Supplemental Appendix for
Trade Protection Along Supply Chains

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B-1   Product to Industry Concordance

As explained in Section 3, the Temporary Trade Barriers Database (TTBD) contains detailed information on AD duties and other protectionist measures (CV duties and safeguards). For each case, it provides information on the products under investigation at the 10-digit Harmonized Tariff Schedule (HTS) level (or at the 5-digit Tariff Schedule of the United States Annotated for years before 1989).

To match TTBD data to the SIC4 classification, we first harmonize HS codes over time to the HS 1992 nomenclature, using the concordance tables provided by the United Nations Statistics Division.

We then match the HS codes to the SIC classification using the following procedure:[1]

1. Each 10-digit HTS code is first aggregated up to the universal 6-digit Harmonized System (HS6) level. Then, each HS6 code is matched with one or more 4-digit SIC code using the crosswalk provided by Autor *et al.* (2013). Around 99% of the observations are mapped using this correspondence table.[2] In order to map each HS6 product to only one industry, we assign an HS6 code to the industry which accounts for the largest share of that product's US imports. This means that each HS6 product is mapped to only one 4-digit SIC industry. Cases often target multiple HS6 products and thus may be linked to more than one SIC4 code.

2. The remaining unmatched HS6 products are mapped to a SIC code by aggregating up the information in the crosswalk to the HS4 level. In this case, a product is matched

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[1]Throughout, when we refer to SIC industries, we use the "sic87dd" scheme used by Autor *et al.* (2013). These codes are slightly coarser than the 1987 SIC codes.

[2]For the years up to 1988, descriptions of products were provided according to the Tariff Schedule of the United States Annotated (TSUSA) classification. Therefore, for cases before 1988, we match each TSUSA code with a corresponding HS code using the correspondence table provided by Feenstra (1996).

to an industry if its correspondent HS4 family maps to only one SIC4 industry. All the unmatched HS6 products are manually matched to a corresponding SIC4 industry by directly retrieving information about the corresponding case from the ITC case descriptions.
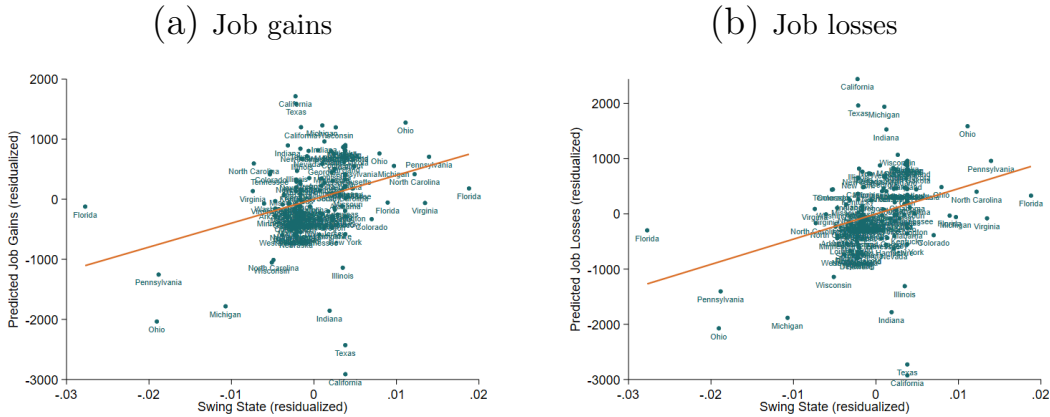
B-2   Figures

