Returning Home: Explaining the Location Choice of American Firms' Backshoring Projects

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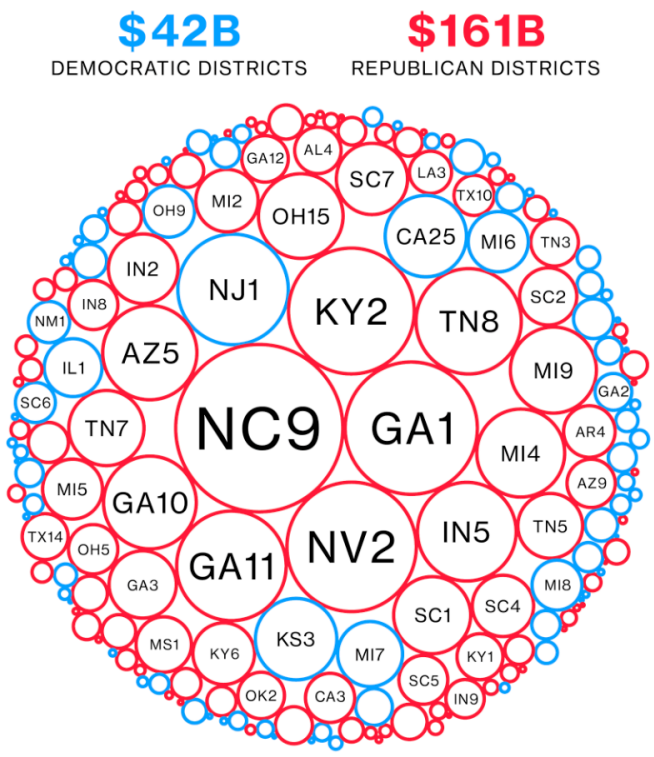
Firms Are Increasingly Reshoring Back to the US

Firms are bringing production back home because of the Ukraine war, China's slowdown — and TikTok

Reshored Firms Bringing Back Jobs, but to Red Districts?



Biden Is Giving Red Districts an Inconvenient Gift: Green Jobs

The White House's policies have fueled plans for more than $200 billion in cleantech manufacturing investments — mostly in districts with Republican lawmakers opposed to the agenda.

Source: Bloomberg

Overview

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- **Data:**
  - Novel firm-level backshoring data from 2007 to 2022 (4,676 backshoring projects by 3,030 US firms in manufacturing industries)
  - Firm-level subsidies data matched to firms' backshoring patterns
  - District-level electoral competition data for US House elections

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  - District-level electoral competition data for US House elections
- **Empirical findings:**
  - Republican strongholds are more successful in attracting backshoring projects compared to tightly contested Republican-leaning districts
  - In contrast, Democratic strongholds are less likely to attract firm backshoring
  - Subsidies increase the probability and frequency of firm backshoring, especially for those promised more jobs

What Drives Firms' Location Choice in Backshoring?

Two-fold questions:

- Why some firms decide to move back to the US, while others don't?
- Among firms that decide to backshore, what influences their choice of specific localities? $\rightsquigarrow$ this project

What Drives Firms' Location Choice in Backshoring?

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Existing Literature

- Internal Drivers
  - Rising labor or energy cost; transportation and logistics costs; underutilization of capacity in the host country; pressure from labor unions; customer proximity outside the host country; patriotism and loyalty in the home country; and the automation of production (Fel and Griette, 2017; Fratocchi et al., 2016; Kinkel, 2012, Gray et al., 2013, Canham and T. Hamilton, 2013)

- External Drivers
  - Government subsidies and other incentives; positive spillovers resulting from technology clustering; rising uncertainties in global supply chains (Ancarani et al., 2015; Foerstl, Kirchoff and Bals, 2016, Ancarani et al., 2015)

Our Argument

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- **Politician-Firm-Voter Relations**
  - Electoral competition motivates politicians in certain districts to prioritize job creation by promising or offering subsidies to firms
  - Firms create more jobs for voters by bringing production back home
  - Voters award politicians who can bring manufacturing jobs home

Our Argument

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  - Electoral competition motivates politicians in certain districts to prioritize job creation by promising or offering subsidies to firms
  - Firms create more jobs for voters by bringing production back home
  - Voters award politicians who can bring manufacturing jobs home
- We focus on the **politician** $\rightsquigarrow$ **firm** arrow within this tripartite relationship.
  - Competitive districts: Politicians face stronger electoral pressure for job creation and appeal to a broader voter base
  - Republicans: Politicians in safe districts often adopt business-friendly policies
  - Democrats: Politicians in safe districts focus less on subsidy provision

