

Does Trade liberalization with China Influence U.S. Elections?

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Yi Che Shanghai Jiao Tong University

Yi Lu National University of Singapore

Justin R. Pierce Board of Governors of the Federal Reserve System

Peter K. Schott Yale School of Management & NBER

Zhigang Tao University of Hong Kong

Introduction

- International trade is often a contentious issue in U.S. elections
- During the 2000s, the growing U.S. trade deficit with China received particular attention given the concomitant decline in U.S. manufacturing employment
- We examine the relationship between voters preferences for Democrats and a change in U.S. trade policy (PNTR) that substantially increased competition from China
- We also examine whether changes in voting can be rationalized by changes in legislators' policies
- We find
 - Greater exposure to change in trade policy is associated with larger increases in turnout, votes for Democrats and the probability of Democrat representation
 - Democrats are more likely to support anti-trade or pro-economic-assistance legislation

Related Research

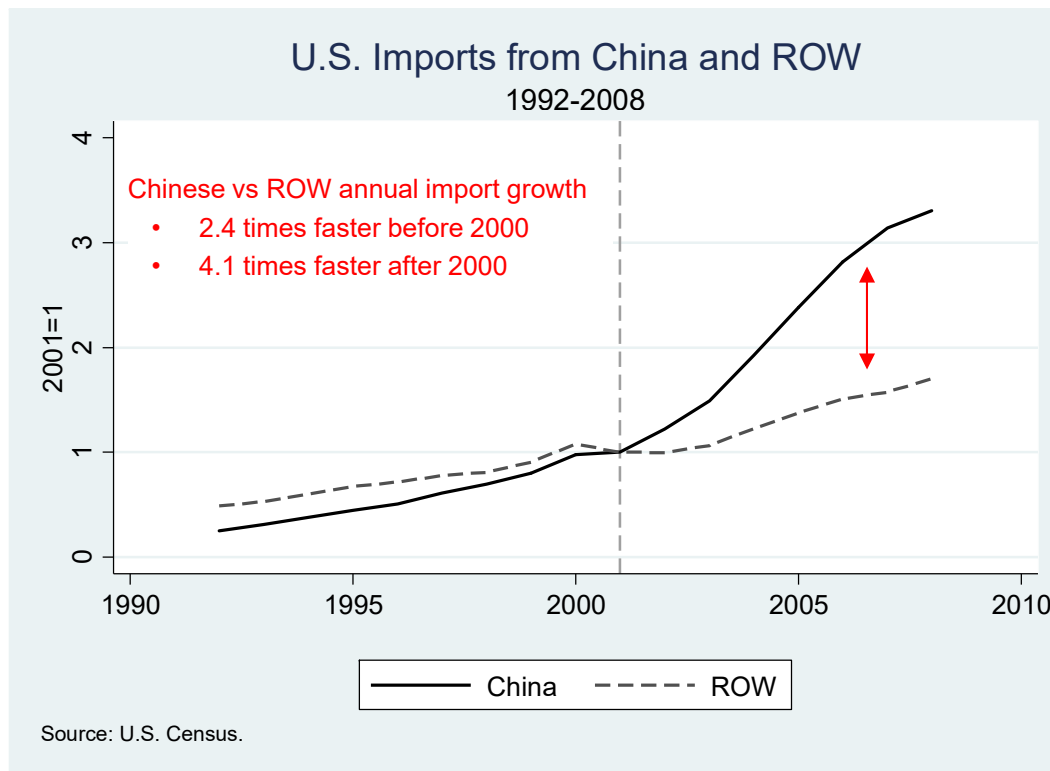
- Voting behavior
 - Many papers; Fair (1978) connects voting to economic conditions
 - Two closely related papers: Feigenbaum and Hall (2015); Autor et al. (2016)
 - Mayda et al. (2016): immigration and share of voters cast for Republicans
 - Dippel et al. (2015): imports and share of voters for far right parties in the Germany
 - Blonigen and Figlio (1998), Conconi et al. (2012), Jensen et al. (2016): trade/FDI and legislators' voting behavior
- Consequences of U.S.-China integration
 - Employment: Autor et al. (2013), Pierce and Schott (2015)
 - Health: McManus and Schaur (2015a, 2015b), Pierce and Schott (2016)
 - Crime: Che and Xu (2015)
 - Provision of public good: Che and Xu (2015), Feler and Senses (2015)

Outline

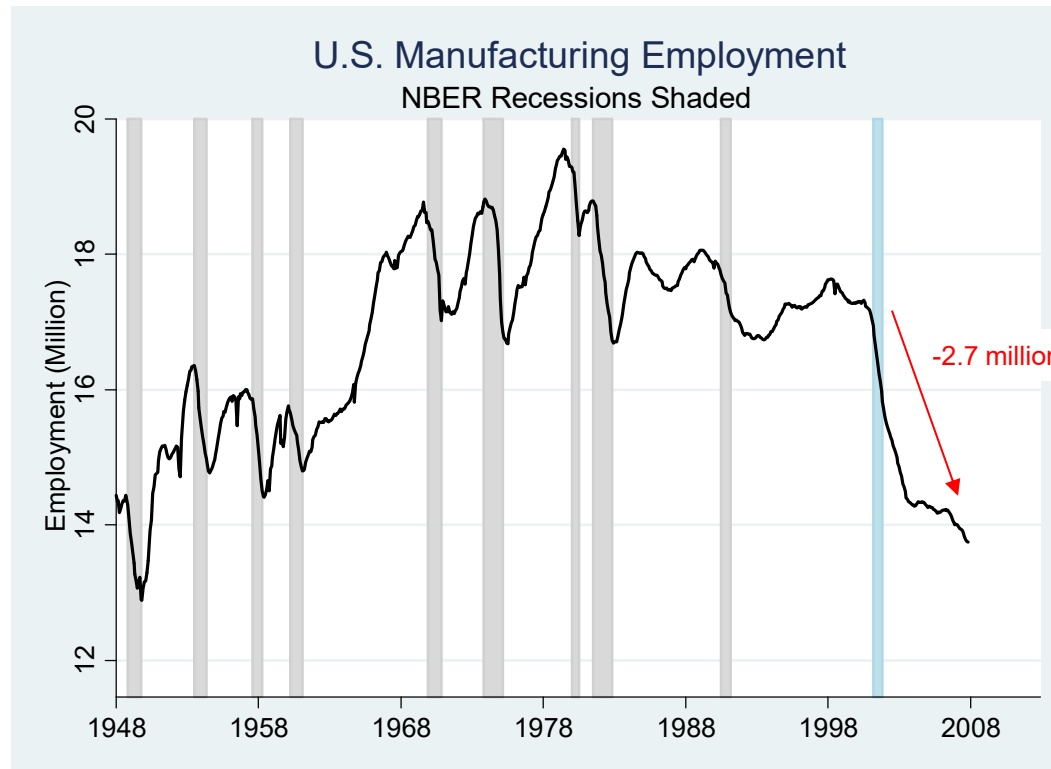
- Introduction
- China's rise as a U.S. trading partner
- Data
- Identification strategy
- Voting results
- Congressional bill results

China's Rise as a U.S. Trading Partner

- China jumped from being an insignificant contributor to world GDP in the 1980s to being the world's 2nd-largest economy
- Between 1990 and 2007, China's share of U.S. imports jumps from 3 to 17 percent, with much of this growth occurring after 2000



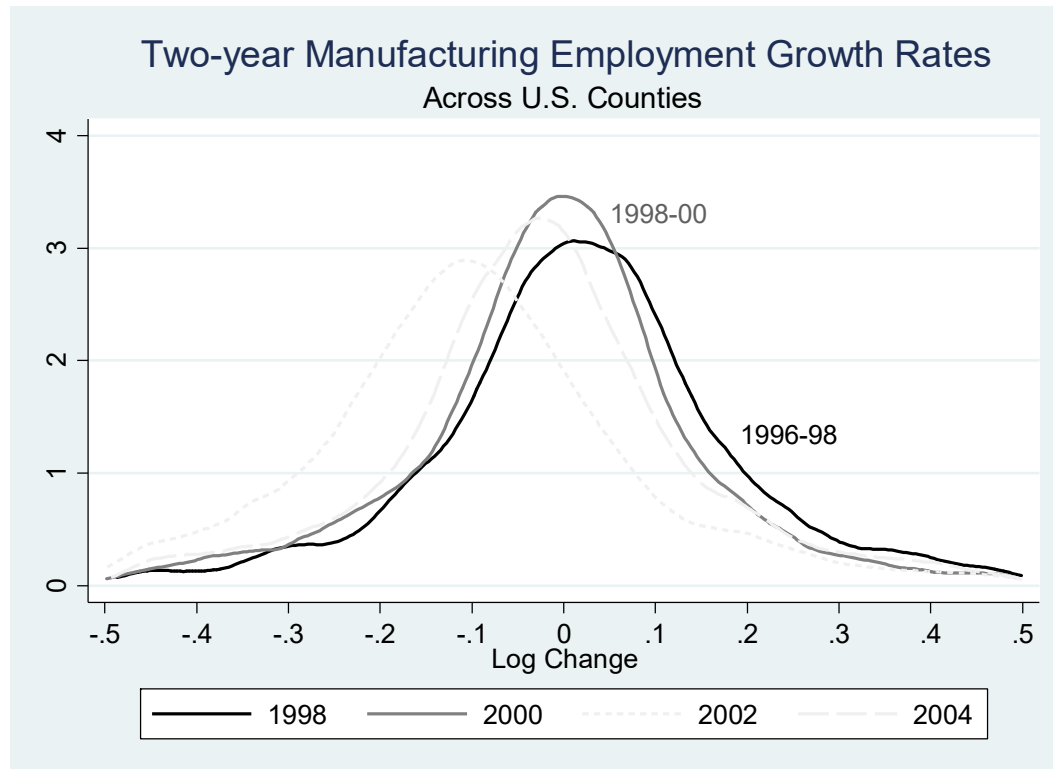
U.S. Manufacturing Employment



- Jump in Chinese imports coincides with sharp decline in U.S. manufacturing employment after 2001
- Many attempts by Congress to restrict trade with China during the 2000s