Figure B-1

Distribution of IO Coefficients

(a) Top-50 Input Industries   (b) Top-50 Output Industries
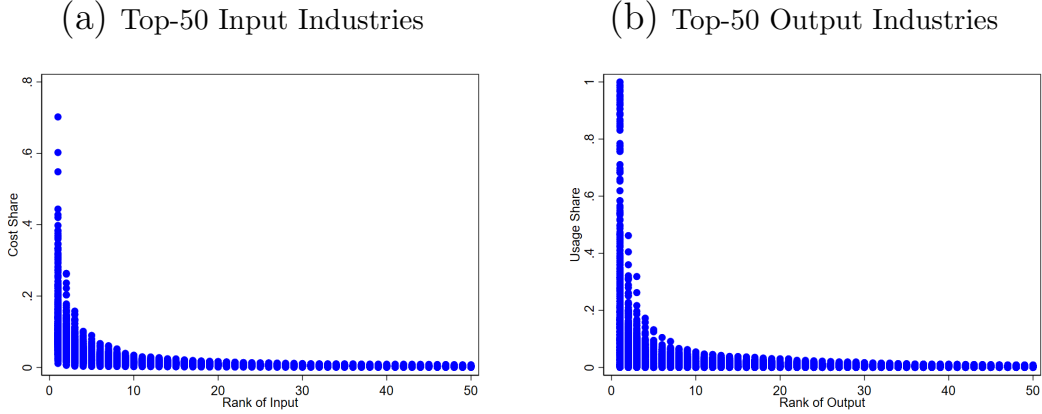
The figures plot cost and usage shares for the 479 SIC4 industries (top-50 input and output industries).

Figure B-2

State-Level Employment Gains and Losses From Trade Protection and $Swing\ State_{s,T(P)}$

(a) Job gains   (b) Job losses

Counterfactual job gains in protected industries and job losses (in absolute value) in downstream industries computed based on the 2SLS estimates reported in column 3 of Table 2. The fitted line is based on a regression of predicted job gains and losses on $Swing\ State_{s,T(P)}$, with state and term fixed effects.

B-3 Robustness Checks

Table B-1
IV and Trade Protection (First Terms), Alternative Definitions of Swing States

	Baseline	5%	4%	6%	CPR	Gallup
	(1)	(2)	(3)	(4)	(5)	(6)
$IV_{j,T(P)}$	1.663***	1.202***	1.639*	1.505***	0.500***	0.262**
	(0.467)	(0.325)	(0.885)	(0.533)	(0.191)	(0.127)
$Swing\ Industry_{j,T(P)}$	10.545*	2.014	1.494	2.650	0.128	-6.806
	(6.008)	(6.586)	(6.673)	(5.565)	(8.913)	(4.715)
Sector FE	Yes	Yes	Yes	Yes	Yes	Yes
Term FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.54	0.55	0.54	0.55	0.53	0.53
Observations	1,960	1,960	1,960	1,960	1,960	1,960

The table reports OLS estimates of equation (5). The dependent variable is $Trade\ Protection_{j,T(P)}$, a dummy variable equal to 1 if any product in industry j is subject to TTB measures during term T (of presidency P). $IV_{j,T(P)} = Swing\ Industry_{j,T(P)} \times Experience_j$. $Swing\ Industry_{j,T(P)}$ is constructed using alternative versions of the variable $Swing\ State_{s,T(P)}$, which captures states expected to be swing in the presidential elections at the end of term T. In the baseline specification of column 1, this is the probability that state s is a decisive swing state in the next presidential elections, based on Strömberg (2008)'s probabilistic voting model. In all other specifications, $Swing\ State_{s,T(P)}$ is an indicator variable equal to 1 if the vote margin between the candidates of the two parties in the next presidential election is expected to be small: in columns 2-4, a state is classified as swing if the vote margin between the candidates in the previous presidential elections was smaller than a threshold (respectively of 5%, 4%, and 6%); in columns 5 and 6, we respectively use ratings from the Cook Political Report and poll data from Gallup to define states expected to be swing in the next presidential elections. The sample covers all executive first terms during 1989-2020. Observations are weighted by 1988 employment. Sector fixed effects are defined at the SIC4 level. Standard errors are clustered at the SIC3 industry level; ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively.