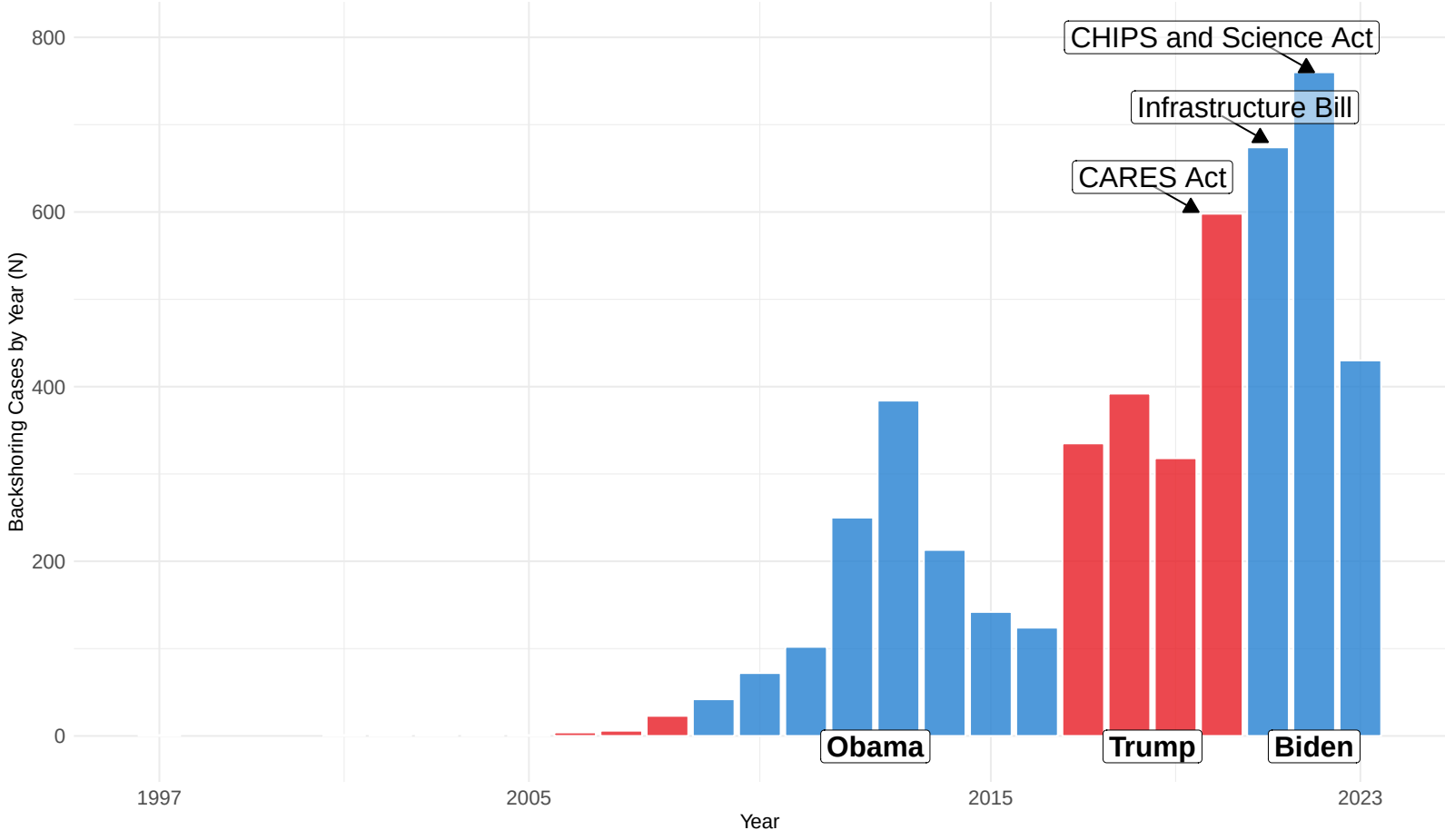
Hypotheses


Politicians
Votes
Subsidies
Voters
Jobs via backshoring
Firms

Hypotheses

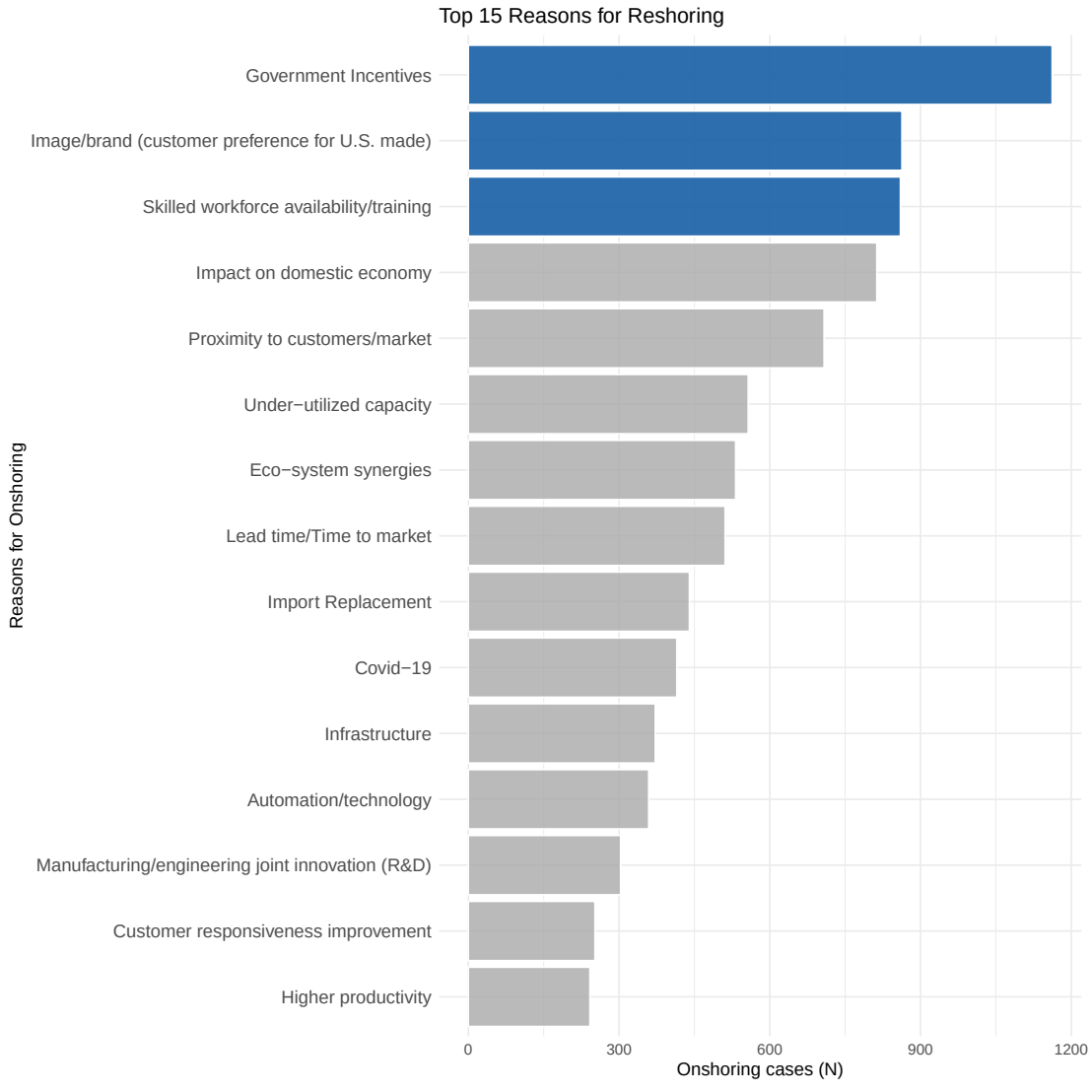
- Hypotheses:
  - Firms are more likely to relocate production to districts with competitive elections *(Hypothesis 1)*.
  - Firms are **more** likely to relocate to Republican strongholds instead of the more competitive Republican districts (*Hypothesis 2a*).
  - Firms are **less** likely to relocate to Democratic strongholds instead of the more competitive Democratic districts (*Hypothesis 2b*).

