

The Effect of Tariffs on U.S. Producer Prices

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Discussion by Oleksiy Kryvtsov (Bank of Canada)

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The views expressed here are my own and do not necessarily reflect the views of the Bank of Canada

How much do input tariffs raise producer prices?

2018–2019 U.S. import tariffs on China and other countries

Merged micro data for trade transactions (LFTTD) and prices (PPI):

- Shipments and duties (de facto and de jure) by *firm-product-origin-month*
- Prices by *firm-product-month*

Direct effect: effective tariffs vary with firm's product-origin portfolio

- Shift-share instrument based on 2017 product-origin portfolios + industry-month FEs

Model: industry pass-through (PT)

- Endogenous sourcing, oligopolistic competition and I/O production network
- Targeted vs universal tariffs

- **Firm pass-through 0.12 to 0.20** (industry with avg imported input intensity)
 - Full effects within about a year
 - Robust to price-change horizon, sample period, choice of instrument
- **Sourcing responds:** effective tariffs rise by 0.65 of the statutory shock
- **Model:**
 - I/O network multiplies the direct effect by a factor between 1.3 and 1.9
 - Universal tariff is about 7 times more inflationary than China tariff

- Granular data enable estimation of **direct effect** of tariffs on product prices
 - Cleaner identification of tariff-induced changes to firm's cost
 - Pass-through to firm's price (not industry PPI)
- Comments: **can do more empirically** before going to the model
 - Distill I/O network propagation and competition effects
 - Inform universal tariff pass-through
 - Facts on re-sourcing

Does within-industry variation influence measured average industry PT?

Average industry PT: pp price increase to a 1 pp increase in input tariff

- Amiti-Redding-Weinstein (2019)[ARW]: average industry pass-through 0.29
- GWYZ: firm pass-through (avg industry) 0.12 to 0.20

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Suggestion: Run ARW spec to assess how additional variation changes PT estimates

$$\Delta \log p_{j,k,i,t} = \beta \cdot III_i \times \Delta \log(1 + \tau_{j,t}^{\text{input,eff}}) \\ + \gamma \cdot IS_i \times \Delta \log(1 + \tau_{i,t}^{\text{output,eff}}) + \eta_j + \delta_t + \varepsilon$$

- Propagation excluded (car producer buys steel parts from U.S. firm)

$$\Delta \log p_{j,k,i,t} = \beta \cdot \text{III}_i \times \Delta \log(1 + \tau_{i^o,t}^{\text{input,ARW}}) \\ + \gamma \cdot \text{IS}_i \times \Delta \log(1 + \tau_{i,t}^{\text{output,eff}}) + \eta_j + \delta_t + \varepsilon$$

- Propagation excluded (car producer buys steel parts from U.S. firm)
- ARW: I/O wgt avg of upstream industries' output tariffs (incl. propagation)

$$\Delta \log p_{j,k,i,t} = \beta \cdot \text{SII}_j \times \Delta \log(1 + \tau_{j,t}^{\text{imp input,eff}}) + \lambda \cdot \text{SDI}_j \times \Delta \log(1 + \tau_{j,t}^{\text{dom input,eff}}) \\ + \gamma \cdot \text{IS}_i \times \Delta \log(1 + \tau_{i,t}^{\text{output,eff}}) + \eta_j + \delta_t + \varepsilon$$

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Suggestions:

- Use *firm-level* shares of imported inputs (SII_j) and domestic inputs (SDI_j)
- Compute tariff exposure for domestic inputs $\tau_{j,t}^{\text{dom input,eff}}$ used by the firm

Within-industry competition channel

Amiti-Itskhoki-Koenig (2019)[AIK]

$$\begin{aligned}\Delta \log p_{j,k,i,t} = & \beta \cdot \text{III}_i \times \Delta \log(1 + \tau_{j,t}^{\text{input,eff}}) \\ & + \gamma \cdot \text{IS}_i \times \Delta \log(1 + \tau_{i,t}^{\text{output,eff}}) + \eta_j + \delta_t + \varepsilon\end{aligned}$$

- “how much the firm raises its output price when tariffs shield it from foreign competition”... but do not distinguish upstream vs downstream goods

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- “how much the firm raises its output price when tariffs shield it from foreign competition”... but do not distinguish upstream vs downstream goods
- AIK: competitors' price changes $\Delta \log P_{-j,t}$ with loading $\gamma \approx 1 - \beta$
 - Relative price change influences market share and incentivizes markup variation
 - AIK instrument: wht avg of competitors' imported-input (tariff-induced) cost changes

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- **Intepretation:** lower PT β reflects stronger strategic pricing complementarities

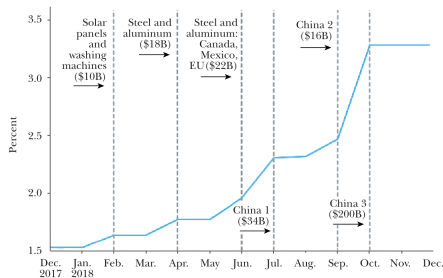
How to think of universal tariffs?

Alexander, Han, Kryvtsov, Tomlin (2026)[AHKT]

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- Tariff changes differ in scope and comove over time

Average tariff rates (ARW 2019)



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- **AHKT: decompose firm-level tariff changes into idio and common components** with industry-month fixed effects ($\epsilon_{it}^{\text{common}}$) and the residual ($\epsilon_{jt}^{\text{idio}}$)

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$$\Delta \log p_{j,k,i,t} = \tilde{\beta} \cdot \epsilon_{jt}^{\text{idio}} + \tilde{\gamma} \cdot \epsilon_{it}^{\text{common}} + \eta_j + \delta_t + \varepsilon$$

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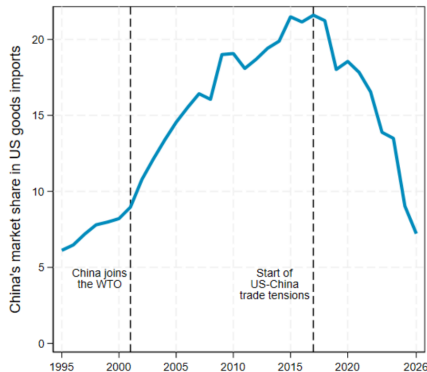
$$III_j \Delta \log(1 + \tau_{j,t}^{\text{input,eff}}) = \epsilon_{it}^{\text{common}} + \epsilon_{jt}^{\text{idio}}$$

- Estimated common-cost PT $\tilde{\gamma}$ gives a sense of the universal tariff PT
- Common-cost PT is greater, $\tilde{\gamma} > \tilde{\beta}$: less need to adjust own markup
- $\tilde{\beta}$ does not depend on price stickiness, $\tilde{\gamma}$ decreases with stickiness

Active re-sourcing: effective tariff change 0.65 of the statutory tariff shock

“Great reallocation” of supply chains (Alfaro and Chor, 2023)

- Chinese share in U.S. imports fell from 22% in 2017 to 8% in 2026 (Antras et al., 2026)



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Paper can provide more evidence on re-sourcing:

- Intensive or extensive margin? (ARW: variety loss is suggestive of extensive-margin exit)
- Alternative sources: low-wage (Vietnam)? nearshoring/friendshoring (Mexico)?
- How quickly?

Merged micro data for manufacturing firm import tariffs and prices

Estimated direct effect of 1 pp tariff increase to prices is 0.12–0.20

Suggest zooming in on indirect effects empirically:

- Propagation, competition, common tariff-induced cost, re-sourcing