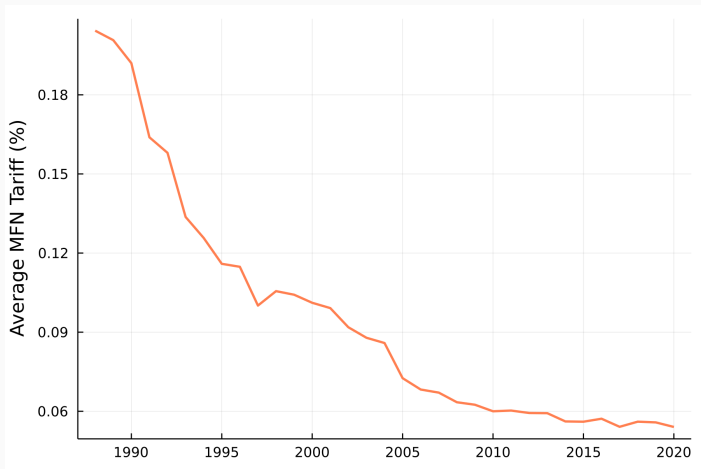


Figure 2: Average MFN Tariffs

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- For instance, an increase in import tariffs may:
 - Benefit all foreign exporters if it bids up domestic input prices (e.g. labor) and affects import competition in the rest of the economy.
 - Harm foreign producers that source domestic inputs via global supply chains.

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- For each country and year, I recover welfare weights θ_i that, given partners' trade policy, minimize the distance between $t_i(\theta)$ and t_i^{MFN} .

- Changes in trade policy cooperation over time: Colantone et al. (2022), Bown and Crowley (2016), Teti (2020), Mei (2020), Beshkar et al (2021).

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- Reduced-form approach to partial cooperation: Cyert and DeGroot (1973), Colombo et al. (2022), López and Vives (2019), Ferrari and Ossa (2023).

Theoretical Framework

Multi-country, multi-sector quantitative model of commercial policy.

- Cobb-Douglas-CES preferences.

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- Cobb-Douglas-CES preferences.
- Monop. competition, homogeneous firms and no entry (Ossa, 2014, 2016).
- I-O linkages (Caliendo and Parro, 2015).
- Iceberg trade barriers and ad-valorem import tariffs (only policy instrument).

Equilibrium:

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- Profits account for a fixed share of industry revenues.
- The model yields a standard gravity equation.

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 - The larger θ_i , the more the negative impact abroad of tariffs will be relatively taken into account.

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Solving for Counterfactual Tariffs

- $\hat{\tau}_i^s$ maximize $\hat{G}_i(\theta_i)$ s.t. equilibrium conditions in changes.

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Solving for Counterfactual Tariffs

- \hat{t}_i^s maximize $\hat{G}_i(\theta_i)$ s.t. equilibrium conditions in changes.
- Enforce duty-free treatment to PTA partners.

Data and Calibration

11 Trading Blocs and 14 Goods Sectors.

Australia, Brazil, Canada, China, the European Union, India, Japan, Korea, Mexico, the USA and a Rest of the World.

Production, Trade and I-O structure

- WIOD and WITS

Trade Policy

- MFN Tariffs: WITS
- PTAs: Baier and Bergstrand database

Estimation of the trade elasticity:

- Model-implied gravity equation (Fontagné et al., 2022):

$$X_{ijt}^s = \exp \left[-\sigma_s \ln(1 + t_{ijt}^s) + v_{jt}^s + v_{it}^s + v_{ij}^s \right] + \epsilon_{ijt}^s$$

- List of sectors and elasticities of substitution

Political Economy Weights

- The cross-sector distribution of tariffs reflect the action of lobbies (Ossa, 2014).
- To identify political economy weights, I calibrate λ_i^s such that non-cooperative tariffs match cross-sector tariff data after controlling for its mean.

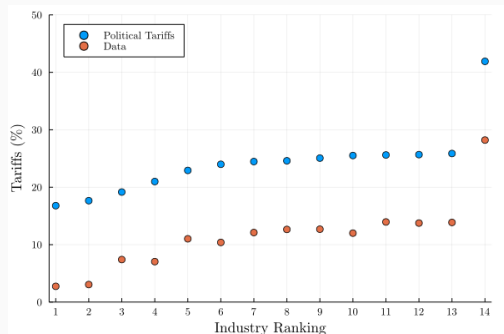


Figure 3: Example: Brazil in 2020

Cooperation Parameters

- Pick θ_i that moves countries from a political noncooperative equilibrium to one that approximate the empirical distribution of tariffs.

