

Discussion:

The Long and Short (Run) of Trade Elasticities

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Summary

Question: What is the trade elasticity at different time horizons?

Answer: 0.75 in SR, 2 in LR

Methodological contributions:

- (1) Omitted variables: bilateral fixed effects lower elasticity estimates
- (2) Handling reverse causality: changes in large importers' MFN schedules constitute exogenous tariff variation for small exporters
- (3) Local projections: account for tariff dynamics following initial reforms
- (4) Theoretical grounding: illustrate how estimating equation can be derived from canonical exporter-dynamics models

My comments

First-order issue in international trade/macro

- ▶ Trade elasticity is the most important parameter in determining how much trade flows will change in response to a change in trade costs, and in quantifying the welfare impact
- ▶ Considerable disagreement about what the “true” trade elasticity is
- ▶ Contemporary issues (Brexit, US-China trade war) are inherently dynamic in nature

Extremely comprehensive attempt at addressing this issue that advances methodological frontier in several ways

Would like to see stronger connection to other studies on trade elasticity dynamics

Would like to understand the economic forces driving the results, especially the implications of bilateral fixed effects and the MFN IV

Alternative microfoundation that helps resolve “puzzle” related to low SR elasticity

Comparison to other estimates of trade elasticity dynamics

Comparison to other studies, demonstration of new methods' implications limited to standard cross-sectional/differences specifications

Several other studies estimate trade elasticity dynamics, but difficult to compare directly due to differences in both scope and methods

Paper	Trade data	RHS var	Method	SR	LR
Galloway et al. (2003)	US multilateral, 4-digit SIC	Prices	ECM	0.95	1.55
Yilmazkuday (2019)	US bilateral, aggregate	Prices	Panel SVAR	1.1	6.9
Alessandria-Choi (2019)	US multilateral, aggregate	Prices	ECM	0.2	1.15
Khan-Khederlarian (2020)	US bilateral w/ MEX, HS6	Tariffs	ECM	2.5	9.2

- ▶ How does LP compare to ECM and other dynamic methods?
- ▶ How would bilateral fixed effects and IV alter estimates from other dynamic methods?
- ▶ How would these techniques affect estimates from aggregated trade data?

What economic forces do bilateral fixed effects capture?

Why do bilateral fixed effects lower trade elasticities?

- ▶ Why are bilateral taste shocks high when tariffs are low?
- ▶ Why are bilateral non-tariff barriers low when tariffs are low?

Standard time-varying multilateral resistance fixed effects have clear economic interpretation (real GDP, aggregate prices, etc.), but bilateral fixed effects do not

Potential explanations:

- ▶ Pricing to market: reduces extent to which trade fluctuations are attributed to changes in trade costs (Alessandria and Choi, 2019)
- ▶ Endogenous transportation costs: tariff reductions incentivize shipping firms to invest in expanding capacity (Asturias, 2019)

Quantitative implications are significant, so sorting this out is crucial to understanding how trade flows respond to changes in trade policy

Does MFN IV capture something else aside from reverse causality?

Why do IV and treatment definition raise elasticities?

- ▶ Why do changes in MFN tariffs lead to larger changes in trade with minor partners?
- ▶ Why do changes in MFN tariffs lead to larger changes in trade than other tariff reforms?

Authors' answer: reverse causality

- ▶ Basic idea is that tariffs changes may be caused by changes in trade due to lobbying, etc.
- ▶ MFN tariffs apply to many partners, but still may be caused by trade with major partners
- ▶ But could $\Delta_0 \log \tau$ really be caused by $\Delta_{10} \log X$?
 - ▶ Check in log-levels estimation by adding future tariffs to RHS as in Baier-Bergstrand (2007)

Alternative explanation: minor trade partners have higher elasticities

- ▶ Larger firm-level responses in minor destinations (Mix, 2020; Steinberg, 2020)
- ▶ Consistent with authors' sensitivity analysis where elasticity is lower when large partners are included in treatment group

Could GE forces be at work?

My first intuition was that GE-driven trade diversion might help account for results

- ▶ Could bilateral fixed effects simply pick up asymmetric RER/TOT changes?
- ▶ Could DiD design pick up diversion in trade from control group to treatment group caused by MFN tariff cuts?

Test by simulating data from simple Armington model with N asymmetric countries

- ▶ Random labor endowments + expenditure shares, fixed over time
- ▶ Countries $1, \dots, N_{wto}$ in WTO: one random MFN tariff that applies to all other WTO members, random bilateral tariffs for non-WTO members, both time-varying
- ▶ Countries $1, \dots, N_{fta}$ in free trade agreement: $\tau_{ij} = 0$ for $i, j \leq N_{fta}$
- ▶ Countries $N_{wto+1} \dots, N$ outside of WTO: random, time-varying bilateral tariffs

Negative result: bilateral fixed effects and MFN IV have no effect on trade elasticity in either log-levels or differences specifications

Short-run elasticity below one: a puzzle?

SR elasticity of 0.75 incompatible with canonical exporter-dynamics models with elasticity of substitution between goods from different origins = σ

- ▶ SR elasticity = σ , LR elasticity = $\sigma + \frac{d \log n}{d \log \tau}$
- ▶ Constant-markup environments require $\sigma > 1$, have implausibly large markups for $\sigma < 3$

Alternative 1: Armington importer with convex adjustment costs maximizes

$$\sum_{s=t}^{\infty} \beta^s \left\{ \left[\sum_{j=1}^N \omega_{i,j,t}^{\frac{1}{\sigma}} C_{i,j,s}^{\frac{\sigma-1}{\sigma}} \right]^{\frac{\sigma}{\sigma-1}} - \sum_{j=1}^N P_{j,s} (1 + \tau_{i,j,s}) C_{i,j,s} - \sum_{j=1}^N W_{i,s} \phi \left(\frac{C_{i,j,s}}{C_{i,j,s-1}} - 1 \right)^2 C_{i,j,s-1} \right\}$$

- ▶ Krugman (1986), Engel and Wang (2011), Drozd and Nosal (2012)
- ▶ SR elasticity $< \sigma$, LR elasticity = σ
- ▶ Given σ , ϕ can be calibrated to match SR elasticity (Steinberg, 2020)

Alternative 2: Nested CES with Armington elasticity $\zeta < 1$ and elasticity of substitution between varieties from same destination $\sigma > 1$

Thank you!