Why Is Trade Not Free?
A Revealed-Preference Approach

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- One prominent answer: **redistributive politics** ... with many potential drivers
  - Direct democracy (median voter?)
  - Electoral-college votes (swing states?)
  - Special interests (organized sectors?)

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  1. Who wins and who loses from redistributive trade policy?
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- **This paper's idea:**
  - Abstract from the specifics of the political process, but leverage common (weak) efficiency property of such political processes
  - Use observed tariff choice to **reveal preference** for $\neq$ constituents of society

This Paper's Contribution

- **Tariff formula** describing constrained Pareto-efficient trade taxes on good g

$$\text{tariff}_g = -\sum_n \text{weight}(n) \times \left(\frac{\partial \text{real earnings}\,(n)}{\partial \text{imports}_g} \right) + (\text{other motives})_g$$

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- **Main findings**:
  1. Who wins and who loses from redistributive trade policy? **Sectors! Not states.**
  2. How much of observed tariff variation can redistributive trade policy explain? **30%**
  3. How large are the implied transfers? **P90-P10 gap is $2.4K p.a.** across US pop.

Related Literature

- **Political economy of trade policy:**
  - *Theory (with constrained efficient politics)*: e.g., Mayer (1984), Grossman & Helpman (1994), Dixit et al (1997), Ma & McLaren (2018)
  - *Empirics*: e.g., Goldberg & Maggi (1999), Gawande & Bandyopadhyay (2000), Mitra et al (2002), Bombardini (2008), Gawande et al (2009)
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- **Revealed preference approach:**
  - *Invert optimum welfare weights*: e.g., Werning (2007), Bourguignon & Spadaro (2012), Jacobs et al (2017)
  - *Optimal tax formula:* Diamond and Mirrlees (1971), Greenwald and Stiglitz (1986), Costinot & Werning (2023)
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  - This paper: recover welfare weights from tariffs using new tariff formula
- **Empirics of tariff incidence:** Attanasio et al (2004), Topalova (2010), Kovak (2013), Dix-Carneiro & Kovak (2017), Fajgelbaum et al (2020), Adao et al (2023)
  - This paper: Use estimates of causal impact of tariffs on earnings of different individuals as an input into analysis of redistributive trade policy

A General Tariff Formula

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- **Competitive equilibrium with trade taxes t:** firms max profits and individuals max utility given domestic prices, the government budged is balanced, and domestic and foreign markets clear. Equations

Pareto-Efficient Trade Taxes

- No assumption about specifics of political process through which t is chosen
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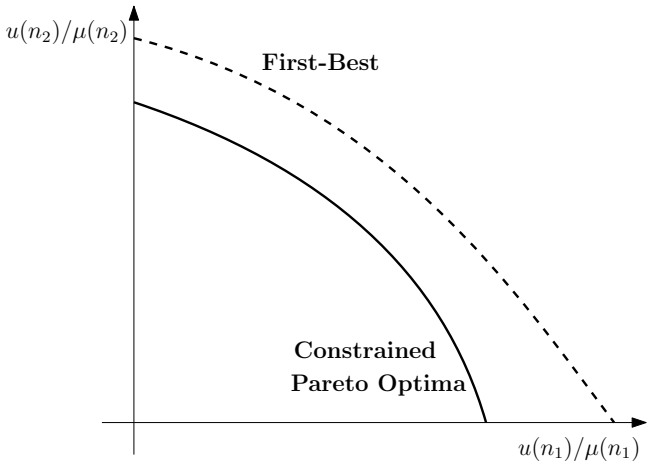
Definition (Pareto-efficient trade taxes)

A vector of trade taxes t^* is *constrained Pareto-efficient* if there exists an individual n_0 and a vector of utility $\{\underline{u}(n)\}_{n \neq n_0}$ such that t^* solves

$$\begin{aligned} \max_{t \in \mathcal{T}} \max_{\{u(n)\}} \quad & u(n_0) \\ \text{subject to :} \quad & u(n) \geq \underline{u}(n) \text{ for } n \neq n_0, \\ & \{u(n)\} \in \mathcal{U}(t), \end{aligned}$$

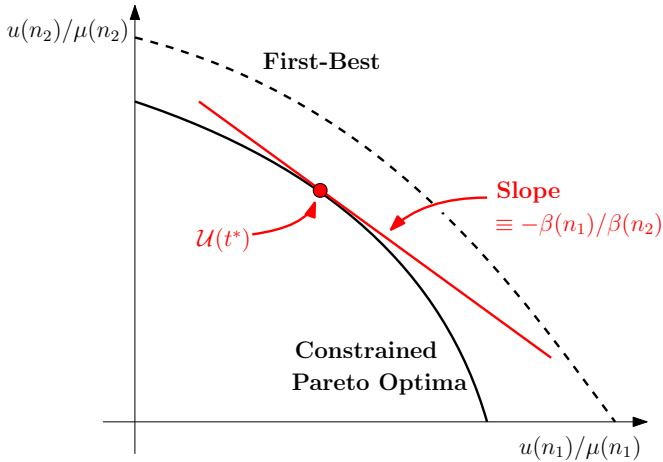
where $\mathcal{U}(t) =$ set of utility profiles in competitive equilibrium with trade taxes t.

