Politically Motivated Trade Protection

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Motivation

- The **president of the United States**, one of the world's most powerful political leaders, is **not directly elected by citizens**
    - Citizens express their preference for a candidate from one party
    - The party winning most votes in a state appoints *all* state's "electors"
    - The Electoral College chooses the president

- One of the main criticisms of this system is that it gives **too much power to swing states**, in which a small difference in votes can shift all electors

- Presidential candidates spend more time and money during their **campaigns** in states expected to be swing (Strömberg, 2008)

- We show that this electoral system distorts **actual policies**, benefiting key industries in swing states but hurting other industries along supply chains

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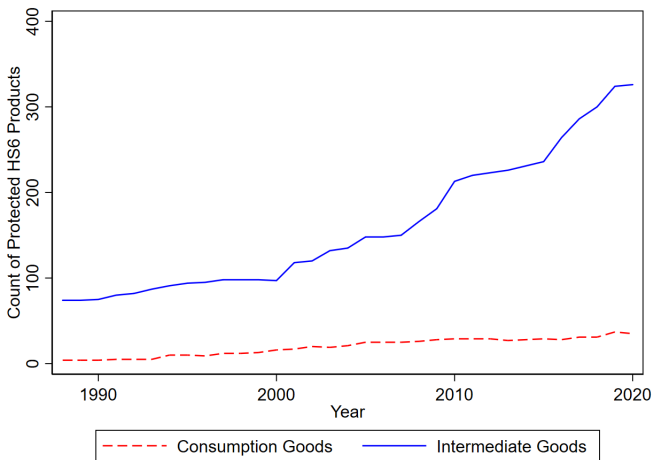
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- We focus on **trade policy**, which is set at **federal** level and can be used to **protect key industries in states expected to be swing**

- E.g., during his first term, President George W. Bush introduced

  - Measures on imports of steel from China and other countries, to gain votes in Ohio and Pennsylvania ("Bush policies follow politics of states needed in 2004," *USA Today*, June 16, 2002)

  - Measures on imports of furniture from China, to gain votes in Wisconsin ("China's furniture boom festers in the U.S.," *The New York Times*, January 29, 2004)

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- The **effects of trade barriers propagate along supply chains**: protecting key intermediate goods (e.g., steel) can have **large detrimental effects on downstream sectors** (e.g., motor vehicles, construction)

- For example, the CEO of the Bicycle Corporation of America complained about tariffs on Chinese imports of bike components, steel and aluminium, which have raised production costs. As a result, the industry's "plans to expand are on hold, costing American jobs." ("The Trouble with Putting Tariffs on Chinese Goods," *The Economist*, May 16, 2019)

- This concern is particularly severe for the highly political temporary trade barriers (AD duties, countervailing duties, safeguards), which are **skewed towards key input industries** (e.g., steel, chemicals, auto parts)

US AD duties on intermediate and consumption goods (1989-2020)

This paper

- New dataset, combining detailed information on protectionist measures applied by the US during the last decades with data on input-output linkages

  - Main sample: eight presidential terms covering 1989-2020

  - Robustness checks: excluding Trump's presidency

- The level of protection granted to an industry during a term depends on its importance in states expected to be swing in that term

- The effects depends on whether the executive can be re-elected

- New shift-share instrument to study the distributional effects of politically motivated trade protection along supply chains:

  - Protected sectors gain (higher employment growth)

  - Downstream sectors lose (lower employment growth)

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Related literature

- Electoral rules (e.g., Alesina and Roubini, 1992; Persson *et al.*, 1997; Persson *et al.*, 2003; Persson and Tabellini, 2004; Ferraz and Finan, 2011)

    - Effects of the **Electoral College** on policy and industry outcomes

- Swing-state politics (e.g., Strömberg, 2008; Muûls and Petropoulou, 2013; Conconi *et al.*, 2017; Ma and McLaren, 2018)

    - **Causal effects of policies** driven by swing-state politics

- AD duties (e.g., Finger *et al.*, 1982; Bloningen and Park, 2004; Pierce, 2011; Bown and Crowley, 2013; Blonigen and Prusa, 2016)

    - **Instrument** for politically motivated AD duties

- Trade policy and input-output linkages (e.g., Amiti and Konings, 2007; Goldberg *et al.*, 2010; Antràs *et al.*, 2017; Erbahar and Zi, 2017; Conconi *et al.*, 2018 Barattieri and Cacciatore, 2023)

    - Effects of **trade protection driven by political shocks**

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  - Effects of **trade protection driven by political shocks**

Outline

1 Introduction

2 Data and variables

3 Swing-state politics and trade protection

4 Effects of political trade protection

5 Conclusion

Data sources

- **Temporary Trade Barriers Database** from Bown *et al.* (2020) for **AD duties and other TTBs** (countervailing duties and safeguards)

