Discussion of:

Barbiero, Sheremirov, Silva, Stein

U.S. Firms' Exposure to Tariffs

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Goal:

Understand the impact of Trump tariffs on the US economy

- Micro – variation across firms/sectors
- Macro – GDP, welfare

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This paper: impact of tariff shocks on COMPUSTAT firms in both 2018 and 2025

Examine empirically multiple channels of tariff propagation

- Imported intermediates – directly and indirectly
- Retaliation in foreign markets
- Protection from import competition

Understanding the micro results: Sales vs. COGS

Demand and price, firm f, sector j, country c:

$$q_{fjct} = q_{fjct}(p_{ft}) \qquad p_{ft} = m_{ft}c_{ft}$$

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Sales and COGS:

$$SALES_{ft} = m_{ft} COGS_{ft}$$

Therefore:

$$\frac{d \ln SALES_{ft}}{d \ln c_{ft}} = \frac{d \ln m_{ft}}{d \ln c_{ft}} + \frac{d \ln COGS_{ft}}{d \ln c_{ft}}$$

Dixit-Stiglitz, Melitz: $\frac{d \ln m_{ft}}{d \ln c_{ft}} = 0$

Taking coefficients at face value: $\frac{d \ln m_{ft}}{d \ln c_{ft}} \approx -0.2$ to -0.5

Understanding the micro results: COGS elasticity

Demand and price, firm f, sector j, country c:

$$q_{fjct} = \frac{X_{jct}}{P_{jct}^{1-\sigma}} p_{ft}^{-\sigma} \qquad p_{ft} = m_{ft} c_{ft}$$

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COGS:

$$\begin{aligned} COGS_{ft} &= m_{ft}^{-\sigma} c_{ft}^{1-\sigma} \frac{X_{jct}}{P_{jct}^{1-\sigma}} \\ \frac{d \ln COGS_{ft}}{d \ln c_{ft}} &= 1 - \sigma - \sigma \frac{d \ln m_{ft}}{d \ln c_{ft}} \end{aligned}$$

Therefore:

$$\frac{d \ln COGS_{ft}}{d \ln c_{ft}} > 0 \Leftrightarrow \frac{d \ln m_{ft}}{d \ln c_{ft}} < \frac{1}{\sigma} - 1 : \text{ Can it be?}$$

Markup elasticity

Atkeson-Burstein markup elasticity (textbook, Cournot):

$$m_{ft} = \left(1 - \frac{1}{\sigma} - \left(\frac{1}{\rho} - \frac{1}{\sigma}\right) s_{ft}\right)^{-1}; \qquad \frac{d \ln m_{ft}}{d \ln c_{ft}} = \left[\left((1-\sigma)\left(\frac{1}{\rho} - \frac{1}{\sigma}\right) s_{ft}\left(1 - s_{ft}\right) m_{ft}\right)^{-1} - 1\right]^{-1}$$

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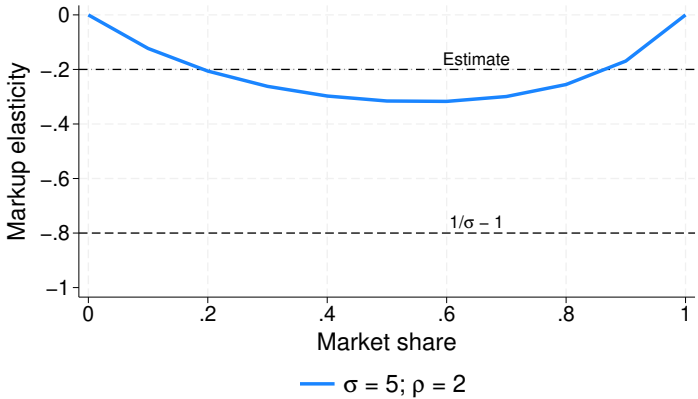
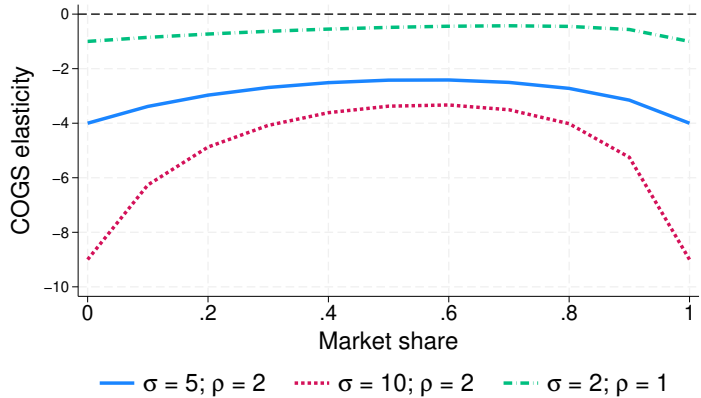


COGS elasticity

$$\frac{d \ln COGS_{ft}}{d \ln c_{ft}} = 1 - \sigma \left(1 + \frac{d \ln m_{ft}}{d \ln c_{ft}}\right)$$



Possibilities?

- Inelastic demand? $\sigma < 1$
- Incorrect sectoral aggregation/fixed effects? $COGS_{ft} = m_{ft}^{-\sigma} c_{ft}^{1-\sigma} P_{jct}^{\sigma-\rho} \times \underbrace{\frac{X_{sct}}{P_{sct}^{1-\rho}}}_{\delta_{st}}$
  - Would require (const. m) $\frac{d \ln P_{jct}}{d \ln c_{ft}} > \frac{\sigma-1}{\sigma-\rho}$
- COGS of exports? $COGS_{ft} \propto c_{ft}^{1-\sigma} \times \left(\frac{X_{jct}}{P_{jct}^{1-\sigma}} + \frac{\tau_{cc'jt}^{1-\sigma} X_{jc't}}{P_{jc't}^{1-\sigma}} \right)$
  - Would require positive (firm-level) demand shift in foreign markets
- Timing? COGS refers to a different time period than when tariffs were incurred?

Towards macro/aggregation

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Production:

$$c_{ft} = \left[(1-\omega) W_{ct}^{1-\epsilon} + \omega \left(P_{ft}^{X} \right)^{1-\epsilon} \right]^{\frac{1}{1-\epsilon}} \qquad P_{ft}^{X} = \left[\sum_{f'} \bar{\varpi}_{f'fs} \left(\tau_{c'cjt} p_{f'ft} \right)^{1-\chi} \right]^{\frac{1}{1-\chi}}$$

Expenditure:

$$X_{jct} = \alpha_j \left(W_{ct} L_{ct} + \Pi_{ct} + T_{ct} \right)$$

Need to know: elasticities + GE $\rightarrow$ Could make progress on elasticities?

Taking stock

- Exciting effort, impressive data collection, rich set of results
- Micro: benefit from understanding micro findings better
- Macro: still some distance

... but may make some progress to put micro estimates in service of macro