Empirical Patterns: Net Backshoring Over the Years



Backshoring activities follow rising geopolitical tensions and the introduction of large subsidy programs.

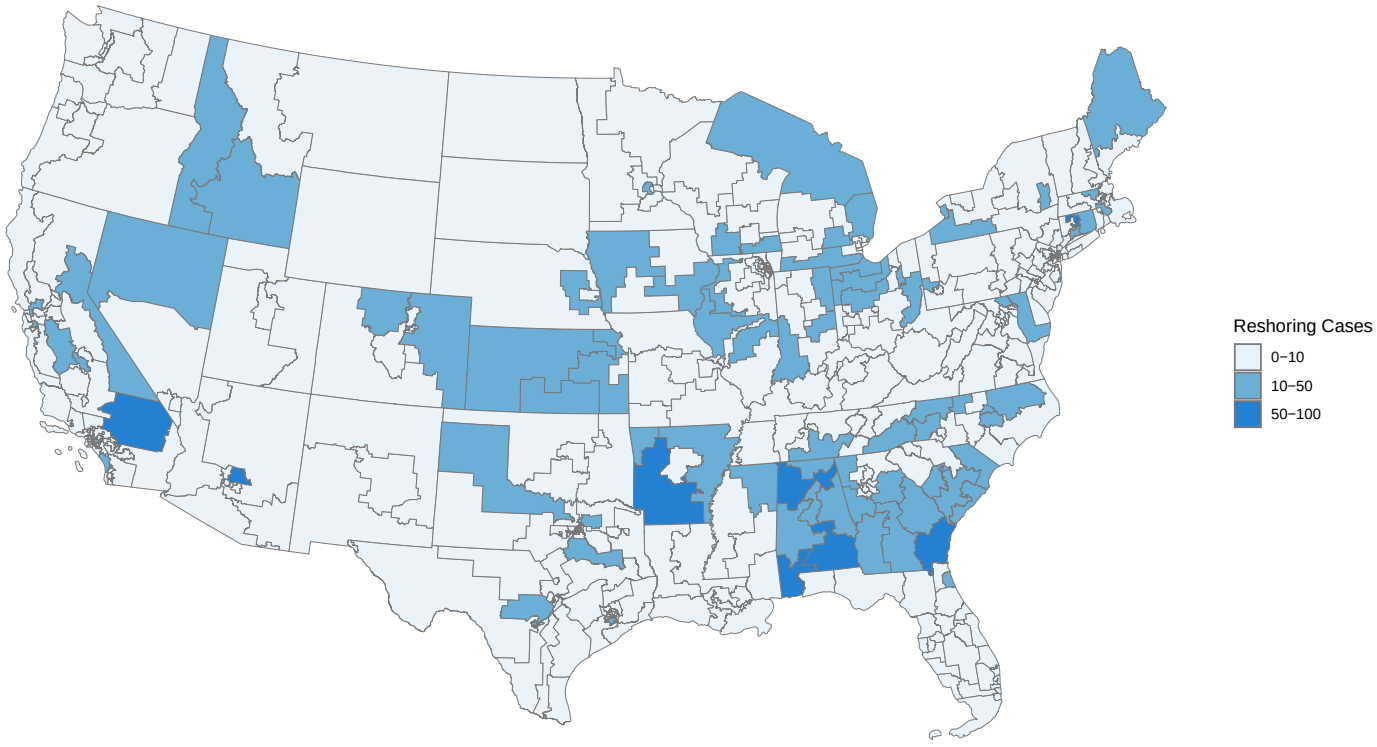
Empirical Patterns: Backshoring Reasons



Top Reasons for Reshoring

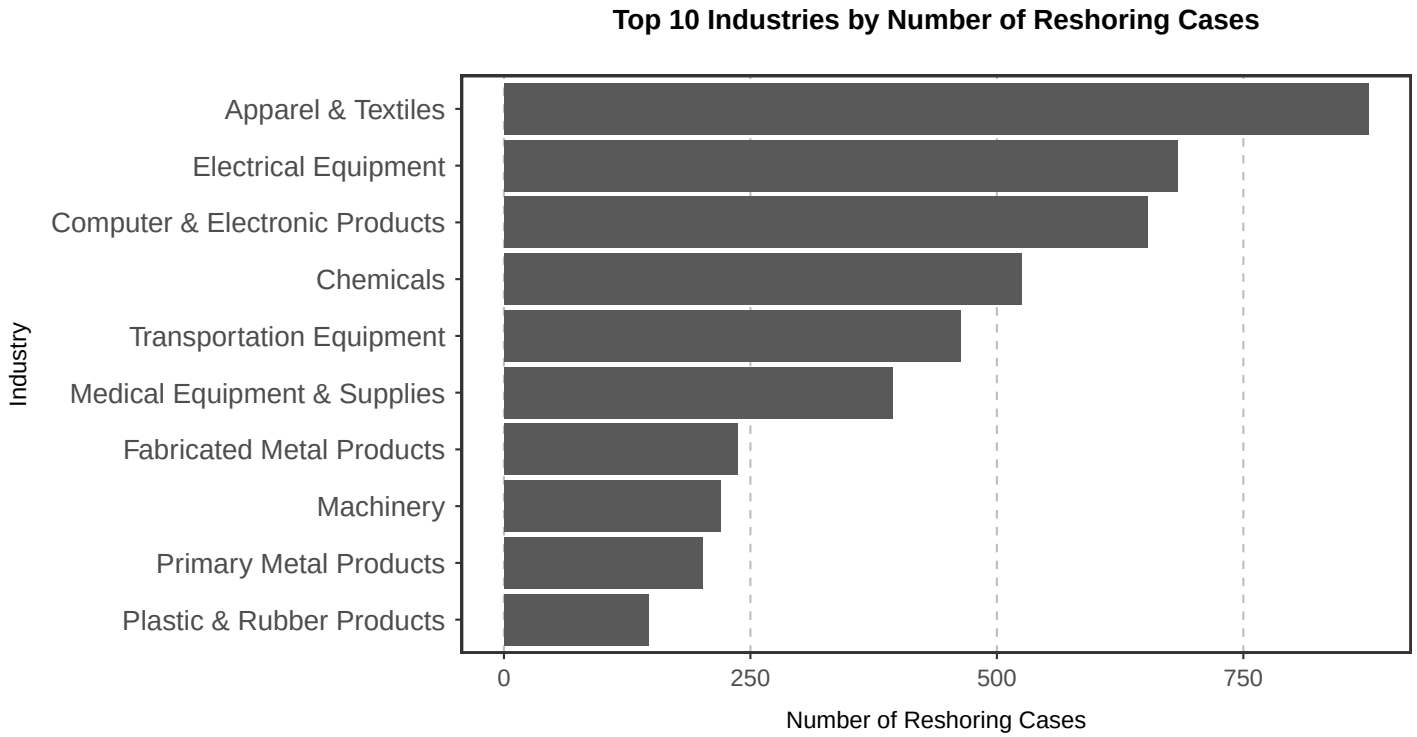
- Government incentives
- Customers' preferences for US-made products
- Skilled workforce

Empirical Patterns: Geographical Distribution of Backshoring Cases



Backshoring activities are geographically concentrated, especially in Republican strongholds, such as district 4 in Arkansas (R+20), district 4 in Alabama (R+33), and district 1 in California (PVI of R+12)

Empirical Patterns: Backshoring Cases by Industry



Backshoring activities are more frequent in manufacturing industries, such as textiles & apparel, electrical equipment, and computer & electronic products

Research Design

Data

- Backshoring data:
  - 4,676 publicly reported backshoring cases for 3,030 unique American firms from 2007 to 2022
- Electoral competition data:
  - US House of Representatives elections data