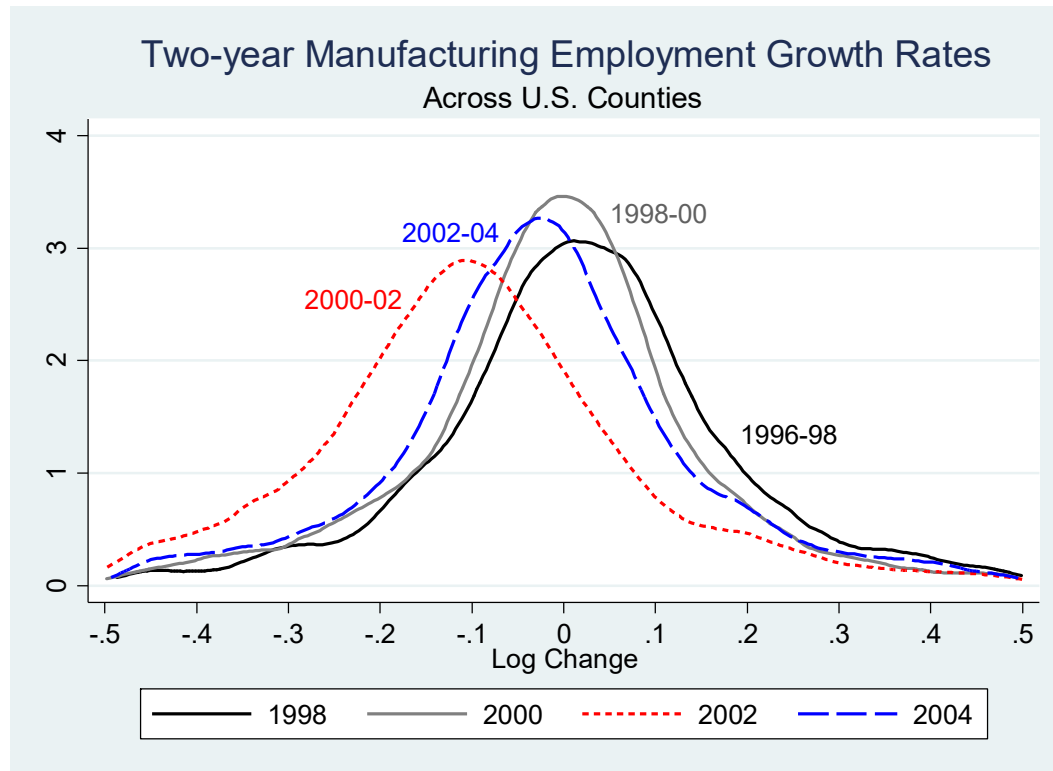
Source: [Pierce and Schott \(2012\)](#)

Wide Variation in Employment Outcomes Across Counties



Notes: Figure displays the distribution of two-year manufacturing employment growth rates across U.S. counties. Distributions are censored at -50 percent and 50 percent to increase readability.

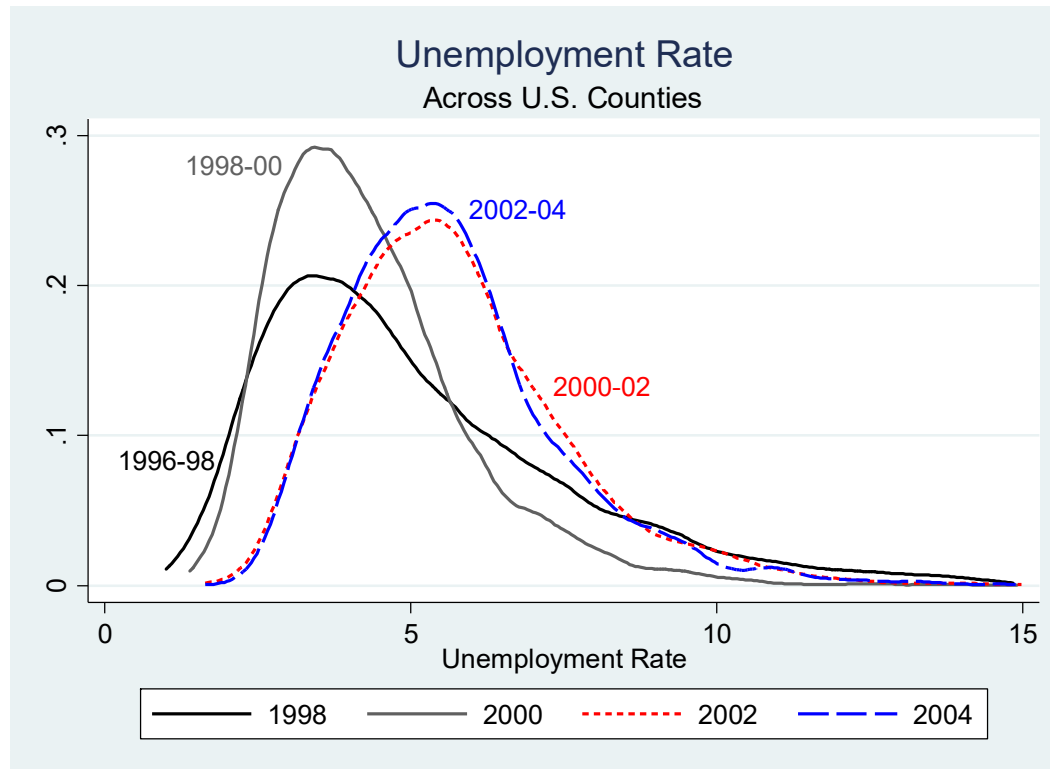
Wide Variation in Employment Outcomes Across Counties



- Decline in manufacturing employment particularly large between 2000 and 2002

Notes: Figure displays the distribution of two-year manufacturing employment growth rates across U.S. counties. Distributions are censored at -50 percent and 50 percent to increase readability.

Unemployment Rate Across Counties



- Decline in manufacturing employment reflected in counties unemployment rates
- To what extent do these trends affect voters' preferences?

Notes: Figure displays the distribution of county unemployment rates at two-year intervals from 1998 to 2004. Distributions are censored at 15 percent to increase readability.

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Data

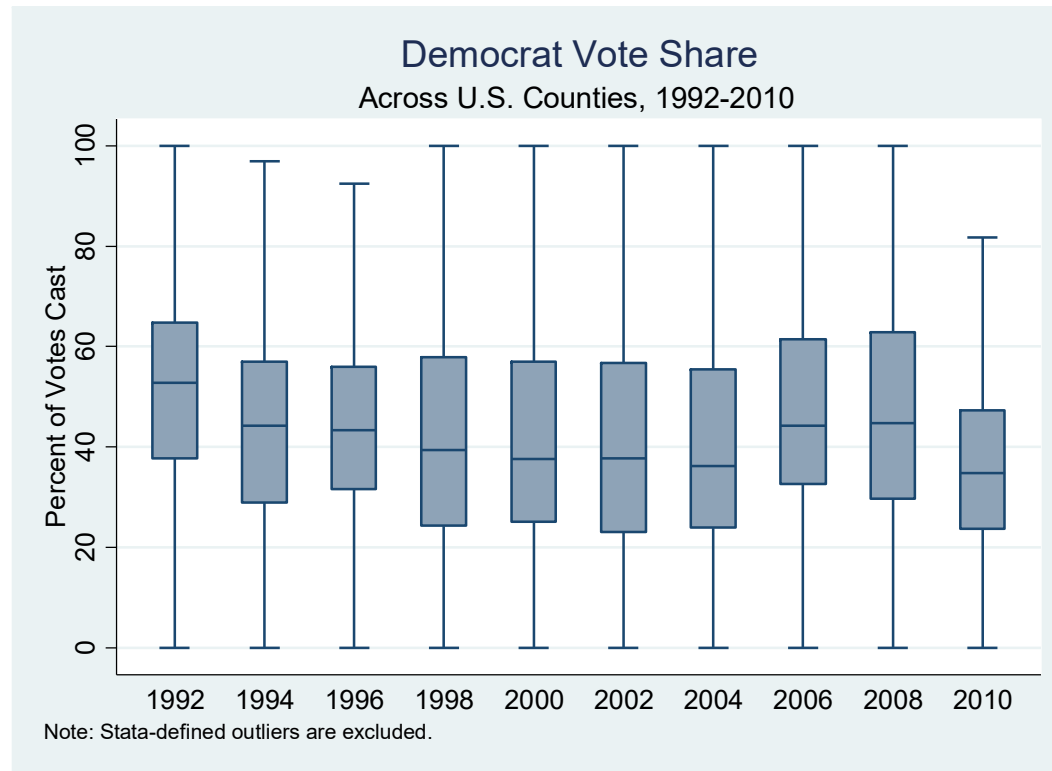
- County-level voting and demographics
- Counties' exposure to change in U.S. trade policy (PNTR)

County-Level Data

- Data on votes received by party and Congressional election from 1992-2010 are from *Dave Leip's Atlas of U.S. Presidential Elections*
 - We examine voting **across counties** rather than Congressional districts in order to examine changes *within* geographic units over time

Democrat Vote Share Across Counties

Elections for the U.S. House of Representatives



County-Level Data

- Data on votes received by party and Congressional election from 1992-2010 are from *Dave Leip's Atlas of U.S. Presidential Elections*
- County attributes
 - (Census) Population by race, age, household income, education and veteran status; available decennially

County Demographic Attributes

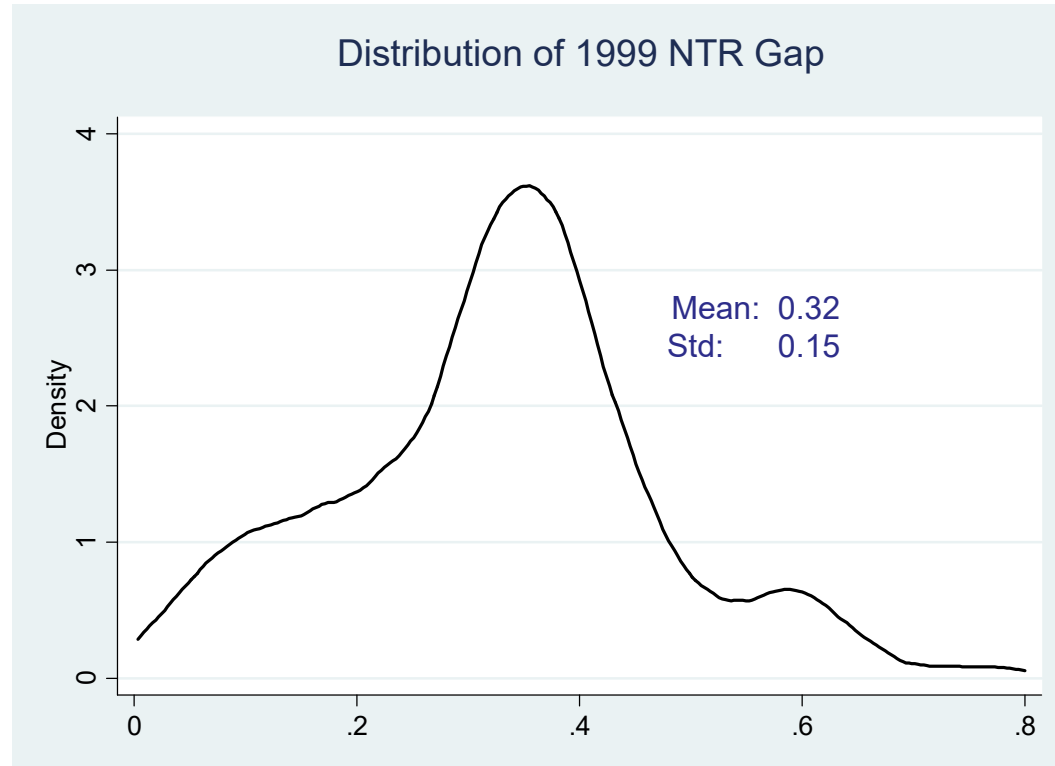
County Attribute	Obs	Mean	SD	Min	Max
Median Household Income	3138	31.28	8.63	11.21	77.35
Percent Bachelor	3138	9.03	4.22	0.00	40.30
Percent Graduate	3138	4.48	2.74	0.00	29.70
Percent Non-White	3138	12.85	15.85	0.00	94.90
Percent Veteran	3138	14.79	2.77	4.20	29.00
Percent 65+	3138	14.86	4.46	0.70	37.70

Notes: Table summarizes the distribution of various county attributes in 1990 according to the 1990 Decennial Census.