Pareto-Efficient Trade Taxes: A simple case with two individuals



$\mu(n)$ is marginal utility of income for n

Pareto-Efficient Trade Taxes: Slope of the tariff-constrained frontier at t^* reveals the relative social marginal returns of transfers, $\beta(n)$



Characterizing Pareto-Efficient Trade Taxes (no externalities)

- Start from optimum t^* and consider tax change dt. Pareto optimality requires

$$\sum_n \nu(n) du(n) = 0$$

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- Combining these expressions, and letting $\beta(n) \equiv \nu(n)\mu(n)/[\sum_{n'} \nu(n')\mu(n')/N]$,

$$\underbrace{-\ t^* \cdot dm}_{\text{mg cost of fiscal rev}} = \underbrace{\sum_n \beta(n)(d\omega(n) - d\bar{\omega})}_{\text{mg benefit of redistribution}} - \underbrace{m \cdot dp^w}_{\text{mg benefit of ToT}}$$

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- Formula follows from tariff change dt that yields dm_g and $dm_{g'} = 0$ for $\forall g' \neq g$

A General Tariff Formula

Proposition 1 (Characterizing Pareto-efficient trade taxes)

Pareto efficient trade taxes t^* satisfy

$$t_g^* = \underbrace{-\sum_n \beta(n) \frac{\partial(\omega(n) - \bar{\omega})}{\partial m_g}}_{\textbf{redistribution}} \qquad \text{for all } g \in \mathcal{G}^T,$$

- $\beta(n)$**:** social marginal return of transfer to n, with $\sum_n \beta(n) = 1$
- $\frac{\partial(\omega(n)-\bar{\omega})}{\partial m_g}$: real earnings impact on n (rel. to avg.) caused by change in imports of good g—"sensitivity of real earnings to imports"

Example: Grossman and Helpman (1994)

Pigouvian perspective: If domestic individuals and firms don't internalize negative impact of good g's imports on social welfare, then optimal tariff asks them to pay for it

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- $\epsilon \equiv \{\epsilon_{z_k}\}$: social marginal cost of various externalities z_k

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Extensions

- **Other Policy Instruments:**
  - *Standards s* ($\Upsilon(z, s; f)$, $u(c(n), z, s; n)$, $\Omega(p^w, z, s)$): same formula
  - *Anti-dumping duties* t^{AD}*:* add their per unit cost to tariffs, $t + t^{AD}$
  - *Production taxes* t^y: add associated fiscal externality, $t^y \cdot \partial y / \partial m_g$
  - *Income taxes:* same formula w/ post-tax changes in real earnings, $(1 - \tau(n))d\omega(n)$

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- **Negotiated Trade Taxes:**
  - If negotiations make Home puts weight on utility in country j, then ToT term becomes $\sum_j (1 - \beta(j)) \left(m(j) \cdot \partial p^w / \partial m_g \right)$

Measuring the Sensitivity of Real Earnings to Imports

How to Measure $\frac{\partial(\omega(n)-\bar{\omega})}{\partial m_g}$ for the US?

- **Direct estimation of $\frac{\partial(\omega(n)-\bar{\omega})}{\partial m_g}$?**
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- **Step 1:** Use quantitative model of the US to compute how imports of 535,199 goods (product-country *ih*) affect real income in 1,173 groups (state-sector *rs*),

$$\frac{\partial(\omega-\bar{\omega})}{\partial m} \equiv \left\{ \frac{\partial(\omega_{rs}-\bar{\omega})}{\partial m_{ih}} \right\}_{rs,ih}$$

  - good: *h* is 6-digit HS (5,299 codes), *i* is a country (100 top partners + RoW)
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- **Basic idea:** Not enough tariff variation for direct estimation, but enough to test model's predictions and help build credibility of model-implied $\frac{\partial(\omega(n)-\bar{\omega})}{\partial m_g}$

Model: Extension of Fajgelbaum, Goldberg, Khandelwal, Kennedy (2020)

- **Quantitative model:** simplified version of a gravity-like trade model
  - US technology + preferences:
    - Nested CES with elasticities from FGKK's (2020) trade war estimates
    - Domestic trade costs + product differentiation across regions
    - Consumption externalities (to rationalize other motives for trade policy)
  - Foreign export supply and import demand:
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- **Calibration:** technology and preference shifters to match US data from 2017:
  - Value-added and employment by US region r and sector s (regional BEA data)
  - Domestic trade flows by US region r and sector s (national IO + CFS flows)
  - International trade flows by US region r, foreign country i, and product h (Census)
  - US specific tariffs inferred from $t_{ih} = t_{ih}^{av}/(1 + t_{ih}^{av})$ (USITC)