- Subsidies data:
  - *Subsidy Tracker* data covering 670,000 subsidy entries awarded to 2,856 parent companies under 1,481 programs

Models

- Baseline models:
  - District-level analysis: electoral competition $\rightsquigarrow$ backshoring patterns
- Mechanisms:
  - Firm-level analysis: subsidies to firms $\rightsquigarrow$ backshoring
  - Instrumental variable approach as subsidies are not randomly assigned

Baseline Models

District-level analysis

$$\begin{aligned}\Pr\left(\textit{Backshoring}_{c,t} = 1\right) =& \alpha + \beta_1 \textit{Incumbent Vote Share}_{c,t} * \textit{Partisanship}_{c,t} \\ &+ \beta_2 \textit{Incumbent Vote Share}_{c,t} + \beta_3 \textit{Partisanship}_{c,t} + \\ &\mathbf{X}_{c,t} + \lambda_c + \gamma_t + \epsilon_{c,t}\end{aligned}$$

- $\textit{Backshoring}_{c,t}$ is a dummy variable that equals 1 if there is at least one backshored project in congressional district c in year t (or $\textit{Backshoring Cases}_{c,t}$ as an alternative)
- $\textit{Incumbent Vote Share}_{c,t}$ is the vote share of the incumbent candidate in the most recent US House of Representatives elections