- UN Comtrade for **trade flows**

- **Input-output (IO) tables** from the Bureau of Economic Analysis

- County Business Patterns for **employment**

- Dave Leip's Atlas of U.S. Presidential Elections and MIT Election Data and Science Lab for **electoral outcomes**

Protectionist measures

- Our main focus is on **antidumping (AD) duties**

  - most widely used trade barrier (e.g., Blonigen and Prusa, 2016) ▶

  - most political protectionist measure (e.g., Finger *et al.*, 1982) ▶

- We consider measures against **China**

  - Perceived as a major threat by US voters (Alfaro *et al.*, 2023)

    - **Rise as a world trading power**, with sizable effects on US labor market outcomes (Autor *et al.*, 2013)

    - **Biggest target of US AD protection** (accounting for 73% of US AD measures since its accession to the WTO)

  - Non-market economy (NME) status

    - **More flexible** methods to compute dumping margins

    - **Higher duties** (average of 160% vs. 48% for other countries)

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Data on input-output linkages

- BEA tables can be used to trace **IO linkages** between 479 SIC4 industries

- Some manufacturing industries are **key inputs** for the rest of the economy
  (e.g., steel, organic chemicals, plastics) ▶

Exposure to trade protection

Direct exposure of industry j during presidential term T:

$$Direct\ Tariff\ Exposure_{j,T} = Trade\ Protection_{j,T}$$

Trade Protection$_{j,T}$: share of HS6 products within industry j that are subject to AD duties during term T

Indirect exposure of industry j during presidential term T:

$$Downstream\ Tariff\ Exposure_{j,T} = \sum_{i=1}^{N} \omega_{i,j} Trade\ Protection_{i,T}$$

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$\omega_{i,j}$: cost share of input i in production of j

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Swing states

- *Swing State*$_{s,T}$ = 1 if **vote margin** between the Democratic and Republican candidates in the midterm House elections is **below 5%**

Importance of industries in swing states

- Total employment in industry j in states expected to be swing during term T, over total employment in those states across all industries:

$$Swing\ Industry_{j,T} = \frac{\sum_s L_{s,j} \times Swing\ State_{s,T} \times EV_s}{\sum_s \sum_j L_{s,j} \times Swing\ State_{s,T} \times EV_s}$$

$L_{s,j}$: employment of industry j in state s in 1988

EV_s: number of electoral votes assigned to state s in 1988

- Within an industry j, variation in $Swing\ Industry_{j,T}$ comes from **changes in the identity of swing states across electoral terms**

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Outline

Swing-state politics and trade protection

- The model by Conconi *et al.* (2017) suggests that **re-election motives** lead US executives to **distort trade policy to gain votes in swing states**

    - Voters have reciprocal preferences

    - Incumbent's political advantage due to ability to set trade policy

- We focus on **first terms**, when the executive can be re-elected, and estimate

    Trade Protection$_{j,T} = \beta_0 + \beta_1$ *Swing Industry*$_{j,T} + \delta_j + \delta_T + \varepsilon_{j,T}$.

    δ_j: SIC4 industry FEs, accounting for time-invariant industry characteristics
    δ_T: term FEs, accounting for macroeconomic and political conditions

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Swing-state politics and AD protection

	Baseline	All TTBs	AD dummy	Pres. elections	Manuf. industries	Excl. Trump
	(1)	(2)	(3)	(4)	(5)	(6)
Swing Industry$_{j,T}$	3.857**	3.807**	43.110**	3.313**	0.879**	3.816**
	(1.548)	(1.726)	(9.093)	(1.587)	(0.356)	(1.495)
Sector FE	Yes	Yes	Yes	Yes	Yes	Yes
Term FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.49	0.5	0.56	0.49	0.49	0.50
Observations	1,960	1,960	1,960	1,960	1,960	1,568

1 s.d. (0.001) increase in *Swing Industry$_{j,T}$* increases the average level of protection by 0.4 p.p, explaining 18% of its mean (2.1%)

Robust to dropping each SIC2 and term at a time ▶

No impact in second terms, when the president is a lame duck ▶

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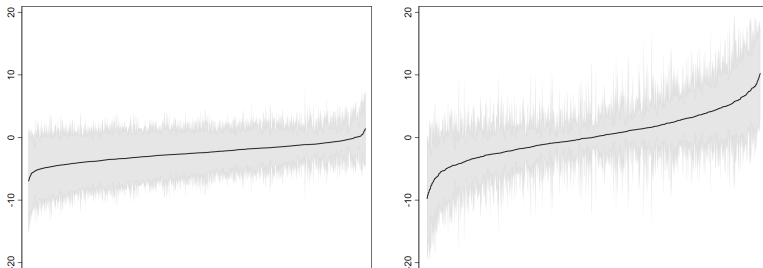
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Placebo tests

- We carry out a placebo test by performing **two types of randomizations** among the 36 US states that were swing at least once during 1989-2020:

    - Fix the **number of times in which a state is swing** (e.g., 5 for Illinois, 4 for Michigan) and randomize across terms $\Rightarrow$ 1,000 randomizations $\Rightarrow$ *Placebo Swing State1$_{s,T}$* and *Placebo Swing Industry1$_{j,T}$*

    - Fix the **number of swing states in a given term** (e.g., 7 for the term ending in 2004, 9 for the term ending in 2008) and randomize across states $\Rightarrow$ 1,000 randomizations $\Rightarrow$ *Placebo Swing State2$_{s,T}$* and *Placebo Swing Industry2$_{j,T}$*

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Estimated coefficients of *Placebo Swing Industry$_{j,T}$*

The figure plots the β_1 coefficients (with 99% confidence intervals) obtained by estimating our baseline specification but replacing *Swing Industry$_{j,T}$* with *Placebo Swing Industry$_{j,T}$*

▸ DID and event study

Swing-state politics and ITC votes

We provide **micro-level evidence** that swing-state politics shapes **ITC votes**

- The ITC is composed of 6 commissioners nominated by the President

- ITC commissioners are appointed for nine years, during which they cast many votes involving different industries

- Positive outcome of final ITC vote leads to the introduction of an AD duty

- To provide micro-level evidence behind the results above, we collect all final ITC votes and estimate the following regression on executive first terms:

$$Vote_{i,c(j),t(T)} = \beta_0 + \beta_1 Swing\ Industry_{j,T} + \delta_{i,j} + \delta_{i,t} + \varepsilon_{i,c(j),t(T)}.$$

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Swing-state politics and ITC votes on AD

	(1)	(2)
Swing Industry$_{j,T}$	60.943**	62.905**
	(26.311)	(26.551)
Commissioner-Sector FE	Yes	Yes
Commissioner-Year FE	Yes	No
Year FE	No	Yes
Adjusted R^2	0.22	0.35
Observations	534	557

- 1 s.d. (0.002) increase in *Swing Industry$_{j,T}$* increases the probability that an ITC commissioner votes in favor of the petitioning industry by 12 p.p., which corresponds to 15% of the average probability of a positive vote (79%)

- No impact in second terms, when the president is a lame duck

Outline

Identifying the effects of trade protection

- We next examine the **effects of politically motivated protection** on industries directly and indirectly affected along supply chains

- **Endogeneity concerns** are the main threat to identification

- Direct effects of trade protection

    - Positive productivity shocks to foreign exporters or negative productivity shocks to domestic producers correlated with growth and trade protection

    - **OLS estimates negatively biased**, harder to identify positive effects

- Effects of trade protection along supply chains

    - Positive productivity shocks to foreign suppliers or lobbying by downstream producers correlated with downstream growth and input protection

    - **OLS estimates positively biased**, harder to identify negative effects

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Identification strategy

- **Shift-share research design**: impact of a set of shocks ("shifters") on units differentially exposed to them (as measured by a set of "shares")

- The shifters are **state-level political shocks** driven by exogenous **changes in the identity of swing states** across terms

- **Exposure to the shocks varies across industries**, depending on their

  - importance across states (employment levels at the start of sample)

  - vertical linkages (IO coefficients at the start of sample)

  - historical experience in AD proceedings (pre-sample petitions)

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- Exposure to the shocks varies across industries, depending on their

  - importance across states (employment levels at the start of sample)

  - vertical linkages (IO coefficients at the start of sample)

  - historical experience in AD proceedings (pre-sample petitions) ▶

Identification strategy

- **Shift-share research design**: impact of a set of shocks ("shifters") on units differentially exposed to them (as measured by a set of "shares")

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    - historical experience in AD proceedings (pre-sample petitions) ▸

An instrument for politically motivated AD protection

$$IV_{j,T} = Swing\ Industry_{j,T} \times AD\ Experience_j$$

- During a term, AD protection should be skewed in favor of **important industries in swing states** (captured by $Swing\ Industry_{j,T}$), if they have prior knowledge of the complex AD proceedings (captured by $Experience_j$)

- Interacting $Swing\ Industry_{j,T}$ with $AD\ Experience_j$

  - alleviates concerns about exclusion restriction (IV is AD specific)

  - increases the power of the instrument

▸ Descriptive statistics

Predicting AD protection

	Baseline	All TTBs	AD dummy	Pres. elections	Manuf. industries	Excl. Trump
	(1)	(2)	(3)	(4)	(5)	(6)
$IV_{j,T}$	0.413***	0.451***	2.986***	0.339***	0.091***	0.340***
	(0.054)	(0.074)	(0.512)	(0.019)	(0.011)	(0.041)
Sector FE	Yes	Yes	Yes	Yes	Yes	Yes
Term FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.50	0.50	0.56	0.50	0.50	0.51
Observations	1,960	1,960	1,960	1,960	1,960	1,568