Table B-2
IV and Trade Protection (First Terms),
Alternative TTB Measures and Samples

	Product Share	AD Only	No Steel	No Bush	No Trump	All Countries
	(1)	(2)	(3)	(4)	(5)	(6)
$IV_{j,T(P)}$	0.242***	1.731***	4.458***	1.310**	2.423***	0.742**
	(0.037)	(0.489)	(0.989)	(0.551)	(0.450)	(0.294)
$Swing\ Industry_{j,T(P)}$	0.705	9.891	0.906	8.145	14.684**	-11.178
	(1.751)	(6.321)	(8.521)	(6.377)	(6.170)	(7.682)
Sector FE	Yes	Yes	Yes	Yes	Yes	Yes
Term FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.50	0.56	0.54	0.56	0.54	0.56
Observations	1,960	1,960	1,955	1,568	1,568	1,960

The table reports OLS estimates of equation (5). In column 1, $Trade\ Protection_{j,T(P)}$ measures the share of products in industry j that are covered by TTBs during term T; in column 2, it is a dummy variable equal to 1 if any product in industry j is subject to AD duties during term T; in all other columns, it is a dummy variable equal to 1 if any product in industry j is subject to TTB measures during term T. $IV_{j,T(P)} = Swing\ Industry_{j,T(P)} \times Experience_j$. The sample covers all executive first terms during 1989-2020 (except in columns 4 and 5, which respectively exclude the first terms of President Bush Sr. and President Trump); it includes all manufacturing industries, apart from column 3, which excludes the steel industry; it covers TTBs against China (except in column 6, which includes TTBs against all target countries). Observations are weighted by 1988 employment. Sector fixed effects are defined at the SIC4 level. Standard errors are clustered at the SIC3 industry level; ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively.

Table B-3
The Effects of Trade Protection on Employment Along Supply Chains, Alternative TTB Measures

	Term		Presidency	
	Manufacturing Industries	All Industries	Manufacturing Industries	All Industries
	(1)	(2)	(3)	(4)
Trade Protection$_{j,T(P)}$	3.168**		3.237**	
	(1.427)		(1.321)	
Upstream Trade Protection$_{j,T(P)}$	-4.110*	-2.897**	-6.194**	-4.269**
	(2.395)	(1.263)	(2.405)	(2.045)
Downstream Trade Protection$_{j,T(P)}$	-2.175	0.968	-1.682	2.570
	(2.995)	(1.698)	(2.482)	(1.687)
Sector FE	Yes	Yes	Yes	Yes
Term FE	Yes	Yes	No	No
Presidency FE	No	No	Yes	Yes
Observations	1,175	1,436	1,175	1,436
KP F-statistic	13.3	38.6	13.3	38.6

The table reports 2SLS estimates. In columns 1 and 2 (3 and 4), the dependent variable is $\Delta L_{j,T(P)}$ ($\Delta L_{j,P}$), the log change of employment in SIC4 industry j the first term T of presidency P (during presidency P). The trade protection variables capture direct and indirect exposure to TTBs (measured as the share of HS6 products within industry j subject to these measures), instrumented using the corresponding IV variables. The regressions include the corresponding direct, upstream, and downstream *Swing Industry* variables (coefficients not reported). The sample covers the period 1993-2016. In columns 1 and 3 (2 and 4), it includes all manufacturing sectors (all sectors). Observations are weighted by 1988 employment. Sector fixed effects are defined at the SIC4 level. Standard errors are clustered at the SIC3 industry level; ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively.

Table B-4
The Effects of Trade Protection on Employment Along Supply Chains,
AD Duties Only

	Term		Presidency	
	Manufacturing Industries	All Industries	Manufacturing Industries	All Industries
	(1)	(2)	(3)	(4)
Trade Protection$_{j,T(P)}$	0.552***		0.593***	
	(0.180)		(0.188)	
Upstream Trade Protection$_{j,T(P)}$	-0.539	-0.750**	-1.139**	-1.130**
	(0.390)	(0.316)	(0.480)	(0.519)
Downstream Trade Protection$_{j,T(P)}$	0.037	0.185	0.086	0.486
	(0.412)	(0.318)	(0.364)	(0.326)
Sector FE	Yes	Yes	Yes	Yes
Term FE	Yes	Yes	No	No
Presidency FE	No	No	Yes	Yes
Observations	1,175	1,436	1,175	1,436
KP F-statistic	36.7	72.1	36.8	72.1