Firm-level analysis

$$\textit{Backshoring Cases}_{f,t} = \alpha + \beta \textit{Government Subsidies}_{f,t} + \mathbf{X}_{f,t} + \lambda_f + \gamma_t + \epsilon_{f,t}$$

- $\textit{Backshoring Cases}_{f,t}$ is the number of backshoring cases of firm f in year t across different localities in the US
- $\textit{Government Subsidies}_{f,t}$ is the total amount of subsidies firm f receives in year t

IV Models

First-stage model

$$\textit{Government Subsidy}_{c,t} = \alpha + \beta \textit{Trade Exposure}_{c,t} + \mathbf{X}_{c,t} + \lambda_c + \gamma_t + \epsilon_{c,t}$$

Second-stage model

$$\textit{Backshoring Cases}_{c,t} = \alpha + \beta \widehat{\textit{Government Subsidy}}_{c,t} + \mathbf{X}_{c,t} + \lambda_c + \gamma_t + \epsilon_{c,t}$$

- $\textit{Trade Exposure}_{c,t}$ is a continuous variable that measures district-level exposure to China's retaliatory tariffs during the US-China trade war
- $\mathbf{X}_{c,t}$ is a set of time-varying covariates which includes the incumbent vote share, annual payroll, number of establishments, skilled labor, high school graduates (%), median earnings, unemployment rate, and labor force participation
- λ_c and γ_t are district and time fixed-effects, respectively
- Note: We rely on the conditional ignorability assumption to identify the causal effects but not the random assignment of IV

Overall Incumbent Vote Share on Reshoring

	DV: Reshoring Probability(%)			DV: Reshoring Cases (N)		
	(1)	(2)	(3)	(4)	(5)	(6)
Incumbent Vote Share (%)	0.002	0.005	0.005	0.001	0.006	0.004
	(0.008)	(0.010)	(0.010)	(0.004)	(0.007)	(0.007)
Num.Obs.	3582	1794	1794	6307	3333	3333
R2 Adj.	0.249	0.126	0.123	0.331	0.421	0.424
Cluster SE	by District	by District	by District	by District	by District	by District
Year & District FE	✓	✓	✓	✓	✓	✓

* p < 0.1, ** p < 0.05, *** p < 0.01

Table: Estimated Effects of Overall Incumbent Vote Share on Reshoring

Limited evidence that firms are more likely to relocate to electorally competitive districts in general.

Yet Backshoring Patterns Differ by Partisanship

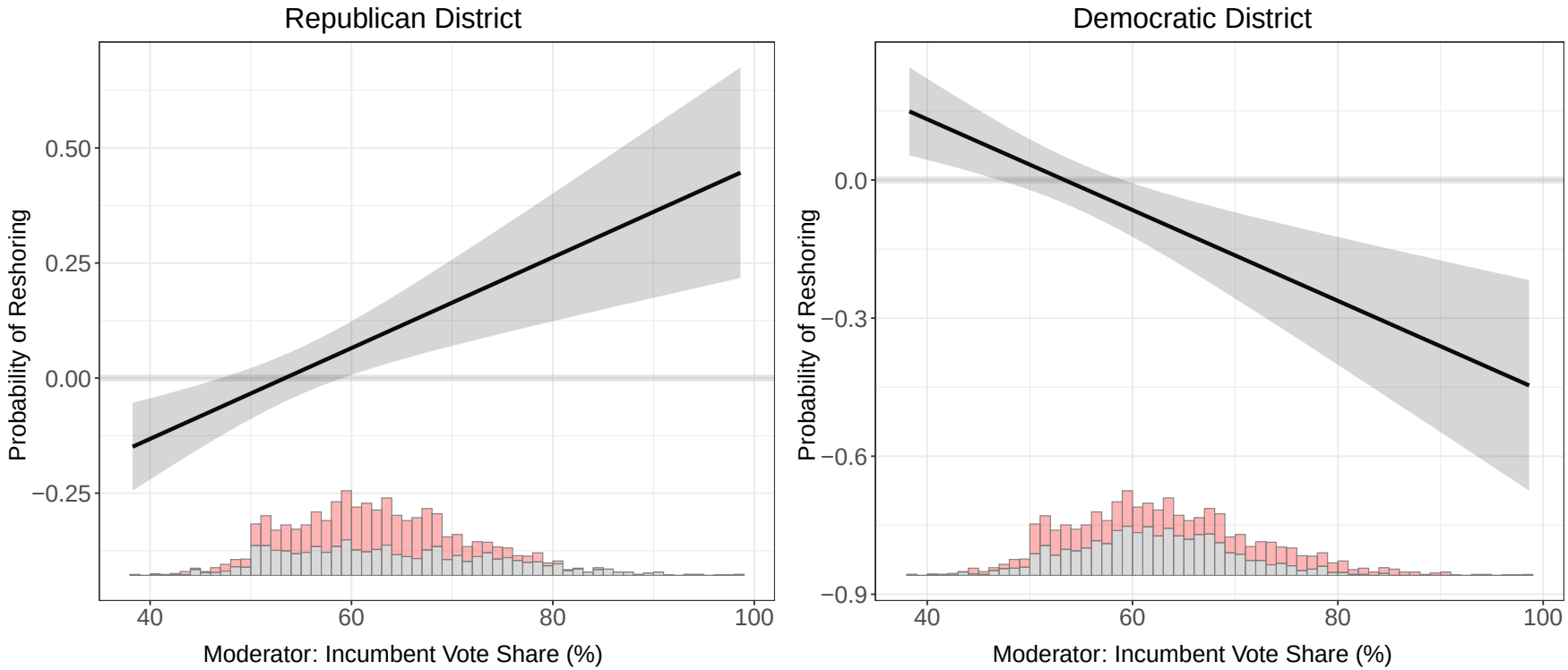


Figure: Marginal Effects of Incumbent Vote Share on Backshoring by Partisanship

Firms are more likely to relocate to safe Republican districts but less likely to move to Democratic strongholds.