- 1 s.d. increase in $IV_{j,T}$ (0.013) increases the average level of protection by 0.5 p.p., 25% of its mean (2.1%)

Controlling for *Swing Industry$_{j,T}$*

Bown, Conconi, Erbahar, and Trimarchi   **Politically Motivated Trade Protection**   26 / 35

Employment effects

Effects on protected sectors:

$$\Delta L_{j,T} = \beta_0 + \beta_1 Direct\ Tariff\ Exposure_{j,T} + Z_{j,T} + \delta_j + \delta_T + \varepsilon_{j,T}$$

$\Delta L_{j,T}$: growth rate of employment in SIC4 industry j during term T

Tariff exposure variables instrumented by corresponding IV measures

$Z_{j,T}$: swing industry variable (not interacted with AD experience)

δ_j: SIC4 industry FEs, accounting for sectoral trends

δ_T: term FEs, accounting for macroeconomic and political conditions

Effects along supply chains (all industries):

$$\Delta L_{j,T} = \beta_0 + \beta_1 Downstream\ Tariff\ Exposure_{j,T} + \beta_2 Upstream\ Tariff\ Exposure_{j,T}$$
$$+ \beta_3 Z_{j,T} + \delta_j + \delta_T + \varepsilon_{j,T}$$

Employment effects

Effects on protected sectors:

$$\Delta L_{j,T} = \beta_0 + \beta_1 Direct\ Tariff\ Exposure_{j,T} + Z_{j,T} + \delta_j + \delta_T + \varepsilon_{j,T}$$

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Effects along supply chains (all industries):

$$\Delta L_{j,T} = \beta_0 + \beta_1 Downstream\ Tariff\ Exposure_{j,T} + \beta_2 Upstream\ Tariff\ Exposure_{j,T} \\ + \beta_3 Z_{j,T} + \delta_j + \delta_T + \varepsilon_{j,T}$$

The impact of protection on employment along supply chains

| | Manuf. industries | All industries | | | |
| | | including diagonal | | excluding diagonal | |
	(1)	(2)	(3)	(4)	(5)
Direct Tariff Exposure$_{i,T}$	4.213**				
	(1.963)				
Downstream Tariff Exposure$_{i,T}$		-3.648**	-3.023**	-3.235**	-2.922*
		(1.651)	(1.470)	(1.637)	(1.524)
Upstream Tariff Exposure$_{j,T}$		4.441**	2.783**	3.338	2.037
		(1.783)	(1.176)	(2.652)	(1.497)
Sector Fixed Effects	Yes	Yes	Yes	Yes	Yes
Term Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	1,567	1,915	1,915	1,915	1,915
KP F-statistic	22.4	20.7	33.1	15.4	18.9

Gains in protected sectors: 1 s.d. increase in *Direct Tariff Exposure*$_{i,T}$ increases growth rate of employment by 5.9 p.p. (27% of s.d. of employment growth)

Losses in downstream sectors: 1 s.d. increase in *Downstream Tariff Exposure*$_{j,T}$ decreases growth rate of employment by 2.3 p.p. (10% of s.d. of employment growth)

▸ OLS   ▸ Reduced form   ▸ Robustness

Addressing concerns about OVB

- Identification relies on **exogenous political shocks**, i.e., changes in the identity of swing states across electoral terms

- Even if the shares are constructed at the start of our sample period, one may be concerned about **non-random exposure to the shocks**

- This could give rise to an **omitted variable bias (OVB)** in the 2SLS estimates, even if the political shocks are as-good-as-randomly assigned

- Borusyak and Hull's (2023) methodology to correct for OVB:
    - Randomize swing states to generate **counterfactual shocks** ▶
    - Average across these shocks to construct **expected instruments**
    - Subtract expected instruments to **recenter** the IV measures

The impact of protection on employment along supply chains
(recentered instruments)

Counterfactual shocks 1	Manuf. industries	All industries			
		including diagonal		excluding diagonal	
	(1)	(2)	(3)	(4)	(5)
Direct Tariff Exposure$_{j,T}$	3.975**				
	(1.855)				
Downstream Tariff Exposure$_{j,T}$		-3.452**	-2.832*	-3.051*	-2.711*
		(1.629)	(1.437)	(1.621)	(1.492)
Upstream Tariff Exposure$_{j,T}$		4.193**	2.686**	3.171	2.002
		(1.715)	(1.145)	(2.507)	(1.448)
Sector Fixed Effects	Yes	Yes	Yes	Yes	Yes
Term Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	1,567	1,915	1,915	1,915	1,915
KP F-statistic	24.5	22.3	34.3	16.5	19.4
Counterfactual shocks 2	Manuf. industries	All industries			
		including diagonal		excluding diagonal	
	(1)	(2)	(3)	(4)	(5)
Direct Tariff Exposure$_{j,T}$	4.395**				
	(2.080)				
Downstream Tariff Exposure$_{j,T}$		-3.491**	-2.813*	-3.029*	-2.663*
		(1.666)	(1.472)	(1.648)	(1.531)
Upstream Tariff Exposure$_{j,T}$		4.788***	2.979**	3.876	2.307
		(1.761)	(1.151)	(2.690)	(1.509)
Sector Fixed Effects	Yes	Yes	Yes	Yes	Yes
Term Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	1,567	1,915	1,915	1,915	1,915
KP F-statistic	20.6	20.3	32.5	15.0	18.5

Mechanism via imports

The effect of trade protection on imports

	China		Rest of the World	
	(1)	(2)	(3)	(4)
Direct Tariff Exposure$_{j,T}$	-28.990***	-26.073***	-8.671	-8.623
	(9.173)	(8.491)	(9.869)	(9.848)
SIC4 FE	Yes	Yes	Yes	Yes
Term FE	Yes	Yes	Yes	Yes
Observations	1,480	1,568	1,561	1,568
KP F-statistic	23.1	22.4	22.3	22.4

1 s.d. increase in *Direct Tariff Exposure$_{j,T}$* decreases growth rate of imports by 43 p.p.

(43% of s.d. of import growth)

Conclusion

- The Electoral College has been criticized for giving **too much power to swing states**, in which a small difference in votes can shift all electors

- This is the first paper to show that this electoral system **distorts actual policies**, benefiting key industries in swing states, at the expense of others

- We provide evidence that **swing-state politics shapes US trade protection** when the president faces a competitive re-election race

- We propose a **new instrument** to identify the causal effects of politically motivated trade protection on directly and indirectly exposed industries

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- We contribute to the **debate about reforming the Electoral College**:

  - Swing-state politics increases the "political size" of some key input industries (e.g., steel, car parts, plastics) ▶

  - If all votes counted equally, these industries would get less protection, with large beneficial effects for the rest of the economy

- Our findings resonate with

    Concerns raised by US businesses: tariffs on steel "cost manufacturing jobs across the country": 6.5 million workers are employed in steel- and aluminum-using industries in the United States, compared to 80,000 employed in the steel industry ("Thousands of jobs at risk over tariffs, US manufacturers warn," *Financial Times*, March 1, 2018)

    Cox (2023): the number of jobs in industries that use steel as an input outnumber the number of jobs that produce steel by about 80 to 1, so protecting steel can have large negative downstream effects

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- Our analysis also contributes to the debate about the rationale for allowing governments to use **AD duties in the multilateral trading system**

- Previous studies provide an **economic rationale** for allowing AD measures in trade agreements: the ability to protect industries in the face of import surges can act as a "safety valve," allowing countries to sustain trade policy cooperation (Bagwell and Staiger, 1990; Bown and Crowley, 2013)

- Our paper emphasizes the **political economy motives** for flexible trade barriers (in the spirit of Bagwell and Staiger, 2005)

Thank you!

Top 10 input industries

SIC4	Input industry	Number of output industries (1)	Average cost share (2)
3312	Blast furnaces and steel mills	84	10.6%
2911	Petroleum refining	43	5.0%
2752	Commercial printing, lithographic	31	3.3%
2221	Broadwoven fabric mills, manmade	30	10.1%
2869	Industrial organic chemicals, n.e.c.	26	9.2%
2621	Paper mills	25	19.9%
3679	Electronic components, n.e.c.	23	6.0%
3089	Plastics products, n.e.c.	15	3.8%
2421	Sawmills and planing mills, general	12	1.9%
2821	Plastics materials and resins	12	12.0%

The table lists the 10 most important tradable input industries i by total cost shares. Column 1 reports the number of industries j for which input i is the key input. Column 2 reports the average cost shares of industry i (across all industries j for which i is the key input).

Distribution of IO coefficients, 50 most important input and output industries
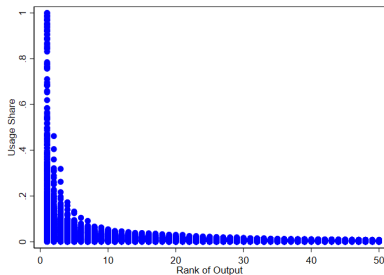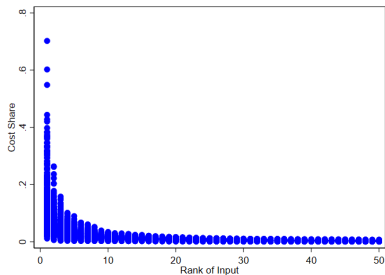
Descriptive statistics on US AD duties against China (1989-2020)

