Robots, Foreigners, and Foreign Robots: Policy Responses to Automation and Trade

Stephen Chaudoin and Michael-David Mangini

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- *Why have voters embraced protectionist policies rather than transfers as a response to economic dislocation?*
  - Both problems can be solved with the same policy: transfers.

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- **Empirical Analysis**: Relative to domestic automation shocks, foreign labor shocks reduce demand for transfers... until the automation shock becomes foreign.

The Present and Future of Populism

- A better understanding of our current populist "moment."
- What happens when Silicon Valley isn't the only Tech Mecca?

US Trade Flow in Automation — Automation Export — Automation Import
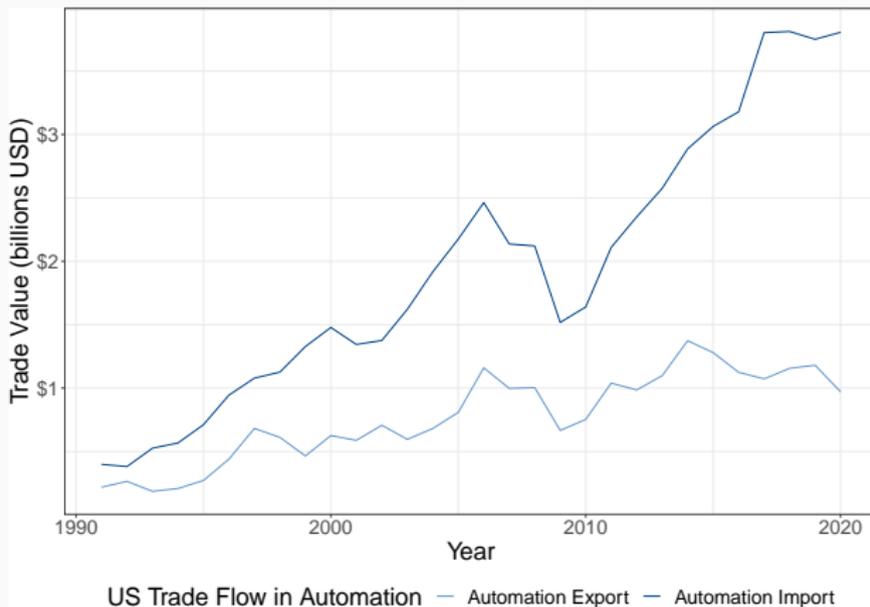
Literature on Trade, Populism, and Automation

- The Globalization Backlash:
  - Baccini, Pinto, and Weymouth (2017)
  - Colantone and Stanig (2018, 2019)
  - Di Tella and Rodrik (2020)
  - Rickard (2021)
- Automation and Populism:
  - Mansfield, Milner, Rudra (2021, **CPS** special issue)
  - Baccini and Weymouth (2021), Owen (2021), Zhang (2019)
  - Anelli, Colantone, and Stanig (2019)
  - Wu (2021): Blame misattribution

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- Government has two instruments:
    - Policy p to reverse the shock: $A'(p) < 0$
    - Transfers: t, leaky according to $\ell(t) < t$, $\ell'(t) < 0$

The Model in a Diagram

Cosmopolitan
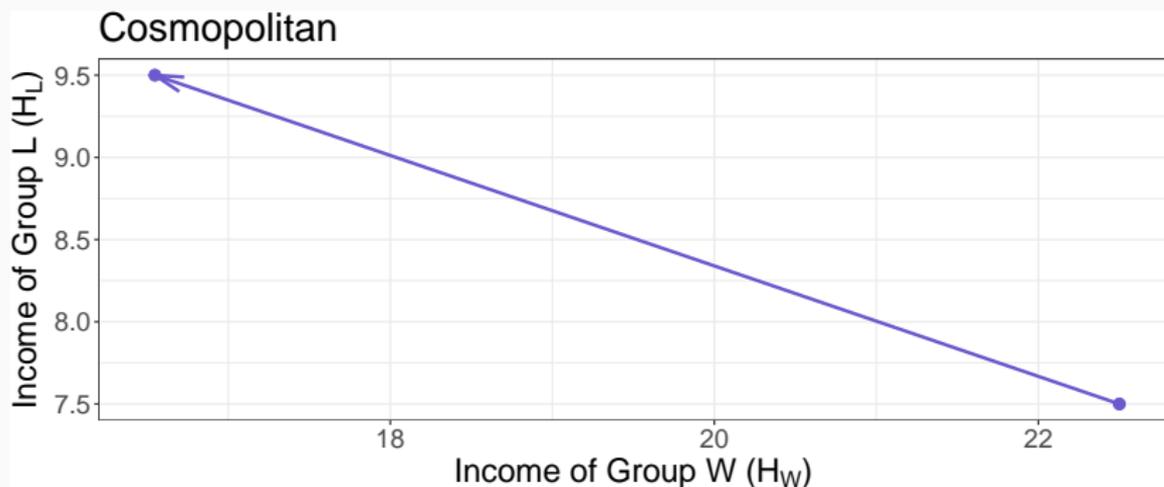
The Model in a Diagram
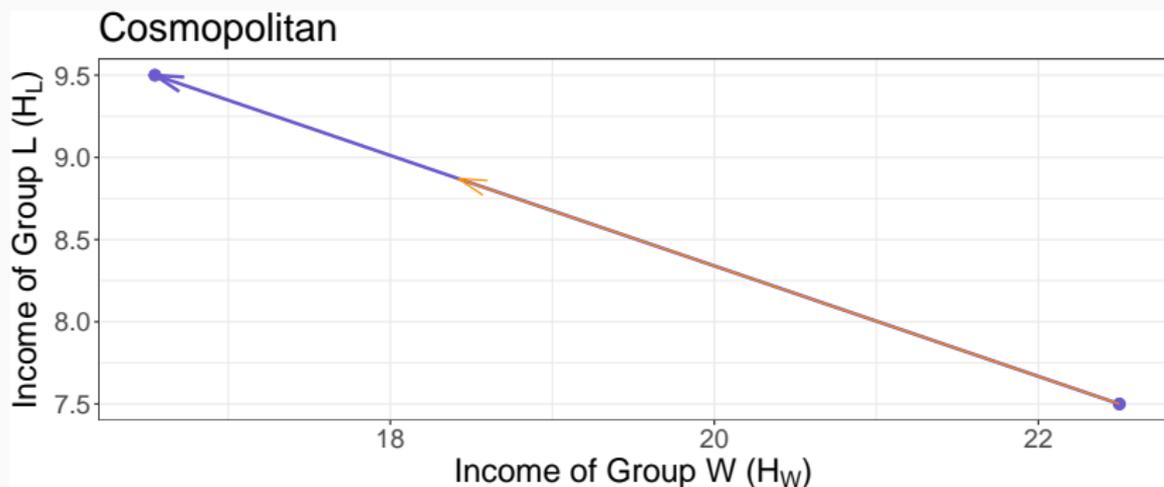
The Model in a Diagram

Nationalist –– Import Good –– Rely on Policy
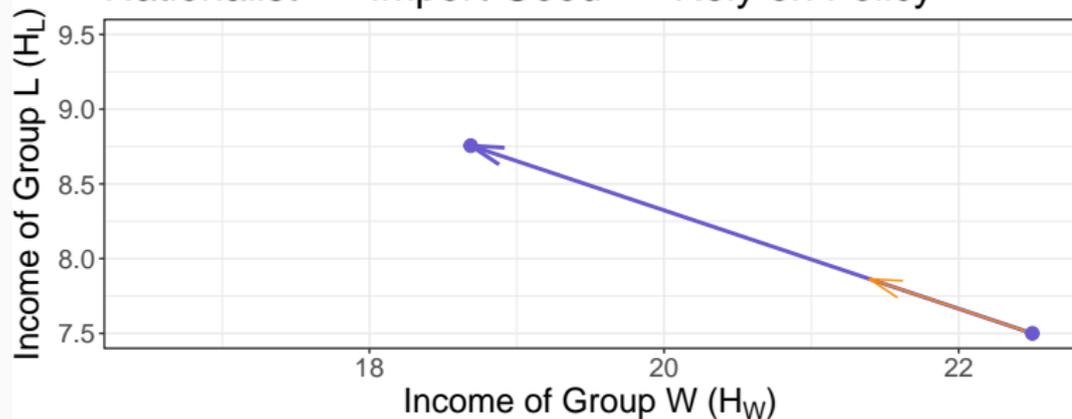
Nationalist –– Export Good –– Rely on Transfers

	Labor	Automation
Foreign	More Protection	More Regulation
	Fewer Transfers	Fewer Transfers
Domestic	Less Protection	Less Regulation
	More Transfers	More Transfers

	Labor	Automation
Foreign	More Protection Fewer Transfers	More Regulation Fewer Transfers
Domestic	Less Protection More Transfers	Less Regulation More Transfers

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Foreign	More Protection Fewer Transfers	More Regulation Fewer Transfers
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Vignette

General Motors closing plant, laying off 1,500 Michigan workers

By Staff - 12/20/2019 03:04 PM EST

General Motors (GM) announced this week that it will close a plant in Michigan, laying off more than 1,500 workers as it tries to address financial losses.

The news comes just months after GM announced it would be laying off 200 workers at a plant in neighboring Ohio.

GM said they expect to end the plant's light truck manufacturing operations by September 1, 2020, with another part of the plant closing by the end of 2020. The estimated job loss is 1,545 workers.

A worker at a US auto plant. CHARLIE RIEDEL / AP

"We are conscious of the impact this decision will have on our employees, their families, and the local community, and we are announcing it now to provide them with as much time as possible to prepare for this transition," the CEO said in a press release. "These decisions are never easy, nor are they taken lightly."

Economic analysts say that the auto manufacturing industry in the United States faces a range of challenges, including automation and imports from abroad.

A construction site for a planned factory outside of the US.

Based on industry analysis, globalization is the main cause of job losses. Many firms have chosen a strategy of "offshoring," where they move production facilities to a foreign country. This allows foreign workers to perform many of the same tasks that were previously done by US auto plant. Factories like this one get shut down as employees are replaced with workers abroad.

Imports of products manufactured abroad arrive at a US port.

Economic analysts say that the auto manufacturing industry in the United States faces a range of challenges, including automation and imports from abroad.

Automation at work.

Based on industry analysis, automation is the main cause of job losses. High-tech companies that are located in the United States, like Cisco, IBM, and Microsoft, have developed computer software and advanced robotics that allow machines to perform many of the same tasks that were previously done by auto plant workers. Factories like this one get shut down as employees are replaced with advanced robotics that US technology companies have developed for the auto industry.

A US company that develops automation technology.

Survey Design: Outcomes

- Agree/disagree on 100 point scale

- *The Federal government should increase benefits that are paid to people who are unemployed.*

- *The Federal government should restrict imports of automobiles by increasing tariffs.*

- *The Federal government should increase regulations to limit a company's ability to replace workers with automation.*

	Outcomes	Labor	Automation
Foreign	Policy:		
	Transfers:		
	Difference:		
Domestic	Policy:		
	Transfers:		
	Difference:		

	Outcomes	Labor	Automation
Foreign	Policy:	63.6	
	Transfers:	66.9	
	Difference:	-3.2	
Domestic	Policy:		54.4
	Transfers:		66
	Difference:		-11.6

	Outcomes	Labor	Automation
Foreign	Policy:		56.7
	Transfers:		64.7
	Difference:		-7.9
Domestic	Policy:		54.4
	Transfers:		66
	Difference:		-11.6

Results: Differences

	Outcomes	Labor	Automation
Foreign	Policy:	63.6	56.7
	Transfers:	66.9	64.7
	Difference:	-3.2	-7.9
Domestic	Policy:	58.3	54.4
	Transfers:	65.4	66
	Difference:	-7.2	-11.6

- We conduct a followup survey experiment to better understand why voters exhibit economic nationalism.

- We find that voters are motivated by concerns about economic self-sufficiency and relative gains.

- Some evidence of concerns about within-state redistribution.

Conclusion

- Why do voters demand restrictions on trade but not automation?
  - Nationalists' bias against imports have two reasons to support protectionism: higher imports and job losses
  - Nationalists' bias for exports have conflicting incentives: restrictions on automation protect jobs but also reduce exports
- Why don't voters support transfers as a solution to both automation and offshoring?
  - Demand for protection crowds out demand for transfers because they are substitute policies for balancing equity and efficiency.

Appendix Table of Contents

Appendix

- Fielded Sept 23-24, 2020 and Oct 28-29, 2020

- Recruited approximately $N = 3,150$ Lucid.

- Good balance across treatments.

- Decent manipulation check scores.
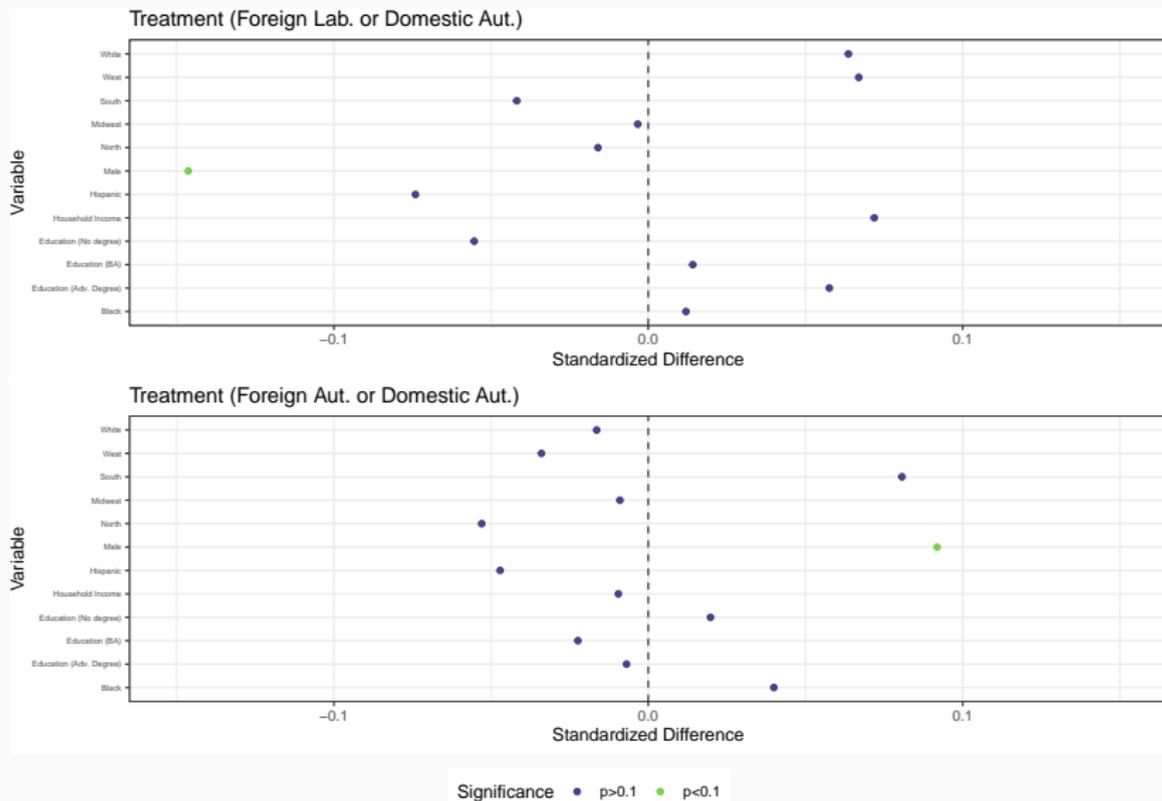
Figure 1: The Bowers and Hansen (2008) omnibus test p values are 0.06 for

Distributions: Levels
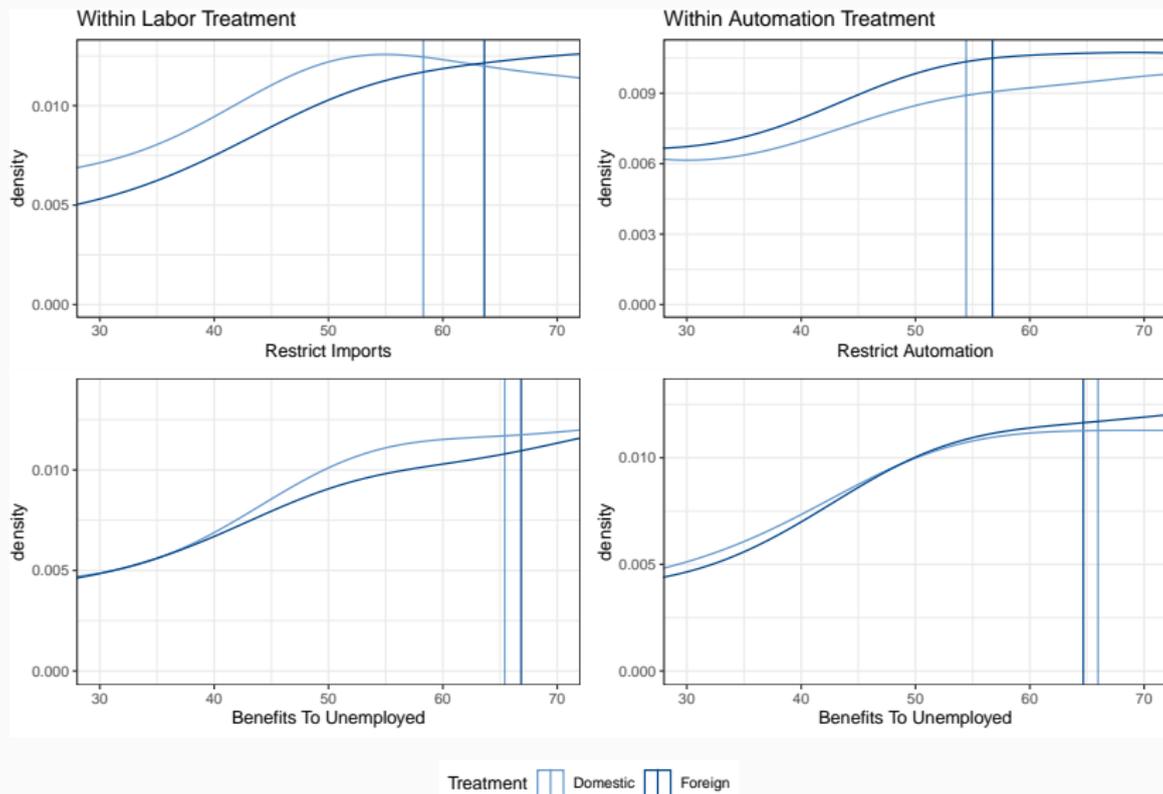
Figure 2: Levels of preferred policy response by treatment condition.

Main Results

Table 1:

	Dependent variable:			
	relevant policy difference		restrict automation difference	
	(1)	(2)	(3)	(4)
Foreign Labor	8.436***	9.439***		
	(1.753)	(1.770)		
Foreign Automation			3.749**	4.236***
			(1.608)	(1.610)
Sept Sample	−0.059	−0.017	1.898	1.528
	(1.799)	(1.840)	(1.663)	(1.666)

Regressions: Shares

Table 2:

	(1)	(2)	(3)	(4)
For. Labor	0.070***	0.074***		
	(0.010)	(0.010)		
For. Auto.			0.036***	0.036***
			(0.010)	(0.010)
Constant	0.422***	0.375***	0.418***	0.397***
	(0.009)	(0.029)	(0.009)	(0.029)
Controls?	N	Y	N	Y
Observations	1,541	1,467	1,530	1,460

Note: $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

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Long Control List

Table 3:

	Dependent variable:			
	restrict imports difference		restrict automation difference	
	(1)	(2)	(3)	(4)
Foreign Labor	5.944***	6.613***		
	(1.884)	(1.816)		
Foreign Automation			3.749**	3.701
			(1.608)	
Sept Sample	1.886	3.285*	1.898	1.404
	(1.932)	(1.866)	(1.663)	
Controls	No	Yes	No	Yes

Heterogeneity by Race

Table 4:

	(1)	(2)	(3)	(4)
For. Lab.	−1.610	−0.697		
	(3.309)	(3.363)		
For. Aut.			4.618	5.539*
			(3.136)	(3.075)
White	−0.772	−1.269	−0.750	0.034
	(2.517)	(2.519)	(2.518)	(3.360)
White*For. Lab.	13.490***	13.125***		
	(3.887)	(3.950)		
White*For. Aut.			−1.163	−1.686
			(3.648)	(3.605)
Constant	−10.952***	−16.872***	−12.140***	−17.866***

> **Donald J. Trump** ✓
> @realDonaldTrump
>
> I want 5G, and even 6G, technology in the United States as soon as possible. It is far more powerful, faster, and smarter than the current standard. American companies must step up their efforts, or get left behind. There is no reason that we should be lagging behind on.........
>
> 8:55 AM · Feb 21, 2019 · Twitter for iPhone
>
> **25.3K** Retweets   **133.3K** Likes

> **Donald J. Trump** ✓
> @realDonaldTrump
>
> ....something that is so obviously the future. I want the United States to win through competition, not by blocking out currently more advanced technologies. We must always be the leader in everything we do, especially when it comes to the very exciting world of technology!
>
> 8:59 AM · Feb 21, 2019 · Twitter for iPhone
>
> **20.5K** Retweets   **116.6K** Likes

Followup Experiment

Potential rationales for economic nationalism:

(1) a preference for self-reliance where a citizen wants to avoid another country having leverage over their own nation
(2) beliefs about relative gains, where a citizen believes that her country gains less or loses relative to the foreign country
(3) beliefs about the effect of trade on the distribution of income within her country

Followup Design

- For the follow-up experiment, we limited attention to automation.
- Basic structure: randomly assign respondents to
    - origin of automation technology (domestic versus foreign)
    - arguments against foreign automation (self-sufficiency, relative gains, within-country effects)
- We fielded the experiment again using Lucid Theorem in May of 2022. The sample consisted of 2182 US respondents, aged 18 or older.

Between Respondent Results

Table 5:

	(1)	(2)	(3)	(4)
Foreign	3.879**	3.705**	2.441**	2.271**
	(1.689)	(1.691)	(1.022)	(1.034)
Initial Trans.			-0.795***	-0.787***
			(0.020)	(0.020)
Initial Regs.			0.738***	0.738***
			(0.021)	(0.021)
Controls?	N	Y	N	Y
Observations	2,133	2,078	2,128	2,073

Note: $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table 6:

Within Respondent Results

Table 7:

	(1)	(2)
For. - Reliance	2.384**	2.336**
	(1.017)	(1.038)
For. - Rel. Gains	0.819	0.824
	(0.991)	(1.013)
Prior Regs.	0.835***	0.835***
	(0.018)	(0.019)
Prior Trans.	—0.875***	—0.871***
	(0.017)	(0.018)
Constant	3.043***	0.032
	(1.040)	(2.159)
Controls?	N	Y
Observations	1.592	1.551

References