Counties' Exposure to PNTR

- U.S. has two tariff schedules
 - NTR: generally low; for WTO members
 - Non-NTR: generally high, for non-market economies
- U.S. granted China access to NTR rates starting in 1980, but continued access depended on annual approval by Congress
 - Absent approval, tariffs would spike to non-NTR levels
 - After PNTR in 2000, these low NTR rates were “locked in”
- Importantly, the “gap” between the non-NTR and NTR rates varied substantially across industries
 - Mean: 0.33
 - SD: 0.15

Counties' Exposure to PNTR



- Average NTR tariff rate is 4%
- Average non-NTR rate is 36%
- Average “NTR gap” is 32%

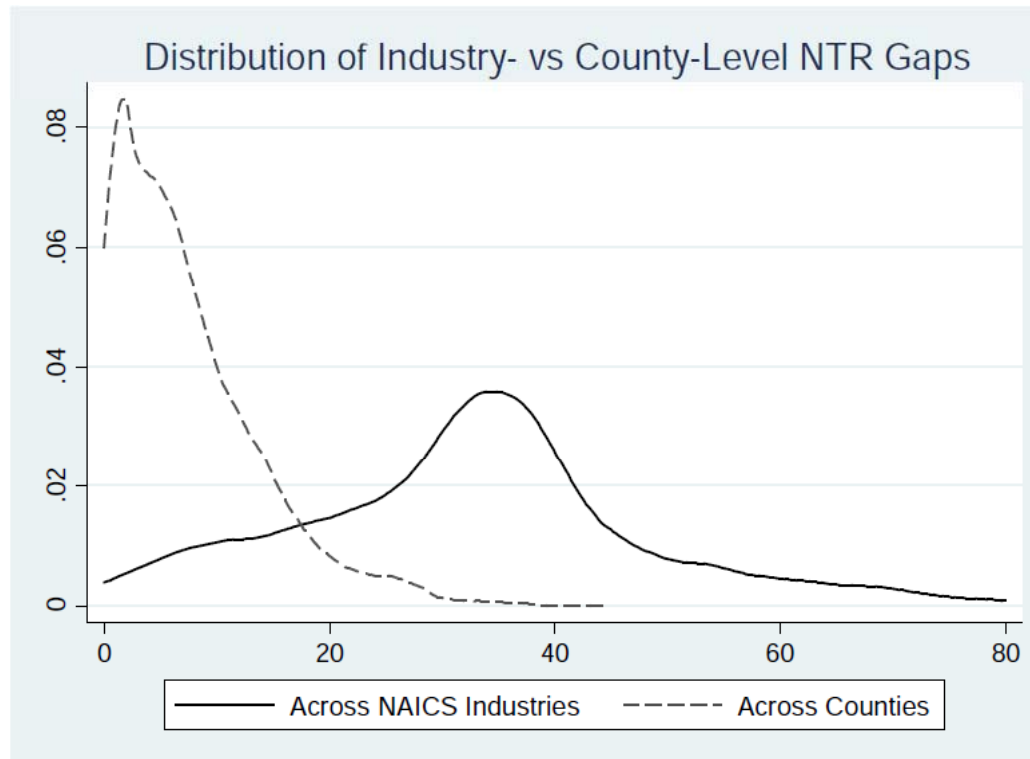
Counties' Exposure to PNTR

$$NTR\ Gap_c = \sum_j \left(\frac{L_{jcb}}{L_{cb}} NTR\ Gap_j \right),$$

where

L_{jcb}	base-year b employment of industry j in county c
L_{cb}	base-year b in county c
b	1990

Counties' Exposure to PNTR



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Identification Strategy

- We focus on voting for the **U.S. House of Representatives**
 - They serve short (two-year) terms and are expected to maintain close contact with their constituents
- We examine voting **across counties** rather than Congressional districts in order to examine changes *within* geographic units over time
- DD estimation
 - Eleven elections between 1992 and 2010
 - Cross section difference: counties with different NTR gaps
 - Time difference: before and after the PNTR in 2000

Identification Strategy

$$\begin{aligned} DemVote_{ct} = & \theta PostPNTR_t \times NTRGap_c \\ & + PostPNTR_t \times \mathbf{X}'_c \gamma + \mathbf{X}'_{ct} \beta \\ & + \delta_c + \delta_t + \alpha + \varepsilon_{ct}, \end{aligned}$$

where

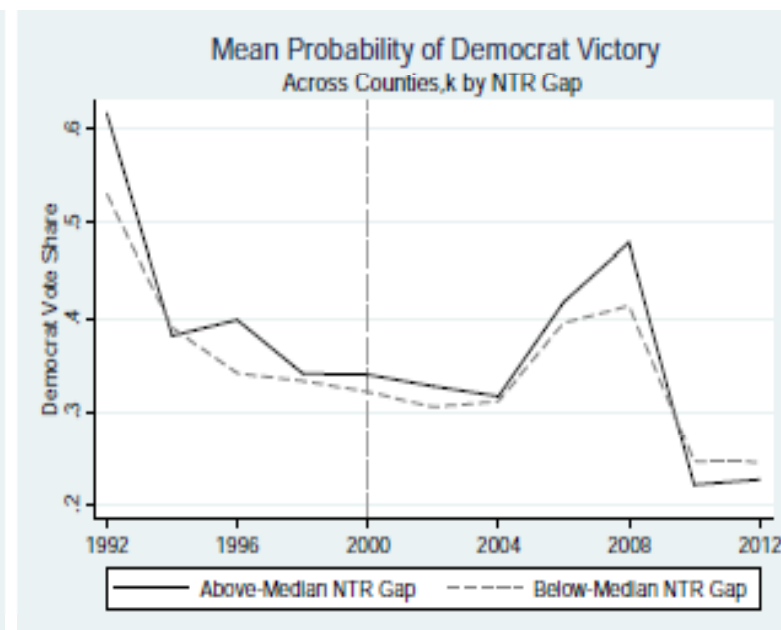
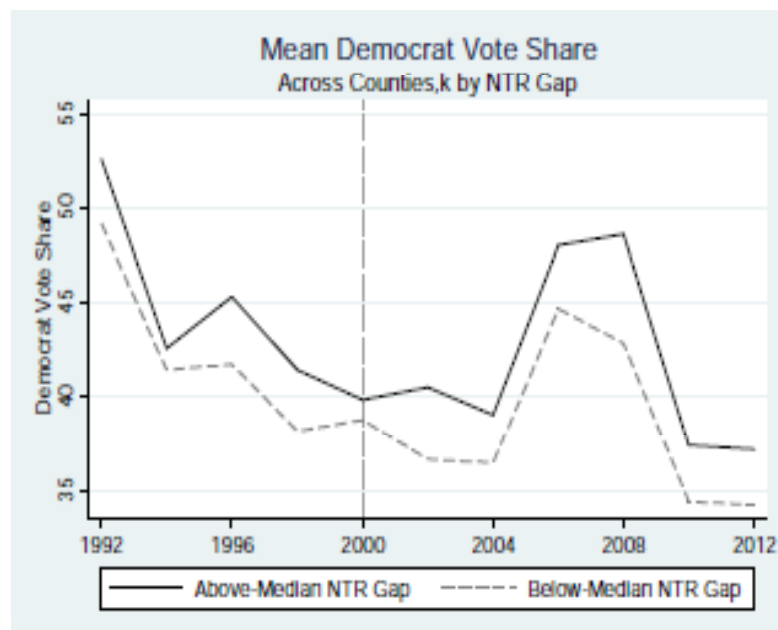
X_c : initial period county demographic attributes

X_{ct} : time-varying policies, such as average U.S. import tariffs, exposure to the phasing out of the MFA

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Baseline Results



Voting Results

VARIABLES	Demovote	Demovote	Demovote	Dem Win	S2Dem	S2Rep	Turnout
Post x NTR Gap _c	-0.0367 0.037	0.1363*** 0.0421	0.1808*** 0.0468	0.2282** 0.1038	0.2287** 0.0894	-0.2668* 0.1559	0.1444*** 0.0203
Post x Median HHI in 1990 _c		0.0224 0.0415	0.0207 0.0416	-0.2065* 0.1062	-0.1104 0.083	0.7161*** 0.1445	-0.3501*** 0.0185
Post x Percent Bachelors in 1990 _c		0.6873*** 0.0989	0.6933*** 0.099	1.9581*** 0.2535	0.4063* 0.2216	-2.2729*** 0.3818	0.6360*** 0.0453
Post x Percent Graduate in 1990 _c		0.0742 0.1282	0.0717 0.1283	-0.0181 0.3208	0.6157* 0.3357	0.3172 0.3962	-0.3889*** 0.0606
Post x Percent Non-White in 1990 _c		-0.019 0.0212	-0.0178 0.0214	-0.049 0.0431	0.1231** 0.0542	-0.0334 0.0471	-0.0652*** 0.0078
Post x Percent Over 65 in 1990 _c		-0.1923** 0.0747	-0.1909** 0.0747	-0.4723*** 0.1653	0.0546 0.1232	0.7587*** 0.2511	-0.1173*** 0.0296
Post x Percent Veteran in 1990 _c		0.0913 0.0964	0.0927 0.0963	-0.0718 0.2227	-0.0468 0.1838	-0.1163 0.3204	0.4357*** 0.0435
NTR _{ct}			134.3901** 64.0184	242.1227 157.9343	-365.8972* 187.6653	-202.3025 293.4735	84.6800** 33.6302
MFA Exposure (China) _{ct}			0.0823 0.2586	1.1879* 0.6895	-0.1262 0.6688	-3.1393*** 1.1028	0.1129 0.1375
MFA Exposure (ROW) _{ct}			-0.2942 0.584	-3.0604** 1.5275	0.1219 1.4646	7.5136*** 2.4494	-0.3302 0.307
Observations	31,106	31,106	31,106	31,106	16,891	11,105	19,400
R-squared	0.6321	0.638	0.6381	0.5769	0.3778	0.464	0.8367
Estimation	OLS	OLS	OLS	OLS	OLS	OLS	OLS
Period	1992(2)2010	1992(2)2010	1992(2)2010	1992(2)2010	1992(2)2010	1992(2)2010	1992(2)2010
Drops	none	none	none	none	Lag D Win	Lag R Win	none
FE	c,t	c,t	c,t	c,t	c,t	c,t	c,t
Clustering	c	c	c	c	c	c	c

Voting Results

Magnitude

- Moving from the 25th to the 75th percentile NTR gap
 - A 1.5 percentage point increase in the share of votes won by the Democratic candidate, or 3.7 percent of the average in the 2000 Congressional election
 - A 1.9 percentage point increase in the probability of Democrat victory, or 5.4 percent of the average in 2000
 - A 1.9 percentage point increase in the probability of switching to Democrats, or 27 percent of the average in 2000
 - A 2.2 percentage point decrease in the probability of switching to Republicans, or 17 percent of the average in 2000
 - A 1.18 percentage point increase in turnout, or 1.8 percent of the average in 2000