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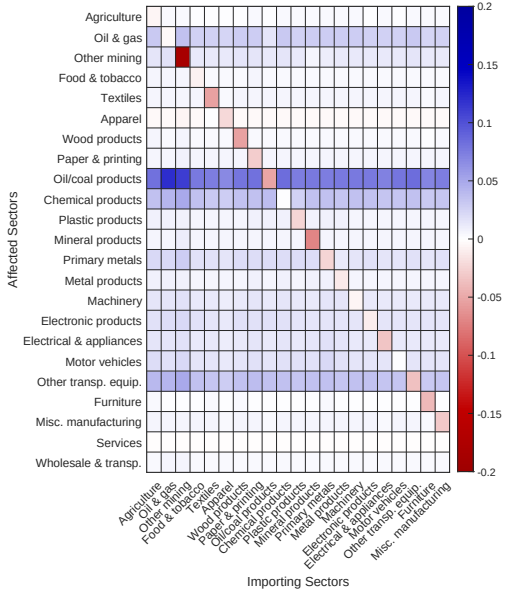
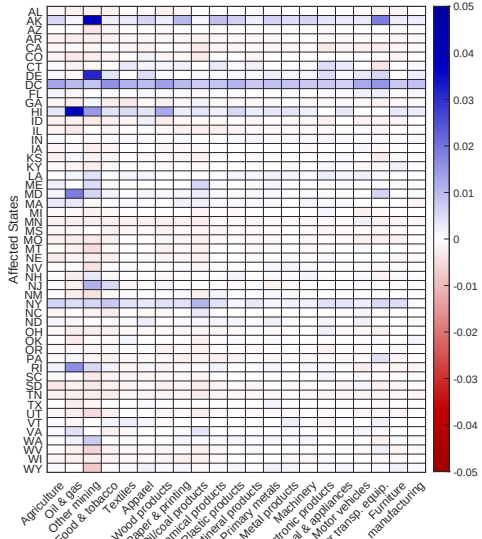
Sensitivity of Real Earnings to Imports: Average by Sector s



Sensitivity of Real Earnings to Imports: Average by Region r



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- Use US-China trade war to test model's predictions about earnings per capita changes (2017-2019) across sectors and regions

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- Apply method in ACD (2023): compare predicted and observed changes in relative earnings, up to a projection on IV

$$\Delta \log w_{rs}^{\text{obs.}} = \alpha_0^{\text{obs.}} + \alpha_1^{\text{obs.}} z_{rs} + \varepsilon_{rs}^{\text{obs.}}$$
$$\Delta \log w_{rs}^{\text{pred.}} = \alpha_0^{\text{pred.}} + \alpha_1^{\text{pred.}} z_{rs} + \varepsilon_{rs}^{\text{pred.}}$$

  - IV from 2017-2019 tariff shocks (mean-independent from other shocks to earnings)

$$z_{rs} \equiv \sum_{i,h} \frac{\partial \log w_{rs}}{\partial t_{ih}} (\Delta t_{ih} - \overline{\Delta t}) + \sum_{i,h} \frac{\partial \log w_{rs}}{\partial t_{ih}^F} (\Delta t_{ih}^F - \overline{\Delta t})$$

  - Inference allows for arbitrary GE dependence in residuals (iid tariff shocks over ih)

Validating Model-Implied Sensitivity of Earnings to Imports

Outcome:	Log-change in			
	earnings per worker			employment
	observed	predicted	obs. - pred.	observed
	(1)	(2)	(3)	(4)
Estimate	1.792	1.173	0.620	-0.481
St. error	(0.548)	(0.020)	(0.567)	(0.356)
p-value	0.001	0.000	0.274	0.177
R^2	0.015	0.994	0.001	0.006

Notes: Sample of 1,055 region-sector pairs with w_{rs}. All specifications include a constant and are weighted by employment in 2017. Observed outcomes in columns (1), (3) and (4) correspond to changes between 2017 and 2019; predicted outcomes in columns (2) and (3) correspond to our model's predictions for the impact of US and foreign tariff changes between 2017 and 2019. Standard errors in parentheses computed with ACD's version of inference for shift-share specifications clustered by 6-digit HS product. Figure

- Column (4) echoes findings in Flaaen and Pierce (2021) and Autor et al (2023)

Putting the Formula to Work

Estimation: Baseline specification and identification

- Suppose:

$$\beta(n) = \sum_{j \in \mathcal{J}} \text{Dummy}_j(n) \times \beta_j$$

  - $\text{Dummy}_j(n) = 1$ iff individual n belongs to group j, defined as "works in sector s" ($\{\beta_s\}_{s \in \mathcal{S}}$) and "resides in region r" ($\{\beta_r\}_{r \in \mathcal{R}_H}$)

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Baseline: OLS, Controls_{ih} including constant and ToT motive ($m \cdot \partial p^w / \partial m_{ih}$)

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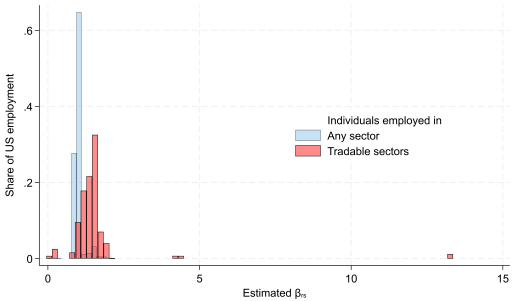
  Baseline: OLS, Controls_{ih} including constant and ToT motive ($m \cdot \partial p^w / \partial m_{ih}$)

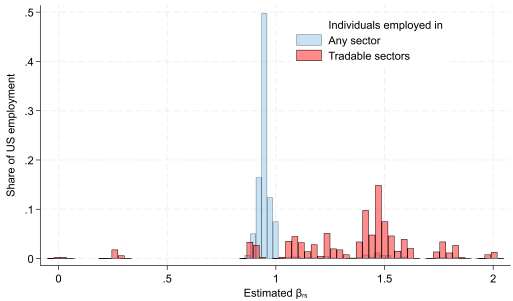
- **Identification:** other (non-controlled) motives in ε_{ih} are orthogonal to $\frac{\partial(\omega_j - \bar{\omega})}{\partial m_{ih}}$
  - Theory-consistent alternative specifications attest robustness to: other policy instruments, tariff constraints, trade negotiation, simultaneity bias, additional groups