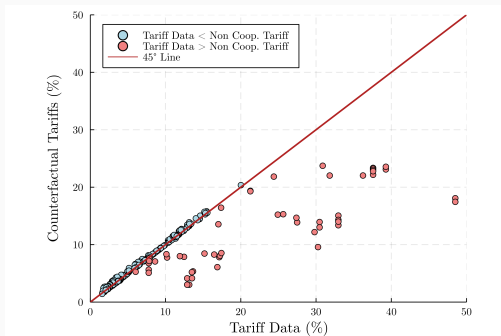


Figure 4: Model Fit - mean tariffs

- At the sector-level, 80% correlation between predicted tariffs and the data.

Results

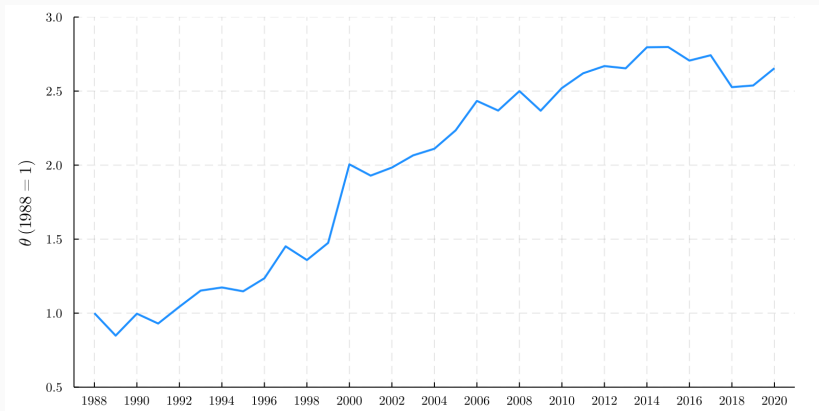


Figure 5: Global Trade Cooperation (1988 - 2020)

Cooperation Increased Everywhere

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- Even among developed countries, which already adopted low import tariffs in 1988.
- Larger cooperation growth in developing countries.
- No widespread decrease in cooperation, but this is visible in some countries.

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- Expansion in cooperation consistent with changes in trade and tariffs.
- Higher trade flows and lower tariffs imply a higher internalization of the trade externality.
- Other salient features of the world economy included are also quantitatively important.
- Main conclusions are robust to changes in particular elements of the model.
 - No I-O linkages, Perfect Competition, No Lobbying, No PTAs, Fixed Trade Deficits, Scaling of the Trade Elasticity.

- **This paper:** A first comprehensive account of changes in global trade cooperation using a modern trade policy framework.

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- Results speak to the end of the hyper-globalization period and the lack of progress in the WTO liberalization agenda.
- **But they are also consistent with the idea that much of the value of the trading system lies in sustaining current cooperation levels.**

Thank you!

List of sectors and elasticity of substitution (σ_s)

#	Sector	$-\sigma$	95% CI
1	Agriculture, Hunting, Forestry and Fishing	-10.06	[-14.53 ; -5.59]
2	Mining and Quarrying	-4.42	[-7.63 ; -1.21]
3	Food, Beverages and Tobacco	-1.28	[-3.87 ; 1.30]
4	Textiles, Leather and Footwear	-2.73	[-4.15 ; -1.30]
5	Pulp, Paper, Printing and Publishing	-6.24	[-9.42 ; -3.05]
6	Coke, Refined Petroleum and Nuclear Fuel	-14.57	[-18.85 ; -10.29]
7	Chemicals and Chemical Products	-7.87	[-9.75 ; -5.99]
8	Rubber and Plastics	-6.46	[-8.92 ; -3.99]
9	Other Non-Metallic Mineral	-7.96	[-11.77 ; -4.14]
10	Basic Metals and Fabricated Metal	-7.01	[-8.84 ; -5.18]
11	Machinery (not elsewhere classified)	-7.85	[-13.03 ; -2.68]
12	Electrical and Optical Equipment	-9.67	[-12.17 ; -7.17]
13	Transport Equipment	-9.15	[-12.35 ; -5.95]
14	Manufacturing (not elsewhere classified); Recycling	-3.79	[-6.92 ; -0.65]

Data description