Voting Results

Neighboring Counties within Commuting Zones

VARIABLES	Demovote	Dem Win	S2Dem	S2Rep	Turnout
Post x NTR Gap _c	0.1297**	0.1688	0.1980*	-0.0288	0.1333***
	0.0556	0.1234	0.1115	0.1713	0.0231
Post x NTR Gap _{cz}	0.1269*	0.1476	0.0671	-0.7098***	0.0275
	0.0656	0.1485	0.1211	0.2184	0.0271
Post x Median HHI in 1990 _c	0.0198	-0.2075*	-0.1102	0.7309***	-0.3505***
	0.0417	0.1062	0.0831	0.1445	0.0185
Post x Percent Bachelors in 1990 _c	0.7214***	1.9908***	0.4203*	-2.4190***	0.6417***
	0.0994	0.2561	0.2226	0.3838	0.0456
Post x Percent Graduate in 1990 _c	0.0294	-0.0673	0.5885*	0.5021	-0.3968***
	0.1287	0.3263	0.3395	0.3987	0.061
Post x Percent Non-White in 1990 _c	-0.0186	-0.0499	0.1230**	-0.0219	-0.0653***
	0.0214	0.0431	0.0542	0.047	0.0078
Post x Percent Over 65 in 1990 _c	-0.1981***	-0.4806***	0.0524	0.8478***	-0.1189***
	0.0748	0.165	0.123	0.2526	0.0296
Post x Percent Veteran in 1990 _c	0.1072	-0.0549	-0.04	-0.2159	0.4386***
	0.0963	0.2227	0.1839	0.3201	0.0436
NTR _{ct}	130.5171**	237.6186	-369.8527**	-197.8596	83.8817**
	64.0094	157.7789	187.5737	291.6341	33.6393
MFA Exposure (China) _{ct}	0.0704	1.1741*	-0.1317	-3.1582***	0.1086
	0.259	0.6905	0.6692	1.0976	0.1376
MFA Exposure (ROW) _{ct}	-0.2657	-3.0273**	0.135	7.5179***	-0.3206
	0.5856	1.5302	1.4657	2.4431	0.3071
Observations	31,106	31,106	16,891	11,105	19,400
R-squared	0.64	0.58	0.38	0.46	0.84
Estimation	OLS	OLS	OLS	OLS	OLS
Period	1992(2)2010	1992(2)2010	1992(2)2010	1992(2)2010	1992(2)2010
Drops	none	none	Lag D Win	Lag R Win	Lag R Win
F-Test p-value	0.00	0.05	0.03	0.00	0.00
FE	c,t	c,t	c,t	c,t	c,t
Clustering	c	c	c	c	c

Voting Results

via Unemployment Rate

- A large literature going back to Fair (1978) examines the relationship between voting and economic conditions
- A large literature in political science indicates that voters reward incumbents when the economy is doing well and vote them out of office if it is not
- Recent research by Wright (2012) challenges this view. It finds a positive relationship between unemployment rates and voting for Democrats across 175 midterm gubernatorial elections and 4 presidential elections between 1994 and 2010
- Here, we examine the relationship between voting for Democrats and the unemployment rate, using the change in trade policy as an instrument for the unemployment rate

Voting Results

via Unemployment Rate

VARIABLES	Demovote _{ct}	U-Rate _{ct}	Demovote _{ct}	Demovote _{ct}	Dem Win _{ct}	Turnout _{ct}
Post x NTR Gap _c	0.1736***	0.0366***				
	0.0476	0.0055				
U-Rate _{ct}			-0.1406*	2.5470***	3.2964**	3.4438***
			0.0819	0.7362	1.5783	0.5675
Post x Median HHI in 1990 _c	0.0022		0.042	-0.1403**	-0.3906**	-0.4732***
	0.0429		0.0418	0.0683	0.1582	0.0457
Post x Percent Bachelors in 1990 _c	0.6147***		0.4919***	0.4280***	1.4902***	0.3226***
	0.102		0.095	0.1011	0.2444	0.067
Post x Percent Graduate in 1990 _c	0.0927		0.1267	0.1405	0.0475	-0.2181**
	0.1309		0.1307	0.1388	0.3261	0.0968
Post x Percent Non-White in 1990 _c	-0.0357		-0.0365	-0.0024	-0.0508	-0.0460***
	0.0226		0.0226	0.0248	0.0469	0.0153
Post x Percent Over 65 in 1990 _c	-0.1988***		-0.1937**	-0.4340***	-0.7780***	-0.4070***
	0.0757		0.0755	0.1038	0.2244	0.0658
Post x Percent Veteran in 1990 _c	0.132		0.0517	0.3005**	0.2756	0.6409***
	0.0985		0.0974	0.1254	0.2756	0.0877
NTR _{ct}	132.9724**		56.462	92.1864	199.2724	27.869
	62.4819		61.5141	64.3923	157.2083	44.8198
MFA Exposure (China) _{ct}	0.1098		0.2245	0.2492	1.1296	-0.0128
	0.2839		0.2841	0.3178	0.7739	0.1654
MFA Exposure (ROW) _{ct}	-0.2264		-0.3047	-0.4534	-2.5275	0.0022
	0.6381		0.6392	0.7164	1.7065	0.3743
Observations	27,974	27,974	27,974	27,974	27,974	16,323
R-squared	0.6489	0.7612	0.6486	0.6263	0.5887	0.7655
Estimation	OLS	OLS	OLS	2SLS	2SLS	2SLS
Instrument	.	.	.	PostxNTR Gap _c	PostxNTR Gap _c	PostxNTR Gap _c
Period	1992(2)2010	1992(2)2010	1992(2)2010	1992(2)2010	1992(2)2010	1992(2)2010
FE	c,t	c,t	c,t	c,t	c,t	c,t
Clustering	c	c	c	c	c	c
First-Stage F Test	.	.	.	113	113	82

Voting Results

Other Offices

VARIABLES	Democrat Vote Share		
	President	Senator	Governor
Post x NTR Gap _c	0.0482***	0.005	0.1459***
	0.0137	0.0327	0.0411
Post x Median HHI in 1990 _c	0.1318***	0.0721**	-0.1115***
	0.0127	0.0301	0.0372
Post x Percent Bachelors in 1990 _c	0.7235***	0.2652***	-0.1071
	0.0309	0.0731	0.085
Post x Percent Graduate in 1990 _c	0.0416	0.2021**	0.7926***
	0.0413	0.0981	0.1167
Post x Percent Non-White in 1990 _c	0.0464***	-0.0618***	-0.0657***
	0.0051	0.012	0.0158
Post x Percent Over 65 in 1990 _c	0.0462**	0.0513	-0.2306***
	0.0203	0.0479	0.0573
Post x Percent Veteran in 1990 _c	0.2614***	0.3062***	0.2013**
	0.0295	0.0697	0.0811
NTR _{ct}	38.5936**	23.5015	-26.0241
	19.0301	50.5806	60.3636
MFA Exposure (China) _{ct}	0.3469***	0.3941*	-0.6620**
	0.1015	0.2182	0.2775
MFA Exposure (ROW) _{ct}	-1.4643***	-1.1000**	0.783
	0.2273	0.4886	0.6166
Observations	15,558	21,129	13,599
R-squared	0.902	0.5974	0.5721
Estimation	OLS	OLS	OLS
Period	1992(2)2010	1992(2)2010	1992(2)2010
Drops	none	Lag D Win	Lag R Win
FE	c,t	c,t	c,t
Clustering	c	c	c

Summary

- Counties exposed to the change in U.S. trade policy with China exhibited larger increases in turnout, the share of voters cast for Democrats and the probability that a Democrat represents the county in the mid-2000 elections
- Do these votes make sense?
- Check to see if Democrats were more likely to vote against free-trade or economic assistance bills once in office

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Identification Strategy

- *District*-level analysis
- Examine “trade” and “economic assistance” bills considered by the 103rd to 112th Congresses (1993-5 to 2011-13) as outlined in the *Rohde/PIPC House Roll Call Database*
- Rank each bill in terms of being “pro” vs “anti” trade or economic assistance using the National Journal rankings of their sponsors’ “economic liberalism”
 - The less economically liberal the sponsor, the more anti-trade or pro-assistance the legislation

Identification Strategy

- Simple, district-Congress level specification

$$y_{dh} = \alpha + \beta Democrat_{dh} + \mathbf{X}'_{dh}\theta + \delta_s + \delta_h + \varepsilon_{dh},$$

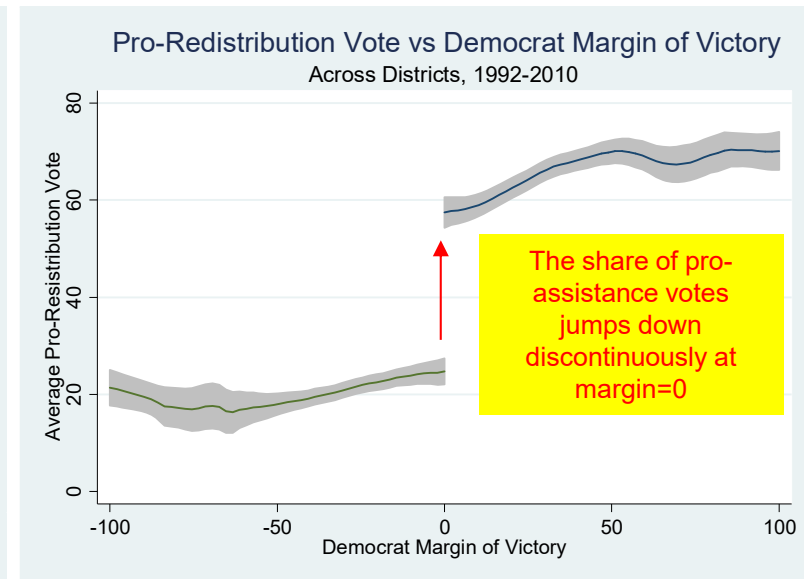
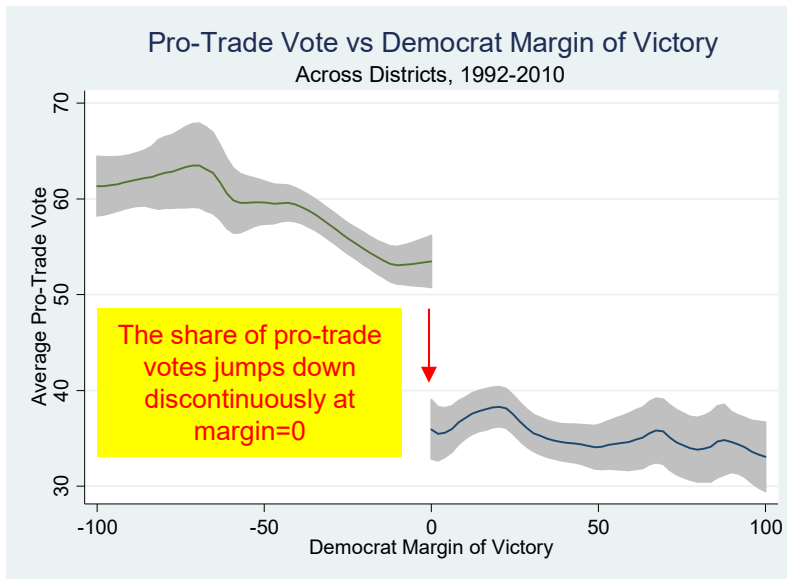
where

y_{dh} share of pro-trade or pro-assistance votes by the district d Representative during Congress h