Firms Receiving More Subsidies Are More Likely to Backshore

	DV: Reshoring Probability(%)			DV: Reshoring Count (N)		
	(1)	(2)	(3)	(4)	(5)	(6)
Government Subsidy	0.010***	0.010***	0.006*	0.055***	0.067***	0.042**
	(0.003)	(0.003)	(0.003)	(0.008)	(0.012)	(0.017)
Num.Obs.	70308	70308	70308	70308	52080	22220
R2 Adj.	0.002	0.035	0.070	0.001	0.136	0.023
Cluster SE	by: firm	by: firm	by: firm	by: firm	by: firm	by: firm
FE: year		✓	✓		✓	✓
FE: firm			✓			✓

* p < 0.1, ** p < 0.05, *** p < 0.01

Table: Firm-level: Estimated Effect of Subsidies on Backshoring

Subsidies increase the probability and frequency of firm backshoring

Especially for Firms That Can Create More Jobs

	Firms Providing ***More*** Jobs			Firms Providing ***Less*** Jobs		
	(1)	(2)	(3)	(4)	(5)	(6)
Government Subsidy	0.018***	0.017***	0.012**	0.011***	0.011***	0.006
	(0.006)	(0.005)	(0.006)	(0.004)	(0.003)	(0.004)
Num.Obs.	16119	16119	16119	17712	17712	17712
R2 Adj.	0.004	0.092	0.114	0.001	0.090	0.115
Cluster SE	by: firm	by: firm	by: firm	by: firm	by: firm	by: firm
FE: year		✓	✓		✓	✓
FE: firm			✓			✓

* p < 0.1, ** p < 0.05, *** p < 0.01

Table: Firm-level: Estimated Effect of Subsidy on Reshoring by Jobs Created

Firms that promise to create more jobs through the provision of subsidies are more likely to backshore

IV Analysis

	DV: Reshoring Probability (%)			DV: Reshoring Cases (N)		
	(1)	(2)	(3)	(4)	(5)	(6)
Second Stage						
Government Subsidy	3.4804***	2.9024***	2.9877***	1.0481***	0.8078**	0.6820*
	(0.9534)	(0.8174)	(1.0713)	(0.3978)	(0.3423)	(0.3540)
First Stage						
China's Retaliation Tariffs	0.0003**	0.0003*	0.0004**	0.0003**	0.0003*	0.0003*
	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Num.Obs.	2937	2185	2185	2937	2185	2937
Cluster SE	by: CD	by: CD	by: CD	by: CD	by: CD	by: CD
FE: state			✓			✓
FE: year		✓	✓		✓	✓
F-stat	10.7	11.3	9.5	12.8	9.4	6.1

* p < 0.1, ** p < 0.05, *** p < 0.01

Table: IV Estimates of Government Subsidies on Backshoring

Our findings hold when we use China's retaliatory tariffs as an instrument for subsidies firms received after the US-China trade war.

Summary

Summary of findings

- Republican strongholds are more successful in attracting backshoring projects compared to tightly contested Republican-leaning districts.
- In contrast, Democratic strongholds are less likely to attract backshoring projects.
- This pattern is driven by how partisan competition influences politicians' strategies for using subsidies to promote backshoring and job growth.

Future Research

- Differences between firms backshoring versus creating new establishments
- Are certain types of financial or regulatory support more effective in specific political or economic contexts?

Appendix

Data Summary

	Mean	SD	Min	Max	N
Reshoring Probability	0.16	0.36	0.00	1.00	7168
Reshoring Cases	0.38	1.37	0.00	33.00	7168
Close Election	0.14	0.35	0.00	1.00	7169
Incumbent Vote Share	62.72	9.01	38.26	98.63	6307
Incumbent Vote Share (Rep)	32.01	31.27	0.00	97.77	6307
Republican District	0.52	0.50	0.00	1.00	6307
Democratic District	0.48	0.50	0.00	1.00	6307
Incumbent Vote Share (Dem)	30.71	32.71	0.00	98.63	6307
Government Subsidies	0.00	1.00	-0.16	41.23	7168
Labor Force	63.39	4.93	40.20	77.30	5129
High School Rate	87.39	6.21	51.50	96.60	5647
Unemployment	7.78	3.64	2.00	36.10	5129
Median Earnings	0.00	1.00	-2.02	7.03	5647
Annual Payroll	0.00	1.00	-0.90	17.00	4340
Number of Establishments	0.00	1.00	-2.08	9.79	4340

Table: Summary Statistics

Partisanship on Reshoring

	DV: Reshoring Probability(%)			DV: Reshoring Cases (N)		
	(1)	(2)	(3)	(4)	(5)	(6)
Republican	0.050	0.132	0.191	0.161*	0.124	0.142
	(0.133)	(0.159)	(0.188)	(0.085)	(0.106)	(0.241)
Num.Obs.	3582	2600	1794	6307	4510	3333
R2 Adj.	0.249	0.173	0.127	0.095	0.094	0.111
Cluster SE	by: CD	by: CD	by: CD	by: CD	by: CD	by: CD
FE: congressional district	✓	✓	✓	✓	✓	✓
FE: year	✓	✓	✓	✓	✓	✓