Variable	Obs.	Mean	Std. dev.	Min	Max
$Direct\ Tariff\ Exposure_{j,t}$	3,136	2.153%	8.520%	0.000%	100.000%
$Downstream\ Tariff\ Exposure_{j,t}^1$	3,832	1.126%	1.596%	0.000%	25.881%
$Upstream\ Tariff\ Exposure_{j,t}^1$	3,832	0.701%	1.732%	0.000%	30.878%
$Downstream\ Tariff\ Exposure_{j,t}^2$	3,832	1.870%	2.195%	0.019%	35.339%
$Upstream\ Tariff\ Exposure_{j,t}^2$	3,832	1.185%	2.647%	0.000%	47.062%
$Downstream\ Tariff\ Exposure_{j,t}^3$	3,832	1.069%	1.529%	0.000%	25.881%
$Upstream\ Tariff\ Exposure_{j,t}^3$	3,832	0.644%	1.654%	0.000%	30.878%
$Downstream\ Tariff\ Exposure_{j,t}^4$	3,832	1.805%	2.124%	0.019%	35.339%
$Upstream\ Tariff\ Exposure_{j,t}^4$	3,832	1.121%	2.561%	0.000%	47.062%
$Swing\ Industry_{j,T}$	3,136	0.058%	0.103%	0.000%	1.345%
$AD\ Experience_j$	3,136	1.235	3.648	0.000	64.000
$IV_{j,T}$	3,136	0.173%	1.498%	0.000%	41.569%

Top-10 Sectors by *Swing Industry_{j,T}* and *AD Experience_j*

		Swing Industry_{j,T}	
Sector	Description	Average Swing Industry$_{j,T}$	Average Direct Tariff Exposure$_{j,T}$
2752	Commercial printing, lithographic	0.77%	2.71%
3714	Motor vehicle parts and accessories	0.75%	3.85%
3089	Plastics products, n.e.c.	0.72%	2.01%
2711	Newspapers	0.51%	0.00%
3711	Motor vehicles and car bodies	0.51%	0.00%
3499	Fabricated metal products, n.e.c.	0.43%	6.41%
3812	Search and navigation equipment	0.39%	0.00%
3312	Blast furnaces and steel mills	0.38%	11.95%
2599	Furniture and fixtures, n.e.c.	0.36%	11.65%
3599	Industrial machinery, n.e.c.	0.34%	4.17%

		AD Experience_j	
Sector	Description	AD Experience$_j$	Average Direct Tariff Exposure$_{j,T}$
3312	Blast furnaces and steel mills	64	11.95%
2819	Industrial inorganic chemicals, n.e.c.	13	4.31%
3714	Motor vehicle parts and accessories	12	3.85%
2869	Industrial organic chemicals, n.e.c.	10	18.93%
3999	Manufacturing industries, n.e.c.	8	3.28%
3991	Brooms and brushes	7	13.28%
3494	Valves and pipe fittings, n.e.c.	7	10.94%
3496	Misc. fabricated wire products	7	4.69%
2821	Plastics materials and resins	7	3.29%
2399	Fabricated textile products, n.e.c.	7	2.86%

US temporary trade barriers against China
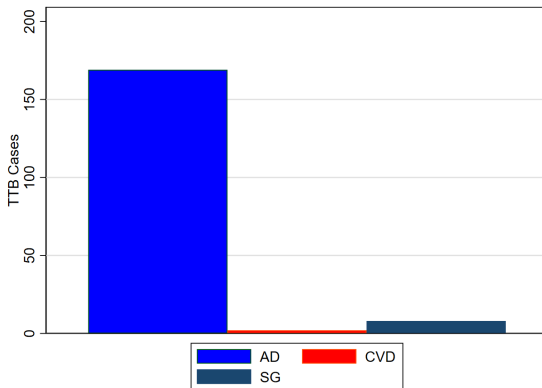
AD in the United States

- An AD case starts with a **petition filed by an industry** claiming injury caused by unfairly priced products imported from a specific country

- **Department of Commerce (DOC)**: determines if imported goods are sold at less than "fair value", sets **dumping margin**

- **International Trade Commission (ITC)**: six commissioners (three appointed by each party) vote on whether imports have caused **injury**

- Both institutions are **subject to political pressure**:

    - The DOC is part of the executive branch, the President nominates its top positions and can directly intervene in its decisions

    - ITC commissioners are influenced by their party (Aquilante, 2018)

Identity of swing states and state-level characteristics

	(1)	(2)	(3)	(4)	(5)	(6)
Trade Protection$_{s,T}$	231.6	63.55				
	(230.6)	(69.79)				
Import Exposure$_{s,T}$			-0.040	7.323		
			(17.38)	(12.88)		
Employment Growth$_{s,T}$					-0.016	-0.026
					(0.126)	(0.146)
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Term FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.46	0.30	0.45	0.45	0.45	0.45
Observations	200	200	200	200	200	200