$Democrat_{dh}$ =1 if Democrat

- Use regression discontinuity approach given potential endogeneity
- Basic idea: the probability of a Democrat winning a congressional election disproportionately increases at the point where she receives a larger share of votes than the Republican competitor

Regression Discontinuity Intuition



Regression Discontinuity Approach

(Lee 2008)

- Can estimate the RD non-parametrically or parametrically (Lee and Lemieux 2010):

First stage: $Democrat_{dh} = \gamma I \{Margin_{dh} \geq 0\} + g(Margin_{dh}) + \mu_{dh}$

Second stage: $y_{dh} = \alpha + \beta Democrat_{dh} + f(Margin_{dh}) + \varepsilon_{dh}$

Formal Estimation

103rd to 112th Congresses

Pro-Trade Vote Share

	Pro-Trade Vote Share		
	[1]	[2]	[3]
Democrat	-0.173***	-0.179***	-0.149***
	0.007	0.033	0.030
Observations	4,294	4,296	4,296
R2	0.59	.	0.15
Covariates	Yes	No	No
Fixed Effects	State, Congress	.	State, Congress
Bandwidth	.	100%	.
Estimation Technique	Linear	Non-Parametric	Polynomial 3

- Democrat is 16 percent more likely to support **anti-trade** legislation than a Republican

Pro-Economic Assistance Vote Share

	Pro-Economic Assistance Vote Share		
	[1]	[2]	[3]
Democrat	0.435***	0.324***	0.325***
	0.009	0.027	0.0358
Observations	4,292	4,294	4,294
R2	0.61	.	0.36
Covariates	Yes	No	No
Fixed Effects	State, Congress	.	State, Congress
Bandwidth	.	100%	.
Estimation Technique	Linear	Non-Parametric	Polynomial 3

- Democrat is 27 percent more likely to support **pro-assistance** legislation than a Republican

Formal Estimation

Pre- vs Post-2001 Congresses; Parametric 2SLS estimations

	Pro-Trade		Pro-Assistance	
	Before 2001	After 2001	Before 2001	After 2001
Democrat	-0.032	-0.336***	0.195***	0.425***
	0.026	0.034	0.031	0.043
Observations	4,197	4,197	4,197	4,197
R2	0.54	0.54	0.54	0.54
Estimation	Parametric	Parametric	Parametric	Parametric
Covariates	Yes	Yes	Yes	Yes
Fixed effects	State, Congress	State, Congress	State, Congress	State, Congress
Control Function	Cubic	Cubic	Cubic	Cubic

Support for anti-trade and pro-assistance bills among Democrats is stronger after the 2001 jump in Chinese imports

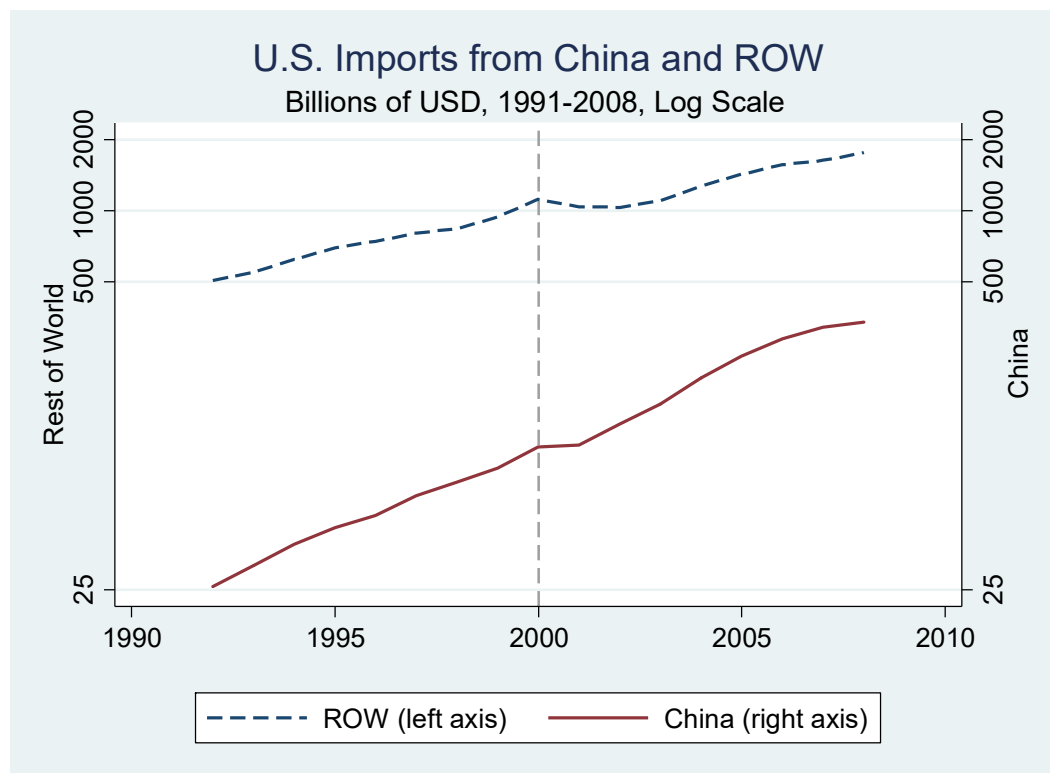
Conclusion

- We examine the influence of U.S. trade liberalization with China on U.S. politics
- We find that voters in U.S. counties with greater exposure to the change of U.S. trade policy with China were more likely to vote Democrat and more likely to experience a switch in representation from Republican to Democrat
- We find that Democrats are more likely to support anti-trade and pro-economic-assistance legislation, especially after the 2001 surge in U.S. imports from China and decline in manufacturing employment

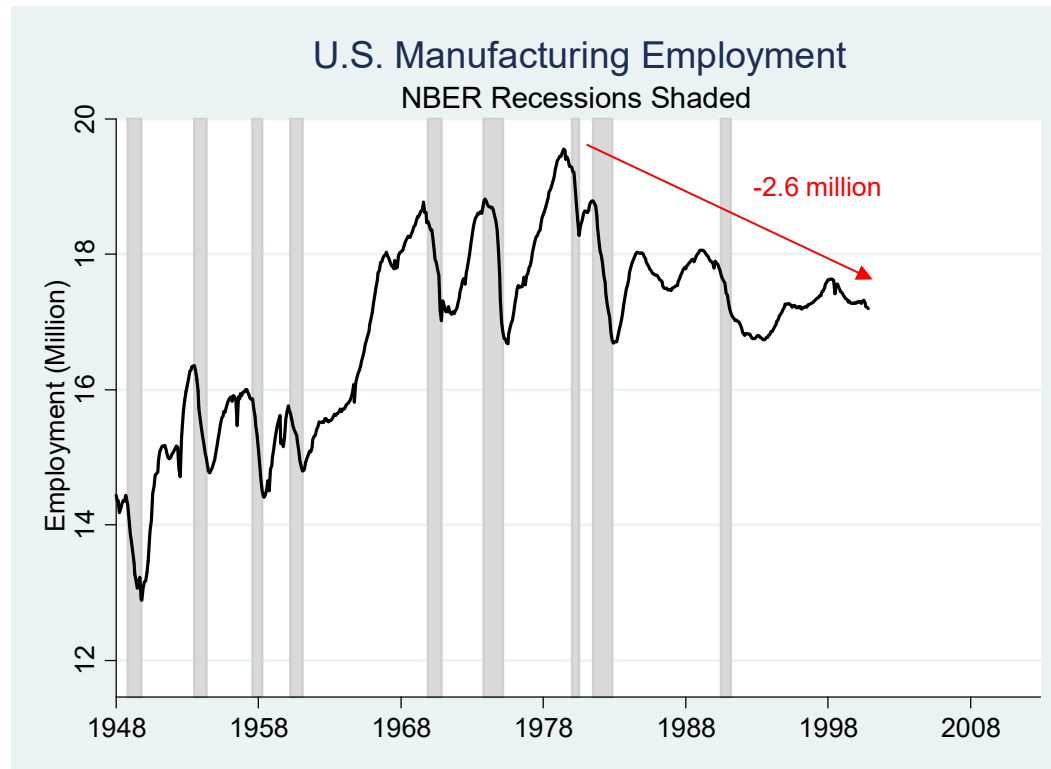
Thanks!

Additional Slides

U.S. Imports from China vs ROW

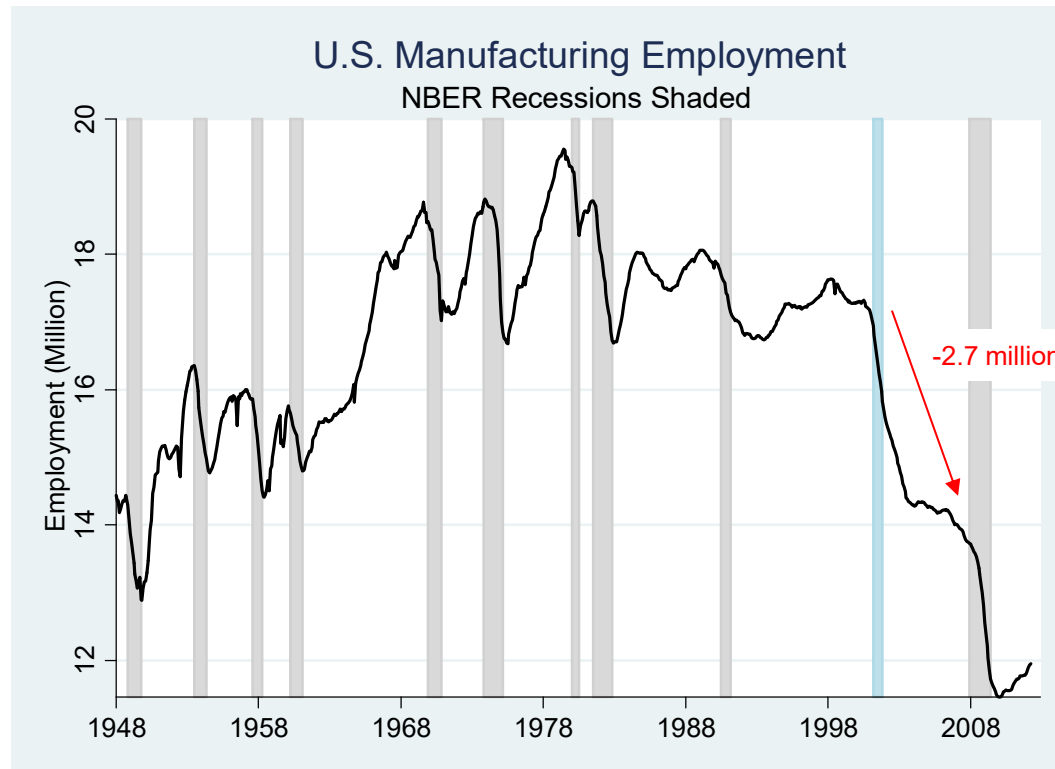


U.S. Manufacturing Employment



Source: [Pierce and Schott \(2012\)](#)

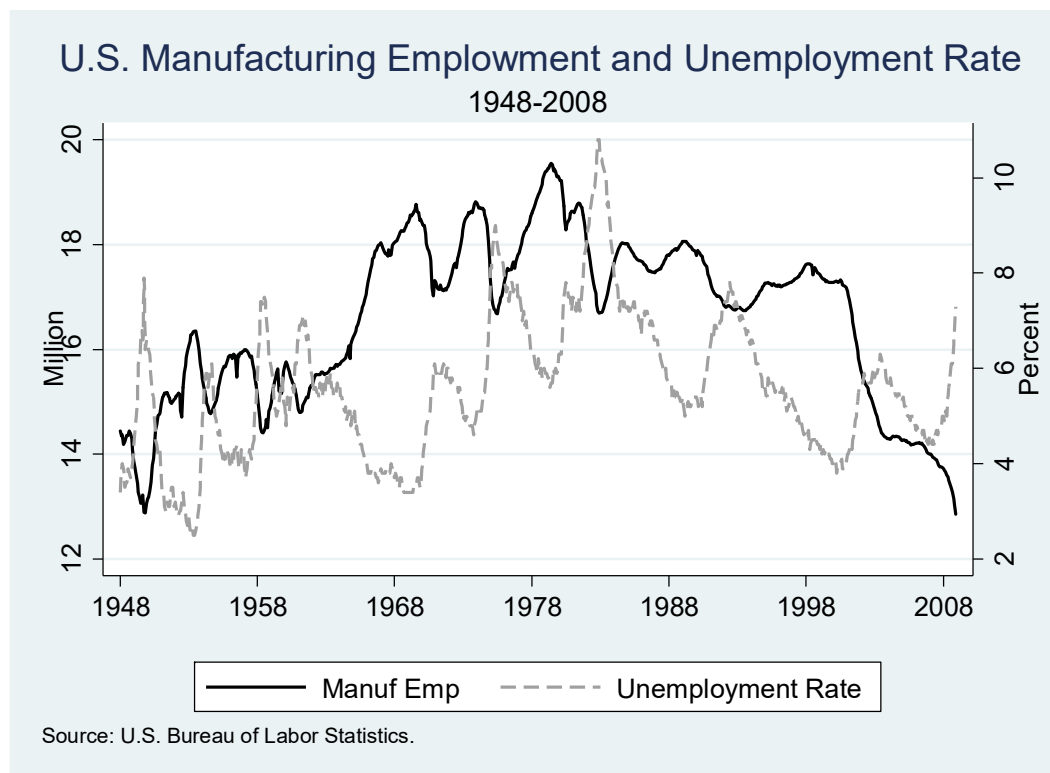
U.S. Manufacturing Employment



Source: [Pierce and Schott \(2012\)](#)

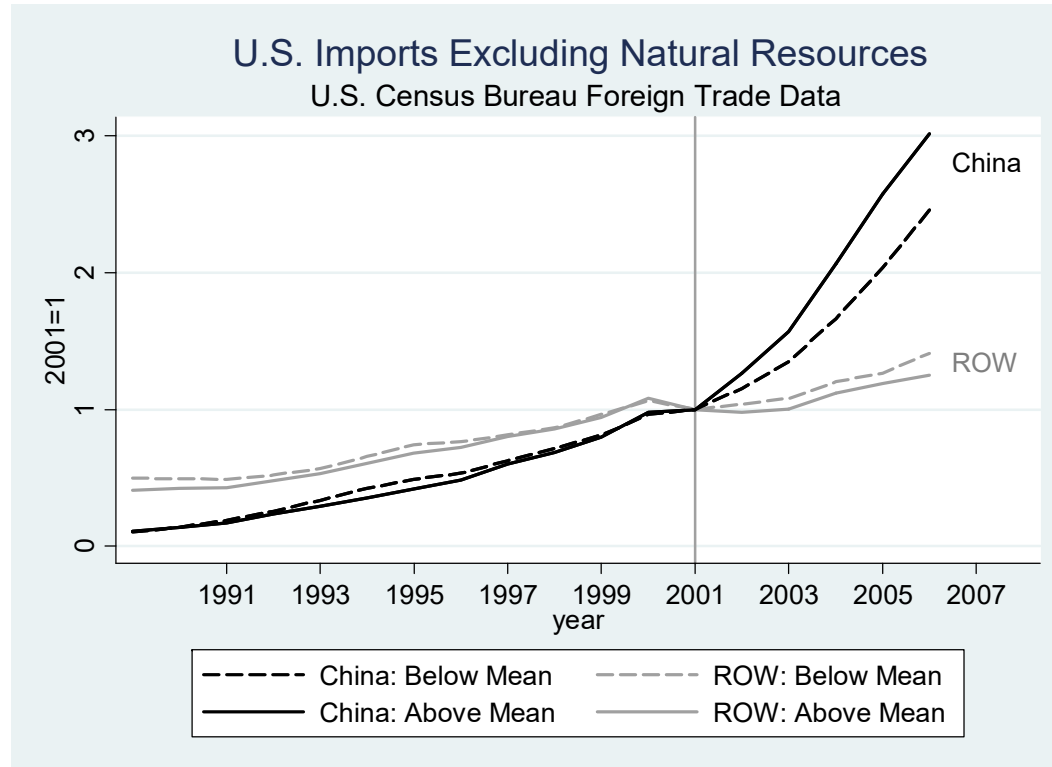
- Jump in Chinese imports coincides with sharp decline in U.S. manufacturing employment
 - Autor et al. (2014)
 - Pierce and Schott (2015)
- Many attempts by Congress to restrict trade with China during the 2000s

U.S. Manufacturing Employment and Unemployment Rate



The NTR Gap and U.S. Imports

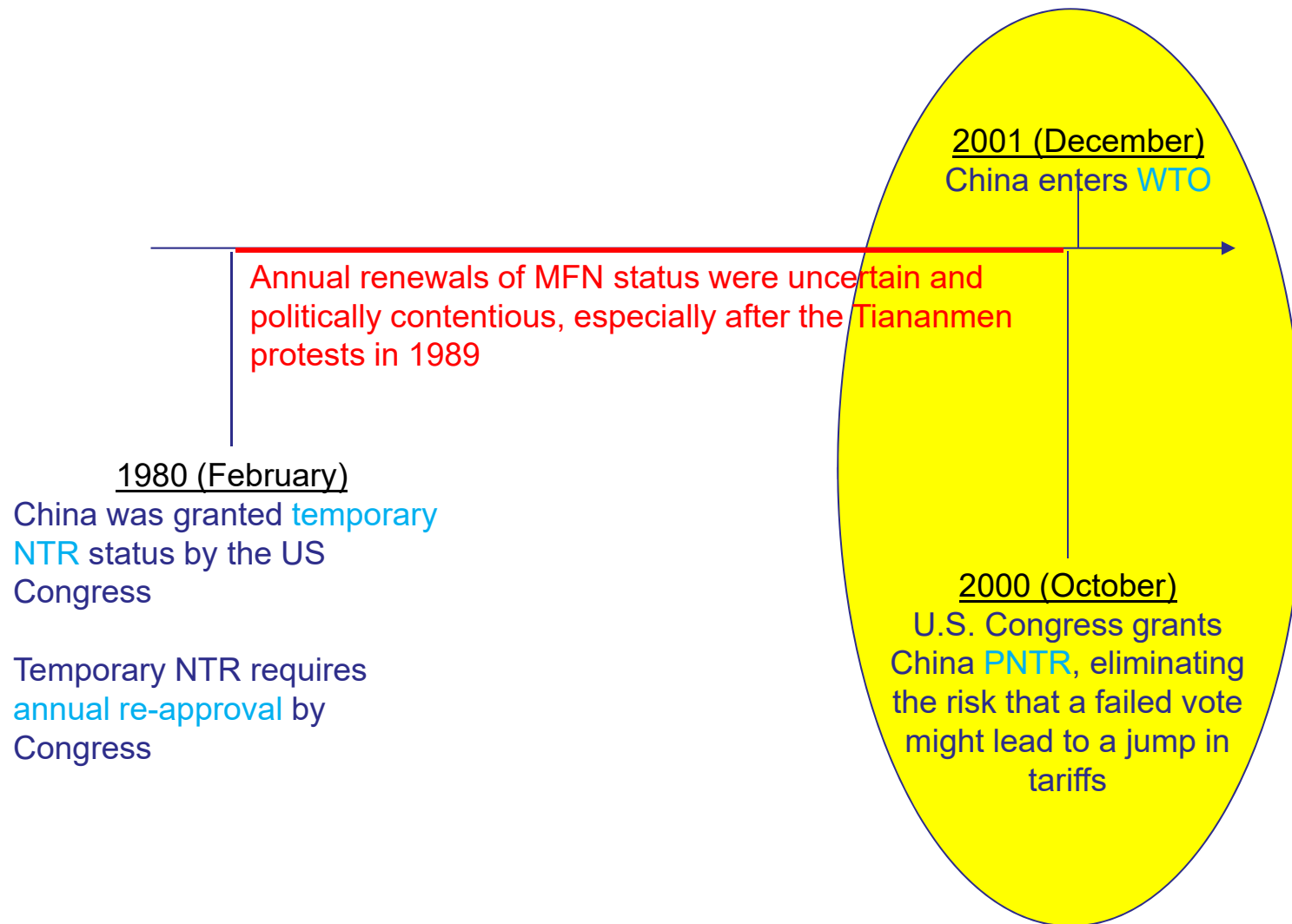
Public Census Trade Data



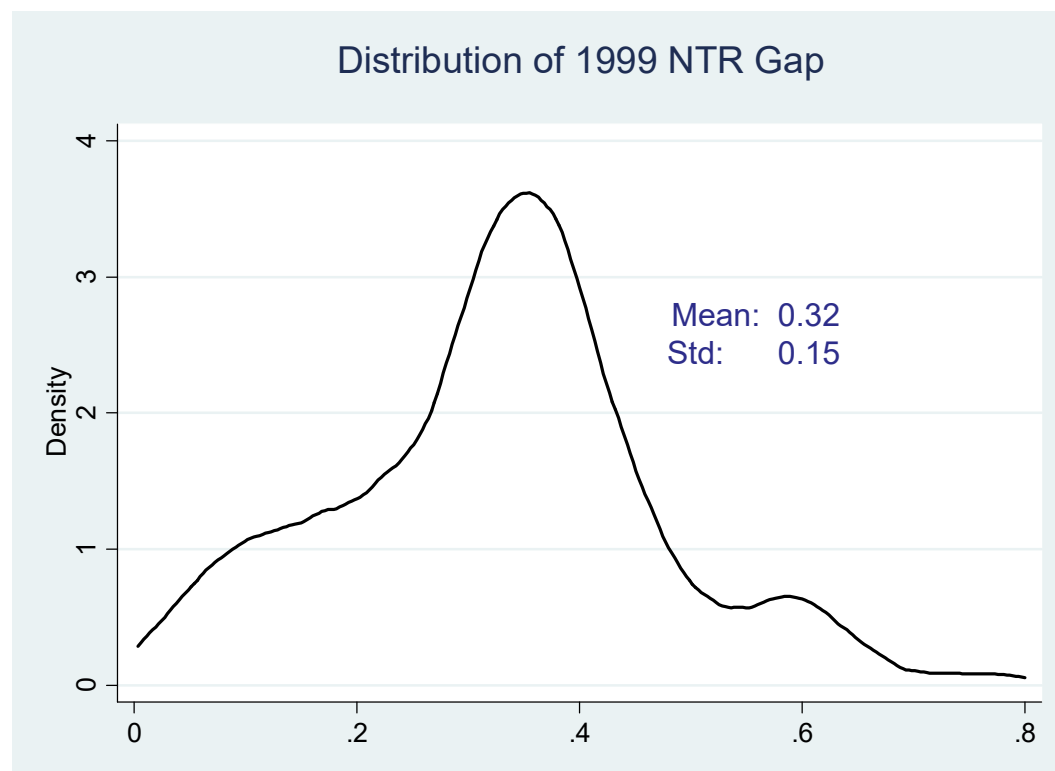
Source: Pierce and Schott (2015)

