

Dynamic Effects of Trade Policy

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Persistent effects of trade policy

Recent reduced-form evidence finds persistent effects of trade policy on earnings and employment (e.g., Dix-Carneiro and Kovak 2017)

- ▶ Suggest frictions to spatial mobility

Introduce labor market dynamics to our framework

- ▶ Households are forward-looking, observe the economic conditions in all regions and sectors, and optimally decide at the end of each period where to supply labor and locate tomorrow
- ▶ Moving across locations is costly

Persistent effects of trade policy

- ▶ Households supply a unit of labor and receive a competitive wage w_t^n
 - ▶ Consume w_t^n/P_t^n , or home production if non-employed b^n
 - ▶ Households decide where to supply labor tomorrow

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 - ▶ Households decide where to supply labor tomorrow
- ▶ Value of labor market n for a household at time t is given by

$$u_t^n = \log(w_t^n/P_t^n) + \max_i \{ \beta E_t [u_{t+1}^i] - m^{n,i} + \varepsilon_t^i \}$$

- ▶ $m^{n,i}$ are mobility costs, ε_t^i idiosyncratic preferences (Type I EV) with dispersion parameter ν

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Aggregation: $U_{t+1}^n \equiv E_t[u_{t+1}^n]$, expected value of the HH (over ε_t^i)

$$\mu_t^{n,i} = \frac{\exp(\beta U_{t+1}^i - m^{n,i})^{1/\nu}}{\sum_{h=1}^N \exp(\beta U_{t+1}^h - m^{n,h})^{1/\nu}}$$

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Evolution of the distribution of labor across markets

$$L_{t+1}^n = \sum_{i=1}^N \mu_t^{i,n} L_t^i$$

- ▶ Straightforward to add multiple sectors and non-employment (see Caliendo and Parro 2021, CDP 2019)

Counterfactuals

- ▶ CDP (2019) propose a dynamic-hat algebra method that:
 - ▶ Allows to solve for counterfactual without having to identified unobserved fundamentals (productivities, migration frictions migration costs)
 - ▶ Do not need to assume the economy is in the steady state at the initial period

$$\dot{u}_{i,t} = \dot{w}_{i,t+1} \left(\sum_{n=1}^N \mu_{in,t} (\dot{u}_{n,t+1})^{\beta/\nu} \right)^{\nu}$$

$$\mu_{in,t+1} = \frac{\mu_{in,t} (\dot{u}_{n,t+1})^{\beta/\nu}}{\sum_{k=1}^N \mu_{ik,t} (\dot{u}_{k,t+1})^{\beta/\nu}}$$

$$L_{i,t+1} = \sum_{n=1}^N \mu_{ni,t} L_{n,t}$$

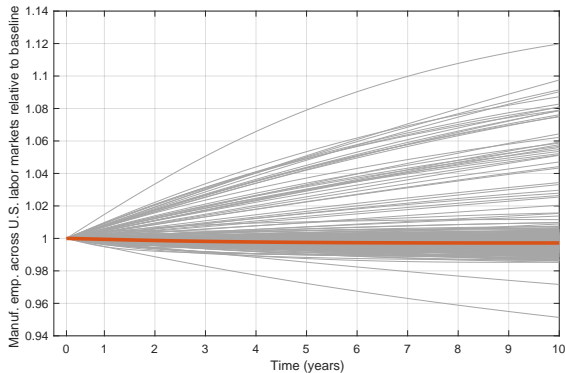
where $\dot{w}_{i,t+1} = w_{i,t+1}/P_{i,t+1}$ and $\dot{u}_{i,t} = \exp(V_{i,t+1} - V_{i,t})$.

Counterfactuals

- ▶ Solve for a baseline economy with the actual evolution of fundamentals relative to a counterfactual economy with counterfactual changes in fundamentals
- ▶ Additional data:
 - ▶ Gross flows across industries and locations
 - ▶ For the U.S. CPS, ACM

Persistent effects of trade policy

Figure: Trade war effects on manufacturing employment over time

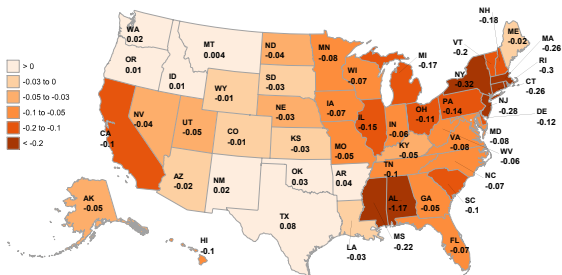


Note: The thick red line shows the U.S. aggregate manufacturing sector, and each gray thin line captures the effects across an individual U.S. manufacturing labor market.

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Figure: Welfare effects of the 2018 trade war across space

a) Changes in households' welfare (percent)



Trade policy and the location of firms

- ▶ The most frequent argument for trade protectionism is the idea that it can bring firms and jobs back home (Baldwin et al. 2003)
- ▶ To make a quantitative statement about this argument, we need to think about production location decisions by firms
- ▶ Questions:
 - ▶ Is trade policy able to revert the decline in manufacturing firms and employment located in the United States?
 - ▶ If so, where those firms attracted by trade protectionisms will locate?

Trade policy and the location of firms

- ▶ Extend the framework to introduce forward-looking dynamic decisions of firms on where to produce, entry and exit
- ▶ Reference: Caliendo and Parro (2021), “The Quantitative Effects of Trade Policy on Industrial and Labor Locations”
- ▶ Findings
 - ▶ Positive location Effects
 - ▶ But at the cost of higher prices and lower welfare