The table reports 2SLS estimates. In columns 1 and 2 (3 and 4), the dependent variable is $\Delta L_{j,T(P)}$ ($\Delta L_{j,P}$), the log change of employment in SIC4 industry j during the first term T of presidency P (presidency P). The direct and indirect trade protection variables are instrumented using the corresponding IV variables. The regressions include the corresponding direct, upstream and downstream *Swing Industry* variables (coefficients not reported). The sample covers the period 1993-2016. In columns 1 and 3 (2 and 4), it includes all manufacturing sectors (all sectors). Observations are weighted by 1988 employment. Sector fixed effects are defined at the SIC4 level. Standard errors are clustered at the SIC3 industry level; ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively.

Table B-5

The Effects of Trade Protection on Employment Along Supply Chains, Controlling for MFN Tariffs

	Term		Presidency	
	Manufacturing Industries	All Industries	Manufacturing Industries	All Industries
	(1)	(2)	(3)	(4)
Trade Protection$_{j,T(P)}$	0.571***		0.611***	
	(0.186)		(0.193)	
Upstream Trade Protection$_{j,T(P)}$	-0.662	-0.740**	-1.286**	-1.120**
	(0.477)	(0.312)	(0.535)	(0.513)
Downstream Trade Protection$_{j,T(P)}$	-0.031	0.160	-0.023	0.420
	(0.406)	(0.302)	(0.358)	(0.314)
Direct MFN$_{j,T(P)}$	0.006		0.007	
	(0.005)		(0.006)	
Upstream MFN$_{j,T(P)}$	0.002	-0.000	-0.006	-0.004
	(0.011)	(0.008)	(0.017)	(0.013)
Downstream MFN$_{j,T(P)}$	-0.033	-0.002	-0.040	-0.009
	(0.034)	(0.012)	(0.035)	(0.020)
Sector FE	Yes	Yes	Yes	Yes
Term FE	Yes	Yes	No	No
Presidency FE	No	No	Yes	Yes
Observations	1,175	1,436	1,175	1,436
KP F-statistic	30.3	62.6	30.3	62.6

The table reports 2SLS estimates. The table reports 2SLS estimates. In columns 1 and 2 (3 and 4), the dependent variable is $\Delta L_{j,T(P)}$ ($\Delta L_{j,P}$), the log change of employment in SIC4 industry j during the first term T of presidency P (presidency P). The direct and indirect trade protection variables are instrumented using the corresponding IV variables. The regressions include the corresponding direct, upstream and downstream *Swing Industry* variables (coefficients not reported). The sample covers the period 1993-2016. In columns 1 and 3 (2 and 4), it includes all manufacturing sectors (all sectors). Observations are weighted by 1988 employment. Sector fixed effects are defined at the SIC4 level. Standard errors are clustered at the SIC3 industry level; ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively.

Table B-6

The Effects of Trade Protection on Employment Along Supply Chains, Broader Industry Clusters

	Term		Presidency	
	Manufacturing Industries	All Industries	Manufacturing Industries	All Industries
	(1)	(2)	(3)	(4)
Trade Protection$_{j,T(P)}$	0.557**		0.596**	
	(0.208)		(0.212)	
Upstream Trade Protection$_{j,T(P)}$	-0.696*	-0.740*	-1.301***	-1.114
	(0.362)	(0.384)	(0.426)	(0.709)
Downstream Trade Protection$_{j,T(P)}$	0.073	0.165	0.114	0.445
	(0.344)	(0.304)	(0.345)	(0.347)
Sector FE	Yes	Yes	Yes	Yes
Term FE	Yes	Yes	No	No
Presidency FE	No	No	Yes	Yes
Observations	1,175	1,436	1,175	1,436
KP F-statistic	23.1	57.3	23.1	57.3