Baseline OLS Estimates of $\hat{\beta}_{rs} \equiv \hat{\beta}_s + \hat{\beta}_r$

All estimates



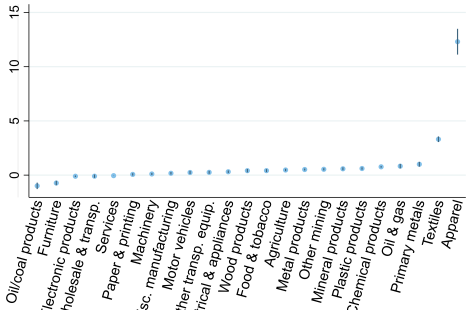
Truncated estimates



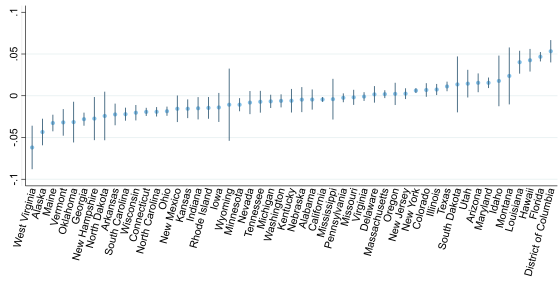
1. Trade policy is far from redistribution-neutral: substantial dispersion, with long upper tail (P99, P95 and P90 are 91%, 53% and 8% higher than P10)
2. Typically, welfare weights are higher for workers employed in tradable sectors
3. Pareto-efficiency test (Werning, 2007): cannot reject positive weights

A First Look at Winners and Losers

$\hat{\beta}_s - \frac{1}{S}\sum_s \hat{\beta}_s$



$\hat{\beta}_r - \frac{1}{R_H}\sum_r \hat{\beta}_r$



- Sector-based redistribution > Region-based redistribution by order of magnitude

Average welfare weight | Without Apparel | state vs sector variation

Sensitivity Analysis: in all cases, high correlation with baseline $\hat{\beta}$

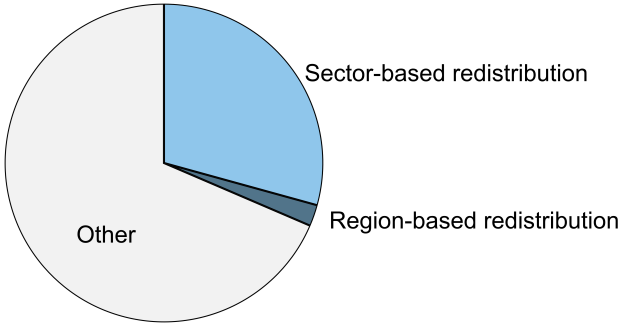
1. Other policy instruments: Instruments
   - 1.1 Non-tariff measures: Dummies to controls for the common effect of 6 types of NTMs
   - 1.2 Income taxes: Adjust real earnings by the average marginal tax rate of sector-state
2. Constrained trade taxes: Constraints Trade war
   - 2.1 Unrestricted subsample: 3.4% of obs not restricted by PTA or WTO bounds
   - 2.2 MFN restrictions: Implementation assuming all WTO members face same tariff
3. Negotiated trade taxes: Negotiations
   - 3.1 Separate ToT control for each of the 101 foreign countries
4. Econometric concerns: Other specifications
   - 4.1 Simultaneity bias: IV with sensitivity around free trade counterfactual eq
   - 4.2 Tariff censoring at zero: Tobit model under normally distributed residuals
   - 4.3 Welfare weights that depend on gender, race and education Weights by group

How Important Is Redistributive Trade Protection?

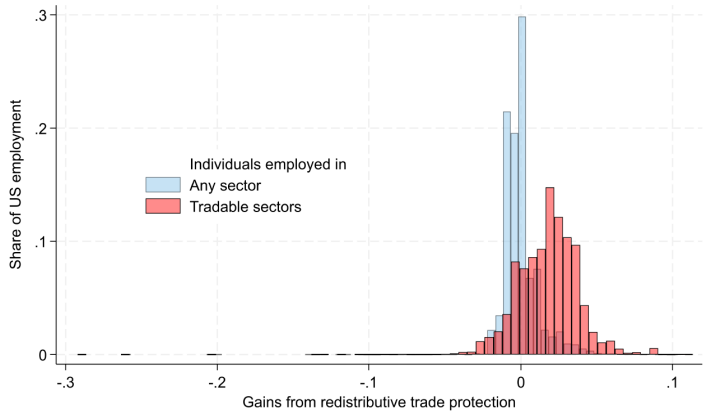
Importance of Redistributive Trade Protection: Tariff Variation

- Shapley-Owen decomposition applied to redistribution terms in

$$t_{ih} = \underbrace{-\sum_{s\in\mathcal{S}} \hat{\beta}_s N_s \frac{\partial(\omega_s - \bar{\omega})}{\partial m_{ih}}}_{\text{Sectors}} \underbrace{- \sum_{r\in\mathcal{R}_H} \hat{\beta}_r N_r \frac{\partial(\omega_r - \bar{\omega})}{\partial m_{ih}}}_{\text{States}} \underbrace{+ \text{Controls}_{ih} + \varepsilon_{ih}}_{\text{Other}}$$



Importance of Redistributive Trade Protection: Implicit Transfers



Details

1. P99, P95 and P90 are 5.1, 3.4, and 2.0 percentage points higher than P10
2. Average gain for tradable workers is 2.1 p.p. higher than for non-tradable workers
3. Top and bottom decile difference equivalent to $2,450p.a.