* p < 0.1, ** p < 0.05, *** p < 0.01

Table: Estimated Effects of Republican District on Reshoring Probability

Republican Incumbent Vote Share on Reshoring

	DV: Reshoring Probability		
	(1)	(2)	(3)
Republican District * Incumbent Vote Share (%)	0.041**	0.068***	0.068***
	(0.019)	(0.021)	(0.021)
Republican District	-2.260**	-3.558***	-3.548***
	(1.069)	(1.146)	(1.138)
Incumbent Vote Share (%)	-0.021	-0.035**	-0.035**
	(0.017)	(0.017)	(0.017)
Num.Obs.	3582	1794	1794
R^2 *Adj.*	0.251	0.129	0.126
Cluster SE	by: CD	by: CD	by: CD
FE: congressional district	✓	✓	✓
FE: year	✓	✓	✓

* p < 0.1, ** p < 0.05, *** p < 0.01

Table: Estimated Effects of Republican District on Backshoring Probability

Democratic Incumbent Vote Share on Reshoring

	DV: Reshoring Probability		
	(1)	(2)	(3)
Democratic District * Incumbent Vote Share (%)	-0.041**	-0.059***	-0.064***
	(0.019)	(0.021)	(0.021)
Democratic District	2.260**	3.131***	3.351***
	(1.069)	(1.100)	(1.133)
Incumbent Vote Share (%)	0.020**	0.019*	0.032***
	(0.009)	(0.011)	(0.012)
Num.Obs.	3582	2063	1794
R^2 *Adj.*	0.251	0.154	0.129
Cluster SE	by: CD	by: CD	by: CD
FE: congressional district	✓	✓	✓
FE: year	✓	✓	✓

* p < 0.1, ** p < 0.05, *** p < 0.01

Table: Estimated Effects of Democratic District on Backshoring Probability

Republican: Incumbent Vote Share on Total Subsidies

	DV: Government Subsidy		
	(1)	(2)	(3)
Republican District * Incumbent Vote Share (%)	0.009	0.016*	0.017*
	(0.006)	(0.008)	(0.009)
Republican District	-0.458	-0.730*	-0.787*
	(0.352)	(0.397)	(0.443)
Incumbent Vote Share (%)	0.001	0.000	0.004
	(0.003)	(0.004)	(0.006)
Num.Obs.	6307	4510	3333
R2 Adj.	0.022	0.014	0.001
Cluster SE	by: CD	by: CD	by: CD
FE: congressional district	✓	✓	✓
FE: year	✓	✓	✓

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table: Estimated Effects of Republican District on Government Subsidy

Democrats: Incumbent Vote Share on Total Subsidies

	DV: Government Subsidy		
	(1)	(2)	(3)
Democratic District * Incumbent Vote Share (%)	-0.009	-0.016*	-0.017*
	(0.006)	(0.008)	(0.009)
Democratic District	0.458	0.730*	0.787*
	(0.352)	(0.397)	(0.443)
Incumbent Vote Share (%)	0.010**	0.016***	0.021**
	(0.005)	(0.005)	(0.009)
Num.Obs.	6307	4510	3333
R2 Adj.	0.022	0.014	0.001
Cluster SE	by: CD	by: CD	by: CD
FE: congressional district	✓	✓	✓
FE: year	✓	✓	✓

* p < 0.1, ** p < 0.05, *** p < 0.01

Table: Estimated Effects of Democratic District on Government Subsidy

Republican Incumbency on Receiving Federal Subsidies

	DV: Federal Subsidies		
	(1)	(2)	(3)
Republican District * Incumbent Vote Share (%)	-0.006	-0.010	-0.010
	(0.004)	(0.008)	(0.008)
Republican District	0.356	0.473	0.466
	(0.266)	(0.365)	(0.373)
Incumbent Vote Share (%)	0.006	0.017	0.016
	(0.004)	(0.011)	(0.011)
Num.Obs.	6307	4510	3333
R2 Adj.	0.004	0.000	0.002
Cluster SE	by: State	by: State	by: State
Year & State FE	✓	✓	✓

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table: Estimated Effects of Incumbency on Receiving Federal Subsidies

Republican Incumbency on Receiving State Subsidies

	DV: State Subsidies		
	(1)	(2)	(3)
Republican District * Incumbent Vote Share (%)	0.013*	0.013**	0.012**
	(0.008)	(0.005)	(0.005)
Republican District	-0.755*	-0.710**	-0.654**
	(0.434)	(0.279)	(0.257)
Incumbent Vote Share (%)	-0.002	-0.001	-0.001
	(0.001)	(0.002)	(0.002)
R2 Adj.	0.138	0.165	0.145
Cluster SE	by: State	by: State	by: State
Year & State FE	✓	✓	✓

* p < 0.1, ** p < 0.05, *** p < 0.01

Table: Estimated Effects of Incumbency on Receiving State Subsidies

Republican Incumbency on Receiving Local Subsidies

	DV: Local Subsidies		
	(1)	(2)	(3)
Republican District * Incumbent Vote Share (%)	0.013*	0.013**	0.012**
	(0.008)	(0.005)	(0.005)
Republican District	-0.755*	-0.710**	-0.654**
	(0.434)	(0.279)	(0.257)
Incumbent Vote Share (%)	-0.002	-0.001	-0.001
	(0.001)	(0.002)	(0.002)
Cluster SE	by: State	by: State	by: State
Year & State FE	✓	✓	✓

* p < 0.1, ** p < 0.05, *** p < 0.01

Table: Estimated Effects of Incumbency on Receiving Local Subsidies

District-level Analysis

	DV: Reshoring Probability (%)			DV: Reshoring Cases (N)		
	(1)	(2)	(3)	(4)	(5)	(6)
Government Subsidy	0.036***	0.031***	0.031***	0.162***	0.170***	0.172***
	(0.008)	(0.008)	(0.008)	(0.051)	(0.064)	(0.064)
Num.Obs.	7168	3838	3838	7168	3838	3838
R2 Adj.	0.192	0.196	0.197	0.187	0.219	0.223
Cluster SE	by District	by District	by District	by District	by District	by District
Year & District FE	✓	✓	✓	✓	✓	✓

* p < 0.1, ** p < 0.05, *** p < 0.01

Table: District-level: Estimated Effect of Subsidy on Reshoring

Subsidies increase the probability and frequency of backshoring at the congressional district level

Different Levels of Subsidies on Reshoring

	DV: Reshoring Cases (N)		
	(1)	(2)	(3)
Federal Subsidies	0.052		
	(0.038)		
State Subsidies		0.128**	
		(0.064)	
Local Subsidies			0.060**
			(0.023)
Num.Obs.	3838	3838	3838
R2 Adj.	0.207	0.213	0.208
Cluster SE	by District	by District	by District
Year & State FE	✓	✓	✓

* p < 0.1, ** p < 0.05, *** p < 0.01

Table: Estimated Effects of Different Levels of Subsidies on Reshoring

Presidential Elections

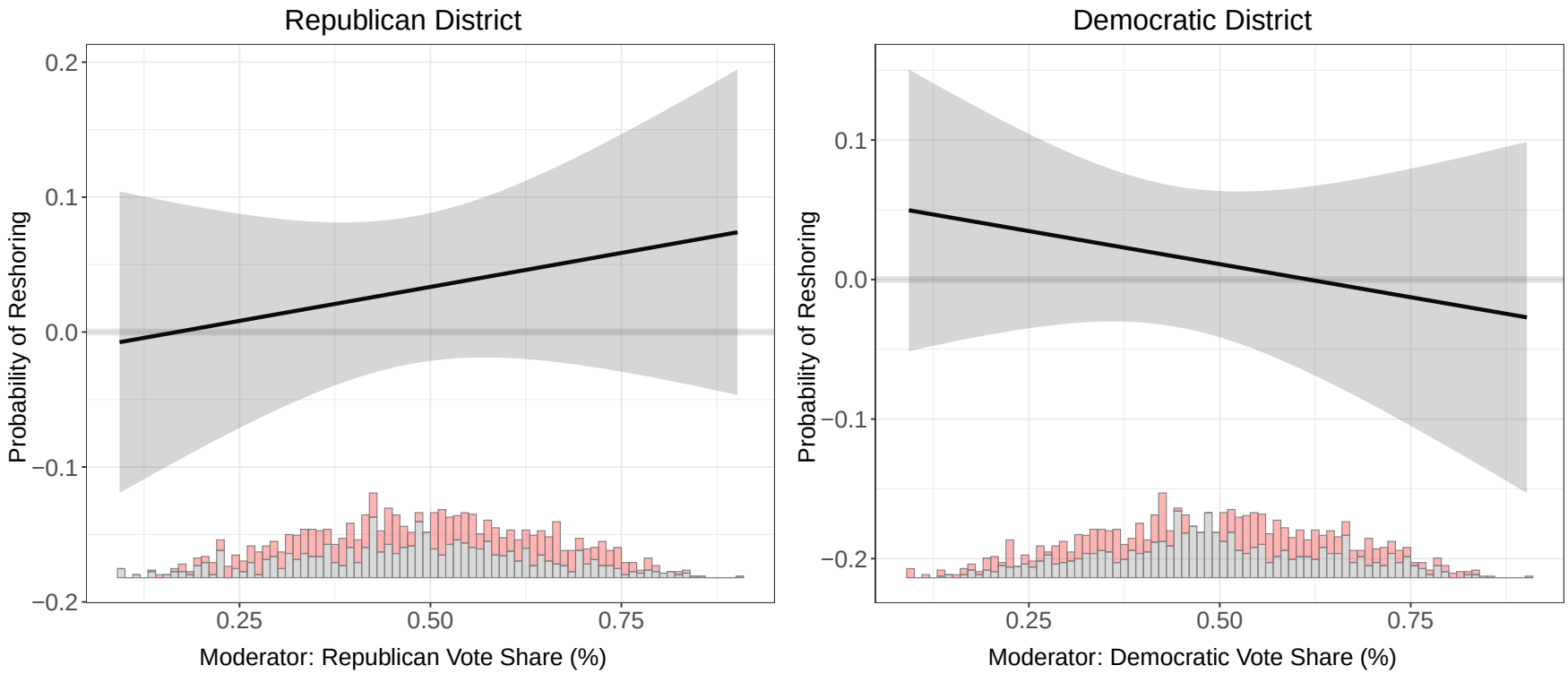


Figure: Presidential Election: Marginal Effects of Incumbent Vote Share on Backshoring by Partisanship