Dropping each SIC2 and term at a time
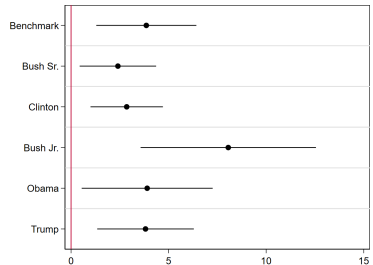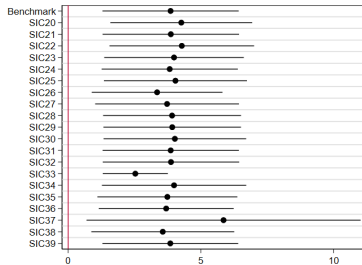
Swing-state politics and AD protection

(second terms)

	Baseline	All TTBs	AD dummy	Pres. elections	Manuf. industries
	(1)	(2)	(3)	(4)	(5)
Swing Industry$_{j,T}$	1.772	1.507	-7.075	6.801	0.125
	(7.715)	(7.700)	(31.567)	(13.907)	(1.548)
Sector FE	Yes	Yes	Yes	Yes	Yes
Term FE	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.49	0.49	0.56	0.49	0.49
Observations	1,176	1,176	1,176	1,176	1,176

Difference-in-differences

$$\text{Trade Protection}_{j,T(p)} = \beta_0 + \beta_1 \text{Swing Industry}_{j,T(p)}^{DID} + \delta_{j,p} + \delta_{T(p)} + \epsilon_{j,T(p)}.$$

	One pre-treatment period		Two pre-treatment periods	
	(1)	(2)	(3)	(4)
Swing Industry$_{j,T(p)}^{DID}$	1.20*	1.41***	1.88**	1.96***
	(0.62)	(0.52)	(0.73)	(0.70)
President-SIC4 FE	Yes	Yes	Yes	Yes
Term FE	Yes	No	Yes	No
Term-SIC2 FE	No	Yes	No	Yes
Adjusted R^2	0.86	0.87	0.84	0.86
Observations	3,136	3,136	3,528	3,528

$$\text{Trade Protection}_{j,T(p)} = \sum_{\substack{\tau=-1 \\ \tau \neq 0}}^{1} \beta_\tau \text{Swing Industry}_{j,p} \times I_{\{T=\tau\}} + \delta_{j,p} + \delta_{T(p),k} + \epsilon_{j,T,p},$$
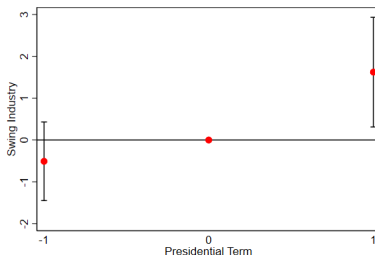
AD experience

- The **process to petition for AD is extremely complex** (Blonigen and Park, 2004; Blonigen, 2006): the petitioning industry must present substantial information about the case, as well as legal analysis and arguments

- As a result of this institutional complexity, **prior experience**
    - decreases the cost of initiating future AD cases
    - increases the likelihood of successful outcomes

- *AD Experience$_j$*: number of AD petitions filed by industry j in the 1980s

- Industries with no historical AD experience (e.g., textile and apparel, which in the 1980s were protected by the MFA) receive no AD protection

IV and AD protection
(controlling for *Swing Industry$_{j,T}$*)

	Baseline	All TTBs	AD dummy	Pres. elections	Manuf. industries	Excl. Trump
	(1)	(2)	(3)	(4)	(5)	(6)
IV$_{j,T}$	0.387***	0.440***	2.147***	0.346***	0.082***	0.302***
	(0.074)	(0.087)	(0.259)	(0.034)	(0.016)	(0.064)
Swing Industry$_{j,T}$	0.802	0.330	26.151***	-0.246	0.289	1.210
	(1.454)	(1.788)	(9.344)	(1.160)	(0.326)	(1.444)
Sector FE	Yes	Yes	Yes	Yes	Yes	Yes
Term FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.50	0.50	0.56	0.50	0.56	0.51
Observations	1,960	1,960	1,960	1,960	1,960	1,568

The coefficient of *IV$_{j,T}$* is always positive and highly significant $\Rightarrow$ industries that are important in swing states get more protection if they have more historical AD experience

- We perform **two types of randomizations** among the 36 US states that were swing at least once during 1989-2020:

  - Fix the **number of times in which a state is swing** (e.g., 5 for Illinois, 4 for Michigan) and randomize across terms $\Rightarrow$ 1,000 randomizations $\Rightarrow$ *Placebo Swing State1$_{s,T}$* and *Placebo Swing Industry1$_{j,T}$*

  - Fix the **number of swing states in a given term** (e.g., 7 for the term ending in 2004, 9 for the term ending in 2008) and randomize across states $\Rightarrow$ 1,000 randomizations $\Rightarrow$ *Placebo Swing State2$_{s,T}$* and *Placebo Swing Industry2$_{j,T}$*

The impact of tariffs on employment along supply chains (OLS)

| | Manuf. industries | All industries | | | |
| | | including diagonal | | excluding diagonal | |
	(1)	(2)	(3)	(4)	(5)
Direct Tariff Exposure$_{j,T}$	-0.067				
	(0.095)				
Downstream Tariff Exposure$_{j,T}$		-2.379**	-1.803*	-2.580**	-1.963*
		(1.087)	(0.990)	(1.175)	(1.042)
Upstream Tariff Exposure$_{j,T}$		0.903	0.575	0.686	0.425
		(0.702)	(0.627)	(0.651)	(0.599)
Sector Fixed Effects	Yes	Yes	Yes	Yes	Yes
Term Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	1,567	1,915	1,915	1,915	1,915
Adjusted R^2	0.36	0.50	0.50	0.50	0.50

Smaller than the corresponding 2SLS estimates, in line with the expectation of a **downward bias** due to omitted variables

◂ Go back

Reduced-form results

| | Manuf. industries | All industries | | | |
| | | including diagonal | | excluding diagonal | |
	(1)	(2)	(3)	(4)	(5)
$IV_{j,T}$	1.272***				
	(0.401)				
Downstream $IV_{j,T}$		-1.476	-1.804*	-1.548	-1.810*
		(0.998)	(1.039)	(0.990)	(1.044)
Upstream $IV_{j,T}$		3.541**	3.251**	2.063	2.137
		(1.544)	(1.416)	(1.571)	(1.483)
Sector Fixed Effects	Yes	Yes	Yes	Yes	Yes
Term Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	1,567	1,915	1,915	1,915	1,915
Adjusted R^2	0.38	0.50	0.50	0.50	0.50

The impact of tariffs on employment along supply chains
(all TTBs)

	Manuf. industries	All industries including diagonal		All industries excluding diagonal	
	(1)	(2)	(3)	(4)	(5)
Direct Tariff Exposure$_{j,T}$	3.399**				
	(1.614)				
Downstream Tariff Exposure$_{j,T}$		-3.036**	-2.836**	-2.748*	-2.767*
		(1.486)	(1.398)	(1.466)	(1.457)
Upstream Tariff Exposure$_{j,T}$		3.723**	2.389**	2.758	1.682
		(1.544)	(1.079)	(2.117)	(1.319)
Sector Fixed Effects	Yes	Yes	Yes	Yes	Yes
Term Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	1,567	1,915	1,915	1,915	1,915
KP F-statistic	22.0	38.3	51.7	22.8	37.1

The impact of tariffs on employment along supply chains
(AD dummy)

| | Manuf. industries | All industries | | | |
| | | including diagonal | | excluding diagonal | |
	(1)	(2)	(3)	(4)	(5)
Direct Tariff Exposure$_{j,T}$	4.213**				
	(1.963)				
Downstream Tariff Exposure$_{j,T}$		-0.727**	-0.578**	-0.659**	-0.570**
		(0.297)	(0.259)	(0.309)	(0.273)
Upstream Tariff Exposure$_{j,T}$		0.607**	0.373**	0.379	0.246
		(0.274)	(0.175)	(0.295)	(0.187)
Sector Fixed Effects	Yes	Yes	Yes	Yes	Yes
Term Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	1,567	1,915	1,915	1,915	1,915
KP F-statistic	22.4	54.4	25.9	33.2	27.4

The impact of tariffs on employment along supply chains
(including Trump)

| | Manuf. industries | All industries | | | |
| | | including diagonal | | excluding diagonal | |
	(1)	(2)	(3)	(4)	(5)
Direct Tariff Exposure$_{j,T}$	3.048**				
	(1.389)				
Downstream Tariff Exposure$_{j,T}$		-1.247*	-1.323*	-1.261*	-1.553*
		(0.681)	(0.780)	(0.695)	(0.847)
Upstream Tariff Exposure$_{j,T}$		2.637**	1.835*	1.366	0.988
		(1.295)	(1.017)	(1.987)	(1.354)
Sector Fixed Effects	Yes	Yes	Yes	Yes	Yes
Term Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	1,958	2,393	2,393	2,393	2,393
KP F-statistic	27.5	26.7	43.9	24.3	24.0

Largest manufacturing industries

	Industries with *Swing Industry*$_j$ > *US Industry*$_j$
3714	Motor vehicle parts and accessories
3312	Blast furnaces and steel mills
3499	Fabricated metal products, n.e.c.
3599	Industrial machinery, n.e.c.
3089	Plastics products, n.e.c.
3711	Motor vehicles and car bodies
2752	Commercial printing, lithographic
2051	Bread, cake, and related products
	Industries with *Swing Industry*$_j$ < *US Industry*$_j$
3721	Aircraft
3728	Aircraft parts and equipment, n.e.c.
2621	Paper mills
2011	Meat packing plants
2711	Newspapers
3812	Search and navigation equipment
2599	Furniture and fixtures, n.e.c.