The table reports 2SLS estimates. The table reports 2SLS estimates. In columns 1 and 2 (3 and 4), the dependent variable is $\Delta L_{j,T(P)}$ ($\Delta L_{j,P}$), the log change of employment in SIC4 industry j during the first term T of presidency P (presidency P). The direct and indirect trade protection variables are instrumented using the corresponding IV variables. The regressions include the corresponding direct, upstream and downstream *Swing Industry* variables (coefficients not reported). The sample covers the period 1993-2016. In columns 1 and 3 (2 and 4), it includes all manufacturing sectors (all sectors). Observations are weighted by 1988 employment. Sector fixed effects are defined at the SIC4 level. Standard errors are clustered at the SIC2 industry level; ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively.

Table B-7

The Effects of Trade Protection on Employment Along Supply Chains, Excluding the Diagonal of the Input-Output Matrix

	Term		Presidency	
	Manufacturing Industries	All Industries	Manufacturing Industries	All Industries
	(1)	(2)	(3)	(4)
Trade Protection$_{j,T(P)}$	0.510**		0.555**	
	(0.221)		(0.244)	
Upstream Trade Protection$_{j,T(P)}$	-0.546	-0.832**	-1.161**	-1.241**
	(0.417)	(0.348)	(0.506)	(0.539)
Downstream Trade Protection$_{j,T(P)}$	0.250	-0.065	0.303	0.262
	(0.535)	(0.285)	(0.502)	(0.315)
Sector FE	Yes	Yes	Yes	Yes
Presidency FE	Yes	Yes	No	No
Term FE	No	No	Yes	Yes
Observations	1,175	1,436	1,175	1,436
KP F-statistic	23.1	60.3	23.1	60.3

The table reports 2SLS estimates. In columns 1 and 2 (3 and 4), the dependent variable is $\Delta L_{j,T(P)}$ ($\Delta L_{j,P}$), the log change of employment in SIC4 industry j during the first term T of presidency P (presidency P). The trade protection variables capture direct and indirect exposure to trade protection (excluding the diagonal of the input-output matrix), instrumented using the corresponding IV variables. The regressions include the corresponding direct, upstream and downstream *Swing Industry* variables (coefficients not reported). The sample covers the period 1993-2016. In columns 1 and 3 (2 and 4), it includes all manufacturing sectors (all sectors). Observations are weighted by 1988 employment. Sector fixed effects are defined at the SIC4 level. Standard errors are clustered at the SIC3 industry level; ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively.

Table B-8
The Effects of Trade Protection on Imports,
Non-China

Dependent variable:	Term		Presidency	
	Import Values	Import Quantities	Import Values	Import Quantities
	(1)	(2)	(3)	(4)
$Trade\ Protection_{j,T(P)}$	-0.045	-0.263	0.060	-0.058
	(0.109)	(0.427)	(0.218)	(0.401)
Sector FE	Yes	Yes	Yes	Yes
Term FE	Yes	Yes	No	No
Presidency FE	No	No	Yes	Yes
Observations	600	600	600	600
KP F-statistic	29.7	29.7	29.7	29.7

The table reports 2SLS estimates. In column 1 (2), the dependent variable is $\Delta Imports\ Values\ RoW_{j,T(P)}$ ($\Delta Import\ Quantities\ RoW_{j,T(P)}$), the log change of US import values (quantities) from the rest of the world (i.e., non-China) in SIC4 industry j during the first term of presidency P. In column 3 (4), the dependent variable is $\Delta Imports\ Values_{j,P}$ ($\Delta Import\ Quantities_{j,P}$), the log change of US import values (quantities) from the rest of the world in SIC4 industry j during presidency P. $Trade\ Protection_{j,T(P)}$ is instrumented using $IV_{j,T(P)}$. The regressions also include $Swing\ Industry_{j,T(P)}$ (coefficients not reported). The sample covers the period 1993-2016 and includes manufacturing sectors. Observations are weighted by 1988 employment. Sector fixed effects are defined at the SIC4 level. Standard errors are clustered at the SIC3 industry level; ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively.