Why Populists Neglect Automation: The Political Economy of Economic Dislocation

Stephen Chaudoin and Michael-David Mangini

June 28, 2022

Word Count: 11,364

Abstract

Why do politicians blame offshoring for manufacturing job losses when automation is at least as significant a culprit? Why have voters predominantly responded to automation and offshoring shocks by demanding a retreat from globalization but not transfers to the unemployed? We propose that both questions are explained by the collision of economic nationalism and comparative advantage trade. Economic nationalists, who dislike vulnerability and oppose imports, oppose policies that hamper their own state's comparative advantage industries, like regulations of high-tech automation. They are more comfortable with tariffs restricting imports. In the United States, which has a comparative advantage in the production of capital intensive automation technologies, this effect undercuts the willingness of voters to support policies that would protect manufacturing jobs by regulating automation. Opportunistic politicians emphasize offshoring because economic nationalist voters are unified in their support for limiting imports but conflicted in their support for limiting automation. We develop a formal model of a citizen's demand for policy in response to economic dislocation, where citizens form preferences over redistribution plans and a policy response that blunts dislocation (like a tariff or a restriction on automation). The source (foreign versus domestic) and type (labor versus automation) of a shock affects the preferred weights citizens place on each policy. We test the model's predictions with a survey experiment fielded in the United States. Consistent with expectations, domestic automation shocks increase the weight respondents place on redistribution versus a regulatory response, while globalization shocks place much heavier weight on regulatory (tariff) responses. Altering the source of each shock - by emphasizing foreign-produced automation technology or within-country labor relocation - reweights responses towards regulations in the former case and redistribution in the latter case. Our findings contribute to our understanding of the political consequences of the current populist moment as well as give predictions about the future consequences of automation shocks.

1

1 Introduction

The surge in anti-globalization sentiment embodied by the election of President Donald Trump and the Brexit referendum spurred renewed interest in the political economy of economic dislocation. A variety of work links globalization, epitomized by growing interdependence in trade networks or the "shock" of China's entry into the world marketplace, with changes in political behavior. These large economic forces set in motion economic dislocation that led to political support for protectionism-touting candidates,[1] platforms,[2] and opposition to incumbents,[3] especially among whites.[4] The changes brought about during this time period have been so large as to lead some scholars to wonder whether this is the end of widespread support for the liberal economic order built since the end of World War II.[5]

Yet, if globalization-induced economic anxiety led to these massive political shifts, then two related questions arise. First, if globalization caused enough economic dislocation to attract the ire of politicians and voters, then why didn't the rise of automation also incur their wrath? After all, automation is thought to account for a much larger share of economic dislocation than globalization.[6] Yet, according to politicians who have most effectively channeled economic anxiety into a populist political surge, globalization is the chief villian, not automation.[7] By April 2020, President Donald Trump had referenced "automation," "robot," or "technology" in 29 tweets but used the words "trade" or "tariff" in at least 528 tweets. Politicians have stoked support for policy remedies to globalization such as tariffs, yet they generally ignore or even oppose regulations or redistributive responses that might blunt the effects of automation.

Similarly, if globalization induced such intense anxiety among voters, why did they re-

---

[1]Che et al. (2016)
[2]Colantone and Stanig (2018), Milner (2018)
[3]Jensen, Quinn, and Weymouth (2017)
[4]Baccini and Weymouth (2021)
[5]Jervis et al. (2018)
[6]Di Tella and Rodrik (2020)
[7]Zhang (2019), Flaherty and Rogowski (2021), Ballard-Rosa, Goldstein, and Rudra (2022)

spond by supporting anti-globalization candidates instead of supporting greater economic transfers to those harmed by economic shocks? A citizen harmed by foreign competition can be helped with tariffs, but she can also be helped by better social safety nets, unemployment insurance, or job retraining. In fact, from a purely material, economic self-interest perspective, a better social safety net could help manufacturing workers regardless of whether the pressure on their jobs is more attributable to automation or offshoring. And yet, pundits routinely express intense interest in the question of whether automation or trade is more to blame for the decline of manufacturing as if there were no policy solutions which could mitigate both problems. Even the politicians who do support increased transfers as their preferred solution also tend to support a retreat from globalization.[8] Why do similar shocks from foreign versus domestic sources engender such different types of policy responses?

This paper's argument is that the collision of economic nationalism and comparative advantage explains both questions. We construct a very general formal model of a citizen whose country faces a shock that affects national income and has distributional consequences for different groups in society. The citizen chooses her preferred bundle of responses to the shock, comprised of a policy response that blunts the shock and redistributive shock that makes losers from the shock whole again. The citizen is, to at least some degree, an economic nationalist. Economic nationalists are distinguished by their preference against imports - preferring instead national self-sufficiency. For an economic nationalist living in a technology or capital abundant state, imports of labor-intensive products both destroy manufacturing jobs and make the state dependent on foreign inputs. By contrast, economic nationalists in capital-abundant states are ambivalent about automation. New automation technologies developed domestically also harm manufacturing employment but they promote the economic self-sufficiency of the state. Therefore, opportunistic politicians neglect automation as a cause of economic dislocation because their natural constituency is conflicted about the merits of stopping it directly. But they are united in their opposition to

---

[8]Newmyer (2019)

3

foreign imports.

By allowing citizens to form preferences over a policy remedy, like tariffs, *and* a direct redistributive remedy, like unemployment insurance, our model explains why the social safety net is undersold as a policy solution to the threat of offshoring. Policy and redistributive remedies are substitutes, and increased preference for one crowds out desire for the other. Transfers only address the distributional consequences of the decline of manufacturing – they do not satisfy the economic nationalists who lament their state's dependence on imports. What's more, the demand for trade barriers actually crowds out the demand for transfers because the restrictions on imports partially protect manufacturing jobs, thereby reducing the need for transfers. When the cause is domestic automation, however, transfers are enticing to economic nationalists since they are less harmful to the technology industry than other types of regulations. Thus, in capital abundant states, transfers are promoted as a valid solution to job losses caused by automation but only rarely as a solution to jobs lost to offshoring.

We assess the predictions of the model with survey experimental data from the United States. Within a realistic news article about layoffs at an auto plant, we randomly vary two features: (1) the type of shock – automation versus labor and (2) the source of the shock – domestic or foreign. A domestic automation shock represents the canonical situation where automation from a U.S. firm replaces workers. Offshoring is the cannonical foreign labor shock. Respondents read about a particular shock and then indicate support for redistribution (e.g. unemployment benefits) and a policy remedy (e.g. a tariff that blocks imports or regulations that limit automation).

We find that support for redistribution, relative to the policy remedy, increases for domestic automation shocks versus foreign labor shocks, consistent with the theory. The model also predicts that making the source of automation foreign, as opposed to domestic, should decrease support for redistribution and increase support for a regulatory policy remedy. To show this, we also include treatments with foreign automation shocks – where technology developed by foreign firms replaces U.S. workers – and domestic labor shocks – where jobs

4

move from one state to another. Making automation foreign or making labor shocks domestic changes preferences in ways predicted by the model. The former change decreases the respondents' weight placed on redistribution; the latter increases the weight placed on redistribution.

The theory and empirical results help us better understand the current, populist moment and its effects on policy. Economic nationalism helps explain why trade, and not automation, bolstered politicians like President Trump, and why those politicians could successfully attribute blame to trade, as opposed to automation. It also helps explain why globalization boosted the political fortunes of President Trump, but not Senator Elizabeth Warren or Andrew Yang. The model and theory also provide a general framework for how citizens weight different political responses to different shocks. Most work considers different policy responses in isolation; ours considers how citizens form a bundle of policy responses, which can potentially act as substitutes for one another. To the best of our knowledge, our model is among the first to account for substitution across options in a policy bundle, as opposed to considering tax/redistribution and policy remedies in isolation from one another.

Our research has important implications for the nascent international political economy of automation.[9] So far, the development of automation has been pioneered by knowledge clusters in the United States, particularly in Silicon Valley. However, other states are closing the technological gap – a phenomenon we document concretely below. China has demonstrated its ability to compete in high tech industries through its investments in Huawei and 5G technology. As firms in China and other states develop their capabilities to produce automation technology, then the pressure on jobs in the United States might become more attributable to foreign rather than domestic technology. The prediction of our theory is that an influx of foreign technology could stimulate demand for policies that limit automation – including domestic automation – among economic nationalists. If the next round of populist politicians choose to blame "foreign" technology for internal dislocation, then this could

---

[9]Mutz (2021), Owen and Johnston (2017), Wu (2019), and Gallego and Kurer (ARPS forthcoming).

further stall a return to the compromise made with embedded liberalism.

By all indications, the pace of growth for digitization, ICT, and artificial intelligence are quickening. Increasing numbers, and increasingly higher-skilled workers, will find their vocations at risk. These trends portend a potential political crisis as large at that triggered by globalization. We therefore seek to heed the call of E. Mansfield and Rudra (2020) who ask for more research on "the political conditions under which governments compensate segments of society that suffer as a result of technological change" and on "the political conditions under which governments support and regulate technological change." Our paper speaks to both by linking a nation's position in high-tech industries with potential political reactions.

2   Shocks and Remedies

A growing body of literature assesses how economic shocks and dislocation affect political preferences. Dislocation from globalization has attracted the most attention from researchers and politicians alike. Most existing work links globalization with a bundle of nativist and anti-global policies, such as increased tariffs or immigration restrictions.[10] Exposure to globalization increases an individual's anxiety about their economic prospects or status, leading them to support protectionist and right wing politicians,[11] authoritarian politicians,[12] or to oppose incumbents.[13]

Surprisingly, existing work finds a weak, or even negative, relationship between globalization-induced dislocation and support for policies that compensate the losers from trade via transfers. Di Tella and Rodrik (2020) and Naoi (2020) survey US and Japanese respondents, respectively. They find that prompts about globalization shocks raise support

---

[10]Che et al. (2016);Bisbee et al. (2020); Bisbee (2019)

[11]Colantone and Stanig (2018)

[12]Ballard-Rosa, Jensen, and Scheve (2018)

[13]Jensen, Quinn, and Weymouth (2017)

for protectionism, but *decrease* support for compensation for the losers.[14] Rodrik (2020) summarizes this puzzle, noting that:

> backlash [against globalization] has overwhelmingly benefited right-wing populists. Left-wing populists who may have been programmatically better positioned to take advantage of the labor market shocks, with their redistributionist agendas, do not seem to have been much advantaged. (p 18)

Research on the political effects of automation and technological change follows a similar pattern. Several works link exposure to automation with support for protectionist policies, populist politicians, or immigration restrictions.[15] The authors generally attribute the effect of automation on support for protectionist policies to blame misattribution,[16] wherein a worker suffering from automation-induced dislocation is "unlikely to have recognized the true causes of the [economic] concerns."[17] This leads to support of trade restrictions or anti-globalization politicians, instead of support for automation restrictions.

Findings for the effect of automation on support for increased transfers are mixed, as in research on trade-related dislocation. Thewissen and Rueda (2019) and Busemeyer and Sahm (2021) find that exposure to automation increased support for redistribution using survey data from Europe covering 2002-2012 and broad surveys of 24 OECD countries in 2020, respectively. Kurer and Häusermann (2021) find that subjective assessments of the risks from automation are positively correlated with support for unemployment assistance in some European countries. However, Zhang's (2019) aptly-titled work, "No Rage Against the Machines," finds little effect of automation primes on US respondents' expressed preferences over trade or redistribution policy. Gallego et al. (2021) find that exposure to automation

---

[14]For one exception, see Che et al. (2016) who find that globalization increased support for Democrats in the US House, who pursued more redistributive policies once elected.

[15]Anelli, Colantone, and Stanig (2019), Caselli, Fracasso, and Traverso (2019), Owen and Johnston (2017), Im et al. (2019), Gamez-Djokic and Waytz (2020), Milner (2021). The lone exception that we are aware of is Gingrich (2019) who finds that automation can increase support for mainstream politicians, using survey data.

[16]Wu (2019), Hai (2022)

[17]Frey, Berger, and Chen (2018), p. 428

does not increase support for *ex post* redistribution policies. Jeffrey (2021) uses a survey experiment in the UK and finds that, initially, respondents who feel vulnerable to automation are unaffected or even less supportive of redistribution, but that rhetoric about the fairness of dislocation can change their opinions.

We are unaware of related work on the effect of within-country relocation of production on support for various remedies. This is despite the fact that major disruption comes not from competition abroad, but from lower wage workers located within the same country.

Work on dislocation and political preferences raises two related questions. First, why does dislocation lead to demands for protectionism instead of increased support for policies like unemployment insurance or adjustment assistance? If a worker fears losing her job because of competition from abroad, then protectionism can potentially avert or counteract that shock. But direct redistribution via tax and redistribution policy can also make that worker "whole" again, while also avoiding the price effects of tariffs, which voters dislike.[18]

Second, a worker is equally harmed – at least in an economic sense – by job loss resulting from foreign competition, a shift to automation, or a firm relocating production within her country. Even Henry Martyn, an English politician writing in 1701 recognized the economic equivalence of automation and globalization shocks. He used the "obvious" attraction of the former to rebut anti-import mercantilists.[19] For a more recent example than 1701, fictional President Jed Bartlett on the *West Wing* resisted protectionism with the same analogy: "Global economic forces are unstoppable, just like technology itself! Should we have banned ATMs to protect bank tellers?" More recently still (and from non-fiction), Adam Posen (2021) writes that "for each manufacturing job lost to Chinese competition, there were roughly 150 jobs lost to similar-feeling shocks in other industries. But these displaced workers got less than a hundredth of the public mourning" (31). So why does political attention and popular ire focus much more heavily on foreign competition than automation or domestic competition, even though the direct consequences of each of these shocks on her income

---

[18]Casler and Clark (2021).

[19]Rodrik (2011) references Martyn's argument in his discussion of debates over globalization.

are identical?

We argue that citizen preferences account for substitution between potential remedies and the foreign nature of some shocks affects how they balance different responses. In general, shocks from globalization and automation create winners and losers. They are generally thought to raise aggregate welfare but to also transfer wealth between those who lose out from the shock to those who gain. Governments can respond to shocks in two ways. They can choose a direct policy that counteracts the shock itself, blunting any reallocation of wealth in the first place or reversing it if the shock has already occurred. For example, the government can use protectionism to try and restore the allocation of wealth to how it was before trade liberalization. The government can put limits on automation to prevent firms from shifting modes of production. The government can also tax and redistribute wealth to return to its *ex ante* allocation. Governments can also use these tools in conjunction with one another. To restore the *ex ante* wealth allocation, the government could heavily emphasize policies that counteract the shock (e.g. tariffs) but only slightly increase redistributive transfers. The government could also use a lighter hand in terms of tariffs, but more heavily tax and redistribute.

Our explanation centers the concept of economic nationalism and the perceived foreignness of a shock. These affect how a citizen "weights" the two options in her optimal response. By economic nationalism, we mean a set of preferences for domestic production and a dislike of imported goods or technology. Economic nationalism has become a very stretched concept. We therefore delineate three different reasons for a dislike of imports. These reasons are not mutually exclusive, nor are they exhaustive of all the reasons someone might dislike imports.

First, nationalists fear foreign reliance and value self-sufficiency. They want the national and political units to be aligned[20] and they expect the state to support the interests of the nation as they perceive it. Economic linkages can be used strategically to undermine the

---

[20]Gellner et al. (1983).

9

sovereignty of the state and subvert its ability to support the nation. Foreign states can make market access to important goods or technologies conditional on certain political behaviors. Existing work on trade emphasizes this downside to economic integration. For example, Carnegie and Gaikwad (2022) extensively document public aversion to trading with geopolitical adversaries. Schweinberger (2022) finds that the tendency towards mercantilism and dislike of trade deficits is magnified for trade with rising power adversaries. Alternatively, the foreign state could use the technology for industrial and political espionage. Nationalists who identify the foreign state as an outgroup would resist foreign influence because it creates a possibility that the state will serve two masters. Nationalists motivated by self-sufficiency concerns might care very much about supply chains out of fear that economic linkages increase vulnerability. Supply chains of linkages among allies would be unlikely to threaten sovereignty.

Second, research on globalization also emphasizes nationalism arising from concerns about the relative gains and losses accrued by fellow citizens versus foreigners. Mutz and Kim (2017) refer to this as a type of in-group favoritism, where people "make choices to maximize the difference between the extent of in-group and out-group benefits rather than maximizing the extent of in-group benefit" (831). Many people believe that the location of production determines whether their fellow citizens accrue economic gains through employment, making them prefer domestic production. This tendency need not be purely economic. Bonikowski and DiMaggio (2016) document "restrictive nationalism," which describes the tendency to hold strict definitions about what it means to be a member of a particular country, eg "to be an American." Margalit (2012) link this to a fear of globalization among those who think of it as an invasive cultural package, as opposed to simply an economic shock.

In the first two types of nationalist preferences, the relevant in-group/out-group distinction is cross-national, demarcated by national borders. They fit within Kathleen Powers' description of "unity nationalism" as "[requiring] that group members prioritize actions that contribute to the group's betterment even when they must pay individual costs" (Forthcom-

10

ing, p. 46). In the case of globalization, a citizen may pay higher costs for domestically produced goods or services. The "action" is forgoing globalization or erecting barriers, for the betterment of the national group.

Other research on trade emphasizes within-nation differences in in-group/out-group definitions and how shocks redistribute wealth or status across different groups within a nation. If someone defines their in-group as an identity nested within their country - eg along racial lines - then they might think that trade hurts their in-group members, even if it benefits other people in their country. Preferences over policy are determined by perceptions of the costs and benefits for a subset of one's fellow citizens, irrespective of the potential gains for the nation as a whole. For example, Guisinger (2017) documents how political ads overwhelmingly portray protectionism as benefitting white workers. Analyzing survey data, she shows how whites in diverse areas were more supportive of protection, presumably because they viewed it as beneficial to their in-group. Baccini and Weymouth (2021) argue that whites and African Americans reacted differently globalization shocks. Whites more strongly believed that globalization harmed them, while African Americans did not view globalization as the same type of threat to their group's relative status.[21]

Crucially, each of these three aspects of nationalism could extend beyond the context of trade in final goods, to also affect preferences over automation technology. With respect to self-sufficiency, reliance on imported technology also creates vulnerability to foreign influence, just as reliance on foreign supplied goods. The recent spats between the United States and China over Huawei-sourced technology emphasized its potential threat to national security. With respect to relative gaines, nationalists may believe that imported automation technology harms national welfare in the same way as trade. These nationalists need not be skeptical of foreign technology per se; ultimately, they worry about the consequences of foreign technology on the nation, believing that it can harm their country to the benefit of an-

---

[21]In a follow-up experiment, we replicate our main results and examine which aspect of economic nationalism most strongly drives our explanation. We find stronger support for arguments based on self-sufficiency and relative gains. See appendix.

other country. Finally, with respect to within-nation group identity, nationalists may believe that any negative consequences of importing technology will be borne disproportionately by their group. For example, nationalists might perceive imported technology as being more likely than domestic technology to automate jobs belonging to ingroup members. Even if the new technology lowers prices, nationalists would resist foreign automation as long as their conception of the nation includes people who are suffering the costs and excludes people who are experiencing the benefits.

2.1 Foreign Robots?

Note however that it is far from guaranteed that these concepts of economic nationalism would extend to citizen preferences over automation. Nationalist voters may not transfer their skepticism of foreign people to foreign technology, because nationalists are defined by their desire to exclude particular groups of people, not technology, from the government's care. Nationalists could in principle be willing to do business with foreigners to access their technology even while resisting their immigrants or imports of their goods. Mutz (2021) hypothesizes this as a reason why automation fails to trigger reactions among U.S. citizens: foreigners are outgroup members, while robots are not. It is also more difficult to attribute malicious intent to a robot than to a foreigner who has agency.

However, we think that the window of opportunity for a politician to cast automation as *foreign*, and therefore worthy of the same reactionary politics triggered by trade in goods, is widening. A politician who wanted to harness anxiety triggered by automation could highlight the foreign origins of industrial robots. Figure 1 shows how the United States' trade deficit in physical machinery to automate manufacturing processes has exploded in the last 30 years. To quantify trade in automation machinery, we use reports on tariff classification rulings[22] to identify the Harmonized System codes most clearly associated with automation

---

[22] Mangini (2022).

products and manufacturing robotics.[23] In the latter part of the 20th century, the United States ran a relatively small trade deficit in automation technology, about 180 million. But by 2020, this deficit increased by 1472%, to 2.8 billion dollars.
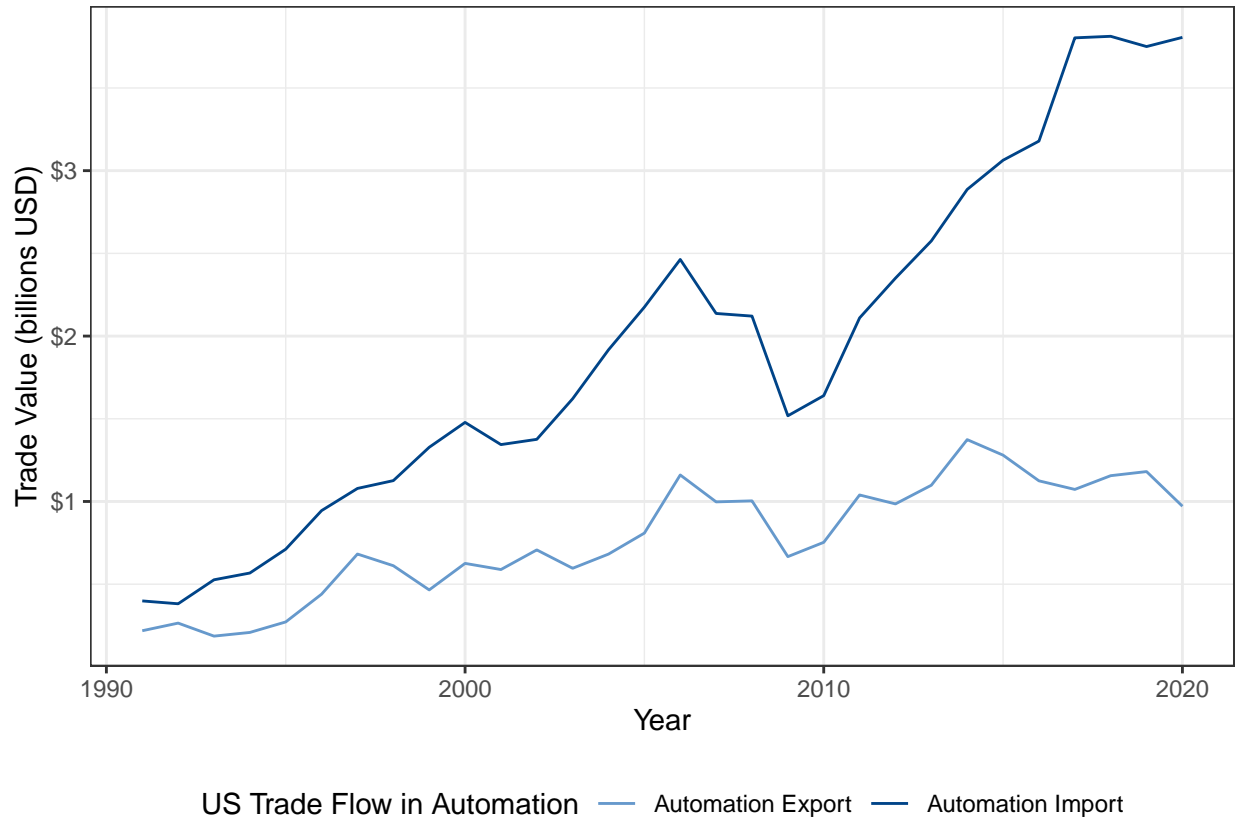

Figure 1:

Additionally, the source of automation trade has changed greatly over this time period in ways that could make automation easier to vilify in the United States and Western Europe. Figure 2 shows how some selected countries' imports and exports of automation technology changed over this same time period. Each vector shows a country's starting point in 1990 and how its automation trade balance changed by 2020. We mark countries with growing net exports with a "+" and those with shrinking net exports with an "o." China, Vietnam, and Malaysia showed the largest gains in automation exports.

---

[23]We searched tariff classification rulings for terms like "robot", "industrial robot", and "automation." This let us identify HS 848290, HS 847950, and HS 851521 as the appropriate codes. Trade value data are from COMTRADE.

The largest automation exporters in 1990 are generally countries towards which Americans feel relatively low levels of antagonism. Germany and Japan – largely viewed as geostrategic partners to most countries in the "West" – were major exporters of automation technology, accounting for almost 80% of global exports. Yet, by 2020, their shares of global exports had been cut in half, with newcomers like China making large gains in export share. Antipathy towards China, with emphasis on its identity as an illiberal non-democracy[24] and its role as a geopolitical adversary to the United States, was a pillar of the anti-globalization sentiment stoked by Donald Trump.
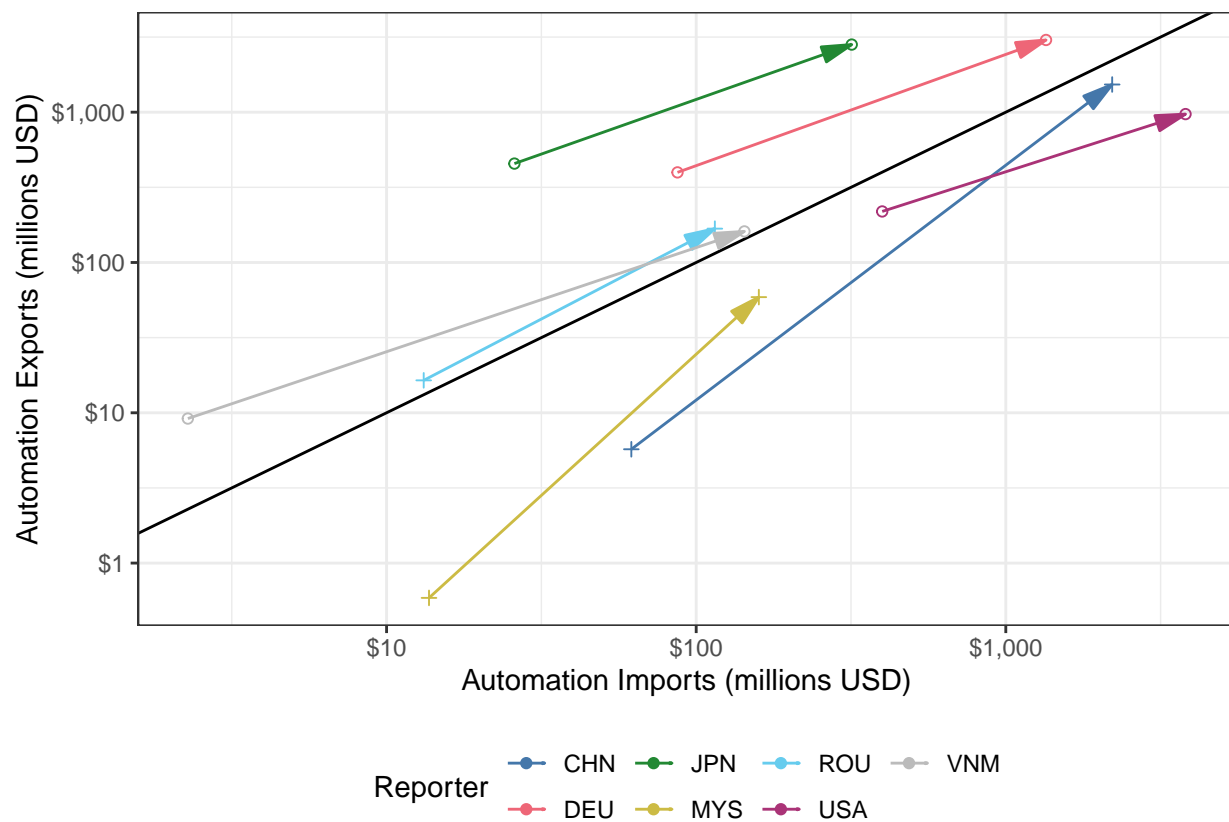

Figure 2: Circles indicate states whose automation imports grew faster than automation exports while crosses indicate states whose automation exports grew faster.

---

[24]Chu (2021)

3 Theory

We now turn to a formal model of a representative citizen forming preferences over government responses to a shock. The shock raises aggregate income, but has positive and negative effects on different societal groups. Our citizen has preferences over the income distribution among different groups in society. We follow recent research that de-emphasizes identifying whether a particular citizen is harmed by a shock, eg whether she owns a certain factor of production or works in an import-competing sector, since most citizens' jobs are not directly tied to a shock and many cannot link economic models with their potential gains or losses.[25] We therefore model preferences that have sociotropic and egocentric components,[26] implemented using preferences that give differential weight to particular groups within society.[27] The political-economic model departs from existing work by allowing two forms of response to the shock, transfers or a policy intervention, each with their own costs and benefits. By transfers, we have in mind tax and redistribution mechanisms that reallocate money from one group to another. By policy intervention, we mean government actions that directly counteract the shock itself, preventing the shock from creating dislocation in the first place.

Our formal model focuses on a "demand" side explanation for different policies, but fits within a broader framework that accounts for elites and their "supply" of policies like protectionism.[28] Our model describes how economic nationalism and economic dislocation tilt public preferences towards policies like protectionism and away from redistribution. Politics is a highly competitive marketplace, where opportunists are always looking for an argument or greivance that they can use to rally their support. Some elites understand, or at least sense or intuit, how shifting conditions create fertile ground for certain arguments or ideas to take root. They then supply the corresponding platform or further stoke those shifts with identity-reinforcing cues.[29] The media helps amplify these messages as they gather steam.

---

[25]Rho and Tomz (2017).
[26]E. D. Mansfield and Mutz (2009), Fehr and Schmidt (1999), Bolton and Ockenfels (2000)
[27]Shayo (2009)
[28]Rodrik (2020).
[29]Balcazar (2021).

Our model helps explain why certain political messages, like those blaming globalization and advocating for protectionism, gain more traction than narratives based on automation.

3.1   The Political Economy of Redistributive Shocks

Consider an economy experiencing an economic shock which creates aggregate gains for the society as a whole. We consider two types of shocks: a globalization shock and a technology shock. We denote the type of shock with $k \in \{G, T\}$. The shocks are similar in several ways. First, both types of shock can create aggregate gains of magnitude A. For a globalization shock, gains arise from offshoring as domestic firms move production abroad to take advantage of lower labor costs, lowering prices or raising the quality of goods for domestic consumers. For an automation shock, gains arise from improved technology that increases the efficiency of production, allowing firms to lower prices at home and export more abroad.

Second, both types of shocks cause internal economic dislocation, meaning that some subset of the population is harmed by the change. Workers who lose their jobs to foreign workers or to automation experience losses that are larger than the benefit of lower prices due to the shock. Citizens whose employment is unaffected by the shock are net "winners" from the shock. We denote the group of net winners with W and the net losers with L. We are interested in shocks that satisfy the Kaldor-Hicks criterion, meaning that the total gains accruing to W are greater than the total losses inflicted on L. The total income before the shock in both the W and L groups is I.[30] The net gains experienced by the W and L populations will be αA and $(1 - \alpha)A$, respectively, where $\alpha > 1$ is a parameter governing the degree of dislocation induced by the shock.[31]

The shocks are also similar in that the government can choose a policy response, p, that blunts the economic dislocation effects of the shock. Our conception of a policy response

---

[30]The groups can be given different incomes without affecting the analysis.

[31]For example, if the shock caused W to gain 100 and L to lose 80, then $A = 20$ and $\alpha = 5$.

is general: it is any policy which interrupts the economic reallocations, both good and bad, that result from the economic shock. For example, p can be thought of as protectionism in the case of a globalization shock. A tariff might re-raise foreign prices above the price of domestically produced goods. This offsets the cost savings from offshoring, deterring a firm from sourcing from abroad or encouraging the firm to re-shore production. For automation, p can be thought of as any policy that hinders technological change. Such policy would interrupt the transitional unemployment from automation at the cost of its associated efficiency gains. Examples include worker protections that make it harder to replace employees with technology or regulations significantly delaying the use of new technology by requiring extensive testing. Even in the United States, there is some discussion of these types of regulations, though they tend to be ad hoc or industry specific. For example, the US Congress has heard heated debate over proper regulation of autonomous vehicles, with transportation workers unions advocating for greater regulation.[32] In other places, automation regulations are more commonly discussed, implemented, and can be more wide-ranging. For example, the European Union has moved forward with a Machinery Directive pertaining to the safety of automation, among many other regulatory efforts.[33]

The government's choice of p is also continuous reflecting how the policy response can be more or less severe. Formally, we assume that aggregate gains A are decreasing in p. Importantly, our model reflects how the economically disruptive consequences from a shock are proportional to the gains from the shock – dislocation increases as the aggregate gains increase, and the government's policy response can counteract this dislocation.

In addition to a direct policy response, the government can also respond to a shock with transfers, t, that redistribute income from the winners from the shock to the losers, without directly blunting the shock. The transfer t represents the size of the net transfer from winners to losers, via taxation and redistribution. With transfers, the shock and ensuing dislocation occur, but taxation and redistribution can *ex post* affect the final income distributions among

---

[32]https://www.twu.org/wp-content/uploads/2022/01/TWU-TI-AV-Hearing-Testimony-2.2.2021.pdf.
[33]https://ec.europa.eu/commission/presscorner/detail/en/ip_21_1682.

the winners and losers. Like many models, we assume that transfer mechanisms are imperfect.[34] The "leakiness" of the transfers t is represented by a function ℓ such that $\ell(t) < t$. Consistent with the literature on efficient taxation, the function ℓ is assumed to be continuous but could be nonlinear.[35] We further assume that $\ell'(0) = 1$, $\ell'(z) < 1$ for all $z > 0$, and $\ell''(z) < 0$ for all z. Together, these assumptions imply that larger transfers are monotonically more leaky.

The automation and globalization shocks differ in one important way: a globalization shock is a "foreign" shock and an automation shock is "domestic." This distinction refers to whether the shock changes the location of production, and relatedly, its effect on trade. A globalization shock is "foreign" in the sense that production moves abroad and, all else equal, the country in question will import more. An automation shock is "domestic" in the sense that no production is moved abroad, and all else equal, the country in question will export more. The setup is consistent with studying a country like the United States which has comparative advantage in the production of capital intensive products including automation technology. We highlight this distinction here, because citizens in our model can have preferences over the location of production. As explained below, we allow citizens to have preferences over production locations reflecting nationalist yearning for self-sufficiency.

3.2 Preferences for Income Equality and Efficiency

How do individuals think about the choice of government responses, be they policy responses or transfers? We study individuals whose utility reflects competing priorities. The first tradeoff is between efficiency and equality of income across groups. All else equal, the citizen likes to increase the wealth of both groups. She also cares about the distribution of income between the groups. All else equal, she prefers a more equal distribution. This creates a tradeoff between aggregate efficiency and income equality: the citizen can reduce

---

[34]For an example of similar modeling approaches, see Meltzer and Richard (1981). For a justification and explanation of the "leaky bucket" of redistribution, see Okun (1975).

[35]Dixit and Londregan (1996)

aggregate gains – either with a shock-blunting policy or a leaky transfer – in order to achieve a more equal distribution of income between the two groups. But this comes at the cost of shrinking the total available national income.

A second tradeoff arises because citizens have preferences over the production locations as described above. Globalization shocks, defined as policies that decrease the costs/barriers of international trade, will increase aggregate welfare by encouraging imports of cheaper or better goods. A positive shock to the productivity of automation shock in a country with comparative advantage in that technology increases aggregate welfare by increasing the efficiency and quality of domestic production.

To simplify this, we allow individuals to vary in the degree to which they receive *direct* utility from the trade balance. On the one extreme, economic nationalists want their state to be self-sufficient and therefore strongly prefer national income arising from exports as opposed to imports. On the other extreme, cosmopolitans do not care whether income changes result from imports or exports.[36]

The nationalist preferences described here can also be thought of as capturing a tradeoff between preference for national income and preference for self-sufficiency. In this framework, economic nationalists would demand more domestic production to avoid exposing their nation's economy to the policy whims of a foreign public or to avoid enriching the outgroup at the expense of one's conationals. Cosmopolitans would be citizens who choose policies to maximize national income (subject to their preference for equality). Cosmopolitans could still be nationalists in the sense that they care mostly about the welfare of their fellow citizens as long as they have no preferences about the location of production. The economic nationalist preferences in the model require the citizen to embrace an exclusionary form of nationalism which perceives foreign production, especially foreign production

---

[36]We do not consider the possibility that citizens may prefer goods produced abroad. As an empirical matter, these people are likely to be rare; most people have some degree of preference for domestic production. From a theoretical standpoint, the model can still incorporate this possibility. The predictions for this group would be the mirror image of those derived below.

that cannot be replicated domestically, as a threat to security.[37]

We formalize these components of the citizen's utility function as follows. Consider a utility function $U(H_W, H_L, p|\gamma, k)$ mapping the welfare of the two groups and the policy choice to an individual voter's utility. The first two arguments, H_W and H_L, represent the incomes of the W and L individuals respectively. The utility function exhibits a preference for *efficiency* which, formally, means that we assume U is strictly increasing in both H_W and H_L. We also assume that the utility function exhibits a preference for *equitable* distributions of wealth, which is formally represented by assuming U is convex in its arguments H_W and H_L.[38] The third term, p allows for the policy intervention to directly affect utility. A direct effect is not present for cosmopolitans, who only care about the equality/efficiency tradeoff.

The remaining arguments of U describe how the individual's utility is affected by trade balances. The parameter $\gamma \in [0, 1]$ describes the intensity of the individual's nationalist sentiments. When $\gamma = 0$ the individual does not care directly about trade balances or policy responses; she only cares about the policy response insofar as it affects each group's welfare. For a nationalist individual, $\gamma > 0$, utility *increases* with the trade balance. In a capital or technology abundant state like the United States, labor intensive products are imported and capital intensive products are exported. Therefore, a nationalist in the United States receives additional utility from restricting imports of labor intensive products and loses utility from interference in the production of technology intensive products.

Recall that $k = G$ denotes that the economy is facing a globalization shock, where policy responses will limit imports. In this case, a citizen with any degree of nationalist preference receives positive utility from protection: $\partial U(\cdot, \cdot, p|\gamma \neq 0, k = G)/\partial p > 0$. When $k = T$, the shock is technological in nature and policy responses will limit exports. In this case, the

---

[37]For more on distinguishing exclusive nationalism from other varieties, see Bonikowski and DiMaggio (2016). Brutger and Pond (2021) use a similar conception of nationalism to explain preferences over antitrust policies among US respondents.

[38]Note that our treatment of preferences for equality is very general. Our modeling choice accomodates the possibility that the citizen cares more about one group than the other, ie she places different weights on each group's income. The convexity assumption only implies that she prefers some (possibly weighted) convex combination of incomes to more unequal distributions.

nationalist receives disutility from the policy response: $\partial U(\cdot, \cdot, p|, \gamma \neq 0, k = T)/\partial p < 0$.

3.3   Demand for Policy

How do citizens form their indirect utility for policies given the above economic framework? In short, since policy remedies and transfers are substitutes, citizens choose the optimal pairing of the two responses. The citizen's degree of nationalism tilts the optimal bundle towards the policy response in the case of a foreign shock and towards transfers in the case of a domestic shock.

The mechanics of this logic can be illuminated by a careful analysis of how the voter would form preferences over policies. Voters choose a level of policy intervention p and a level of transfers t to achieve their preferred balance between equality and efficiency. Voters always want more efficiency if they can get it without sacrificing equality. But not every income allocation is feasible; voters are restricted to choose among only the income allocations which can be implemented with transfers and protection. The set of feasible allocations is therefore defined as $Y = \{(H_W, H_L) : H_W = I + \alpha A(p) - t, H_L = I + (1 - \alpha)A(p) + \ell(t)\}$.

Figure 3 shows the citizen's optimal policy choices in vector form, in response to a foreign and domestic shock. In each pane, the horizontal axis shows the income of the losing group and the vertical axis shows the income for the winning group. The point of origin for the vectors in the top left, $(H_L = 7.5, H_W = 22.5)$, represents the income distribution resulting from the shock. This is the income distribution that would remain without any government intervention.

It is helpful to start with the left pane – a "purely" cosmopolitan citizen facing a foreign shock. She first chooses her preferred income allocation, which is the point at the end of the blue vector in the bottom right. This point represents her preferred allocation, based on the tradeoff between income equality and efficiency. This destination point reallocates income away from the winners, back towards the losers from the shock. She stops this reallocation

when further efficiency losses outweigh further equality gains.

The blue and red vectors show *how* she achieves this reallocation. The red vector shows how much reallocation results from the policy instrument, tariffs. The blue vector shows how much reallocation results from transfers. She uses a relatively balanced approach; the balance is determined by the leakiness of transfers. If transfers became leakier, she would place a greater weight on the policy response to achieve her preferred allocation. To show the relative weights of each response, we project the blue and red vectors onto the middle vector. Their length in the middle vector shows the relative weight placed on each type of response.

Now consider the middle pane, showing a nationalist – who also has preferences over the location of production – facing an identical foreign shock. To isolate the effect of these additional preferences, we fix this nationalist's preferences over the efficiency/equality trade-off to be identical to the cosmopolitan just considered. Making the previous citizen more nationalist has two important consequences.

First, the nationalist still balances equality and efficiency, but because she has preferences that stem directly from the trade balance, she is more inclined to deploy policies that reduce imports. In effect, the nationalist's benefit from reducing imports is compensation for the efficiency loss of restricting trade. Indeed, the nationalist will never choose an allocation on the frontier of the feasible set, because doing so would always mean foregoing their perceived intrinsic benefits of interrupting imports. Second, the nationalist's enthusiasm for stopping imports has another effect – as a byproduct, the economy is also less unequal. Having already partially achieved their preferred balance between equality and efficiency, the nationalist demands fewer transfers than the cosmopolitan. Importantly, the total redistribution demanded by the nationalist could increase or decrease depending on whether the demand for trade barriers grows by more than demand for transfers contracts. However, the theory makes a clear prediction that the difference between demand for policy and demand for transfers should be larger for a nationalist. In other words, the demand for trade barriers

crowds out the demand for transfers. In this way, the theory can help explain why politicians courting voters who are concerned about offshoring are more successful emphasizing policies that restrict trade than policies that compensate workers who lose their jobs.

The opposite logic occurs when this same nationalist considers a domestic shock, as with an advance in automation technology – shown in the right pane. The nationalist, wary of weakening a domestic firm that employs co-nationals, is hesitant to support policies that could undermine its business. Thus, she experiences an additional penalty for interrupting trade that the cosmopolitan does not experience. Relative to the cosmopolitan, the nationalist demands fewer trade barriers. But the nationalist still seeks to balance equality and efficiency, and does so by relying more heavily on transfers. Even when facing an export shock, the nationalist does not choose an income allocation on the frontier of the feasible set because doing so would mean ignoring the domestic firm's penalty. The preference for transfers in the face of domestic shocks can help explain why politicians who are courting voters concerned about automation are typically more successful when emphasizing policies like universal basic income rather than making automation more difficult.
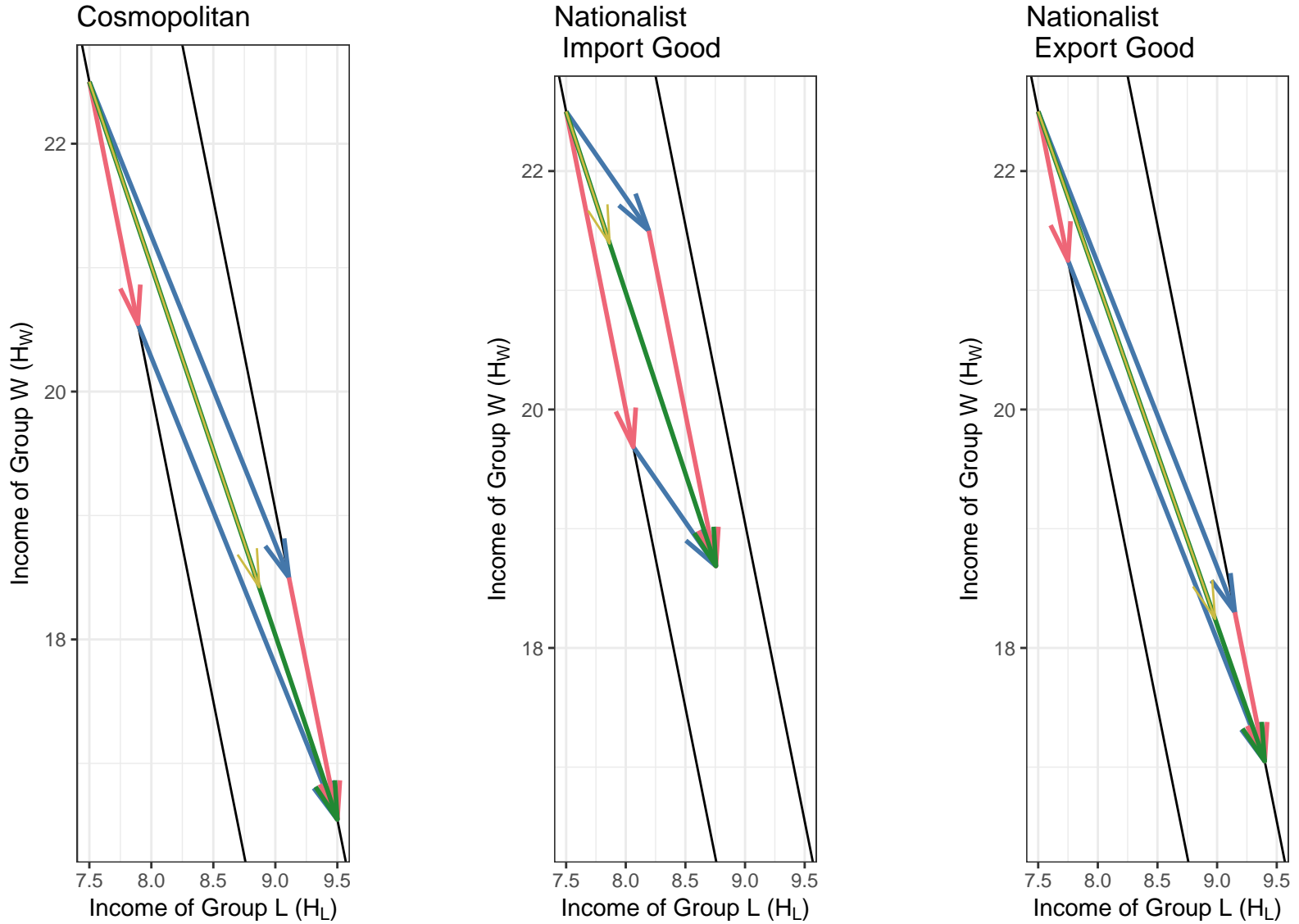
Figure 3: The figure depicts weights on each response as a vector decomposition of the total response. The red vector – $v_p = (A(p^*) - A(0))(1-\alpha, \alpha)^T$ – represents the component of the preferred allocation implemented with a policy interventions p^*. The blue vector – $v_t = (\ell(t^*), -t^*)^T$ – represents the component implemented with transfers, t^*. The green vector shows the total desired redistribution $v_t + v_p$. The yellow vector shows the weight placed on transfers – the projection of v_t onto $v_t + v_p$.

Finally, Figure 3 makes clear that it is important to consider *relative* weights a citizen places on each response - not the overall level of response. We held fixed the size of the shock in our thought excercises, but different types of shocks can trigger different levels of total responses from a citizen. For example, if a citizen perceived a foreign shock to be bigger than an domestic shock, this could change her total response.[39] However, our theory makes clear that - regardless of how large or small a citizen perceives a shock to be - the relative weights she places on particular responses will vary in predictable ways. Regardless of the perceives shock size, citizens with some degree of economic nationalism in their preferences will prefer greater policy responses to foreign shocks, as a proportion of their total response, compared to when they face domestic shocks. Conversely, they will prefer weaker transfer responses, relative to their demand for policy responses, when facing a foreign shock, as opposed to a domestic shock. To account for this, we isolate the effects of a shock on the relative weights placed on government responses, rather than the level of support for a particular type of response. Existing work's emphasis on one type of policy response in isolation, could potentially explain the inconsistency of results across different studies for how citizens respond to different shocks.

3.4 Predictions

Figure 4 links the above predictions with the empirical evidence below. The above discussion corresponds to a comparison between the top left and bottom right cells. When thinking about the canonical foreign shock – the outsourcing of labor production to another country – citizens place greater weight on tariffs as a direct response and less weight on transfers. This is compared to a domestic automation shock, where citizens place greater weight on

---

[39]The effect of a shock on total response is complicated. For example, a nationalist's total preferred redistribution may increase or decrease relative to the cosmopolitan's. While nationalists favor transfers or policy interventions predictably, we show in the Appendix that the net effect on incomes is indeterminate. For example, nationalists facing a shock that raises imports could reduce their preference for transfers by more than they increase their preference for tariffs or not. The potential nonlinear relationship between the instruments and income further complicates the net effect on total redistribution. These issues make the empirical detection of these effects challenging.

transfers, and less weight on a policy response – in this case, regulations or other laws that directly limit the adoption of automation. This comparison, in responses to foreign labor versus domestic automation shocks, is the first one we consider empirically below.

The second prediction considered below corresponds to movement from the bottom right to the top right cells. If we take an automation shock, and "make it foreign" as opposed to domestic, our theory predicts that citizen will demand a greater degree of regulations to directly limit the adoption of automation, and place a relatively weaker weight on transfers to remedy that shock. Note, that this is a prediction that is about direct regulations on automation, not simply on tariffs. This prediction is not that "making automation foreign" will increase demand for tariffs; rather that this will cause citizens to demand greater direct regulations of automation.

	Labor (Imported)	**Automation** (Exported)
Foreign	More Protection Fewer Transfers	More Regulation Fewer Transfers
Domestic	Less Protection More Transfers	Less Regulation More Transfers

Figure 4: Predicted Effect of Shock Type on Responses

4   Survey Experiment

To assess the predictions of the theoretical model, we conducted a online survey experiment that varied the type and source of an economic shock and let respondents indicate their support for different government responses. In two waves occurring September 23-24, 2020 and October 28-29, 2020 we sampled 3,154 respondents using Lucid Theorem, a service that recruits respondents from a variety of sources such as ads or rewards programs. Respondents

resided in the United States and were at least 18 years old. One advantage of this platform is that Lucid recruits samples that are representative of the country on a variety of demographic characteristics, including gender, age, education, party identification and household income, making the respondents more representative than samples recruited from similar platforms, like MTurk. Recent work by Peyton, Huber, and Coppock (2020) indicates that survey experiments conducted during the COVID-19 pandemic of 2020 should be generalizable in most cases.[40]

4.1   Treatment

Respondents answered some initial demographic and opinion questions. They were then randomly assigned to one of four treatment conditions, describing features of an economic shock. They then answered questions about their support for possible government responses.

For treatment, every respondent read a newspaper article that we composed about layoffs in an automotive plant, owned by General Motors, taking place in Michigan.[41] We choose to use an article that we created in order to maximize the realness of the treatment while holding everything else about the article constant. Respondents were pre-briefed in the informed consent process that they might be shown false information and they were also debriefed about the deception after the experiment. The risks of this deception were minimal, since all four versions of the article contained content similar that found in real articles. It would not have been possible to find four real articles that were similar enough to each other – except for the characteristics of the economic shock – to make inferences. We also wanted treatment to be realistic and mimic the treatment respondents receive in the real world, to increase the external validity of the experiment.[42]

---

[40]During the pandemic, researchers noticed a drop in quality of Lucid respondents (Aronow et al. 2020). We used two attention checks at the beginning of the survey and dropped respondents who failed either.

[41]We used a blue-collar industry for the vignettes because the majority of elite discourse about trade and automation focuses on the industries. A natural extension to our research would consider more white-collar industries.

[42]Please see the appendix for more detail on the decisionmaking process behind the use of deception.

Each respondent read the same first page of the article, shown in Figure 4.1. The first page laid out the situation, displayed a picture of an auto worker, and included a quote attributed to the CEO.[43] Treatment consisted of random assignment to one of four versions of the second page of the article. The versions varied the type of shock – labor versus automation – and the origin of the shock – foreign versus domestic. Our key concern was making sure that all four versions matched each other closely in structure, overall tone and content, except for variation in the type and origin of the shock.


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

By Staff - 12/20/19 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.
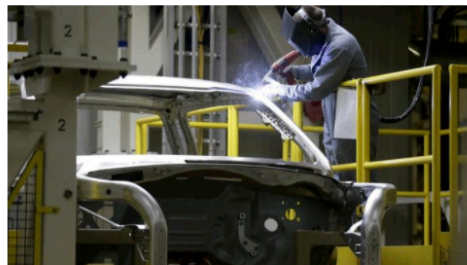
A worker at a US auto plant. CHARLIE RIEDEL / AP

"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."

Figure 5: First page of news article, read by all respondents

The foreign labor shock, shown in the left pane of Figure 6, was described as originating from globalization and offshoring. It included a picture of large shipping containers arriving at a US port and a planned factory site overseas. The text described companies moving jobs abroad and shutting down production facilities in the United States.

---

[43]We intentionally left the gender and race of the worker obscured. We also did not mention GM's CEO, Mary Barra, by name since President Trump had specifically antagonized her in speeches and on public media.

The domestic automation shock, middle pane of Figure 6, was described as originating from firms developing computer software and advanced robotics that replaced workers and shut down production facilities in the United States Respondents first saw a captioned picture of automation at an auto plant. We emphasized that US firms were the source of the automation technology. Respondents also saw a picture of CISCO headquarters, a company to whom automation advances were attributed.

For the foreign automation treatment, right pane of Figure 6, we again matched the domestic automation treatment. Except, we emphasized how foreign firms in Europe and Asia had developed the technology that replaced workers, and we included a picture of Alibaba headquarters. For the domestic labor shock,[44] we kept everything the same as in the foreign labor treatment, except that relocation was to other states within the US.
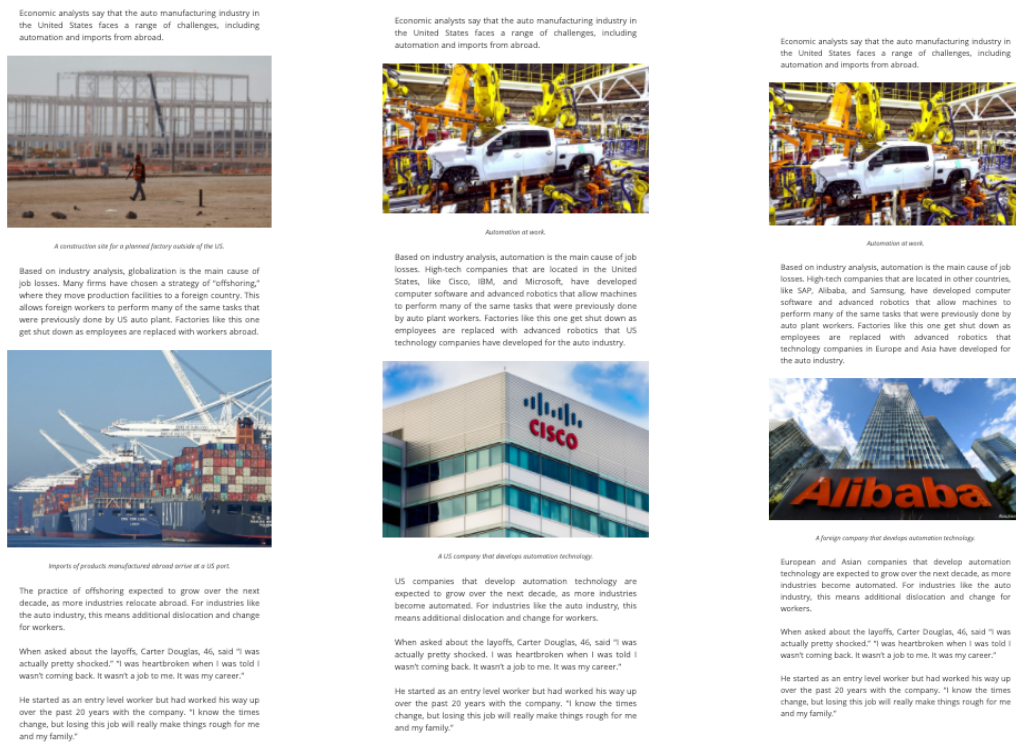

Figure 6: Foreign Labor, Domestic Automaiton, and Foreign Automation Treatments

In the taxonomy of Brutger et al. (2020) our survey is non-hypothetical, identifies real ac-

---

[44]See appendix for full text and pictures of this treatment.

tors, and is high in contextual detail. The treatments themselves are relatively small changes in a detail-rich article. This tends to bias against finding larger treatment effects, making our approach more conservative.

4.2 Outcome Measures

We then told respondents "we want to ask how you think the US Federal government should respond to events like the one described in the article." Respondents saw brief bullet points that recapped the content of the article they had just read. For example, a respondent assigned to the Domestic-Automation treatment condition read as follows.

To recap:

- *The company is laying off a large number of workers.*
- *The main cause of the layoffs is the company's decision to replace workers with automation and technology.*
- *The technology was developed by US firms.*

Respondents were then asked how much they agreed or disagreed with a set of statements. They answered with a slider that ranged from 0 (strongly disagree) to 100 (strongly agree). The statements below were presented in random order:[45]

- *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.*

---

[45] Respondents read all three options in all treatment conditions. The article was written so that each question would still read coherently, even if the article emphasized a policy remedy that didn't correspond to that policy, eg a respondent in the Foreign Labor condition still read about automation regulation. We did this because it gives insight into respondents' overall level of preferred response and because of the possibility, identified in existing work, that respondents prefer mis-matched policy remedies, eg they could theoretically prefer tariffs as a remedy to automation and vice versa.

4.3   Randomization, Balance, and Attention

We block-randomized treatment assignment based on whether the respondent identified as a Republican, Democrat, or an Independent.[46]   The randomization procedure worked as expected.   Additionally, the respondents were balanced across treatment conditions along a larger set of respondent characteristics. We used the procedure described in Hansen and Bowers to compare balance in respondent characteristics across treatment groups. We fail to reject the null of no significant differences between groups, both comparing domestic and foreign treatments and labor and automation treatments.

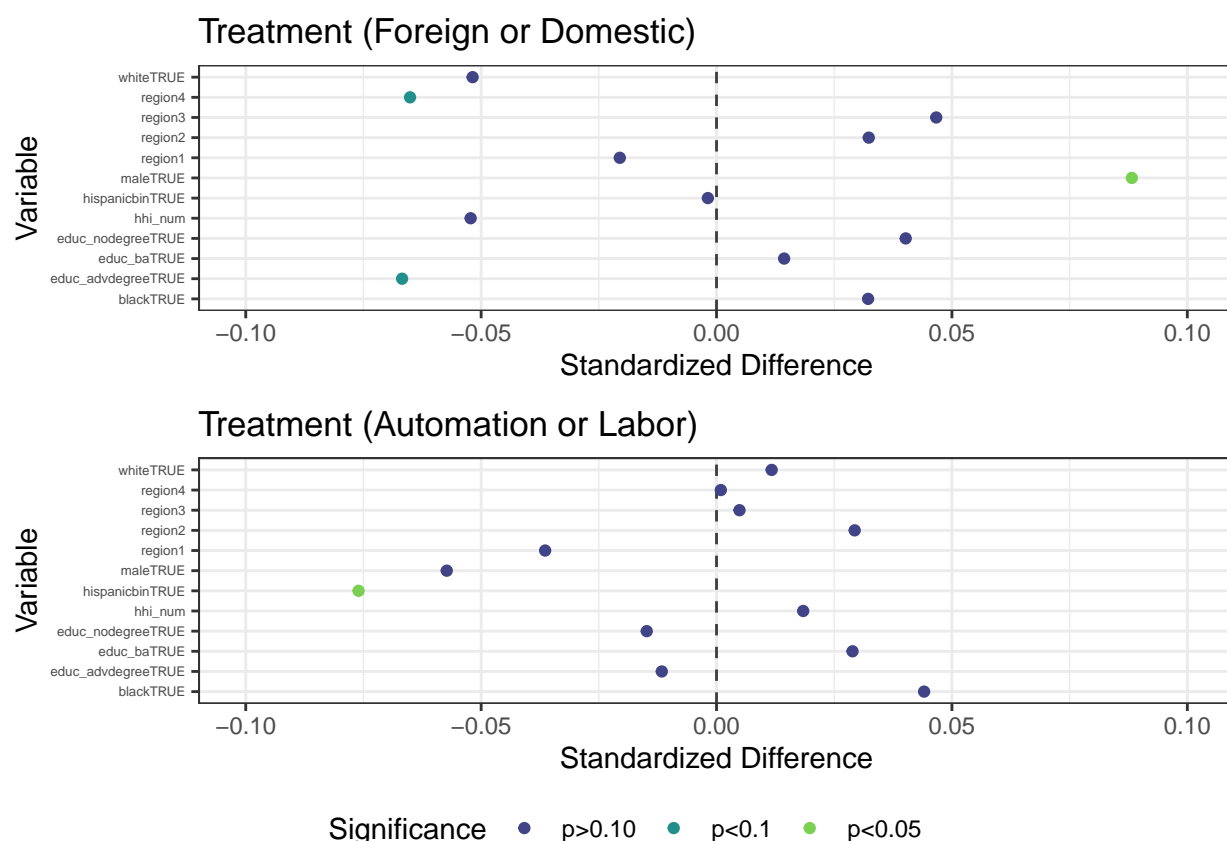Figure 7: The Bowers and Hansen (2008) omnibus test p values is 0.42 for the Automation/Labor treatment and 0.09 for the Foreign/Domestic treatment.

We primed respondents with the statement that we would ask them about the content of the article at the end of the survey. Respondents generally answered these questions with a

---

[46]Lucid provides this information directly to the researcher prior to treatment assignment.

high degree of accuracy. We also timed how long respondents spent on each page of the article. In general, time spent reading the article was speedy, but not unexpectedly so for an online survey like this one.[47]

Additionally, at the end of the survey, we asked respondents three questions to see whether they recalled details of the treatment. We asked the industry in which the layoffs took place, the main cause of the layoffs, and which potential government solutions they were asked about. The first and third questions had one correct answer and two incorrect answers apiece. The correct answers also did not vary across treatments. The second question had all four treatment conditions listed in brief, and the correct answer depended on which treatment the respondent received. 97% and 82% answered the first and third question correctly, respectively. For the harder second question, 63% of respondents answered correctly. The mean of the number of correct answers was 2.4.

4.4 Results: Relative Weights on Transfers vs. Policy

Figure 8 shows summary data for respondent support for restricting imports, restricting automation, and increasing benefits, broken down by type of shock. The left column shows the distribution of respondent support for government responses to labor shocks; the right column shows the measures for automation shocks. The top row shows support for the relevant policy response: restricting imports for the labor shocks and restricting automation for the labor shocks. The bottom row shows support for increasing benefits. In each pane, the light blue line shows the mean measure for a domestic shock and the dark blue line for a foreign shock.

An initial look shows support for the theoretical prediction. Looking at the top row, going from a domestic to a foreign shock increases support for the relevant policy response. The bottom row also shows the importance of looking at *differences* in support for policy responses versus transfers. In the bottom left, going from a domestic to foreign labor shock
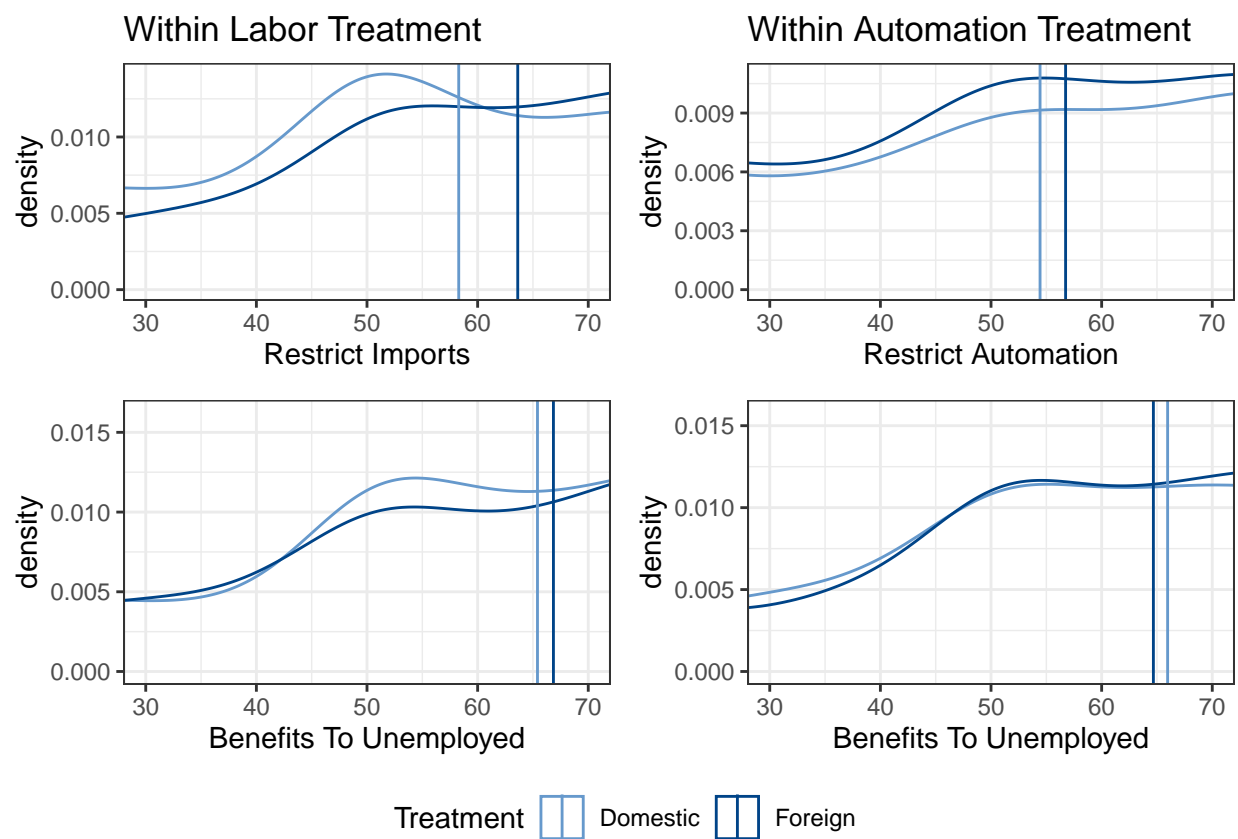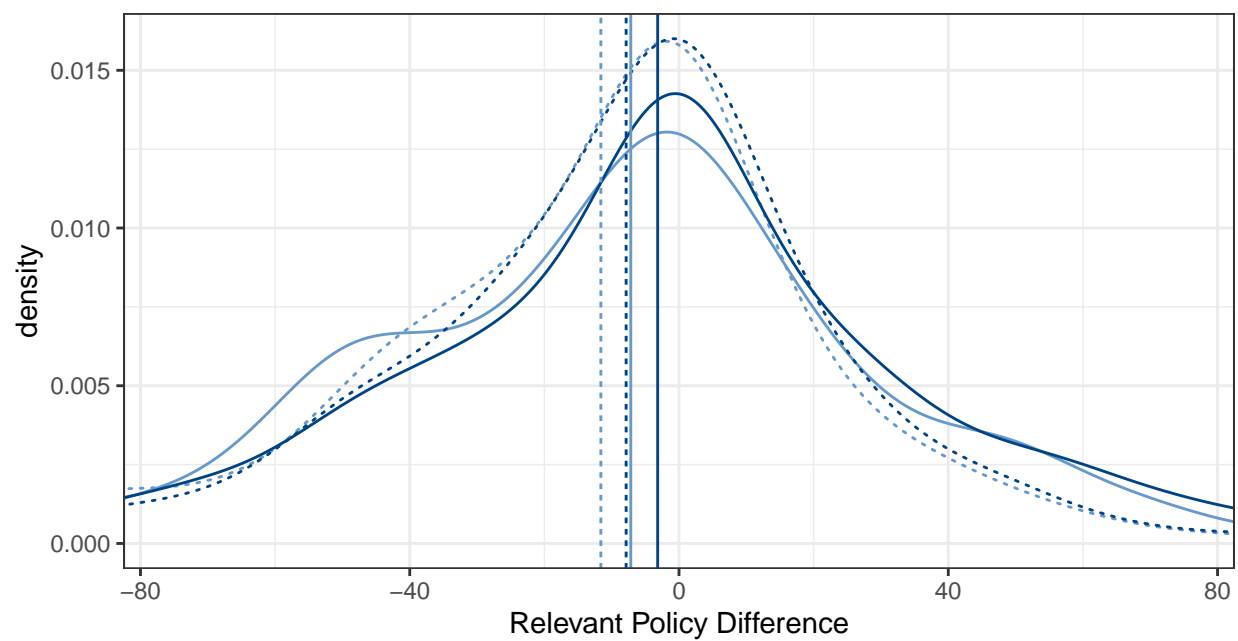
---

[47]See appendix for full details.

Figure 8: Summary of dependent variables by treatment.

Figure 9: Summary of differences by treatment

increases support for transfers, albeit to a much smaller degree than the corresponding increase in support for tariffs. In the bottom right, going from a domestic to foreign automation shock decreases support for transfers.

Since the theory's predictions pertain to differences between the support for policy instruments versus transfers, Figure 9 shows summary data for the difference between these measures. For labor shocks, this is the difference in support between import restrictions and transfers. For automation, this is the difference in support between automation restrictions and transfers. These differences are the main outcome variable we use in the regression analysis. The mean of the differences for each treatment condition (vertical lines) are all negative; respondents generally supported transfers more than the policy remedies.

As predicted by the theory, the foreign treatments cause respondents to favor the policy response over transfers. Foreign shocks lead respondents to place greater weight on the policy restriction, substituting away from transfers. As an initial look at the first prediction – that going from foreign labor to domestic automation shocks will increase the weight on transfers – we see that this is indeed the case. Respondents reading the foreign labor treatment had nearly equal support for tariffs versus transfers, slightly preferring transfers. Respondents reading the domestic automation treatment placed a much higher weight on transfers, compared to the relevant policy remedy of restricting automation. Support for transfers was over 10 points higher in the domestic automation treatment condition.

Additionally, the right pane shows initial support for our prediction about these differences when moving from domestic to foreign automation. When reading about foreign automation, respondents shift their preferred responses more towards restrictions on automation. In the domestic automation condition, respondents supported transfers over automation restrictions by an average of 11.61 points. For foreign automation, this difference shrinks to 7.85 points.

To analyze these differences statistically, we start with a comparison of differences policy support, comparing respondents assigned to the Foreign Labor and Domestic Automation

treatment conditions. The dependent variable in the regression uses the relevant policy in each case, i.e. it equals tariffs minus transfers for labor and automation restrictions minus transfers for automation. Table 1 shows the results. The first column regresses this difference on an indicator for the Foreign Labor treatment. The second column does the same and includes a wide array of control variables.

The positive coefficients show how the differences in support for the policy versus transfers increases with the Foreign Labor, compared to the Domestic Automation treatment. Moving to Foreign Labor causes the increase in support for import restrictions to far outweigh any corresponding increase in support for transfers. This makes the difference in support for the two responses bigger.

The second two columns of 1 show the same thing, for a comparison of responses to the Domestic and Foreign Automation treatments. The sample in these two columns is restricted to resondents who received one of the automation treatments, and the main independent variable is an indicator for Foreign Automation. Going from domestic to foreign automation has a similar effect as going from domestic automation to foreign labor. It again increases the difference between support for a policy remedy – in this case, restrictions on any use of automation – and the transfers remedy. The magnitudes for this effect are slightly smaller than that of the Foreign Labor treatment, but the similarities in effects are striking. When told that automation is foreign, respondents adjust their preferred policy bundle in similar ways to when we emphasized a Foreign Labor shock.

4.5   Extended Results and Robustness

Here, we briefly describe a follow-up experiment as well as several robustness checks and extensions to the main results. The appendix describes each in greater detail.

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)
Controls	No	Yes	No	Yes
Subsample	DA + FL	DA + FL	DA + FA	DA + FA
Observations	1,565	1,490	1,566	1,495

Note: *p<0.1; **p<0.05; ***p<0.01

4.5.1 Follow up experiment

We conducted a large (N ≈ 2, 100), preregisterd follow-up experiment in May 2022 with two goals. First, we wanted to replicate the main finding. Replication helps make sure that our results are not driven by the timing of our original experiment or specific design choices. The initial experiment was fielded when unemployment from COVID was rising rapidly, which could have made respondents more sensitive to threats to employment. Unemployment was still an issue in May 2022, but not to the same degree as it was during the height of COVID. Our initial experiment also used a news story format about a specific set of job losses. Details or unintended content in the vignettes could also have influenced results. The follow-up uses an abstract, informational treatment about job losses from automation, in general. We do not have strong reasons to believe that either survey timing or survey design are problems, but the follow-up lessens these concerns.

Second, the theory and main experiment leave unspecified the aspects of economic

nationalism that matter most to citizens. The follow-up explores which aspects of economic nationalism push respondents the most to support regulations over transfers for foreign shocks. We first randomly assigned respondents to information about whether automation was foreign- or domestically sourced. Then, for respondents who were told that a significant proportion of automation technology is imported, we randomly assigned them to one of three arguments about the potential downsides of imported technology. Each argument emphasized one of the aspects of economic nationalism described in the theory. The *foreign reliance* treatment emphasized the worry that foreign technology makes the US dependent on other countries. The *relative gains* treatment emphasized that the US gained less than the exporting country. The *within-country* redistribution treatment emphasized how imported technology harmed "blue-collar" workers in the "heart" of America, words used to evoke specific images of who loses from imported automation. The outcome measures were very similar to those used above. They asked respondents to choose the degree to which they agreed or disagreed with regulating automation and increasing unemployment benefits as a response to job losses from automation.

We again find that emphasizing the foreignness of automation technology and giving arguments about the potential downsides increases the weight that respondents place on regulations as a response, compared to transfers. Emphasizing the foreigness of automation technology increases the weight placed on regulations by 2-4 percentage points. We find the strongest effects for the foreign reliance and relative gains treatments. The within-country treatment also increases the weight respondents place on regulation, but we cannot reject the null of no effect for that particular treatment in some specifications.

4.5.2   Results based on attention check responses

The perils of online samples, especially those recruited during COVID, are well-known. One worry is from low-attention respondents. In general, we would expect this to create an attenuation bias, making our estimates above more conservative. Yet, it is worth showing

that our results are generally stronger when we exclude respondents who either failed to correctly recall details of their treatment or took the survey quickly. In the appendix, we replicate the regressions above, limiting the sample to exclude either those who did not correctly recall the treatment they received or who were in the lowest quartile of time taken on the survey.

When excluding respondents who did not correctly recall, results get universally stronger in magnitude and we can still reject the null hypotheses of no effect, despite the smaller sample sizes. Treatment effects on the weight placed on import restrictions or automation regulations compared to transfers are generally 1-3 percentage points larger. When excluding especially quick respondents, the results for the Foreign Labor versus Domestic Automation comparisons are slightly stonger. The results for the Foreign Automation versus Domestic Automation comparisons are slightly weaker. Though in all cases, we can again still reject the null hypothesis of no effect despite the smaller sample size.

4.5.3 Results based on shares

The results for the main experiment were presented using a differences outcome measure: support for policy remedies minus support for transfers. The results are robust to two alternate versions using *shares* instead of differences. For the relevant policy remedy (ie tariffs for imports, regulations for automation) There are two ways to specify a shares outcome measure: (1) $\frac{\text{relevant policy}}{\text{relevant policy}+\text{transfers}}$ and (2) $\frac{\text{relevant policy}}{\text{tariffs}+\text{regulate automation}+\text{transfers}}$. The two measures differ in how they treat the policy remedy for the *other* shock, ie how they treat tariffs for a respondent receiving the automation treatment or automation regulations for someone receiving the foreign labor treatment. The first measure excludes the "less relevant" policy from the denominator. The second measure includes it.

As shown in the appendix, results are similar using both measures. We again replicated the regressions above, using each of the shares measures. The Foreign Labor and Foreign Automation treatements increase the share of respondents' preferred responses consisting

39

of restrictions on imports or restrictions on automation. These treatments also decrease the share consisting of support for benefits to the unemployed.

The appendix also contains additional analyses and robustness checks. For example, we replicated the main results broken down by race. We found, consistent with existing work, that the Foreign Labor treatment effect is largest among white respondents, and we found no evidence of different treatment effects across race for Foreign Automation. We also replicated the main results using a much longer set of control variables, without binning categorical variables. Results are similar to those presented above.

5   Discussion and Conclusion

Our model and empirical results help resolve two, interrelated questions: why have globalization shocks, instead of automation, triggered political reactions, and why has that reaction de-emphasized redistributive remedies? Economic nationalist sentiment, which values exports over imports explains part of why citizens prefer tariffs for globalization shocks and redistribution for automation shocks in a capital-rich country like the United States. Facing a globalization shock, tariffs remedy part of the problem and also substitute for transfers. Facing an automation shock, regulations can weaken national standing in prominent industries, so citizens more heavily favor transfers.

Of note is how our answers to our two motivating questions - why trade and not automation, and why protection instead of redistribution – compliment and differ from existing work. For example, one alternative story asserts that automation is simply less salient than trade. Our explanation explains how this came to be. It was not long ago that academics assumed that trade was an exceptionally low salience issue among foreign policy issues, that were themselves relatively low salience.[48] Our argument helps understand why trade rose to the forefront of political consciousness, as opposed to automation.

---

[48]Guisinger (2009), See also "What do Americans think about free trade? Not much." Egan, Patrick. The Washington Post. May 11, 2015.

Similarly, our explanation does not rest on blame misattribution or voter ignorance. For starters, citizens tend to better understand issues that directly affect their employment. Our treatments gave people direct, clear information about a particular shock, which should alleviate those issues. We still found that different shocks engendered different types of reactions. Additionally, "blame" is a malleable concept. Our model explains why politicians could more effectively sell stories about the harms of globalization and the necessity of protection, compared to the harms of automation and the necessity of redistribution or regulation. Our results suggest that patterns of responses to automation shocks may be more than ignorance or blame misattribution.

Looking forward, our research microfounds and explicitly models the intuition of work emphasizing disillusionment with "embedded liberalism" as a reason for the success of protectionist agendas.[49] Our research suggests the possibility of a a self-perpetuating cycle that further undermines the bargain implied in "embedded liberalism." If citizens prefer tariffs and this crowds out deeper social safety net programs, then citizens may further lose faith in those safety net programs. As globalization continues to deepen, citizens may be less and less inclined to reach for economic transfers as a remedy, furthering the perceived ineffectiveness of redistribution.

Separate from globalization, our research makes a direct contribution to the politics of automation and how citizens respond to automation shocks. By all indications, the pace of growth for automation is quickening. Increasing numbers, and increasingly higher-skilled workers, will find their vocations at risk. These trends portend a potential political crisis as large at that triggered by globalization.

While our motivating data and subsequent experiment focused on manufacturing, our arguments go beyond "old-school" manufacturing. Trends towards white-collar automation are, by now, well documented. A politician courting pharmacists displaced by automation, for example, could emphasize the foreignness of imported machinery from German robotics

---

[49]Colantone and Stanig (2018)

giant, DENSO.[50]

The next frontier of automation also extends far beyond physical machines to include more recent manifestations – digitization, ICT, and artificial intelligence. Here, too, some data suggest an opening window of opportunity for politicians to cast certain technologies as foreign. In surveys of over 1,000 global leaders conducted in 2020 and 2021, almost 35% of respondents answered "Very likely" or "Likely" when asked about the likelihood that "the innovation center of the world will move from Silicon Valley in the next four years." The majority of respondents were C-level executives (eg CEO, CFO, COO) for their firms. This was *down* from 58% in 2019.[51]

Recent high profile events, like the Trump administration's antagonism toward TikTok emphasized the power of arguing that a piece of foreign technology poses a unique threat. The United States currently has strong reasons to resist policy restrictions on emerging technologies – the world's tech giants are mostly American firms, which is a large reason why the United States fights to tear down barriers like data localization or privacy laws. But if foreign challengers emerge, the temptation to reach for those policy restrictions with an appeal towards nationalism, will only increase.

---

[50]https://willrobotstakemyjob.com/awesome-examples-of-robots-in-the-workplace
[51]KPMG Technology Industry Surveys 2019-2021.

6 References

Anelli, Massimo, Italo Colantone, and Piero Stanig. 2019. "We Were the Robots: Automation and Voting Behavior in Western Europe." *BAFFI CAREFIN Centre Research Paper*, no. 2019-115.

Aronow, Peter Michael, Joshua Kalla, Lilla Orr, and John Ternovski. 2020. "Evidence of Rising Rates of Inattentiveness on Lucid in 2020."

Baccini, Leonardo, and Stephen Weymouth. 2021. "Gone for Good: Deindustrialization, White Voter Backlash, and US Presidential Voting." *American Political Science Review*, 1–18.

Balcazar, Carlos Felipe. 2021. "Top-down Identity Politics: Theory and Its Effect on Trade Policy." *Working Paper*.

Ballard-Rosa, Cameron, Judith Goldstein, and Nita Rudra. 2022. "Trade as Villain: The Fading American Dream and Declining Support for Globalization."

Ballard-Rosa, Cameron, Amalie Jensen, and Kenneth Scheve. 2018. "Economic Decline, Social Identity, and Authoritarian Values in the United States." *International Studies Quarterly*.

Bisbee, James. 2019. "What You See Out Your Back Door: How Political Beliefs Respond to Local Trade Shocks." Working Paper.

Bisbee, James, Layna Mosley, Thomas B Pepinsky, and B Peter Rosendorff. 2020. "Decompensating Domestically: The Political Economy of Anti-Globalism." *Journal of European Public Policy* 27 (7): 1090–1102.

Bolton, Gary E, and Axel Ockenfels. 2000. "ERC: A Theory of Equity, Reciprocity, and Competition." *American Economic Review* 90 (1): 166–93.

Bonikowski, Bart, and Paul DiMaggio. 2016. "Varieties of American Popular Nationalism." *American Sociological Review* 81 (5): 949–80.

Brutger, Ryan, Joshua D Kertzer, Jonathan Renshon, Dustin Tingley, and Chagai M Weiss. 2020. "Abstraction and Detail in Experimental Design." Working Paper 1-47. Accessed June 4, 2020. https://api. semanticscholar. org ?

Brutger, Ryan, and Amy Pond. 2021. "International Economic Relations and American Support for Antitrust Policy."

Busemeyer, Marius R, and Alexander HJ Sahm. 2021. "Social Investment, Redistribution or Basic Income? Exploring the Association Between Automation Risk and Welfare State Attitudes in Europe." *Journal of Social Policy*, 1–20.

Carnegie, Allison, and Nikhar Gaikwad. 2022. "Public Opinion on Geopolitics and Trade: Theory and Evidence." *World Politics*.

Caselli, Mauro, Andrea Fracasso, and Silvio Traverso. 2019. "Globalization, Robotization and Electoral Outcomes: Evidence from Spatial Regressions for Italy." *Journal of Regional Science*.

Casler, Don, and Richard Clark. 2021. "Trade Rage: Audience Costs and International Trade." *Journal of Conflict Resolution*, 0022002721994085.

Chaudoin, Stephen, Jude Hays, and Raymond Hicks. 2018. "Do We Really Know the WTO Cures Cancer?" *British Journal of Political Science* 48 (4): 903–28.

Che, Yi, Yi Lu, Justin R Pierce, Peter K Schott, and Zhigang Tao. 2016. "Does Trade Liberalization with China Influence US Elections?" National Bureau of Economic Research.

Chu, Jonathan A. 2021. "Liberal Ideology and Foreign Opinion on China." *International Studies Quarterly* 65 (4): 960–72.

Cinelli, Carlos, and Chad Hazlett. 2020. "Making Sense of Sensitivity: Extending Omitted Variable Bias." *Journal of the Royal Statistical Society: Series B (Statistical Methodology)* 82 (1): 39–67.

Colantone, Italo, and Piero Stanig. 2018. "The Trade Origins of Economic Nationalism: Import Competition and Voting Behavior in Western Europe." *American Journal of Political Science* 62 (4): 936–53.

Di Tella, Rafael, and Dani Rodrik. 2020. "Labour Market Shocks and the Demand for Trade Protection: Evidence from Online Surveys." *The Economic Journal* 130 (628): 1008–30.

Dixit, Avinash, and John Londregan. 1996. "The Determinants of Success of Special Interests in Redistributive Politics." *The Journal of Politics* 58 (4): 1132–55.

Fehr, Ernst, and Klaus M Schmidt. 1999. "A Theory of Fairness, Competition, and Cooperation." *The Quarterly Journal of Economics* 114 (3): 817–68.

Flaherty, Thomas M, and Ronald Rogowski. 2021. "Rising Inequality as a Threat to the Liberal International Order." *International Organization*, 1–29.

Frey, Carl Benedikt, Thor Berger, and Chinchih Chen. 2018. "Political Machinery: Did Robots Swing the 2016 US Presidential Election?" *Oxford Review of Economic Policy* 34 (3): 418–42.

Gallego, Aina, Alex Kuo, Pepe Fernandez-Albertos, and Dulce Manzano. 2021. "Technological Risk and Policy Preferences." *Comparative Political Studies*.

Gamez-Djokic, Monica, and Adam Waytz. 2020. "Concerns about Automation and Negative Sentiment Toward Immigration." *Psychological Science* 31 (8): 987–1000.

Gellner, Ernest et al. 1983. *Nations and Nationalism*. Cornell University Press.

Gingrich, Jane. 2019. "Did State Responses to Automation Matter for Voters?" *Research & Politics* 6 (1): 2053168019832745.

Guisinger, Alexandra. 2009. "Determining Trade Policy: Do Voters Hold Politicians Accountable?" *International Organization*, 533–57.

———. 2017. *American Opinion on Trade: Preferences Without Politics*. Oxford University Press.

Hai, Zuhad. 2022. "Automation and the Salience of Protectionism." Working Paper.

Im, Zhen Jie, Nonna Mayer, Bruno Palier, and Jan Rovny. 2019. "The ?losers of Automation?: A Reservoir of Votes for the Radical Right?" *Research & Politics* 6 (1): 2053168018822395.

Jeffrey, Karen. 2021. "Automation and the Future of Work: How Rhetoric Shapes the Response in Policy Preferences." *Journal of Economic Behavior & Organization* 192: 417–33.

Jensen, J Bradford, Dennis P Quinn, and Stephen Weymouth. 2017. "Winners and Losers in International Trade: The Effects on US Presidential Voting." *International Organization* 71 (3): 423–57.

Jervis, Robert, Francis J Gavin, Joshua Rovner, and Diane N Labrosse. 2018. *Chaos in the Liberal Order: The Trump Presidency and International Politics in the Twenty-First Century*. Columbia University Press.

Kreps, Sarah, and Stephen Roblin. 2019. "Treatment Format and External Validity in International Relations Experiments." *International Interactions* 45 (3): 576–94.

Kurer, Thomas, and Silja Häusermann. 2021. "Automation and Social Policy: Which Policy Responses Do at-Risk Workers Support?" *Welfare Priorities Working Paper Series*.

Mangini, Michael-David. 2022. "Escape from Tariffs: The Political Economies of Protection and Classification."

Mansfield, Edward D, and Diana C Mutz. 2009. "Support for Free Trade: Self-Interest, Sociotropic Politics, and Out-Group Anxiety." *International Organization* 63 (3): 425–57.

Mansfield, Edward, and Nita Rudra. 2020. "Embedded Liberalism in the Digital Era." *International Organization, Forthcoming*.

Margalit, Yotam. 2012. "Lost in Globalization: International Economic Integration and the Sources of Popular Discontent." *International Studies Quarterly* 56 (3): 484–500.

Meltzer, Allan H, and Scott F Richard. 1981. "A Rational Theory of the Size of Government." *Journal of Political Economy* 89 (5): 914–27.

Milner, Helen V. 2018. "Globalization and Its Political Consequences: The Effects on Party Politics in the West." In *Annual Meeting of the American Political Science Association, Boston, August*.

———. 2021. "Voting for Populism in Europe: Globalization, Technological Change, and the Extreme Right." *Comparative Political Studies*, 0010414021997175.

Mutz, Diana C. 2021. "(Mis) Attributing the Causes of American Job Loss: The Consequences of Getting It Wrong." *Public Opinion Quarterly* 85 (1): 101–22.

Mutz, Diana C, and Eunji Kim. 2017. "The Impact of in-Group Favoritism on Trade Preferences." *International Organization* 71 (4): 827–50.

Naoi, Megumi. 2020. "Do Trade-Originated Income Shocks Mobilize Higher Backlash Against Free Trade? Experimental Evidence from the United States and Japan." Working paper.

Newmyer, Tory. 2019. "Elizabeth Warren, Bernie Sanders Pitch Trumpian Trade Protectionism." *Washington Post*, July.

Okun, Arthur M. 1975. *Equality and Efficiency: The Big Tradeoff*. Brookings Institution Press.

Owen, Erica, and Noel P Johnston. 2017. "Occupation and the Political Economy of Trade: Job Routineness, Offshorability, and Protectionist Sentiment." *International Organization* 71 (4): 665–99.

Peyton, Kyle, Gregory A Huber, and Alexander Coppock. 2020. "The Generalizability of Online Experiments Conducted During the COVID-19 Pandemic."

Posen, Adam S. 2021. "The Price of Nostalgia." *Foreign Affairs* 100: 28.

Rho, Sungmin, and Michael Tomz. 2017. "Why Don't Trade Preferences Reflect Economic Self-Interest?" *International Organization* 71 (S1): S85–108.

Rodrik, Dani. 2011. *The Globalization Paradox: Democracy and the Future of the World Economy*. WW Norton & Company.

———. 2020. "Why Does Globalization Fuel Populism?"

Schweinberger, Tanja. 2022. "Mass Public Opinions Towards Trade Balances: Mercantilism 2.0."

Shayo, Moses. 2009. "A Model of Social Identity with an Application to Political Economy: Nation, Class, and Redistribution." *American Political Science Review* 103 (2): 147–74.

Thewissen, Stefan, and David Rueda. 2019. "Automation and the Welfare State: Technological Change as a Determinant of Redistribution Preferences." *Comparative Political Studies* 52 (2): 171–208.

Wu, Nicole. 2019. "Misattributed Blame? Attitudes Towards Globalization in the Age of Automation." *Manuscript in Preparation*.

Zhang, Baobao. 2019. "No Rage Against the Machines: Threat of Automation Does Not Change Policy Preferences."

Why Populists Neglect Automation: The Political Economy of Economic Dislocation
ONLINE APPENDIX

June 2022

Appendix Table of Contents

A THEORY APPENDIX ITEMS

A.1 Locating the Frontier of the Feasible Set

The range of possible income allocations can be found by finding the highest income H_W for each possible H_L using the policy tools. The frontier of the feasible set can be characterized by solving the following maximization:

$$\max_{p,t} H_W \ s.t. \ H_L = K$$

Forming the Lagrangean and taking the first order conditions:

$$\mathcal{L} = H_W - \lambda(H_L - K)$$
$$= I + \alpha A(p) - t - \lambda(I + (1 - \alpha)A(p) + \ell(t) - K)$$
$$\frac{\partial \mathcal{L}}{\partial p} = \alpha A'(p) - \lambda(1 - \alpha)A'(p)$$
$$\frac{\partial \mathcal{L}}{\partial t} = -1 - \lambda \ell'(t)$$

Setting the first order conditions to zero and simplifying:

$$\alpha A'(p) - \lambda(1 - \alpha)A'(p) = 0$$
$$\frac{\alpha}{1 - \alpha} = \lambda$$

$$-1 - \lambda \ell'(t) = 0$$
$$\lambda = -\frac{1}{\ell'(t)}$$

Plugging in we obtain:

$$\ell'(t) = \frac{\alpha - 1}{\alpha}$$

The above equation completely determines the value of t which maximizes H_W for a fixed value of H_L. The transfer must equate the decay rate with the redistribution index. Notice that the frontier choice of t is decreasing in α: when the right hand side is higher a smaller transfer is required to drop ℓ' sufficiently low. The intuition is that when the distributional consequences of the shock are extreme it would be very relatively inefficient to use leaky transfers to redistribute wealth since larger transfers are more leaky. An example of the feasible set is shown in Figure 10.

When is there an interior solution to the above equation? Since $\ell'(0) = 1$ by assumption and $\ell''(t) < 0$ it must be the case that there exists some t^* which solves the equation because $(\alpha - 1)/\alpha < 1$.

Once t^* is determined it is possible to identify the rest of the feasible set as a function of p using the constraint:

$$H_L = K$$

$$I + (1 - \alpha)A(p) + \ell(t^*) = K$$

$$A(p) = \frac{-K + I + \ell(t^*)}{\alpha - 1}$$

How does the frontier choice of p change with α? Recall that increasing α decreases t^*. Therefore, the numerator decreases with α and the denominator increases, so $A(p)$ must decrease with α. Thus, because $A(p)$ must decrease as a function of α, we have concluded that p must increase as a function of α. Thus, we have determined that p and t are substitutes along the frontier of the feasible set and thus the feasible set is convex towards the origin.

Notice as well that the frontier of the feasible set is linear in H_L for all points where both
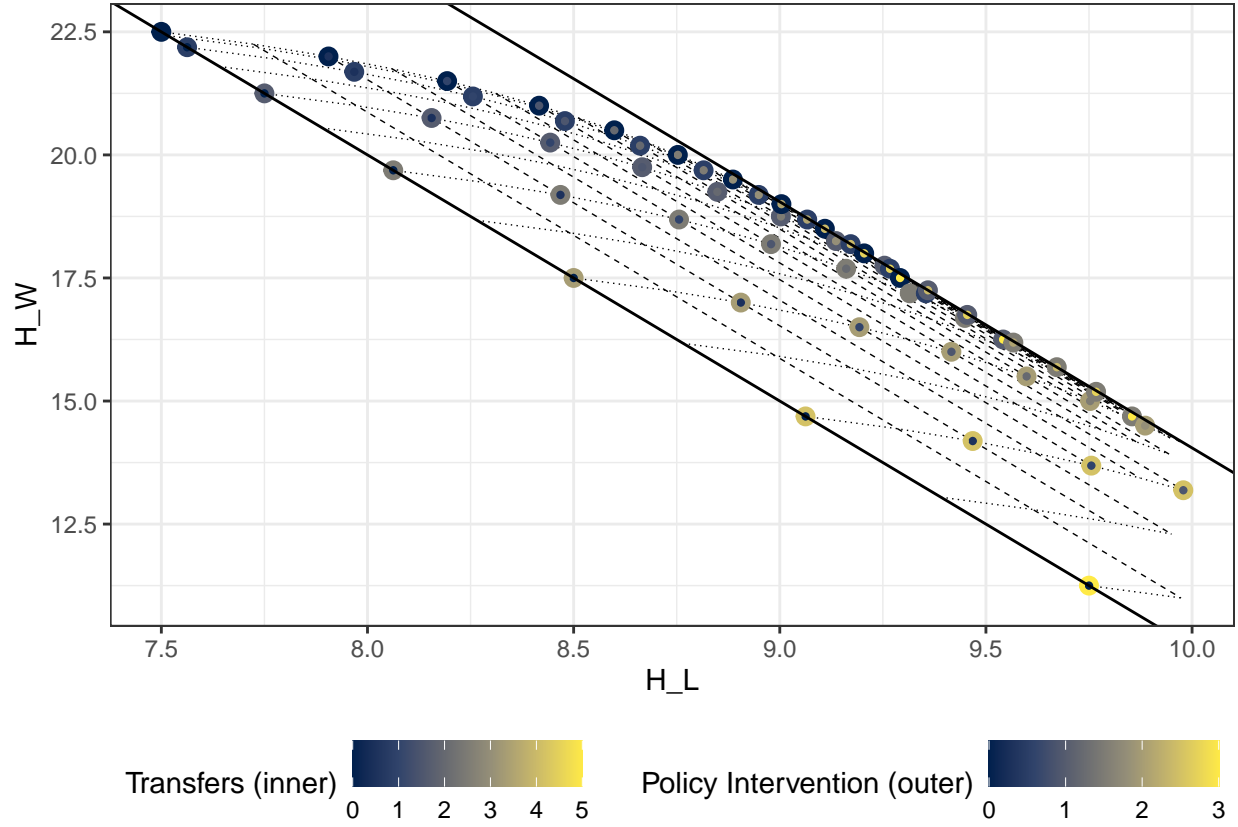
Figure 10: Example feasible set with the frontier highlighted and a sample of allocations plotted. Each dot shows a potential reallocation of income between the winners and losers. The diameter of the outer dot shows the magnitude of the policy change needed to achieve that allocation. The inner dot shows the amount of transfers needed. The graph was made using the following parameters: $A(p) = 10-p^2$, $\ell(t) = \log(t+1)$, $I = 10$, and $\alpha = 1.25$. Given these parameters, the allocation $(H_L = 7.5, H_W = 22.5)$ would occur in the absence of government action. Allocations along dotted lines all have equal policy interventions p while allocations along dashed lines have equal transfers t. The upper and lower envelopes are illustrated with black lines whose slope is $\alpha/(1-\alpha) = -5$ (see Appendix for the derivation). The feasible set's upper envelope is below the black line when the allocation can be achieved with transfers alone and requires no policy intervention.

transfers and protection are used. The slope of the upper envelope can be found by plugging in and taking a derivative with respect to H_L:

$$
\begin{aligned}
H_W &= I + \alpha A(p) - t \\
&= I + \alpha \left(\frac{-H_L + I + \ell(t^*)}{\alpha - 1} \right) - t^* \\
\frac{\partial H_W}{\partial H_L} &= -\frac{\alpha}{\alpha - 1} \\
&= \frac{\alpha}{1 - \alpha}
\end{aligned}
$$

Recall when taking the derivative that we have already shown t^* does not depend on H_L since it depends only on α. This section has established the properties of the feasible set of income allocations. The next section establishes how voters choose allocations from that set given their preferences.

A.2   The Behavior of Nationalists

If nationalism is additively separable from the preferences over the incomes then:

$$
U_N(H_W, H_L) = U_C(H_W, H_L) + u(p)
$$

where N and C stand for nationalist and cosmopolitan, respectively, and $u(p)$ is the nationalist's direct utility from the protection level p. Now consider the maximization problem

$$
\max_{p,t} U_C(H_W, H_L) + u(p)
$$

Taking the first order conditions and setting them equal to zero:

$$\frac{\partial U_C}{\partial H_W}\frac{\partial H_W}{\partial p} + \frac{\partial U_C}{\partial H_L}\frac{\partial H_L}{\partial p} + \frac{\partial u}{\partial p} = 0$$

$$\frac{\partial U_C}{\partial H_W}\frac{\partial H_W}{\partial t} + \frac{\partial U_C}{\partial H_L}\frac{\partial H_L}{\partial t} = 0$$

Simplifying the derivative with respect to p:

$$\frac{\partial U_C}{\partial H_W}\frac{\partial H_W}{\partial p} + \frac{\partial U_C}{\partial H_L}\frac{\partial H_L}{\partial p} + \frac{\partial u}{\partial p} = 0$$

$$\frac{\partial U_C}{\partial H_W}\alpha A'(p) + \frac{\partial U_C}{\partial H_L}(1-\alpha)A'(p) + \frac{\partial u}{\partial p} = 0$$

$$\frac{\partial U_C}{\partial H_W}\alpha A'(p) = -\frac{\partial U_C}{\partial H_L}(1-\alpha)A'(p) - \frac{\partial u}{\partial p}$$

$$\frac{\partial U_C}{\partial H_W} = -\frac{\partial U_C}{\partial H_L}\frac{1-\alpha}{\alpha} - \frac{\frac{\partial u}{\partial p}}{\alpha A'(p)}$$

$$\frac{\frac{\partial U_C}{\partial H_W}}{\frac{\partial U_C}{\partial H_L}} = -\frac{1-\alpha}{\alpha} - \frac{\frac{\partial u}{\partial p}}{\alpha A'(p)\frac{\partial U_C}{\partial H_L}}$$

$$\frac{\frac{\partial U_C}{\partial H_W}}{\frac{\partial U_C}{\partial H_L}} = \frac{\alpha-1}{\alpha} - \frac{\frac{\partial u}{\partial p}}{\alpha A'(p)\frac{\partial U_C}{\partial H_L}} \tag{1}$$

The above expression makes it clear that the cosmopolitan (a voter for whom $\partial u/\partial p = 0$) will make different choices than a nationalist. Calculating the first order condition with respect to transfers t

$$\frac{\partial U_C}{\partial H_W}\frac{\partial H_W}{\partial t} + \frac{\partial U_C}{\partial H_L}\frac{\partial H_L}{\partial t} = 0$$

$$\ell'(t) = \frac{\frac{\partial U_C}{\partial H_W}}{\frac{\partial U_C}{\partial H_L}} \tag{2}$$

First, consider Equation (1). When a nationalist is confronted with a shock of foreign

origin their utility for policy is positive, so $\partial u/\partial p > 0$. Thus, the term $-\frac{\partial u}{\partial p}/(\alpha A'(p)\frac{\partial U_C}{\partial H_L})$ is positive (recall $A'(p) < 0$ by assumption). Therefore, the right hand side is larger for a nationalist facing an import shock than it is for a cosmopolitan for whom $\partial u/\partial p = 0$. The nationalist's choice of p thus needs to either lower $\partial U/\partial H_L$, raise $\partial U/\partial H_W$, or both, relative to the choice of the cosmopolitan. Choosing a higher value of p decreases H_W and raises H_L: thus, it also raises $\partial U/\partial H_W$ and lowers $\partial U/\partial H_L$. Following the logic, a nationalist must choose a higher level of policy p than a cosmopolitan. The nationalist is reacting to their intrinsic incentive to stop the flow of imports, and they are accepting more redistribution as a consequence.

Now consider the incentives described by Equation (2). The nationalist's higher choice of p leads to more redistribution raising $(\partial U/\partial H_W)/(\partial U/\partial H_L)$. Because the marginal rate of substitution between incomes H_W and H_L is higher, the nationalist's optimal transfer must change. By assumption, $\ell''(t) < 0$, meaning that decreasing t will increase $\ell'(t)$. The nationalist therefore prefers fewer transfers. This choice is a byproduct of the effect of nationalism on demand for policy. The nationalist's higher demand for policy means that they are accepting more redistribution. Thus, they need fewer transfers to achieve their preferred level of redistribution. The demand for policy that stops imports has crowded out their demand for transfers.

A.3   Policy Composition of Preferred Allocation

How much of their total redistribution does the voter implement with each policy instrument? Consider the following vector decomposition of the preferred income allocation:

$$v_t = (H_L(0, t^*) - H_L(0,0), H_W(0, t^*) - H_W(0,0))$$

$$= (I + (1 - \alpha)A(0) + \ell(t^*) - (I + (1 - \alpha)A(0)), I + \alpha A(0) - t^* - (I + \alpha A(0)))$$

$$= (\ell(t^*), -t^*)$$

$$||v_t|| = \sqrt{(-t^*)^2 + \ell(t^*)^2}$$

$$v_p = (H_L(p^*, 0) - H_L(0,0), H_W(p^*, 0) - H_W(0,0))$$

$$= (I + (1 - \alpha)A(p^*) - (I + (1 - \alpha)A(0)), I + \alpha A(p^*) - (I + \alpha A(0)))$$

$$= ((1 - \alpha)(A(p^*) - A(0)), \alpha(A(p^*) - A(0)))$$

$$||v_p|| = \sqrt{\alpha^2(A(p^*) - A(0))^2 + (1 - \alpha)^2(A(p^*) - A(0))^2}$$

$$= (A(p^*) - A(0))\sqrt{1 - 2\alpha + 2\alpha^2}$$

$$v_t + v_p = ((1 - \alpha)(A(p^*) - A(0)) + \ell(t^*), \alpha(A(p^*) - A(0)) - t^*)$$

$$||v_t + v_p|| = \sqrt{((1 - \alpha)(A(p^*) - A(0)) + \ell(t^*))^2 + (\alpha(A(p^*) - A(0)) - t^*)^2}$$

Now we can project the transfers vector onto the total movement to understand what fraction of the movement is due to transfers and what fraction is due to policy. The scalar projection of a on b is defined as $proj_b(a) = a \cdot b/||b||$ and it measures how much of a is

pushing in the same direction as b. The voter is relying more on policy if

$$proj_{v_t+v_p}(v_p) \geq proj_{v_t+v_p}(v_t)$$

$$\frac{v_p \cdot (v_t + v_p)}{||v_t + v_p||} \geq \frac{v_t \cdot (v_t + v_p)}{||v_t + v_p||}$$

$$v_p \cdot (v_t + v_p) \geq v_t \cdot (v_t + v_p)$$

$$v_p \cdot v_t + v_p \cdot v_p \geq v_t \cdot v_t + v_t \cdot v_p$$

$$v_p \cdot v_p \geq v_t \cdot v_t$$

$$||v_p||^2 \geq ||v_t||^2$$

$$(A(p^*) - A(0))^2((1-\alpha)^2 + \alpha^2) \geq \ell(t^*)^2 + (t^*)^2$$

The above inequality applies regardless of whether the voter is a cosmopolitan or nationalist and regardless of where the optimal point is located within the feasible set. Recall that t^* does not vary for sufficiently high values of H_L for a cosmopolitan voter. Therefore, there is some threshold above which the cosmopolitans start to rely more heavily on policy than on transfers.

The actual fraction attributable to transfers is

$$\frac{proj_{v_t+v_p}(v_t)}{proj_{v_t+v_p}(v_t) + proj_{v_t+v_p}(v_p)} = \frac{\frac{v_t \cdot (v_t+v_p)}{||v_t+v_p||}}{\frac{v_t \cdot (v_t+v_p)}{||v_t+v_p||} + \frac{v_p \cdot (v_t+v_p)}{||v_t+v_p||}}$$

$$= \frac{v_t \cdot (v_t + v_p)}{v_t \cdot (v_t + v_p) + v_p \cdot (v_t + v_p)}$$

$$= \frac{v_t \cdot (v_t + v_p)}{v_t \cdot (v_t + v_p) + v_p \cdot (v_t + v_p)}$$

$$= \frac{v_t \cdot (v_t + v_p)}{(v_t + v_p) \cdot (v_t + v_p)}$$

$$= \frac{||v_t||^2 + v_t \cdot v_p}{||v_t + v_p||^2}$$

$$= \frac{\ell(t^*)^2 + (t^*)^2 + (1-\alpha)(A(p^*) - A(0))\ell(t^*) - \alpha(A(p^*) - A(0))}{((1-\alpha)(A(p^*) - A(0)) + \ell(t^*))^2 + (\alpha(A(p^*) - A(0)) - t^*)^2}$$

B   SURVEY APPENDIX ITEMS

B.1   Deception Description and Justification

Our survey experiment used deception by showing respondents an article that included details that we manipulated. We described it as a news article, and did not attribute it to any particular outlet. We believe that the potential harms of this deception are minimal and justified. We also mentioned possible misinformation in the informed consent document and included a detailed debrief document.

We believe that our use of deception entails minimal harm, if any, because the content of each version of our article resembles the type of information commonly found in mainstream news outlets. A regular media consumer is likely to come across articles about globalization, offshoring, automation, and job losses.

Respondents were aware of the possibility of misinformation at the informed consent stage. Our informed consent included: "As part of this research design, you may not be told everything or may be misled about the purpose or procedures of the research. You will be fully informed about the procedures and any misinformation at the conclusion of the study." Respondents could therefore make their own decisions about the possible harms.

Our debrief document is reproduced below in full:

Thank you for your participation in this study. This study is concerned with how information about economic changes, such as globalization and automation, affect participants' support for various government policies.

The news article you read was not from an actual news outlet and the exact events described did not happen. We changed parts of the news article for each participant. Some participants read about automation developed by US firms, while others read about automation developed by foreign firms, competition with foreign workers, or competition from US workers. Some news articles also included language that emphasized nationalist ideas. We did this to ensure that all participants read an article that was identical in all ways, except for

those key changes.

Though the news article was not from a real news outlet, its content resembled that of many similar articles that appear in national news outlets. For example, our news article was partially based off of this published article:

https://thehill.com/policy/finance/475529-us-steel-closing-mill-laying-off-1500-detroit-workers

There is ongoing debate in political science and economics research about which trends most affect US jobs. Here are links to further reading about automation and globalization:

https://www.piie.com/blogs/trade-and-investment-policy-watch/automation-labor-market-disruption-and-trade-policy

https://www.usnews.com/news/economy/articles/2017-07-17/study-1-in-4-us-jobs-at-risk-of-offshoring

If you have concerns about your rights as a participant of this study, please contact (author names and contact information).

Finally, we urge you not to discuss this study with anyone else who is currently participating or might participate at a future point in time.

Thank you again, your participation is greatly appreciated. Please click the next arrow to be redirected and end the survey.

Finally, this deception was necessary since it would not have been feasible to find real articles whose content matched that of the treatments without also varying many other features. Articles about different shocks, labor and automation, foreign and domestic, also vary important features like the industry in question, the country source of the shock (eg China, Mexico, Germany, etc.). They also vary in their tone, ranging from purely abstract economic reporting to a more personal-interest focus on those affected by the shock. We chose not to use a purely hypothetical treatment because we wanted our instrument to mimic, as closely as possible, the "real-world" treatment of reading an article about an actual event. Very recent research argues that these decisions may not have large consequences for estimated

treatment effects.[1] We defaulted to choosing a realistic scenario to more closely match the information the readers are exposed to outside of our survey.

B.2   Domestic Labor Treatment

The main manuscript showed the foreign labor and domestic/foreign automation treatment article. Figure B.2 shows the remaining treatment, the domestic labor treatment. It uses the same picture for labor as the foreign labor treatment (top picture) and the same picture as domestic automation, showing over-ground shipping instead of a container ship (bottom picture).

B.3   Sample Comparison to National Demographics

Group	Sample Percentage	ACS Percentage
Female	54.76%	51.30%
20 to 34 years of age	20.70%	27.51%
35 to 54 years of age	36.81%	33.88%
55 to 64 years of age	17.69%	17.21%
65 years of age and over	22.19%	21.40%
Hispanic	9.42%	18.20%
White	76.54%	75.10%
Black	9.61%	14.20%

B.4   Main Estimates: Restricting sample based on speed/attention

In the main manuscript, we initially excluded respondents who took less than 30 seconds to complete the survey. Here, we make those restrictions more strict and show how results are similar. 2 replicates the main analyses in the odd numbered columns. In the even numbered columns, we show the same results, only with the added restriction that the respondent took at least 330 seconds on the survey (which was the 1st quartile of observed times). Results are slightly stronger for the first two specifications and slightly weaker for the second two

---

[1] See Brutger et al. (2020) and Kreps and Roblin (2019).

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

A construction site for a planned factory in a different region of the US.

Based on industry analysis, factories moving to other states is the main cause of job losses. Many firms have chosen a strategy of moving production facilities to another state. This allows different workers to perform many of the same tasks that were previously done by an auto plant in the Midwest. Factories like this one get shut down as employees are replaced with workers elsewhere.

Shipping of products manufactured in different parts of the United States.

The practice of relocating factories within the United States is expected to grow over the next decade, as more industries choose to change where they manufacture goods. For industries like the auto industry, this means additional dislocation and change for workers.

When asked about the layoffs, Carter Douglas, 46, said "I was actually pretty shocked." "I was heartbroken when I was told I wasn't coming back. It wasn't a job to me. It was my career."

He started as an entry level worker but had worked his way up over the past 20 years with the company. "I know the times change, but losing this job will really make things rough for me and my family."

Figure 11: Second page of news article, domestic labor treatment

specifications. In all cases, signs are the same and each acheives conventional levels of statistical significance.

3 does the same type of replication, only it excludes anyone who did not correctly answer the second manipulation check. This question asked respondents to identify the reason for layoffs in the articles. We again include the baseline results for comparison in the odd numbered columns. This exclusion makes all the results stronger in magnitude and statistical significance.

Table 2: Effect of Treatment on Policy Differences, Excluding speeders

	Policy diff.	No speed			Aut. Diff.	No speed		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
FL	8.436***	9.546***	9.439***	10.228***				
	(1.753)	(1.993)	(1.770)	(2.019)				
FA					3.749**	3.565*	4.236***	3.956**
					(1.608)	(1.840)	(1.610)	(1.845)
Constant	−11.571***	−11.530***	−21.296***	−20.284***	−12.746***	−12.967***	−17.173***	−18.633***
	(1.601)	(1.778)	(5.309)	(6.031)	(1.547)	(1.730)	(4.782)	(5.382)
Controls?	N	N	Y	Y	N	N	Y	Y
Observations	1,565	1,222	1,490	1,158	1,566	1,197	1,495	1,141

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

Table 3: Effect of Treatment on Policy Differences, Excluding Manip 2 fails

| | Policy diff. | No fail | | | Aut. Diff. | No fail | | |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
FL	8.436***	11.696***	9.439***	12.870***				
	(1.753)	(2.679)	(1.770)	(2.761)				
FA					3.749**	4.690***	4.236***	5.682***
					(1.608)	(1.810)	(1.610)	(1.827)
Constant	−11.571***	−12.083***	−21.296***	−11.977*	−12.746***	−13.186***	−17.173***	−14.720***
	(1.601)	(1.918)	(5.309)	(7.027)	(1.547)	(1.712)	(4.782)	(5.381)
Controls?	N	N	Y	Y	N	N	Y	Y
Observations	1,565	948	1,490	897	1,566	1,298	1,495	1,236

Note: *p<0.1; **p<0.05; ***p<0.01

B.5 Effect of Treatment on Shares

The theoretical model suggests that the difference in support for particular responses should change depending on the type of shock. It also suggests that the share of a respondent's total policy bundle made up of policy responses versus shares should also change. In other words, when moving from say Domestic to Foreign Automation, support for restricting automation as a share of the respondent's total agreement with the set of response options should also increase.

There are two reasons why we prefer using differences as the outcome measure in the main analysis instead of shares. First, based on simulations we conducted, using differences greatly weakens statistical power in the face of even small amounts of measurement error. This can lead to Type 2 errors, where we fail to reject a null hypothesis that should have been rejected. Second, using shares also risks Type 1 errors, because, if treatment affects the variance of outcome measures, it can create the appearance of treatment effects, even if there are none.[2]

Figure 12 shows the distribution of shares across treatment conditions. Shares, here, are defined as $\frac{\text{policy}_i}{\text{policy}_i + \text{policy}_j + \text{policy}_k}$. The patterns from the main analysis are again apparent. First, looking at the share for unemployment benefits (right pane), this share decreases for the Foreign Labor condition, compared to under the Domestic Automation condition. Second, the share of respondent support for restricting automation (left pane) increases when moving from the Domestic to the Foreign Automation condition.

Table 4 shows regression analysis of these comparisions. The first four columns use the same set of specifications as the same as those in Table 1, except we use the relevant policy share instead of the relevant policy's difference with support for transfers. Columns 5-8 use that same set of specifications, only using the benefits share as the dependent variable.

The results are again consistent with the main analysis. The positive coefficients in the first four columns show that Foreign shocks increase the share of responses placed on relevant

---

[2]We thank Anton Strezhnev for pointing this out to us.
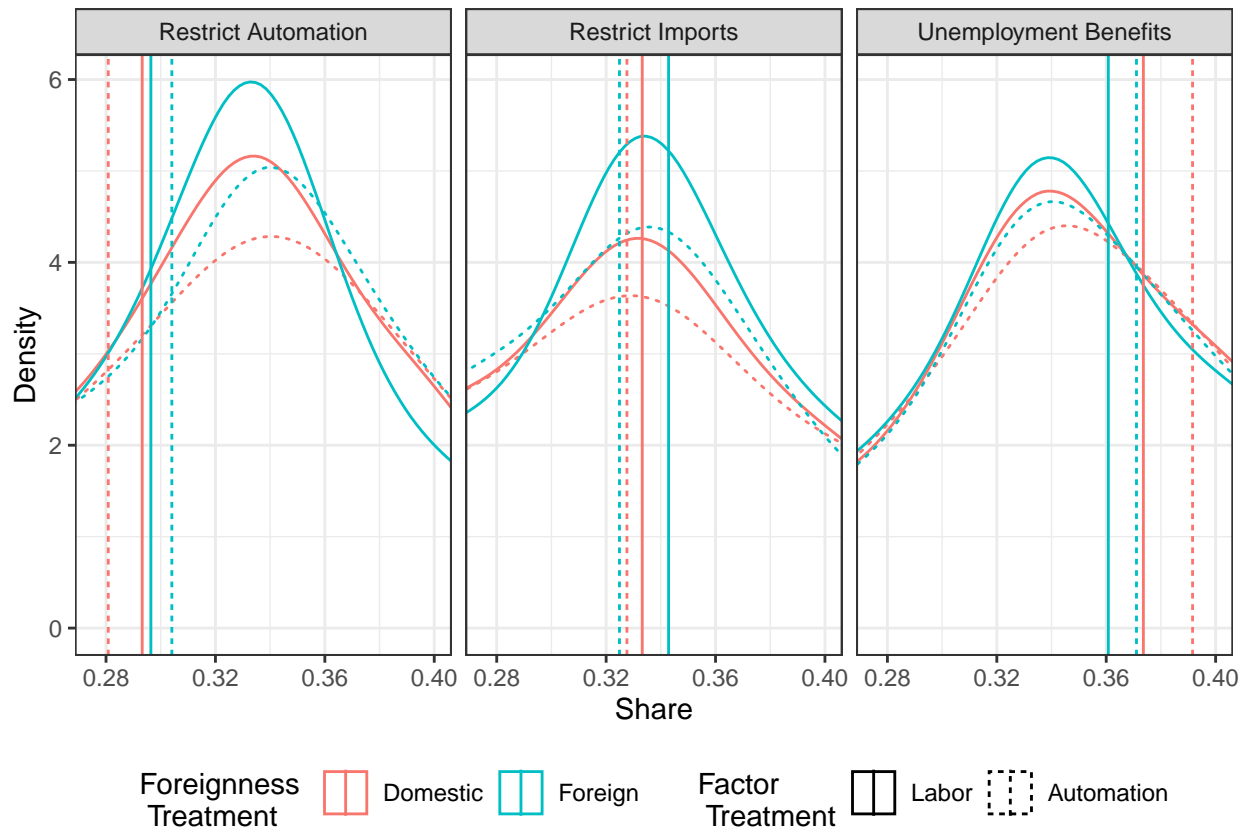
Figure 12: The distribution of agreement shares across treatments. Only shares between 0.275 and 0.4 are depicted. The diagram shows that respondents want to rely more heavily on restricting automation when the automation threat is foreign while they want to rely on transfers when an automation threat is domestic. They rely on restricting imports in response to foreign labor shocks.

policy remedies. The last four columns show how Foreign shocks decrease the share of responses places on unemployment benefits.

Table 5 shows the same set of specifications, only it restricts the denominator of the shares to the relevant policy. For Labor shocks, the shares for the relevant policy is defined as $\frac{\text{restrict imports}}{\text{restrict imports}+\text{benefits}}$. For Automation shocks, the shares for the relevant policy is defined as $\frac{\text{restrict automation}}{\text{restrict automation}+\text{benefits}}$.[3]

---

[3]Note that we do not need the second set of specifications from the final four columns of Table 4, because the coefficients would equal the coefficients in the first four columns, multiplied by -1.

Table 4: Effect of Treatment on Policy Shares

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
For. Labor	0.062***	0.065***			−0.031***	−0.033***		
	(0.007)	(0.007)			(0.009)	(0.009)		
For. Auto.			0.023***	0.023***			−0.021**	−0.021**
			(0.007)	(0.007)			(0.009)	(0.009)
Constant	0.281***	0.245***	0.280***	0.269***	0.390***	0.406***	0.395***	0.401***
	(0.006)	(0.021)	(0.006)	(0.020)	(0.008)	(0.025)	(0.008)	(0.026)
Controls?	N	Y	N	Y	N	Y	N	Y
Observations	1,543	1,470	1,540	1,470	1,543	1,470	1,540	1,470

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

Table 5: Effect of Treatment on Policy Shares, version 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	

There is some evidence that treatment determines the variance of the how much respondents wish to restrict imports. These differences could have a theoretical impact on results where the dependent variable is calculated as a share.

B.6   Racial breakdowns

Table 6 shows the main results, interacting each treatment with an indicator variable for white respondents. The results are very interesting. First, the treatment effect of moving from Domestic Automation to Foreign Labor *is* much stronger among whites. In fact, there is very little effect for non-white respondents. Second, the effect of going from Domestic Automation to Foreign Automation is *not* concentrated among either whites or non-whites. Both white and non-white respondents increase the weight they place on regulating automation under the Foreign Automation treatment, with white respondents increasing a little bit less. The latter result - that both groups respond similarly to Foreign Automation - is especially interesting, since it suggests that a politician wanting to "make automation foreign" might find responsive ears among broader segments of the population. The persuasive appeal of tariffs as a remedy for foreign labor shocks might have been especially powerful for whites,

but appeals against foreign automation might not be limited to one racial group.

Table 6: Effect of Treatment on Policy Differences, white interaction term

	(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***
	(2.424)	(4.808)	(2.392)	(5.039)
Controls?	N	Y	N	Y
Observations	1,565	1,490	1,566	1,495

Note: *p<0.1; **p<0.05; ***p<0.01

B.7   Results with long control list

In the main manuscript, regressions including controls used binned versions of some variables instead of categorical variables for all possible responses to all of the control questions. For example, we collapsed some answers to the education question into a smaller number of categories. Here, we replicate the main specifications with the much longer list of controls. The results from 7 obtain.

Table 7: Main results with long control list

	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
Subsample	DA + FL	DA + FL	DA + FA	DA + FA
Observations	1,564	1,450	1,566	1,458
Note:			*p<0.1; **p<0.05; ***p<0.01	

C Follow Up Experiment: Aspects of Nationalism

The main manuscript lays out three aspects of economic nationalism, three reasons why a citizen might have direct preferences over the trade balance. These were: (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, and (3) beliefs about the effect of trade on the distribution of income within her country, moving wealth away from her in-group members. Each could plausibly motivate the theoretical model's γ parameter, describing the citizen's degree of preference for exports over imports.

We designed a pre-registered follow-up experiment designed to assess which of these three aspects of economic nationalism most pushes respondents away from transfers and towards policy remedies. For the follow-up experiment, we limited attention to automation.

The basic structure of the experiment was to randomly assign respondents to information about the origin of automation technology (domestic versus foreign) and to 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.

C.1   Sample Comparison to National Estimates

Group	Sample Percentage	ACS Percentage
Female	52.34%	51.30%
20 to 34 years of age	27.41%	27.51%
35 to 54 years of age	32.72%	33.88%
55 to 64 years of age	19.39%	17.21%
65 years of age and over	17.92%	21.40%
Hispanic	10.54%	18.20%
White	73.88%	75.10%
Black	11.37%	14.20%

C.2   Treatments and Outcome Measures

We structured our experiment to allow for between- and across-respondent comparisons. Respondents all read the following brief introduction about automation and its impacts:

Please read the following information carefully. We will then ask you how you think the government should address these challenges.

A major issue these days is how the nature of work is changing. Many manufacturing firms have replaced jobs that were previously done by employees with advanced robots that can perform similar tasks. This can help manufacturing firms, but it also means the number of people working in manufacturing jobs has decreased.

Analysts argue that this type of automation technology can help US firms produce goods more efficiently.

They then all answered the same two questions from the main experiment about how the government should respond:

How much do you agree or disagree with the following statements about how the government should respond?

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

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

Respondents indicated their agreement or disagreement using a slider, ranging from 0 (Strongly disagree) to 100 (Strongly agree). The order of the two items was randomized across respondents.

Respondents were then randomly assigned to one of two treatments, describing the source of automation as domestic or foreign. Those assigned to the domestic treatment condition read "Additionally, manufacturing firms purchased many of these advanced robots from American technology companies." Those assigned to the foreign treatment read "U.S. manufacturing firms purchased many of these advanced robots from foreign technology companies located outside the United States, in countries like Germany and China." They then answered the same two outcome measure questions, after the prompt "With this additional information, how do you think the government should respond?"

Finally, the respondents assigned to the foreign treatment then read an additional, randomly assigned treatment emphasizing a particular aspect of foreignness, tied to economic nationalism. The three treatments gave information about reliance on foreign technology, relative gains, and coded information about the impact of foreign automation on different parts of America. We chose the wording of the third treatment to reflect the ways that political rhetoric discusses trade, subtly emphasizing manufacturing workers in the midwest who are often white.[4] Respondents then answered the same questions about regulations and unemployment benefits as before.

---

[4]Guisinger (2017).

Analysts worry that relying on imported technology makes the United States too reliant on foreign technology from foreign countries. The United States would be vulnerable to foreign influence if other countries threatened to stop exporting their technology.

Analysts worry that importing technology helps foreign firms more than it helps US firms. US firms will be able to sell products at a lower cost, but most of the profits would go to foreign firms that make the machines.

Analysts worry that imported technology hurts some Americans more than others. Automation is especially harmful to hard-working, blue collar Americans working in the "heart" of the country, even if automation helps the US economy overall.

C.3   Randomization, Balance, and Attention

We used the same procedure as the main manuscript to assess balance across treatment groups. There is some imbalance in observable characteristics comparing the respondents who received the domestic versus foreign treatments.

The overall χ^2 statistic for imbalance across groups is insignificant ($p = 0.152$). There were some differences in specific observables. Respondents in the foreign treatment had higher household incomes and were less likely to come from the Midwest region. The standardized differences are significant at conventional levels, though the differences are unlikely to affect the results we present here. Below, we control for these observables in our specifications. Addtionally, after presenting the main results, we show that the imbalance in these observables is not likely to suggest sufficient imbalance in unobservables to threaten our main results.

Our respondents generally did internalize the treatments we gave them. After answering our outcome measure questions the final time, we asked them "Of the automation technology used in America, what is your best guess at how much comes from foreign firms, as opposed to US firms?" They responded with a slider ranging from 0 (no imports) to 100 (all imported). In general, respondents receiving one of the foreign treatments thought this percentage was
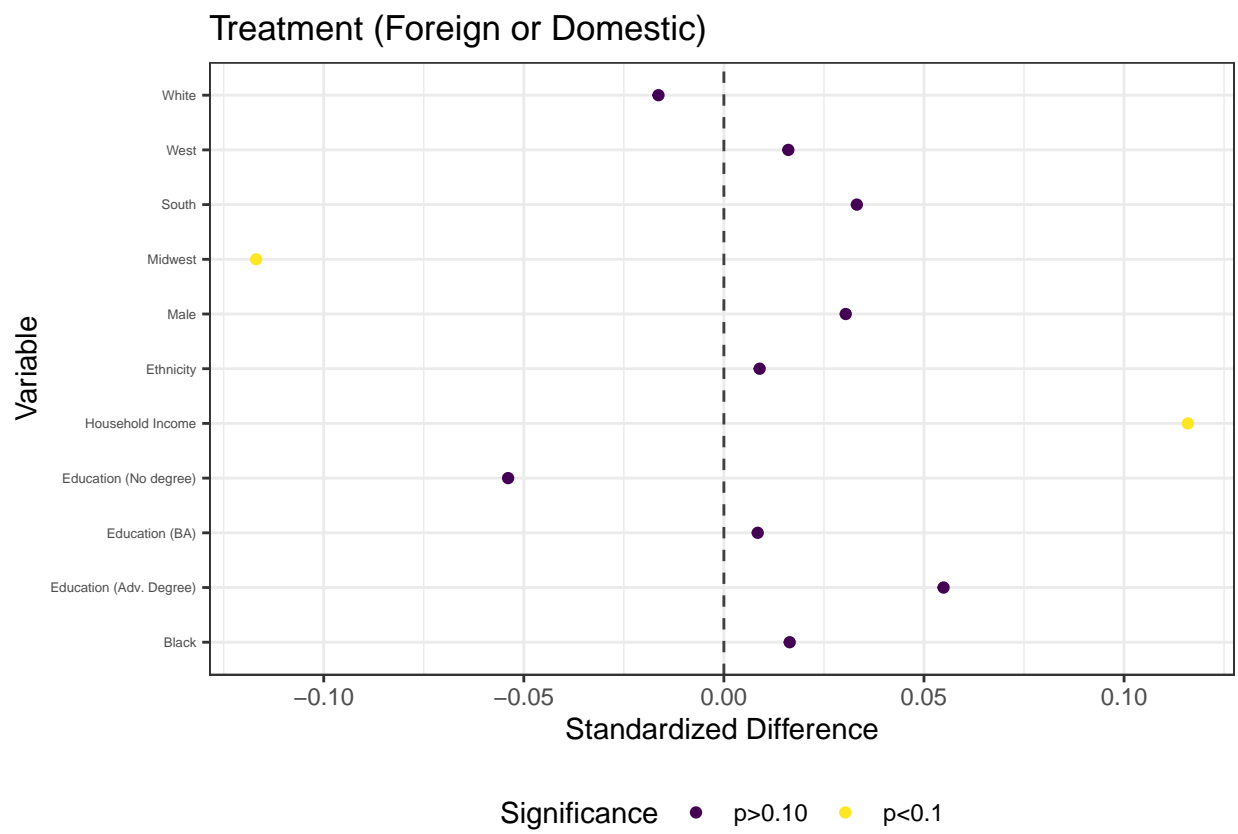
Figure 13: Balance across foreign/domestic. The Bowers and Hansen (2008) omnibus test p values is 0.32.

between 3.9 and 5.1 percentage points higher.

Our respondents generally did *not* do very well on recall checks of their treatment, which we suspect attentuated the treatment effects we report below. At the end of the survey, we asked them "Earlier, you read about automation. Which piece of information did you read?" We gave them four options: three corresponding to each of the foreign treatments and one that read "I didn't read any of the above arguments." Table 8 shows the number of correct and incorrect responses.[5] In general, limiting the sample to respondents who took longer raises these means.

treatment_name	Mean
Domestic	0.42
For. - Rel. Gains	0.45
For. - Reliance	0.49
For. - Within	0.57

Table 8: Percent correctly recalling treatment, by treatment

C.4 Results

For analyzing treatment effects, we use the difference in how much a respondent agreed with the question about increasing regulating and the question about increasing unemployment benefits.[6] Our expectation is that the foreign treatments will increase this difference, showing that the respondents placed a greater weight on regulating automation when told that it was foreign-source, as opposed to domestically sourced.

---

[5]We randomized the order of the response options, so it is also possible that some people were confused by the option "I didn't read any of the above arguments." There may or may not have been options above that option in the displayed table.

[6]In our pre-analysis plan, we said that we would analyze *shares*, not difference. In other words, we proposed to analyze a dependent variable equalling $\frac{regulations}{regulations+benefits}$. In general, results using shares are weaker than results using differences. This surprised us, since our initial analysis of the main experiment used shares (and found similar results to the current presentation using differences). We did extensive analysis with simulated data and found that - while using shares and difference return similar estimated treatment effects - the statistical properties of estimates using shares are much worse than those using differences. Regressions using shares fail to correctly detect effects at a much higher rate than regressions using differences. We therefore departed from the PAP on this aspect of analysis.

C.4.1 Between respondent results

For analyzing treatment effects between respondents, we used the differences outcome measure after the domestic treatment for respondents receiving the domestic treatment and after the full foreign treatment – ie learning that automation is foreign and receiving an argument about the implications of that – for respondents in one of the foreign treatments. Table 9 shows estimates from regressing (OLS) this difference on an indicator for whether a respondent received one of the foreign treatments, with and without respondent controls, and with and without controlling for their intial support levels for regulations and unemployment benefits. These regressions thus pool all three foreign treatments.

Results are similar across all specifications. Respondents receiving one of the three foreign treatments had a larger difference in their support for regulations versus transfers, and the difference is always positive. In other words, those respondents placed a greater weight on regulations, as opposed to transfers. They generally increased their weight on regulations by 2-4 percentage points, relative to their agreement with a statement about increased transfers.

Table 10 then shows the same series of regressions, using indicator variables for each of the three foreign treatments, rather than pooling them together. The base category is thus the domestic automation treatment.

The reliance and relative gains treatments consistently have greater effects than the within-country effects treatment. The reliance and relative gains treatments generally increase the respondent's weights on regulations by 2.6 - 4.6 points, compared to support for benefits. The within-country treatment generally has smaller and always statistically insignificant effects.

C.4.2 Within respondent results

We also find that the Foreign Reliance treatment had the strongest effect on increasing the weight respondents put on regulations, using within-respondent comparisons. For these comparisons, we use the difference outcome measured after the different foreign treatments have

Table 9: Effect of Foreign Treatment on Difference (Regul. - Transfers), Between-respondent estimates

	(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	

been administered and we control for the respondent's level of support for regulations and benefits *after* the initial foreign/domestic treatment has been administered. In other words, these estimates describe how much more weight the respondent places on regulations, even after she has already been told that automation is foreign in origin.

Table 11 shows these estimates with and without other controls. We set the within-country treatment as the base/reference category, since it had the weakest effects in the previous sections. The reliance treatment increases the weight respondents place on regulation, compared to the within-country treatment, by about 2.4 points. The relative gains treatment has a similar effect, though it is smaller and we cannot reject the null of no additional effect of this treatment, compared to the Within treatment.

C.4.3 Sensitivity testing

As described above, there was imbalance across treatment groups in respondent houshold income and also in their regional distribution. These imbalances do not confound the above estimates that include these variables as controls. However, the imbalance raises the possibility that - if there is imbalance in an observable we know about, then there could also be

Table 10: Effect of Specific Foreign Treatments on Difference (Regul. - Transfers), Between-respondent estimates

	(1)	(2)	(3)	(4)
For. - Reliance	4.629**	4.343**	3.844***	3.581***
	(2.056)	(2.061)	(1.251)	(1.267)
For. - Rel. Gains	4.515**	4.548**	2.632**	2.631**
	(1.996)	(1.994)	(1.253)	(1.266)
For. - Within	2.495	2.240	0.844	0.613
	(2.031)	(2.038)	(1.244)	(1.261)
Initial Trans.			−0.796***	−0.787***
			(0.020)	(0.020)
Initial Regs.			0.738***	0.739***
			(0.021)	(0.021)
Constant	2.763*	−4.015	4.564***	1.173
	(1.490)	(3.379)	(1.237)	(2.263)
Controls?	N	Y	N	Y
Observations	2,133	2,078	2,128	2,073

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

A32

Table 11: Effect of Specific Foreign Treatments on Difference (Regul. - Transfers), Within-respondent estimates

	(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
Note:	*p<0.1; **p<0.05; ***p<0.01	

imbalance in an unobservable that isn't measured. Sensitivity testing is designed to assess the potential severity of this problem. For an application focusing on international politics, see Chaudoin, Hays, and Hicks (2018). Here, we use the benchmarking approach developed in Cinelli and Hazlett (2020).

Figure 14 shows a graphical representation of the thought exercise. The bottom left corner shows our original estimate (for the effect of foreign treatment on the between-respondent differences in support for regulation versus benefits). Each contour shows how that estimate would change in the presence of an unobservable with a particular strength of correlation with treatment and the outcome measure. The dashed line shows the contour for unobservables whose strength of correlation with treatment/outcome is sufficient to drive our estimate to zero. The two red triangles show the observed relationship between the HHI and Midwest region variables and treatment/outcome. Both triangles are very close to the bottom left and far from the dashed contour lines. In other words, unobserved confounding would have to involve a much, much stronger degree of imbalance than we observed in our sample - much worse than our observed imbalances - and this imbalance would have to pertain to an unobservable that was much more strongly correlated with outcomes than our observables. We therefore conclude that unobservables are unlikely to have strongly influenced our conclusions.

C.4.4   Between-respondent results, excluding speeders

Results in the follow up experiment are generally similar when we exclude respondents who took the survey very quickly. Tables 12 and 13 replicate the above main results, excluding anyone who took less than 150 seconds to complete the survey.
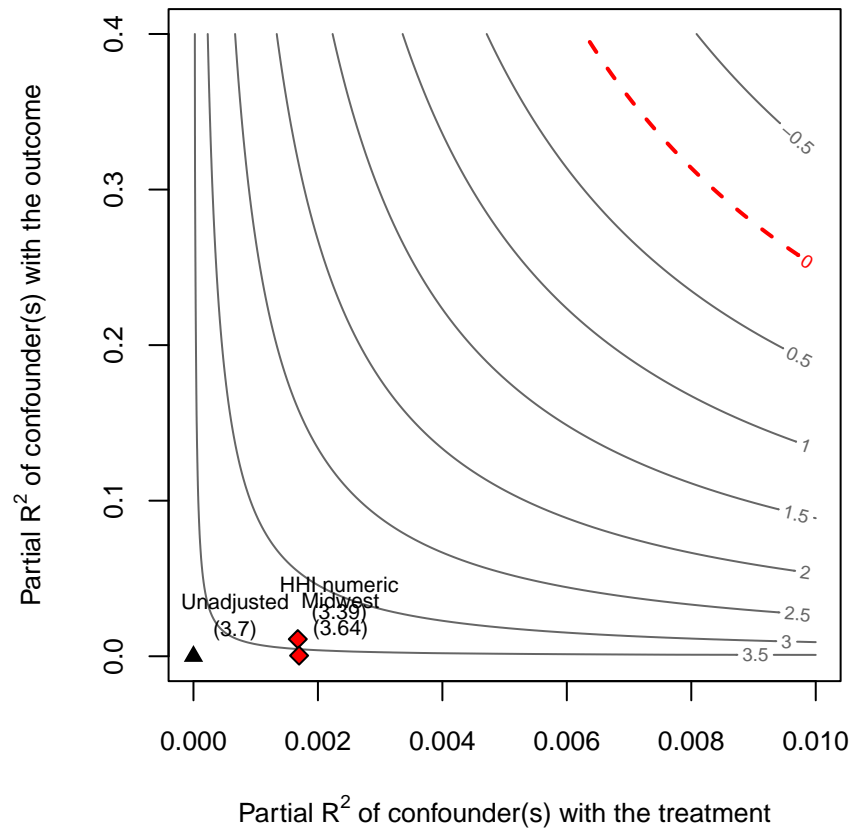
Figure 14: Sensitivity analysis, benchmarking with imbalanced observables

Table 12: Effect of Foreign Treatment on Difference (Regul. - Transfers), Between-respondent estimates, 150 second limit

	(1)	(2)	(3)	(4)
Foreign	4.016**	3.780**	2.513**	2.342**
	(1.720)	(1.719)	(1.038)	(1.048)
Initial Trans.			−0.798***	−0.790***
			(0.020)	(0.020)
Initial Regs.			0.743***	0.743***
			(0.021)	(0.021)
Controls?	N	Y	N	Y
Observations	2,089	2,036	2,084	2,031

Note:	*p<0.1; **p<0.05; ***p<0.01

Table 13: Effect of Specific Foreign Treatments on Difference (Regul. - Transfers), Between-respondent estimates, 150 second limit

	(1)	(2)	(3)	(4)
For. - Reliance	4.863**	4.461**	4.023***	3.754***
	(2.095)	(2.099)	(1.264)	(1.280)
For. - Rel. Gains	4.633**	4.579**	2.589**	2.580**
	(2.034)	(2.027)	(1.272)	(1.285)
For. - Within	2.565	2.331	0.935	0.718
	(2.064)	(2.067)	(1.257)	(1.272)
Initial Trans.			−0.798***	−0.790***
			(0.020)	(0.020)
Initial Regs.			0.743***	0.743***
			(0.021)	(0.021)
Constant	2.710*	−4.363	4.456***	0.847
	(1.519)	(3.431)	(1.251)	(2.272)
Controls?	N	Y	N	Y
Observations	2,089	2,036	2,084	2,031
Note:				*p<0.1; **p<0.05; ***p<0.01

C.4.5 Economic Nationalism and Trade Preferences

Our research design also allows us to evaluate why nationalists have a preference against imports. We investigate three logics of economic nationalism as explanations for an anti-import bias: 1) economic nationalists may fear that foreign states will threaten to withdraw trade unless the United States makes political concessions, 2) economic nationalists may worry that foreign states gain more from trade than the United States does, and 3) economic nationalists may fear that imports disproportionately harm co-ethnics within the United States, giving them economic power in domestic politics.

Our research design elicits the trade attitudes before and after treatment so we can calculate treatment effects both within and between individuals. We asked respondents: "Imports are goods made in other countries that are purchased by firms and consumers in the United States. On a scale of 1 to 100, how bad or good are imports for the United States?"

Figure 15 shows the pre and post treatment measurements of respon to this quesiton, broken down by treatment condition. The horizontal axis shows the respondent's pre-treatment response and the left vertical axis shows their post-treatment response. The black line is the 45-degree line, so dots below the line correspond to respondents who expressed greater support for imports before treatment compared to afterwards. The blue bars show a bar chart of the fraction of respondents whose preferences for imports *decreased* after treatment, broken down by bins based on their pre-treatment level of support for imports. So larger blue bars correspond to a greater fraction of respondents whose support for imports decreased.

Even in the domestic (control) condition, preferences for imports declined during the experiment for some respondents, shown by the number of black dots in the lower right triangular region of the panel. In the control condition support for imports declined more among those respondents who had initially high support.

However, support for imports declined more for respondents assigned to the foreign treatment conditions. The bar charts make it clear that support declined more often for respondents in the other treatment conditions. In general, the blue bars are higher in the foreign

treatment conditions, compared to in the control condition. For example, the bars show a higher fraction of respondents reduced their support for imports in response to the relative gains prompt. We can also see that the effect was concentrated in the second and third quartiles of the pre-treatment distribution.

Table 14 shows statistical analysis corresponding to Figure 15. In the first two columns, the dependent variable is a continuous measure equalling pre-treatment support for imports minus post-treatment support. The second two columns use a binary indicator for whether support went down from the pre- to post-treatment measure. There are not strong results using the continuous measure, though the signs are all negative. Foreign treatments decreased support for imports. There is stronger evidence using the binary measures. Respondents in the relative gains and reliance treatments were around $8 - 9\%$ more likely to reduce their support for transfers from the pre-treatment measure.

Table 14:

|	Dependent variable:			
	Import Preference (Post - Pre)	Import Preference (Post - Pre)	Import Preference (Post < Pre)	Import Preference (Post < Pre)
	(1)	(2)	(3)	(4)
For. - Rel Gains	−1.614	−1.664	0.088***	0.090***
	(1.010)	(1.035)	(0.031)	(0.031)
For. - Reliance	−1.142	−0.987	0.079**	0.081***
	(1.028)	(1.045)	(0.031)	(0.031)
For. - Within	−0.578	−0.369	0.056*	0.051
	(0.960)	(0.982)	(0.031)	(0.031)
Constant	−4.274***	−5.355***	0.478***	0.497***
	(0.691)	(1.862)	(0.022)	(0.054)
Controls?	N	Y	N	Y
Observations	2,111	2,056	2,111	2,056

Note: *p<0.1; **p<0.05; ***p<0.01
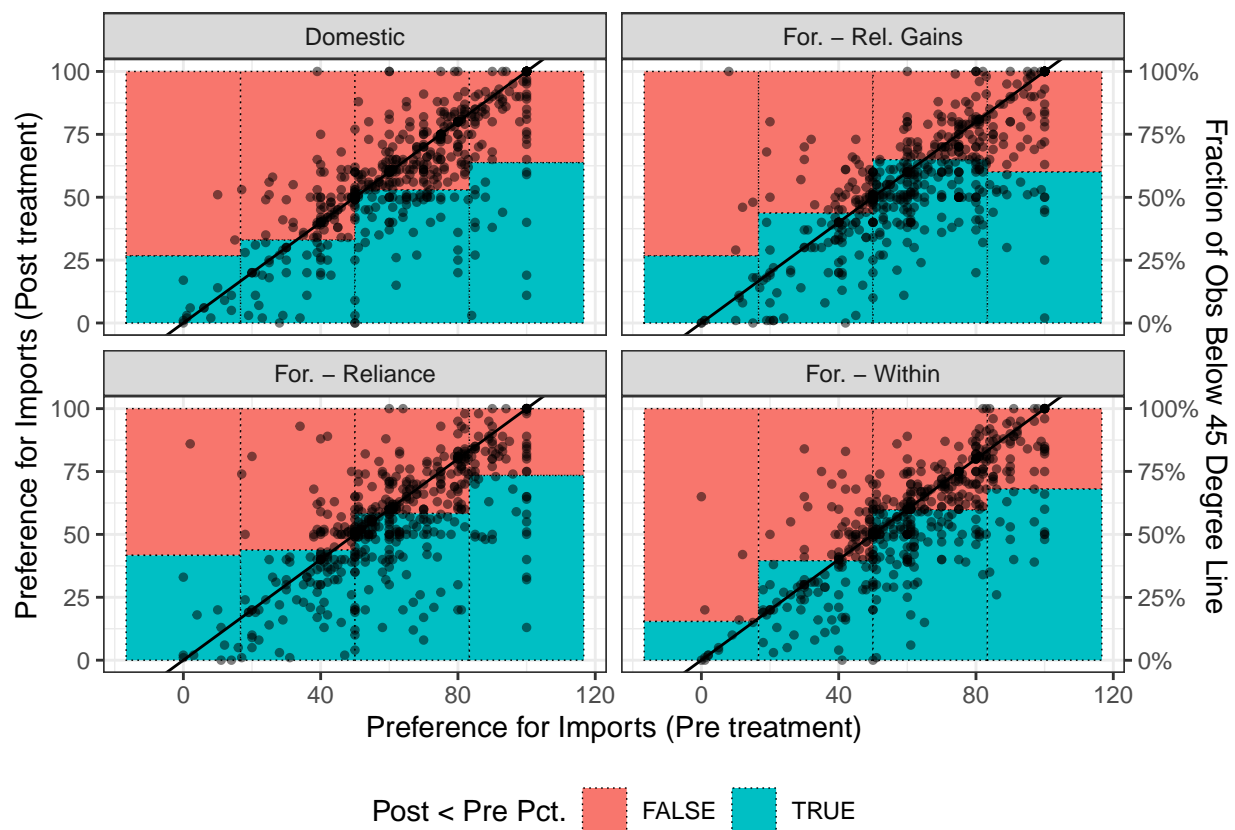
Figure 15: Treatment effect on import preferences in the followup experiment. The bars show the fraction of observations with declining support for imports broken down by quartile of the pre treatment measure of support.

C.4.6 Results by Race

In general, we do not find strong evidence of differential treatment effects by race. We replicated the above between-respondent analysis, interacting treatment indicators with a binary indicator for white respondents. Table 15 shows the results when interacting the foreign treatment indicator with the white indicator. The effect of the foreign treatment is generally stronger for whites (positive coeffficients on the interaction terms), but we cannot reject the null hypothesis of equivalent effects.

Table 16 does the same thing, only it breaks down the foreign treatments into the three specific foreign treatments. We would most expect the within-country treatment effects to be largest for whites, given that the within-country redistributional story is most often one of harmed blue-collar, white Americans. But we do not see consistent evidence of this. The treatments are again all generally stronger for whites, but in only one instance can we reject the null of equivalent effects - one particular specification for the within-country treatment. Though, in other specifications, the interaction term is negative.

Table 15: Effect of Foreign Treatment on Difference (Regul. - Transfers), Between-respondent estimates

	(1)	(2)	(3)	(4)
Foreign	2.372	2.924	0.292	0.548
	(3.527)	(3.536)	(2.268)	(2.334)
Initial Trans.			-0.791^{***}	-0.787^{***}
			(0.020)	(0.020)
Initial Regs.			0.740^{***}	0.738^{***}
			(0.021)	(0.021)
Foreign * White	2.102	1.049	2.908	2.311
	(4.015)	(4.026)	(2.532)	(2.589)
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 16: Effect of Specific Foreign Treatments on Difference (Regul. - Transfers), Between-respondent estimates, by race

	(1)	(2)	(3)	(4)
For. - Reliance	2.337	2.505	1.762	2.087
	(4.032)	(4.099)	(2.555)	(2.640)
For. - Rel. Gains	3.224	3.601	1.142	1.207
	(3.946)	(3.975)	(2.785)	(2.850)
For. - Within	1.533	2.670	−2.117	−1.707
	(4.153)	(4.159)	(2.687)	(2.770)
Initial Trans.			−0.791***	−0.788***
			(0.020)	(0.020)
Initial Regs.			0.741***	0.739***
			(0.021)	(0.021)
White	3.196	2.481	2.825	2.003
	(4.687)	(4.749)	(2.927)	(2.997)
For. - Reliance * White	1.829	1.275	2.021	1.904
	(4.575)	(4.604)	(3.103)	(3.166)
For. - Rel. Gains * White	1.323	−0.583	3.981	3.110
	(4.759)	(4.763)	(3.027)	(3.110)
For. - Within * White	−0.380	−3.435	4.108*	2.486
	(3.240)	(4.150)	(2.209)	(2.742)
Controls?	N	Y	N	Y
Observations	2,133	2,078	2,128	2,073

Note: *p<0.1; **p<0.05; ***p<0.01

–>

–>