- Imports from China in products with above-median NTR gaps jump after PNTR
- That jump is not present in imports from rest-of-world (ROW)

Policy Background

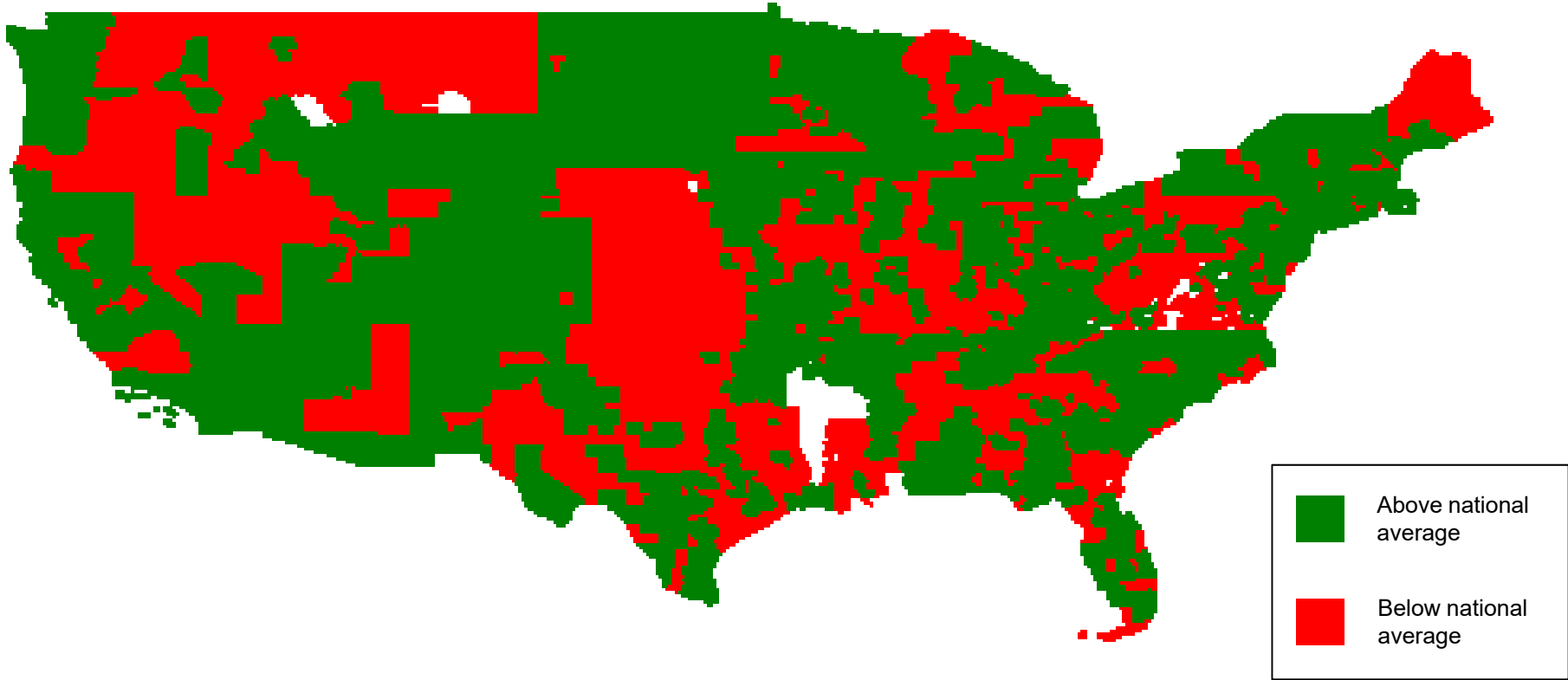


Data – Instrument #2 (NTR Gap)

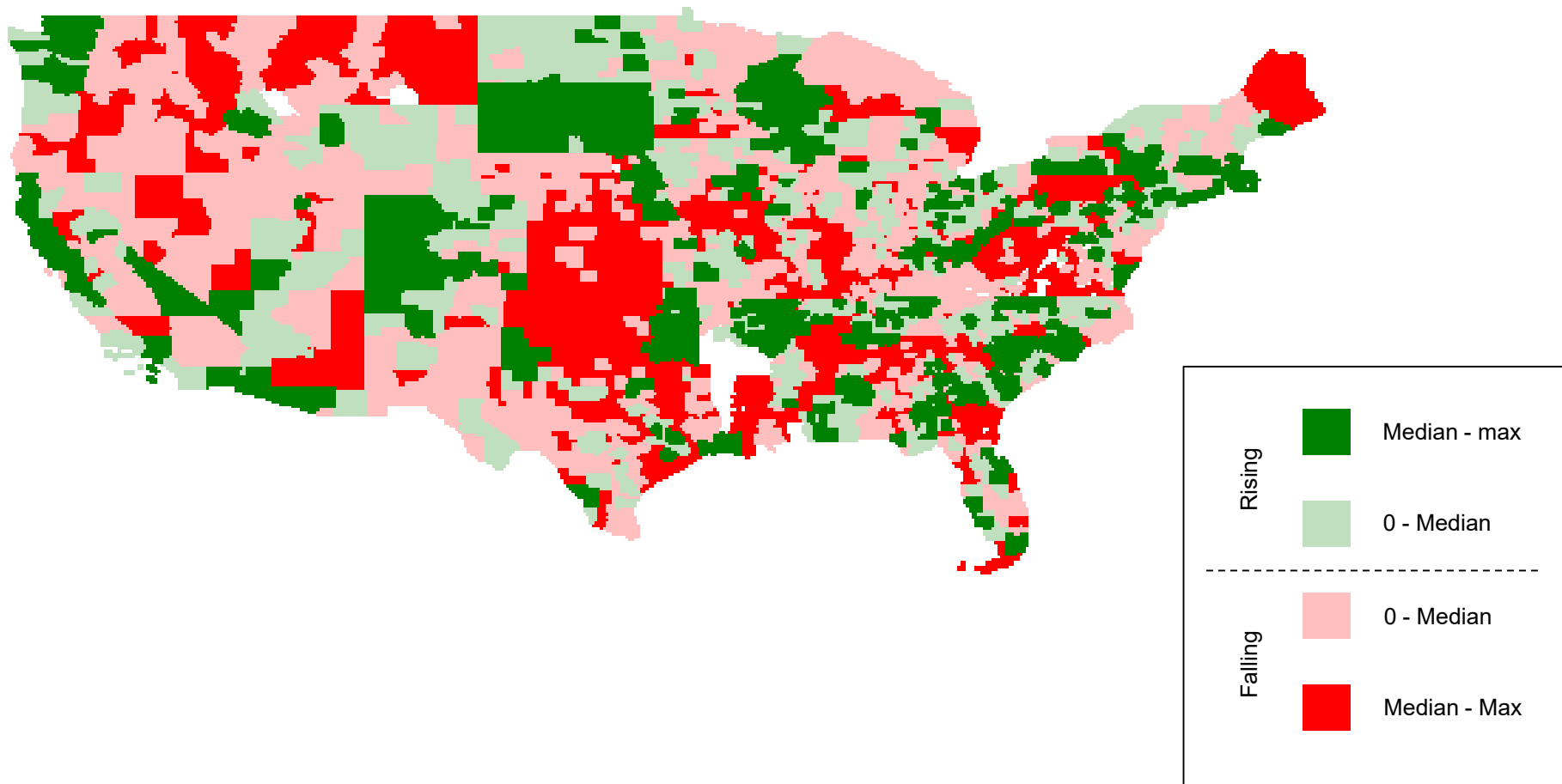


- Average NTR tariff rate is 4%
- Average non-NTR rate is 36%
- Average “NTR gap” is 32%

Change in Democrat Vote Share (DVS), 1996-2004

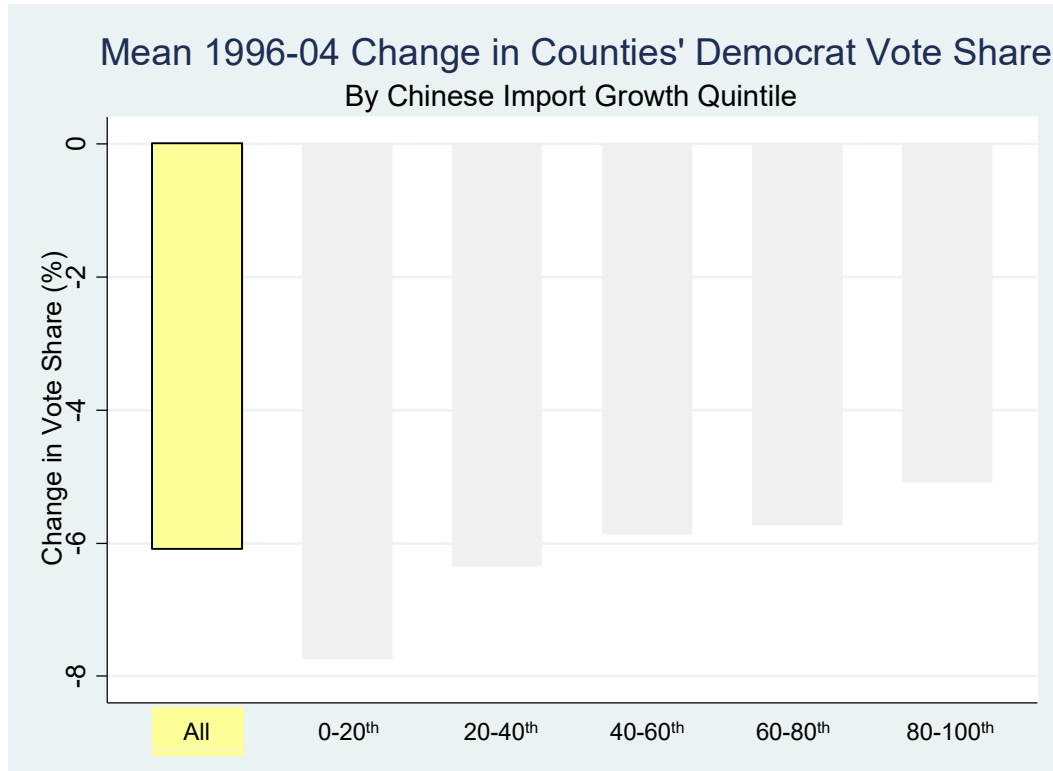


Change in Democrat Vote Share, 1996-2004



Summary Statistics

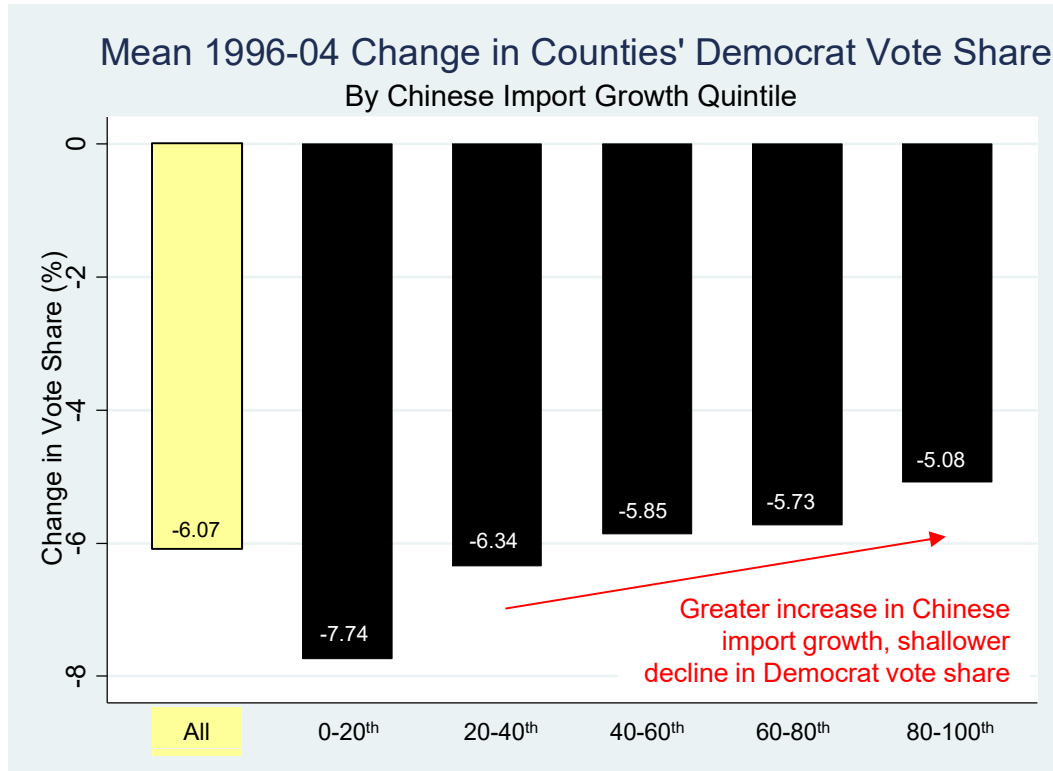
1996-2004 Change in Democrat Vote Share (DVS)



- On average, Democrats lost votes between 1996 and 2004

Summary Statistics

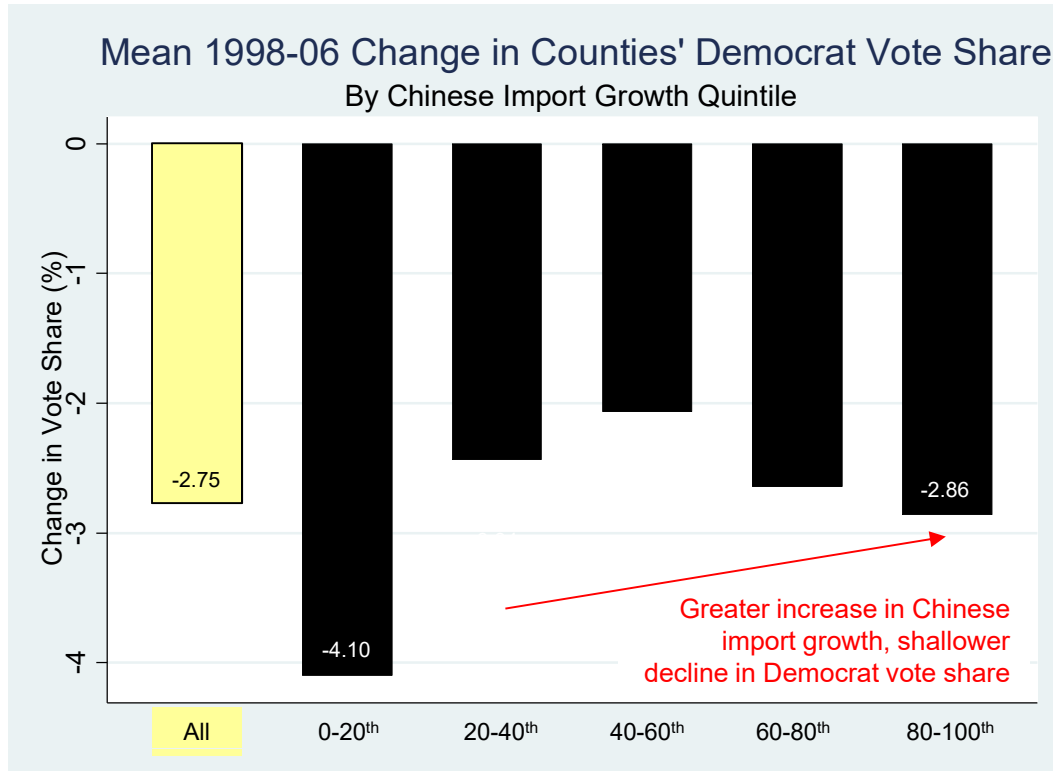
1996-2004 Change in Democrat Vote Share (DVS)



- On average, Democrats lost votes between 1996 and 2004
- Less votes were lost in counties experiencing the higher growth in Chinese imports per worker

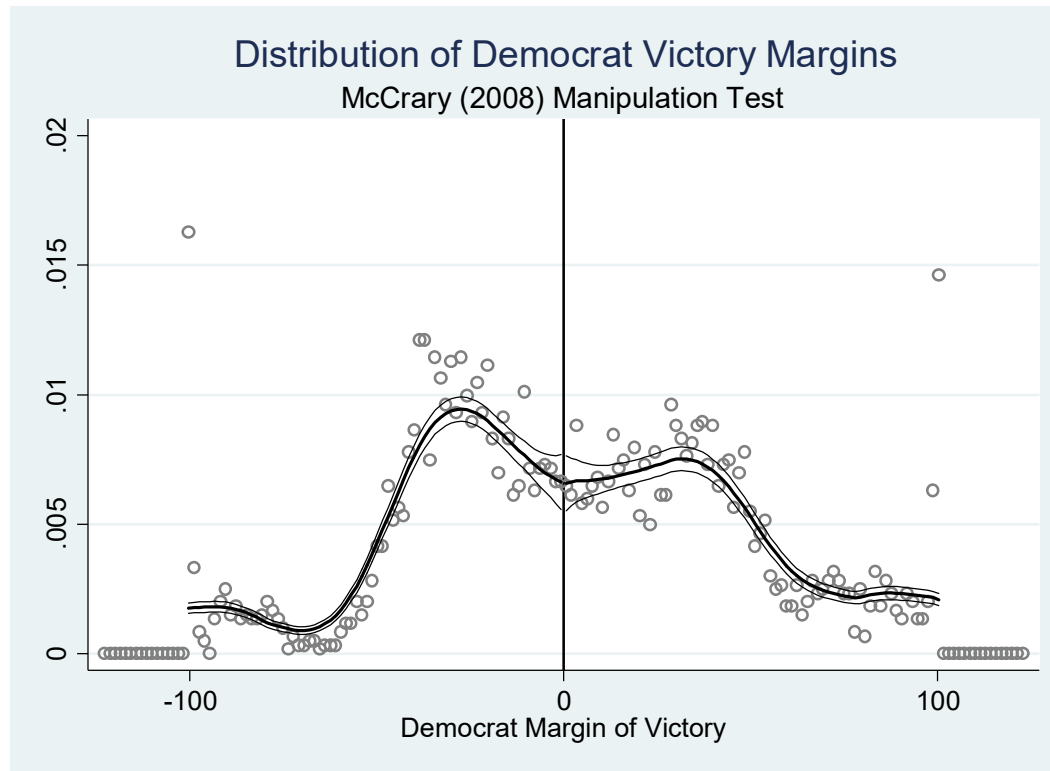
Summary Statistics

1998-2006 Change in Democrat Vote Share (DVS)



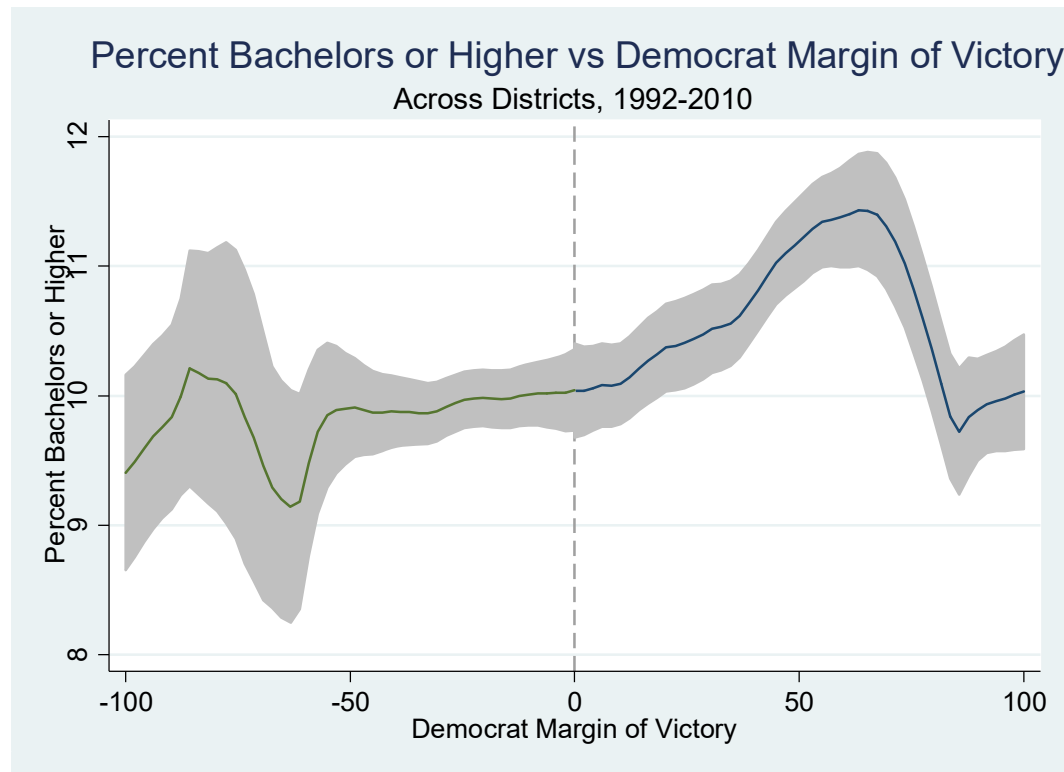
- On average, Democrats lost votes between 1998 and 2006
- Less votes were lost in counties experiencing the higher growth in Chinese imports per worker

McCrary (2008) Manipulation Test



- Discontinuity estimate across Congressional districts: -0.003 (0.125)
- I.e., no evidence of bias toward control or treatment groups

McCrary (2008) Manipulation Test



- Also no evidence of discontinuities across district attributes, e.g., percent of population with Bachelor's degree