A Final Look at Winners and Losers

Table: Winners and losers from redistributive trade protection

Outcome:	Estimated welfare weight	Estimated protection gain
	(1)	(2)
High trade-lobbying sector	0.675	0.018
	(0.104)	(0.002)
Swing state	0.000	0.001
	(0.014)	(0.002)
R^2	0.091	0.095

Notes: Sample of 1,080 region-sector pairs with positive employment in 2017. All specifications include a constant and are weighted by employment in 2017. In column (1), the dependent variable is the estimated welfare weight of each region-sector, $\hat{\beta}_{rs} = \hat{\beta}_s + \hat{\beta}_r$; in column (2), it is the estimated gain from redistributive trade protection. Robust standard errors in parentheses.

Concluding Remarks

Concluding Remarks

- **A revealed preference approach:**
  - Tariff $= \sum_n$ (social return)$_n \times$ (economic return to importing)$_n +$ (other motives)
  - Given measures of (economic return to importing)$_n$, tariff schedule can be used to reveal each (social return)$_n$

- **Lessons from US trade policy:**
  - Redistributive trade protection is important:
    - Explains around 30% of tariff variation across goods
    - Creates large as-if transfers across US population
  - Redistributive trade protection is primarily driven by preference bias for certain sectors rather than states (or other demographic characteristics)

- **In progress:**
  - "A World Trading System for Whom?": Reveal Pareto weights *across countries* and shed light on the distribution of the gains from international cooperation

Model: Domestic Technology

- For each region $r \in \mathcal{R}_H$, destination $d \in \mathcal{R}_H \cup \mathcal{R}_F \equiv \mathcal{R}$, and product $h \in \mathcal{H}_s$ from sector $s \in \mathcal{S}$, there is a representative firm $f \in \mathcal{F}$ whose gross output $q(f)$ is

$$q(f) = \theta_{rds}[\ell_{rs}(f)]^{\alpha_s} \prod_{k \in \mathcal{S}} [Q_{rk}(f)]^{\alpha_{ks}},$$

$$Q_{rk}(f) = \left[\sum_{c=H,F} (\theta^c_{rk})^{\frac{1}{\kappa}} [Q^c_{rk}(f)]^{\frac{\kappa-1}{\kappa}} \right]^{\frac{\kappa}{\kappa-1}},$$

$$Q^c_{rk}(f) = \left[\sum_{v \in \mathcal{H}_k} (\theta^c_{rkv})^{\frac{1}{\eta}} [Q^c_{rkv}(f)]^{\frac{\eta-1}{\eta}} \right]^{\frac{\eta}{\eta-1}},$$

$$Q^c_{rkv}(f) = \left[\sum_{o \in \mathcal{R}_c} (\theta^c_{orkv})^{\frac{1}{\sigma}} [q_{orv}(f)]^{\frac{\sigma-1}{\sigma}} \right]^{\frac{\sigma}{\sigma-1}},$$

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Model: Domestic Preferences

- In each region $r \in \mathcal{R}_H$, the utility $U(n)$ of any individual n is

$$U(n) = E(z,n) \prod_{s \in \mathcal{S}} [C_{rs}(n)]^{\gamma_s},$$

$$C_{rs}(n) = \left[\sum_{c=H,F} (\theta^c_{rs})^{\frac{1}{\kappa}} [C^c_{rs}(n)]^{\frac{\kappa-1}{\kappa}} \right]^{\frac{\kappa}{\kappa-1}},$$

$$C^c_{rs}(n) = \left[\sum_{h \in \mathcal{H}_s} (\theta^c_{rsh})^{\frac{1}{\eta}} [C^c_{rsh}(n)]^{\frac{\eta-1}{\eta}} \right]^{\frac{\eta}{\eta-1}},$$

$$C^c_{rsh}(n) = \left[\sum_{o \in \mathcal{R}_c} (\theta^c_{orsh})^{\frac{1}{\sigma}} [c_{orh}(n)]^{\frac{\sigma-1}{\sigma}} \right]^{\frac{\sigma}{\sigma-1}},$$

- $E(z,n)$ denotes the impact of externalities on the utility of individual n

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Model: Foreign Offer Curve

- For each foreign country $i \in \mathcal{R}_F$, domestic region $r \in \mathcal{R}_H$, and product $h \in \mathcal{H}$, gross exports $q_{irh}^{X,F}$ and gross imports $q_{rih}^{M,F}$ satisfy

$$p_{irh}^{X,F} = \theta_{irh}^{X,F} (q_{irh}^{X,F})^{\psi^{X,F}},$$
$$p_{rih}^{M,F} = \theta_{rih}^{M,F} (q_{rih}^{M,F})^{-\psi^{M,F}},$$

  - $p_{irh}^{X,F}$: price received by foreign sellers of product h in country i serving region r
  - $p_{rih}^{M,F}$: price paid by foreign buyers of product h from region r in country i

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Competitive Equilibrium with Trade Taxes

1. Each firm f chooses $y(f)$ to maximize profits

$$\max_{y \in \Upsilon(z;f)} p \cdot y$$

2. Each individual n chooses $c(n)$ to maximize utility subject to budget constraint

$$\max_c u(c, z; n)$$
$$\text{subject to: } p \cdot c = p \cdot y(n) + \tau$$

3. All markets clear

$$\sum_n c(n) = \sum_f y(f) + m$$

4. The government's budget is balanced

$$t \cdot m = N\tau$$

5. Domestic prices satisfy $p_g = p_g^w + t_g$; net imports satisfy $m \in \Omega(p^w, z)$; and externalities satisfy $z \in \mathcal{Z}(\{y(f), c(n)\}, m, p, p^w)$ Back

A Look Back at a Classic: Grossman and Helpman (1994)

$$t_g^* = \left(\frac{I_s - \alpha_L}{a + \alpha_L}\right)\left(\frac{Z_s}{e_s}\right)$$

- $\left(\frac{I_s - \alpha_L}{a + \alpha_L}\right) \equiv$ social marginal return $\beta(s)$ of transfers to sector s
  - Takes only two values depending on whether n lobbies ($I_s = 1$) or not ($I_s = 0$)
- $\left(\frac{Z_s}{e_s}\right) \equiv$ changes in real earnings $\frac{\partial(\omega_s - \bar{\omega})}{\partial m_s}$ individual employed in sector s
  - Calibration uses import penetration ratio (Z_s) and import demand elasticity (e_s)

Back

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  - Calibration uses import penetration ratio (Z_s) and import demand elasticity (e_s)
- **This paper's perspective:**

$$t_g^* = -\beta \cdot \frac{\partial(\omega - \bar{\omega})}{\partial m_g}$$

  - Keep political process and hence β unrestricted, except for Pareto efficiency
  - In order to go from t to β, key to measure changes in real earnings $\frac{\partial(\omega - \bar{\omega})}{\partial m_g}$

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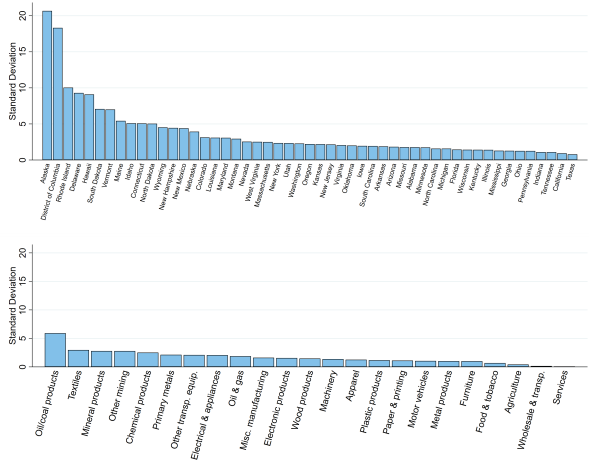
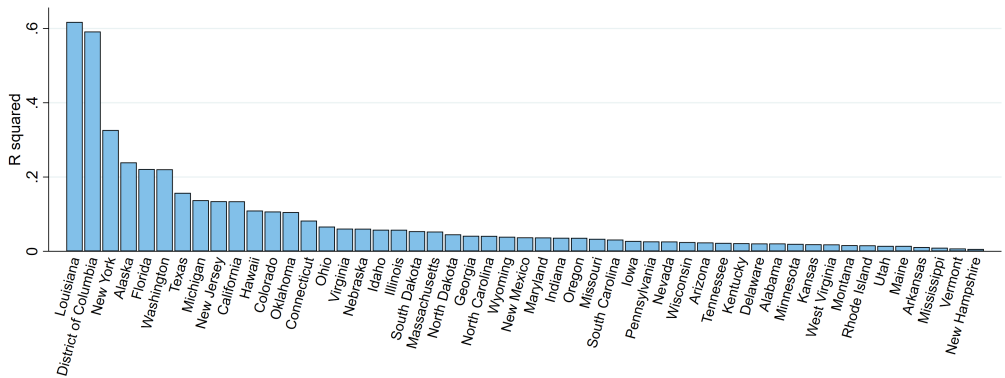
Standard Deviation of $\frac{\partial \omega_s}{\partial m_{ih}}$ and $\frac{\partial \omega_r}{\partial m_{ih}}$



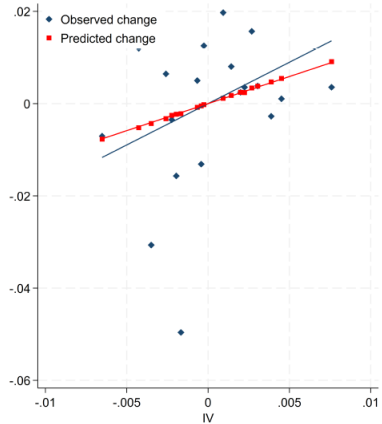
Import Sensitivity Welfare weights

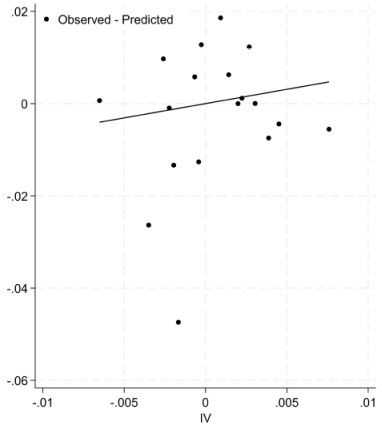
R^2 of regressing $\partial(\omega_r - \bar{\omega})/\partial m_{ih}$ on the set $\{\partial(\omega_s - \bar{\omega})/\partial m_{ih}\}_{s \in \mathcal{S}}$



Import Sensitivity Welfare weights

Graphical Representation of Test





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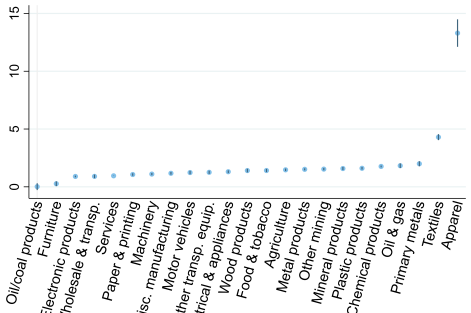
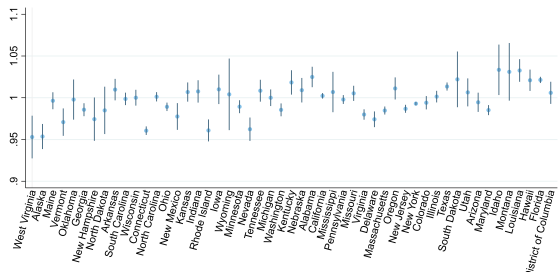
Who Wins and Loses? Average Welfare Weights

$$\bar{\beta}_s \equiv \sum_r (N_{rs}/N_s)\hat{\beta}_{rs}$$



$$\bar{\beta}_r \equiv \sum_s (N_{rs}/N_r)\hat{\beta}_{rs}$$



- Sector-based redistribution $>$ Region-based redistribution by order of magnitude

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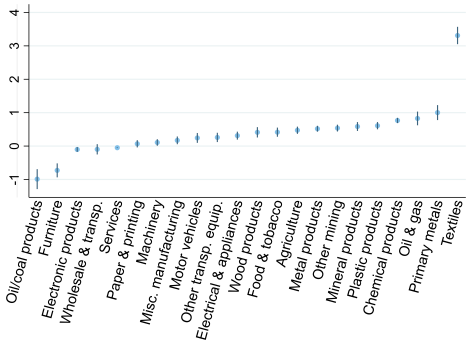
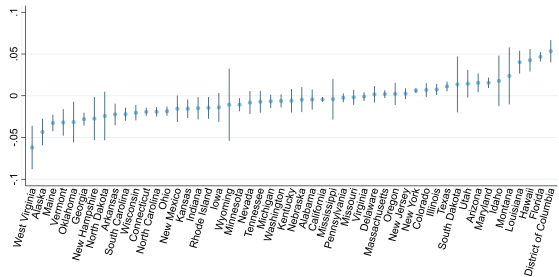
Who Wins and Loses? (Without Apparel)

$\hat{\beta}_s - \frac{1}{S}\sum_s \hat{\beta}_s$



$\hat{\beta}_r - \frac{1}{R_H}\sum_r \hat{\beta}_r$



- Sector-based redistribution $>$ Region-based redistribution by order of magnitude

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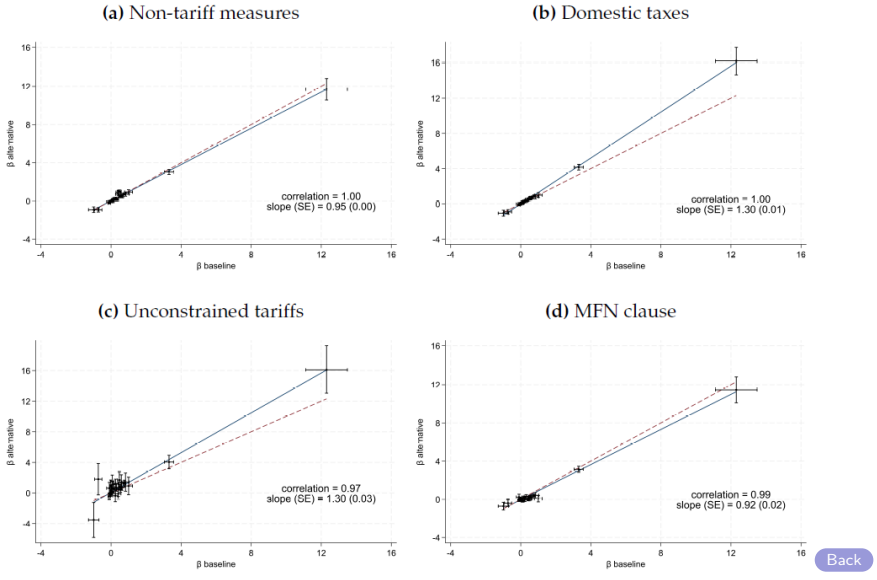
Sensitivity Analysis



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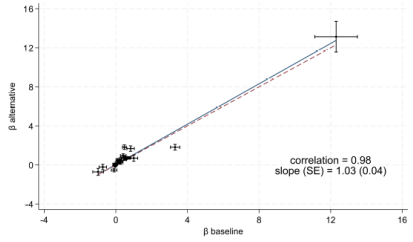
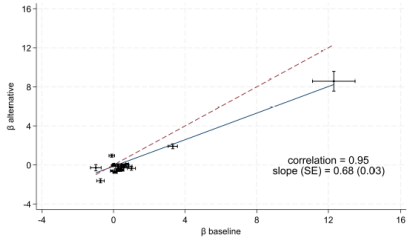
Sensitivity Analysis (continued)

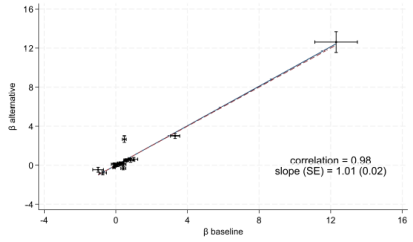
(a) Negotiated trade taxes



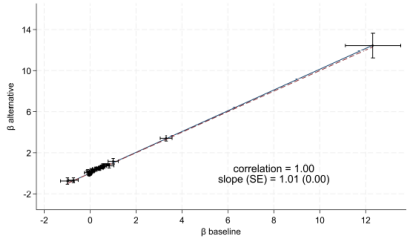
(b) Reverse causality from tariffs to imports



(c) Censoring of tariffs at zero



(d) Controlling for education, gender, and race



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Sensitivity Analysis (Table)

	All (1)	Drop apparel (2)	Employment-weighted (3)
Panel (a): Non-tariff measures			
Slope	0.95	0.96	0.99
(SE)	(0.00)	(0.04)	(0.04)
Correlation	1.00	0.97	0.98
Panel (b): Domestic taxes			
Slope	1.30	1.21	1.29
(SE)	(0.01)	(0.04)	(0.02)
Correlation	1.00	1.00	1.00
Panel (c): Unconstrained tariffs			
Slope	1.30	1.28	1.34
(SE)	(0.03)	(0.23)	(0.07)
Correlation	0.97	0.75	0.87
Panel (d): MFN clause			
Slope	0.92	0.77	0.86
(SE)	(0.02)	(0.13)	(0.07)
Correlation	0.99	0.92	0.95
Panel (e): Negotiated trade taxes			
Slope	1.03	0.75	1.12
(SE)	(0.04)	(0.16)	(0.09)
Correlation	0.98	0.80	0.90
Panel (f): Reverse causality from tariffs to imports			
Slope	0.68	0.42	0.55
(SE)	(0.03)	(0.15)	(0.13)
Correlation	0.95	0.54	0.58
Panel (g): Censoring of tariffs at zero			
Slope	1.01	0.88	1.08
(SE)	(0.02)	(0.07)	(0.11)
Correlation	0.98	0.82	0.84
Panel (h): Controlling for education, gender, and race			
Slope	1.01	1.03	1.03
(SE)	(0.00)	(0.02)	(0.02)
Correlation	1.00	0.98	0.98

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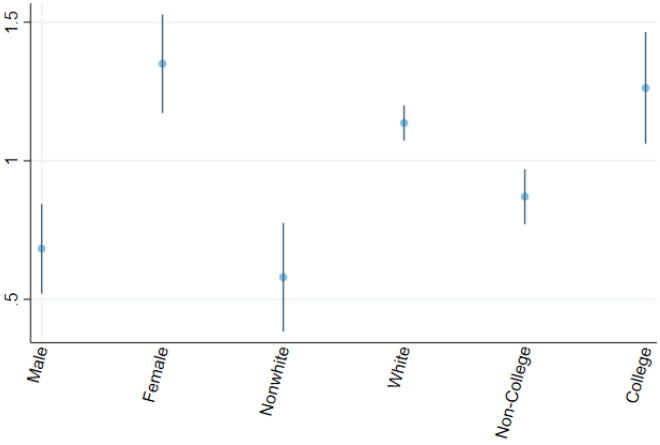
Average Welfare Weight of Demographic Groups



Average welfare weight for each demographic group

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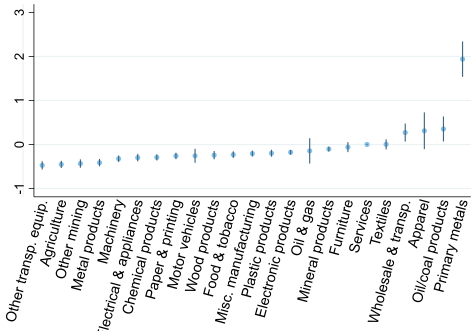
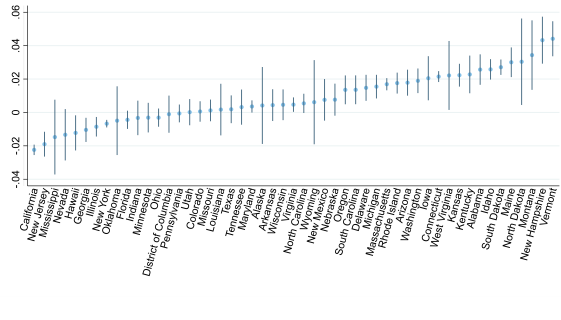
Changes in Welfare Weights in 2017-2019

$\hat{\beta}_s^{2019} - \hat{\beta}_s^{2017}$



$\hat{\beta}_r^{2019} - \hat{\beta}_r^{2017}$



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Importance of Redistributive Trade Protection: Implicit Transfers

- Counterfactual US economy with trade taxes implied by equal welfare weights:

$$t'_{ih} = t_{ih} + \sum_{s \in \mathcal{S}} \hat{\beta}_s N_s \frac{\partial(\omega_s - \bar{\omega})}{\partial m_{ih}} + \sum_{r \in \mathcal{R}_H} \hat{\beta}_r N_r \frac{\partial(\omega_r - \bar{\omega})}{\partial m_{ih}}$$

- We hold fixed other motives for trade protection
  - Estimated changes in ToT motive are small in practice
  - Other efficiency motives cannot change either (e.g., externalities only depend on imports and world prices)

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