What you see out your front door:

How political beliefs respond to local trade shocks

James Bisbee

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Abstract

What effect does trade have on American politics? Until recently, the answer to this question was "not much". Trade has been viewed as a low-salience issue since the 1970s – its once-important status among the policy dimensions superseded by issues such as abortion, gay rights, and gun control. However, recent research and the election of Donald Trump have thrust trade back into the spotlight. In this paper, I document a causal relationship between localized trade shocks and individual policy preferences, highlighting the importance of sociotropic concerns at the local level, a phenomenon I explain with a "spatiotropic" framework. In addition, I show that policy preferences on free trade are bundled with opinions on immigrants and US global leadership, assembling to create a nativist response to trade-related economic shocks. These findings further our understanding of how free trade's unequal economic consequences explain variation in the political economy of trade.

FREE TRADE | POLITICAL ECONOMY | AMERICAN POLITICS | DONALD TRUMP | SOCIOTROPISM

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Introduction

A recent explosion of economic research has shed light on free trade's negative consequences. These costs range from economic outcomes including unemployment and declining income (Autor, Dorn and Hanson, 2013); and social outcomes including family dissolution and rising mortality (Autor et al., 2017; Pierce and Schott, 2016b). In this paper, I explore the political implications of these costs at the constituent level to answer two broad questions. First, does trade exposure influence political beliefs? If so, which beliefs and how?

To answer these questions, I compare the opinions of individuals living in trade-exposed and insulated counties, exploiting the instrumental variables strategy pioneered in Autor, Dorn and Hanson (2013) to identify a causal effect of trade shocks on U.S. politics. I document significant differences in protectionism, xenophobia, and isolationism. These results suggest that, not only does exposure to trade's negative consequences influence an individual's beliefs about free trade, exposure also shifts a bundle of conceptually similar opinions that combine to produce a nativist shift in American politics. These effects, though statistically significant, are substantively small. But they embody a heretofore undocumented response to free trade's negative consequences that was in place long before Donald Trump.

To assess how trade's costs cause these shifts in political beliefs, I exploit geographically rich data that allows me to measure the geographic distance between each survey respondent and the firms that laid off workers due to trade in the preceding year. I show that geographic proximity to particularly visible signs of trade's negative consequences strengthens the effect of trade shocks on nativism. I argue that these patterns reflect an information transmission process that is geographic in nature and formalize this theoretical intuition with a "spatiotropic" framework for understanding preference formation.

For decades, the economic consensus on free trade was that its losers could be compensated by the surplus gains accrued to free trade's winners, and that the number of losers

was relatively small. But by looking for losers within geographic areas instead of within industries or occupations – by taking "localness" seriously – recent research has upended the conventional wisdom. This paper argues that our understanding of the politics of trade has similarly focused too narrowly on industry and occupational cleavages when searching for evidence of political responses among trade's winners and losers. By also taking "localness" seriously, I show that the political response to trade's negative consequences is stronger than previously assumed; is shared among a larger population of American voters than previously assumed; and spills over to other political beliefs that combine to form a nativist backlash.

1   Existing Literature

Conventional wisdom about public preferences over free trade holds that 1) voters generally don't care very much about trade and 2) to the extent that they do, their opinions can be predicted with some combination of their educational attainment and their occupation. There is ample evidence of the former claim. Free trade is rarely listed as the most important problem facing the nation. In addition, opinions on trade are highly susceptible to elite cues, befitting a topic on which people generally don't have strong opinions. A clear example of cue taking is illustrated in Figure 1 which underscores the degree to which Republicans have followed Donald Trump on trade policy.

Evidence of the second piece of received wisdom – the predictive power of education and occupation – is more muddled. Naoi and Kume (2015) use a survey experiment in Japan to identify the effect of identifying as a producer or consumer on trade policy preferences. They show that priming respondents to think as consumers induces more support for free trade, consistent with broad economic models of trade's winners and losers. But other pieces find contradictory and imprecise relationships between an individual's occupation or industry of employment and her opinion on free trade (Rho and Tomz, 2015). The most robust results

2

Positive views of free trade agreements rebound to pre-2016 levels

% who say free trade agreements between the U.S. and other countries have generally been a _____ for the U.S.

Total — Among Rep/Lean Rep — Among Dem/Lean Dem
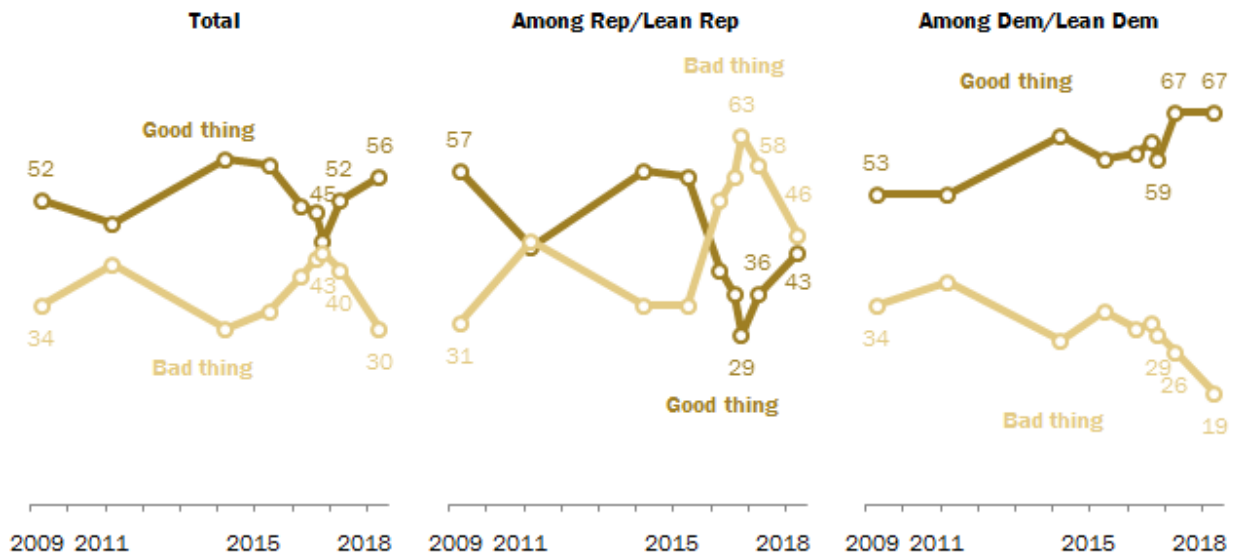
Note: Don't know response not shown.
Source: Survey of U.S. adults conducted April 25-May 1, 2018.

PEW RESEARCH CENTER

Figure 1: Pew Research Center data on free trade support, 2009 to 2018.

are a correlation between educational attainment and support for free trade, which some scholars have argued reflects an individual's skill level and thus her position as a factor of production. But as argued by Hainmueller and Hiscox (2006), this empirical regularity may instead capture the socializing effects of higher education in which students learn about the theoretical benefits of open markets.

The bulk of existing IPE research examining individual-level responses to free trade is based on a rational actor model. These models share a common concern with an individual's role as an economic producer. Political beliefs about free trade are theorized to be a utility-maximizing function of how free trade will impact an individual's ability to earn a wage.

This framework contains two restrictions that may explain why existing research failed to identify the anti-globalization backlash. First, by focusing on an individual's role as an

economic producer, rational actor models don't consider others who might also be directly or indirectly affected by free trade (although see Ansolabehere, Meredith and Snowberg, 2014 and Reeves and Gimpel, 2012). Second, these models typically only focus on preferences over free trade agreements and don't consider how other political beliefs might also be connected.

I relax these restrictions by adopting theories of preference formation developed in the psychology, behavioral, and public opinion literatures. I incorporate geography by defining salience as a function of the distance between an individual and a signal about the quality of a policy (such as free trade). I call this framework "spatiotropism" to connect it with, and distinguish it from, two competing models of preference formation most commonly found in the economic voting literature: egotropism and sociotropism.

Egotropism is typically implied in rational actor models of preference formation in which individuals base their beliefs and behaviors on what impacts them directly. For example, when a hurricane destroys an individual's home and they receive FEMA benefits, they are more supportive of the incumbent who distributed these benefits (Chen, 2013). Conversely, sociotropism focuses on the attention paid to national measures of success and failure. Kinder and Kiewiet (1981) examine the impact of personal outcomes on evaluations of the national economy and decisions on who to support at the ballot box, finding little connection between an individual's personal welfare and these behaviors. A rich literature on pocketbook voting similarly concludes that national-level measures of unemployment and economic health are prognostic of incumbent support (Nadeau and Lewis-Beck, 2001). And Mansfield and Mutz (2009) argue that support for free trade is a function of an individual's perception of whether free trade is good for the country overall, with very little evidence that the specific implications of imports and exports on personal income matter.

The spatiotropic framework I introduce below is similar to models of macro-economic voting (Ansolabehere, Meredith and Snowberg, 2014) and geotropism (Reeves and Gimpel, 2012) insofar as all three share the insight that location matters. But the spatiotropic

framework differs by connecting geographic distance with a cognitive model of preference formation in which the strength of a signal decays over distance. My approach builds on the insights developed in Mansfield and Mutz (2009) by connecting an individual's sociotropic views on trade to local outcomes. In addition, the cognitive framework helps explain the link that those authors document between levels of education and ethnocentrism and isolationism. (See also Margalit 2012.) But it does not preclude other types of "distance" that might also matter, such as occupational or social distance. I see these alternative dimensions as areas of promising future research, as we continue to develop an understanding of how changes in group welfare propagate across space and social connections.

2   Spatiotropism, or How Geography Matters

I build on behavioral models of preference formation which posit that attitudes are produced by an individual considering a set of relevant concepts ("considerations") and estimating the net valence of these concepts (Tourangeau, 1992; Zaller and Feldman, 1992; Lord and Lepper, 1999). These considerations have two characteristics: valence (or the emotional response to the consideration), and accessibility (or how readily the consideration comes to mind).

To formalize notation, consider an expressed dichotomous opinion Y on topic T modeled as the observed outcome of some continuous latent variable z such that:

$$
Y^T = \begin{cases} 1, & \text{if } z^T \geq 0 \\ 0, & \text{otherwise} \end{cases}
$$

This latent variable z^T is the weighted sum of C considerations c^T which are defined by two characteristics: valence v_{c^T} and accessibility a_{c^T}. For ease of exposition, a_c^T is bounded between 0 and 1 while v_c^T is dichotomized to be either -1 (representing negative reactions)

or $+1$ (representing positive reactions).[1] The latent continuous variable z is simply the sum of consideration valences weighted by their accessibilities, or:

$$z^T = \sum_{c=1}^{C} a_c^T * v_c^T \tag{1}$$

Using free trade as an example, a non-exhaustive list of considerations might include:

- Job losses in import competing industries ($v_1^T = -1$)

- Job creation in exporting industries ($v_2^T = +1$)

- Cheaper prices for imported goods ($v_3^T = +1$)

- Access to a broader variety of consumer goods ($v_4^T = +1$)

- Promotion of peace ($v_5^T = +1$)

The valence of these issues can vary by individual but a reasonable assumption would be that job losses are viewed negatively, while the other considerations are viewed positively, as indicated by the v_c^T values in parentheses above. If all considerations were weighted equally, the individual would indicate support for free trade, since $z^T = 0.6 \rightarrow Y^T = 1$. However, if the job losses consideration were much more accessible than the other considerations – for example, if $a_1^T > 0.5$ meaning $z^T < 0$ – the individual would indicate opposition to free trade.

I assume that a consideration's accessibility is more fluid than it's valence, in the sense that it is more responsive to external factors, including both information provided by political elites as well as signals observed in the course of an individual's life. For example, while

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[1]Valences need not be dichotomized in this way and surely are more naturally viewed as a continuous measure. For the purposes of discussion, this dichotomization avoids an unnecessarily complicated discussion of how valence magnitudes and accessibility trade off and may be correlated.

individuals may differ in whether they believe job losses in import competing industries are good or bad, these beliefs are determined by socialization and education, making them less responsive to transient shocks. But the accessibility of this consideration can be subdued by a pro-free trade politician or elevated by witnessing a factory shut down. Thus, for each individual i, I assume the consideration's valence is constant and focus attention on the determinants of accessibility.

Accessibility can be expressed as a function of external signals s which can include elite discourse, news media, information transmitted via social and professional networks, and direct observation. Individuals i start with some baseline level of accessibility for consideration c on topic T based on accumulated signals. When a new signal is received, the accessibility of the associated consideration increases from this baseline. For the majority of Americans, signals related to the considerations of free trade typically come from elite discourse and the media, as illustrated in Figure 1 above. But the severity of free trade's localized economic and social consequences, documented by Autor, Dorn and Hanson (2013) and Pierce and Schott (2016b) among others, generates the hypothesis that direct observation may also matter to the formation of political preferences by impacting the accessibility of certain considerations.

Existing rational actor models of preference formation can be placed along a spectrum from "egotropic" models to "sociotropic" models. The former focuses exclusively on the direct experiences of individuals and ignores broader community-level outcomes. For example, an egotropic model of trade policy preferences would examine whether an individual works in an import-competing industry and model their utility as a function of expected wealth under free trade or protectionism. The sociotropic framework instead posits that individuals care about society writ large and include aggregate welfare implications in their utility function.

I introduce a "spatiotropic" framework that exists between egotropic and sociotropic models. This framework is similar to the mecro-economic voting model presented in An-

solabehere, Meredith and Snowberg (2014) in that it argues more geographically proximate signals are more influential on political decisions. But it differs in that it is based on behavioral models of decision making, instead of the rational actor framework adopted by those authors who make predictions about perceptions of the national unemployment rate. I choose a behavioral model in order to make predictions about a broader range of political beliefs that are typically ignored in the IPE literature on trade opinions.

The core hypothesis is that accessibility is inversely related to geographic distance between an individual i and a signal s.

$$a_{ci}^{T} = f(dist_{is})$$

$$f' < 0 \quad \forall dist_{is} \in [0, \infty]$$

The intuition behind this hypothesis is that an individual is more likely to be exposed to a signal that is geographically closer to her through her day-to-day interactions with family, friends, and time spent at home and at work. For example, an individual who lives nearby a firm that lays off 500 workers is more likely to know workers who were laid off or hear about the layoffs via social networks or even travel past the closed factory. Note that spatiotropism is consistent with both selfish and altruistic preferences. An individual may directly experience welfare loss by proximity to trade shocks due to declining housing prices (Mansfield, Milner and Rosendorff, 2002) or diminished public goods provision (Feler and Senses, 2017). Alternatively, she may respond altruistically to seeing her community decline, even if her personal welfare is unaffected. Either or both of these mechanisms may be active in a spatiotropic model. The core insight is that the salience of different considerations is a function of geographic distance. The value of this insight is that it expands the scope of who opposes free trade beyond the existing literature's focus on occupation and skills.

For a simple political belief such as whether free trade is good or bad, the link between

these signals and policy preferences is straightforward and amenable to formalization in a rational actor framework. One doesn't need to incorporate considerations, accessibility, and valence to predict that the clarity of some signal about free trade influences political beliefs on the issue (Ansolabehere, Meredith and Snowberg, 2014). But what of opinions over other topics, such as immigration and globalization? This is where a behavioral model provides greater predictive power than purely rational models. Immigrants and import competition are unrelated in the sense that immigration policies rarely include provisions for tariffs and vice versa. But cognitively, these topics may share similar levels of access to relevant considerations, including considerations about foreigners and jobs. For example, the topics of immigration and free trade both prime the consideration of a job lost to a foreign worker. The only difference is where the foreign worker lives. A behavioral framework is better equipped to speak to these types of cognitive associations and leads to the prediction that preferences will change not only on the specific policies related to a certain signal but also across conceptually related topics.

The foregoing discussion provides the theoretical intuition for predicting how community-level phenomena influence individual-level political beliefs. This intuition leads to the main hypothesis of this paper – namely that distance-defined exposure to free trade's negative consequences shifts political beliefs on a bundle of topics, including free trade, immigration, globalization, and distrust of government. These topics combine to form a nativist set of beliefs that has grown increasingly visible over the course of the last 20 years in advanced industrialized democracies.

3 Trade-Related Layoffs and Distance

To operationalize the theoretical intuition with data, I rely on applications to the Trade Adjustment Assistance program (TAA). TAA is a special program developed in the early

1960s by the Department of Labor to provide firms and workers who have been adversely affected by trade with additional federal support. These data date back to 1975 and contain the estimated number of workers laid off, the address of the firm where they worked, the industry associated with the firm, and the occupational nature of the work. Each application must be certified by the Department of Labor who investigates the claim via interviews, reviews of financial records, and assessments of upstream supplier prices and downstream consumer competition.

These data provide two benefits for my analysis. First, they capture a ground-truth measure of trade's negative outcomes, as perceived by those who are most directly affected. Although local unemployment rates may rise due to import exposure, it is not necessarily true that individuals themselves are able to perceive the cause for lost jobs. TAA applications, on the other hand, are instantiated by firms, workers, or unions representing workers who demonstrably believe that the reason for a layoff is due to free trade.

Second, TAA applications include the specific street address of where the layoffs occurred. This feature allows me to measure the geographical distance between a survey respondent (placed at the centroid of their zip code) and each firm in the TAA data, an example of which is presented in Figure 5. As per the spatiotropic model introduced in the preceding section, I predict that accessibility to the considerations associated with trade-related layoffs increases as distance declines. These rich data allow me to test not only whether this prediction is consistent with the data, but also to characterize the nature of the relationship between distance and accessibility.

Opinions

The Pew Research Center provided me with geocoded survey data between 2000 and 2016, allowing me to place each survey respondent at the centroid of their zip code. These data include questions on free trade, immigrants, US global leadership, and trust in the federal

government, all issues connected to the populism and nativism that characterize Donald Trump's campaign and presidency and have echoes across other advanced industrial democracies.

Methods

I nest survey respondents within counties and commuting zones and predict variation in opinions y for individual i living in geography g in time t as a function of total layoffs (L) in their area in the preceding year. I estimate using a multilevel model that controls for geography and time random effects (λ_g and δ_t, respectively), along with a battery of individual ($\mathbf{X}_i$) and geography-level ($\mathbf{G}_g$) controls. Formally,

$$Y_{igt} = \beta_1 L_{g,t-1} + \beta_2 \mathbf{X}_i + \beta_3 \mathbf{G}_{g,t-2} + \delta_t + \lambda_g + \epsilon_{igt} \tag{2}$$

This specification attempts to control for confounding influences that affect both opinions and layoffs, including age, gender, race, education, and previous presidential vote choice at the individual level, and local economic conditions including transfers, employment by sector, previous presidential vote, and demographic characteristics at the county or commuting zone level. These geography-level covariates are twice-lagged to ensure they are prior to the layoffs which are lagged to $t - 1$.

The TAA program is not automatic. Indeed, part of its appeal from a construct validity perspective is that individuals who have lost their job must work to obtain the additional benefits provided by TAA compensation, meaning that they have made the conceptual connection between free trade and negative economic outcomes. But this also means that the program may be politicized. Recent work by Kim and Pelc (2017) suggests that geographic variation in TAA applications may indeed be caused by the way members of Congress talk about the program.

To overcome these concerns, I calculate annual changes in Chinese import exposure based on the strategy described in Autor, Dorn and Hanson (2013) and use this measure as an instrumental variable. My argument relies on the assertion that changes in Chinese productivity and decreasing transportation costs cannot affect the political beliefs of an individual living in the United States except through their impact on local labor market outcomes, which I proxy with the TAA data. I assert that this instrumental variable purges the TAA measure of potential confounding effects while retaining the construct validity of the measure along with the geographic richness it affords.

However, while my data are repeated observations of geographically diffuse TAA applications over time, they are not true panel data in the sense that I observe opinions of the same respondent multiple times. The specification described above uses individual and geographic controls to compare opinions of otherwise similar individuals living in otherwise similar areas that differ only by the number of TAA applications instrumented by Chinese import penetration. But if individuals relocate based on their political beliefs – for example if people with more positive views of free trade move away from areas where the trade shock has been most painful – any association between trade-related job losses and political beliefs may be spurious. In the supporting information, I use IRS tax data on county-to-county migration patterns to demonstrate that there is no empirical support for the concern that geographic selection is driving my results. People in high-exposure counties are (1) no more likely to migrate to a different county than people in relatively insulated counties, and (2) if they do migrate, they are not more likely to move to a more insulated county. In addition, I use data from the Cooperative Comparative Elections Survey (CCES) from 2006 to 2016 which includes respondent-level information on how long they have lived at their current address. Restricting analysis to those respondents who have not moved since prior to Chinese accession to the WTO still produces substantively similar results.

4 Trade Shocks and Political Beliefs

How do individuals update their political beliefs in response to trade-related layoffs in their county? To begin, I estimate the relationship between trade shocks and opinions on trade, capturing the overall relationship.

Table 1 reports a statistically significant increase in the probability that respondents believe free trade is "bad" for the United States across all specifications. In the IV regression, this reflects a 3 percentage point increase in opposition to free trade with each standard deviation increase in the share of the county population laid off due to trade (roughly 3.9 additional individuals laid off per 1,000). These effects are modest but not insubstantial, particularly given the lumpy distribution of layoffs across the US.

This pattern is robust to the inclusion of both individual-level and county-level controls, state and interview date fixed effects, and using only variation in local-level layoffs explained by Chinese export growth to other developed countries. The larger point estimates for the 2SLS model points to an attenuating selection effect in which those more likely to apply for TAA assistance are less likely to hold negative views of free trade – a relationship that is consonant with the mission statement of the Trade Adjustment Assistance program.

Bundled Opinions

The core finding, that individuals' opinions on free trade sour when exposed to free trade's negative consequences, may not seem terribly interesting. Yet this is a causally identified relationship that has yet to be documented in the IPE literature. Furthermore, it manifests among those whose status as trade's "losers" is a function not of their occupation or industry, but of their geographic location. These individuals comprise a much larger population among whom political beliefs on trade have responded to trade's negative consequences.

But what of other political beliefs? The cognitive framework again provides intuition.

Table 1: Agreement that "free trade has been bad for the US" predicted by trade-related layoffs

	OLS				2SLS Chinese exports...	
	Biv.	+Ind Ctrl	+Cty Ctrl	+FE	to US	to Dev.
	(1)	(2)	(3)	(4)	(5)	(6)
Layoffs (per 1,000)	0.022***	0.020***	0.013***	0.009**	0.022*	0.019*
	(0.003)	(0.004)	(0.004)	(0.003)	(0.011)	(0.008)
College Degree		−0.062***	−0.047***	−0.056***	−0.056***	−0.056***
		(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
GOP Pres Vote		0.003	0.001	0.002	0.001	0.001
		(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
% Hispanic			−0.007	−0.008	−0.001	−0.002
			(0.006)	(0.007)	(0.008)	(0.008)
% Foreign Born			−0.027***	−0.031***	−0.027**	−0.027**
			(0.006)	(0.008)	(0.009)	(0.009)
FEC per capita			−0.007***	−0.002**	−0.002***	−0.002***
			(0.001)	(0.001)	(0.001)	(0.001)
Unemployment Rate			0.025***	0.019*	0.004	0.006
			(0.007)	(0.008)	(0.011)	(0.010)
Survey & Region FE	No	No	No	Yes	Yes	Yes
1st Stage					0.362***	0.477***
					(0.061)	(0.081)
1st Stage F-Stat					53.17	110.31
Reduced Form					0.01*	0.01*

Notes: Linear regressions of opposition to free trade policy on trade-related layoffs per 1,000, standardized. A simple bivariate regression is reported in column (1). Column (2) adds individual-level demographic controls. Column (3) includes county-level controls. Column (4) adds controls for date and region fixed effects. Column (5) uses the import penetration instrument described in Autor, Dorn and Hanson (2013) focusing on Chinese exports to the United States. Column (6) uses the same instrumental variables strategy but uses Chinese exports to other developed countries. Standard errors clustered on the county-year are presented in parentheses. 1st-stage F-statistics summarized at bottom. Additional controls summarized in Supporting Information. † < 0.10; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Using immigration as an example, a trade-related layoff is fundamentally a job lost to a foreign worker. While the foreign worker in this example lives in another country, immigrants working in the United States are also foreign workers. As such, one might expect a trade-

related layoff to increase the accessibility of negative considerations of immigrants. Similar logic applies to topics such as globalization and the role of the United States in world affairs. But we shouldn't expect it to connect to issues such as abortion or gun control.

Or to adopt the formal framework introduced above, trade shocks increase accessibility to a set of considerations which pertain to multiple topics. Denote the set of considerations primed by trade shocks $\mathcal{C}$. Phenomena like factory closings, layoffs, and rising unemployment increase $a_c \forall c \in \mathcal{C}$. These considerations are accessed when considering a trade policy topic, as well as other related topics $\mathcal{T}$. Thus when an individual is asked for her opinion on one of these related topics $T \in \mathcal{T}$, she calculates the weighted sum of valences across associated considerations, some of which are made more accessible by trade shocks, even though the topic itself is not about trade policy.

Figure 2 provides evidence of bundled political beliefs responding to free trade's negative consequences. In particular, individuals living in trade-exposed counties are more likely to express negative views of immigrants, globalization, and the federal government. These findings are consistent with a story in which individuals who experience trade's negative consequences adopt more protectionist views of trade policy and more nativist views in general. Importantly, these significant trends contrast powerfully with the insignificant estimates for other topics unrelated to nativist opinions of the United States. The relationship between trade-related layoffs and standard barometers for ideology such as positions on gay marriage, abortion, global warming, and gun rights are null.

Spatiotropism

The results summarized above connect individual survey respondents to localized trade shocks by assigning them to TAA data based on their county of residence. But this is only a coarse approximation of the theorized relationship between political beliefs and geographic proximity. In the following analyses, I exploit the rich geographic information in
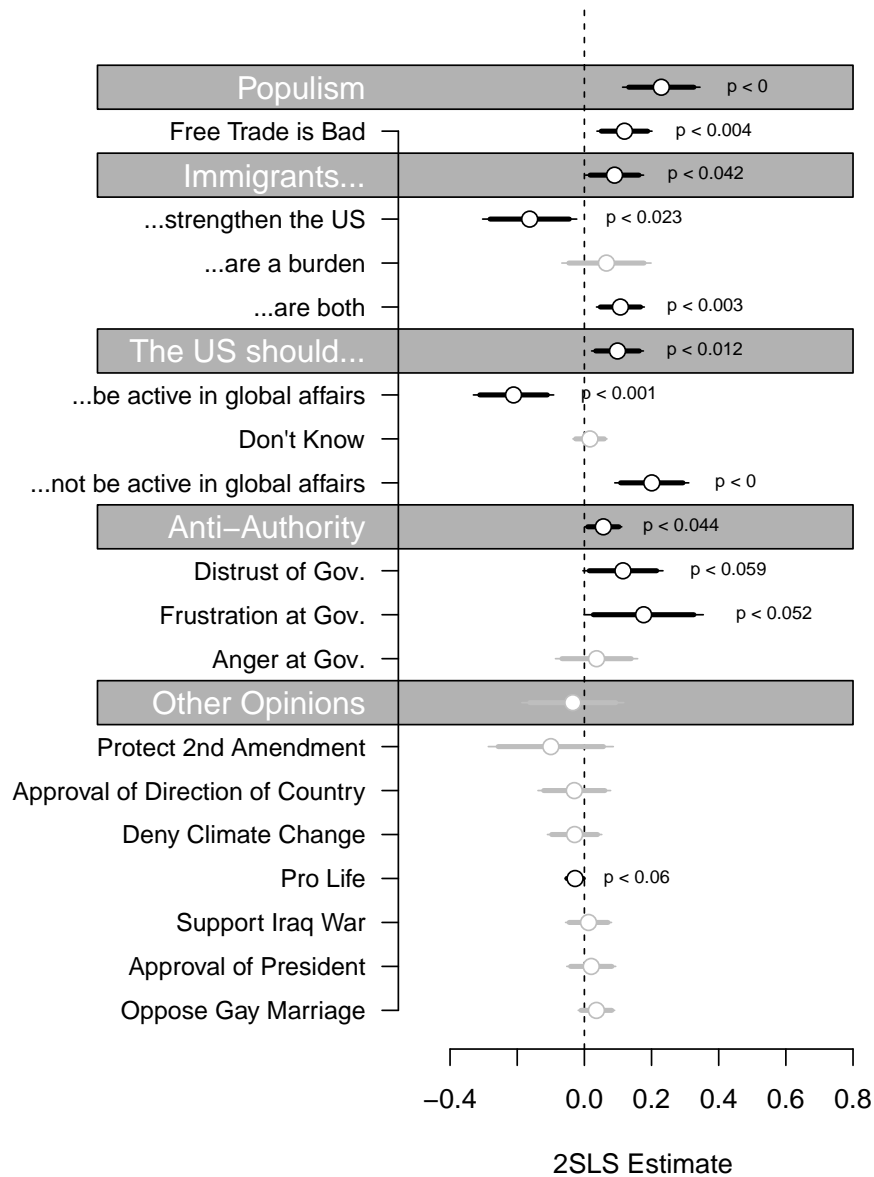
Figure 2: Regressions of other opinions on instrumented layoffs. 95% confidence intervals indicated with thin bars, 90% intervals indicated with thick bars. Significant estimates shaded black. All regressions use region and interview date fixed effects and cluster standard errors at the year-county level.

my data to confirm that these patterns reflect a response to the signals in a respondent's

immediate vicinity. To see if there is any evidence of a relationship between distance and

opinions, I start by assigning each survey respondent to a weighted sum of all layoffs within a specific radius. As illustrated in Figure 3, I divide each layoff by the distance in miles between a given respondent and the location of the firm at which the layoffs occurred. I then sum these weighted layoffs that are within a 25 mile radius of the respondent and assign this value to the individual. I vary the radii to explore the sensitivity of my estimates to different distances and identify the threshold at which local spatiotropic concerns disappear.

I repeat this process for each respondent in my dataset, assigning distance-weighted trade shock exposures across radii ranging from 10 miles to the entire United States. At the most narrow radius thresholds, it is likely that I am under-counting the intensity of the trade-shock as individuals are likely sensitive to layoffs in areas further away than ten miles. Conversely, at the most broad radius thresholds (simply summing all distance-weighted layoffs for each respondent), it is likely that I overestimate the intensity of the shock and conflate treatment and control. As illustrated in Figure 4, my results are strongest at thresholds between 50 and 250 miles, although these coefficients are not statistically different from each other at conventional thresholds.

These results suggest that the sociotropic concerns detailed in Mansfield and Mutz (2009) have a local character that decays as the location of the trade-related job losses becomes more distant. Spatiotropism can help explain why regressions of trade opinion on proxies for an individual's skill or industry of occupation provide inconsistent evidence in favor of traditional economic theories of who wins and who loses under free trade. It is not merely who you are as an economic factor of production but also where you live that determines your experience with, and reaction to, free trade.

The preceding analyses are useful insofar as they capture a coarse form of spatiotropic beliefs where geographic distance is defined either by county borders (as analyzed in Table 1) or by more flexibly radii bins (as analyzed in Figure 4). But I want to say something about the specific relationship between distance and opinions that speaks to the functional

Layoff Assignment Map
Respondent #1,251 near Dallas, TX in September 2000

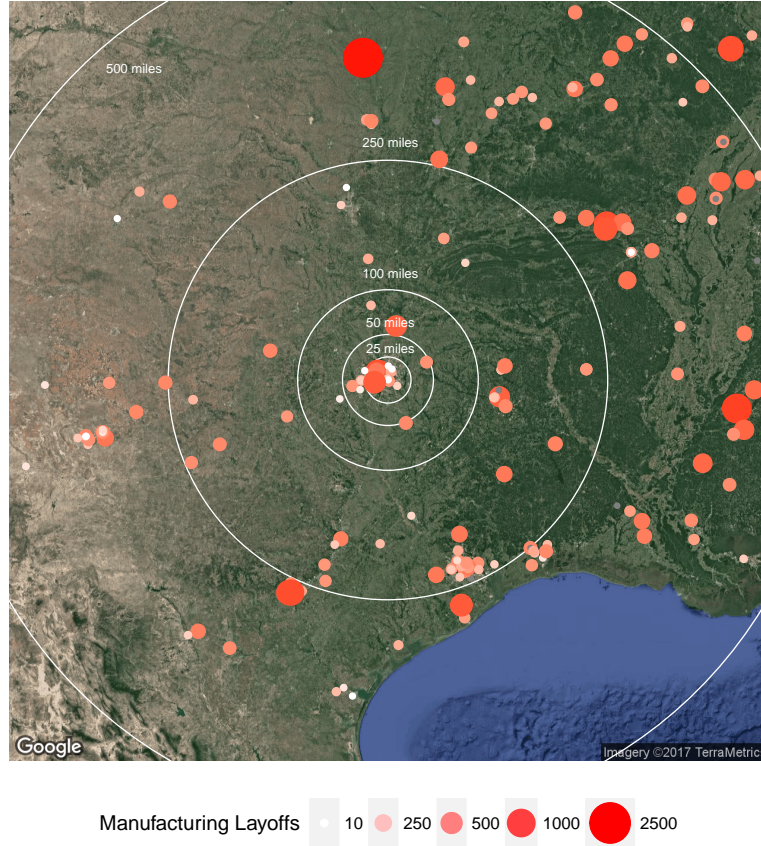Manufacturing Layoffs   10   250   500   1000   2500

Figure 3: Example of assigning layoffs to survey respondents using respondent #1,251 who was living in Dallas, TX when contacted by Pew Research in September of 2000. Bubbles represent all trade-related layoffs recorded by firm in the preceding year in manufacturing. The size and red shade of the bubbles indicate the number of individuals laid off at each firm. The hollow white circles demarcate radii of 25 miles, 50 miles, 100 miles, 250 miles, and 500 miles around the respondent. The assignment method attributes each layoff within a certain radius to respondent #1,251 weighted by the distance between the respondent and the location of the layoff.

form underlying spatiotropism. I therefore turn to exploiting the geographically rich data. Specifically, I assign to each survey respondent in my data a distance-weighted sum of all trade-related layoffs in the preceding year, formalized as:

$$T_{it} = \sum_{j=1}^{J} W(dist_{ij}) L_{j,t-1} \tag{3}$$

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Distance from Layoffs Robustness
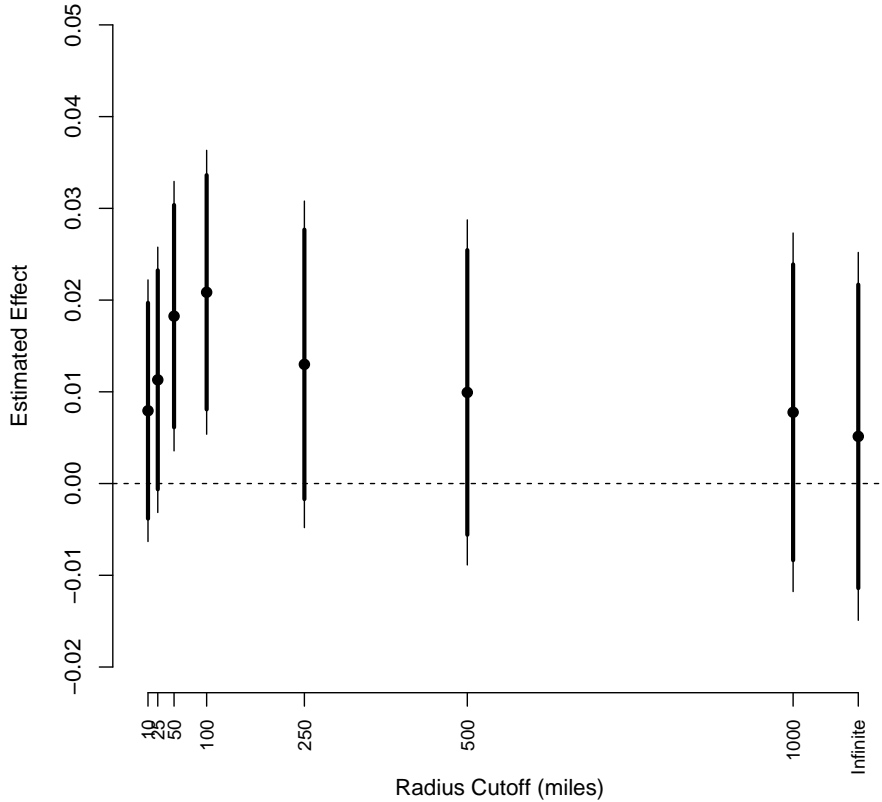
Figure 4: Robustness of main results when replacing county-level aggregated layoffs with distance-weighted measures. X-axis details different radius thresholds for including layoffs based on distance between firm and individual survey respondent. Gray bars and circle uses all layoffs weighted by distance between firm and respondent.

where T_i is the treatment dose for individual i, L_j is the total number of layoffs at firm j in the preceding year (either raw or predicted using import penetration weights at the commuting zone level), and $W(dist_{ij})$ is a weighting function that takes as it's input the distance $dist$ between individual i and firm j. This empirical measure parallels the theoretical formalization of how political beliefs are the weighted sum of considerations' valences (equation 1).

There are a number of possible ways to parameterize $W(dist_{ij})$. An egotropic model

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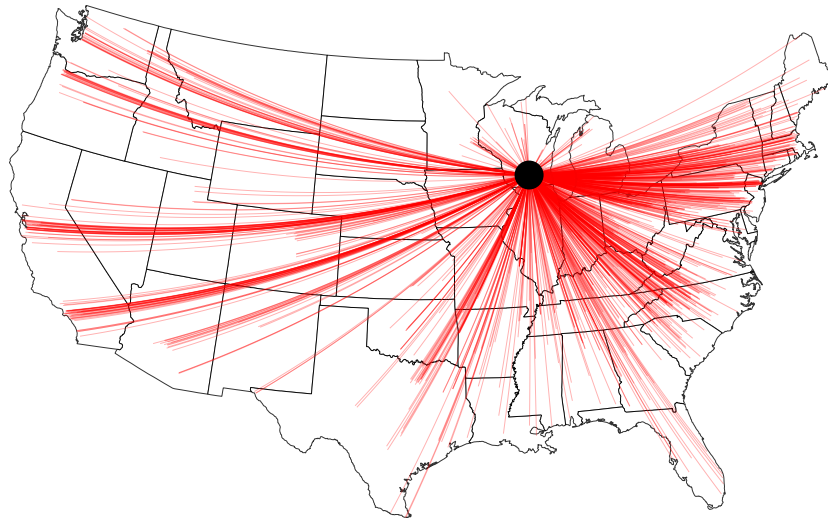
Figure 5: Example of distance between a survey respondent and all trade-related layoffs in the preceding year.

would place the entirety of the weight on a distance of zero, reflecting the intuition that individuals only care about signals that affect them directly (thick vertical line in Figure 6). A sociotropic model would place equal weight on all signals across the country, regardless of how close or how far they are from an individual (thin horizontal line in Figure 6). Spatiotropism predicts a decay over distance, although the sharpness of the decay and the particular shape of the decline is unknown (sloped line in Figure 6).

The three decays plotted in Figure 6 reflect the theoretical intuition about how individuals adjust their political beliefs in response to external information. To let the data inform me what the true shape of the decay looks like, I implement a flexible gamma distribution and
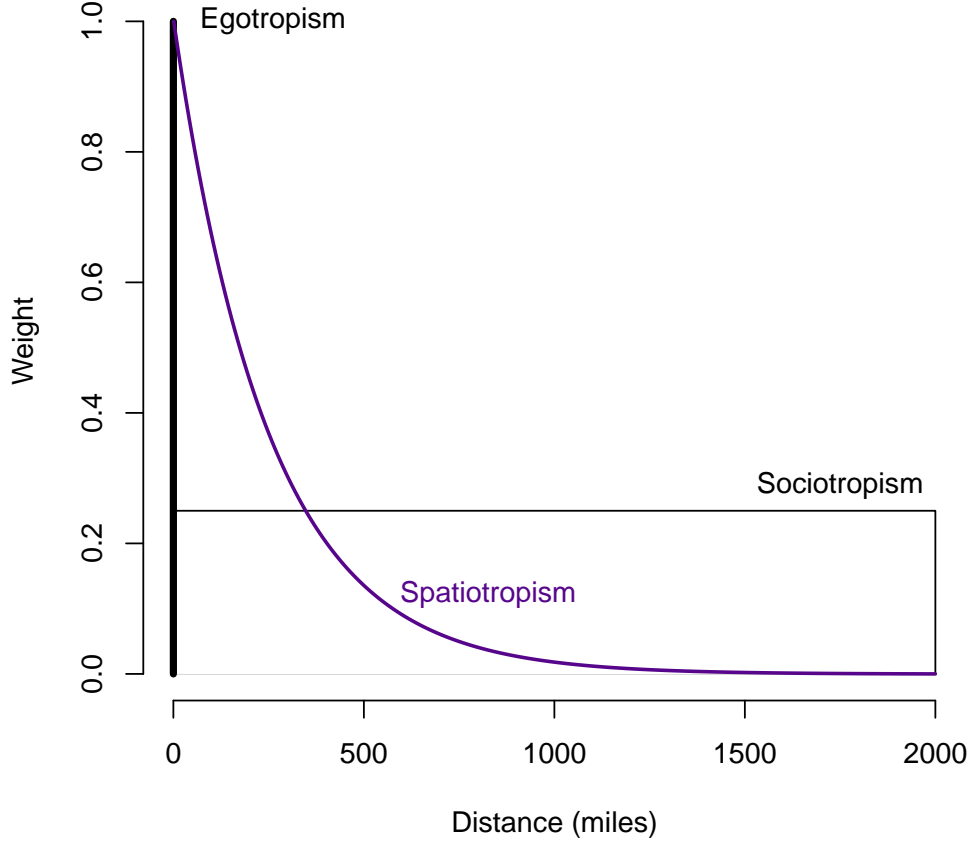
Figure 6: Three examples of weighting functions and their associated theories.

test different values for the shape (α) and scale (β) parameters:

$$W(dist_{ij}) = \frac{\left(\frac{dist_{ij}}{\beta}\right)^{\alpha-1} exp\left(-\frac{dist_{ij}}{\beta}\right)}{\beta\Gamma(\alpha)} \tag{4}$$

I choose values of α and β that maximize model fit, measured using the R^2 value. The gamma distribution is especially useful for testing the monotonicity assumption implicit in spatiotropism. Specifically, the gamma distribution shifts from a monotonic decline over distance to an inverted-U shape when $\alpha > 1$. This distribution thus provides a clear test of

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the hypothesis that the strength of the response to trade-related layoffs declines over distance based on the optimal value of α. If model fit is maximized with $\alpha \leq 1$, I can reject the null hypothesis that distance is not monotonically related to belief formation. I use bootstrapped simulations for statistical inference, randomly sampling the data and calculating distance-weighted layoffs for each individual using different combinations of α and β, saving the values of each that maximize model fit. The resulting vector of optimal values can then be used to calculate the probability that the monotonicity assumption is true, expressed as the share of bootstrapped simulations where $\alpha \leq 1$. The entire procedure can be summarized in the following 8 steps:

- For a given political belief...

1) Randomly sample the data with replacement.

2) Assign values for α and β

3) For each individual i, assign the treatment dose T_{it} as the distance-weighted sum of all layoffs at all firms $j \in J$ in the preceding year, with weights defined by the gamma distribution with parameters α and β

4) Predict political beliefs as a function of these distance-weighted layoffs and covariates

5) Record model fit via cross-validation and R^2.

6) Repeat steps (2) through (5) for $\alpha \in (0.1, 0.2, \ldots, 1.9, 2)$ and $\beta \in \{100, 200, 300, 400, 500, 1000\}$

7) Save the values of α and β that maximize model fit

8) Repeat steps (1) through (7) for 200 bootstrapped simulations

This procedure yields a vector of α and β parameter values that carry substantive implications for the shape of the decay function connecting opinions and distance. α values less than 1 are consistent with a monotonically decreasing function, visualized in Figure 7.

At $\alpha = 1$, the gamma distribution is equivalent to an exponential distribution with the β parameter determining where the mean is located. And at α values greater than 1, the shape starts to approximate a bell curve, suggesting that the most nearby signals are less meaningful than those in the middle distance. A clear statistical test of spatiotropism's monotonicity function is thus a matter of how many bootstrapped simulations yield α values less than or equal to 1, with H_0 positing that $\alpha > 1$.
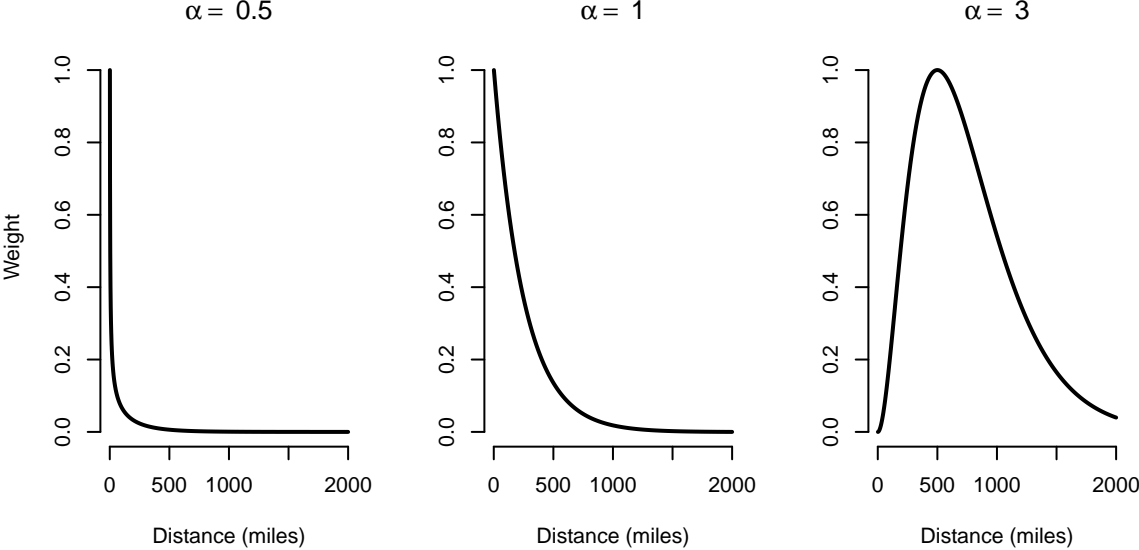
Figure 7: Gamma weight decays over distance for different values of α

I turn to the grid search described above to find values of α and β that maximize model fit to determine what the true shape of the decay over distance looks like. Figure 8 plots the distribution of α values that maximize model fit in terms of R^2. These are associated with a β scale parameter of 300 which was chosen due to the best overall R^2 on average across all values of α.

The mass of the distribution is below 1, with 98% of bootstrapped simulations choosing optimal shape parameters less than 1. The modal and median values are roughly 0.5. These results are consistent with the monotonicity assumption of spatiotropism. Furthermore, the mean and modal α values returned by this approach, combined with the optimal β value of
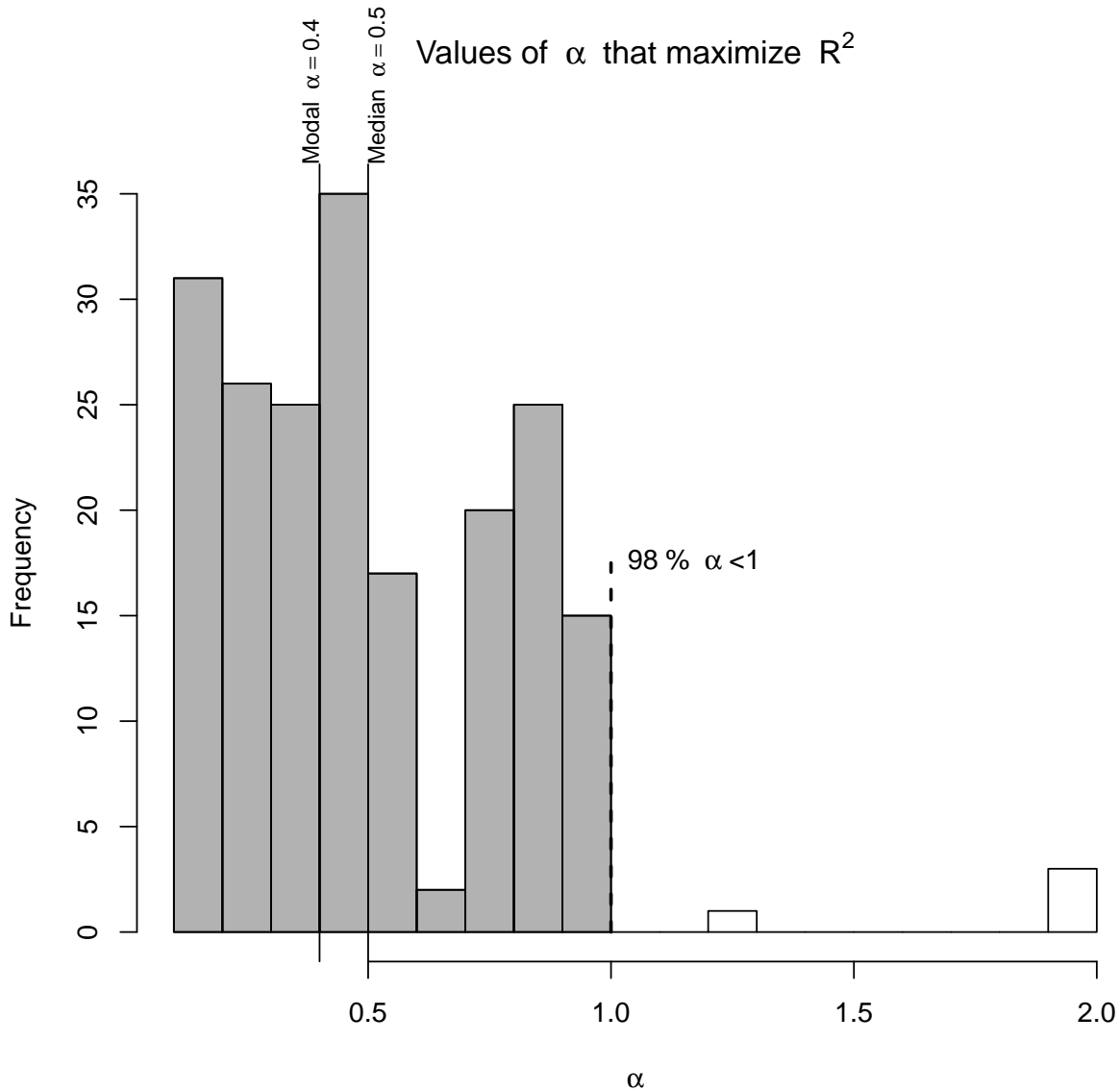
Figure 8: Distribution of α shape parameter, along with median and modal values over 200 bootstrapped simulations. In 98% of bootstrapped simulations, the optimal value of α was less than or equal to 1.

300, suggest that the optimal average distance is between 140 and 150 miles, consistent with the binned approach summarized in Figure 4.

Figure 9 plots the estimated relationship between protectionism and exposure to layoffs across a range of α values, finding the strongest relationship around $\alpha = 1$. Furthermore, for

values of α greater than 1.5, the relationship between trade-related layoffs and protectionism becomes negative. One interpretation of these patterns it that, when people live far from trade-related layoffs, they are more likely to believe free trade is good.
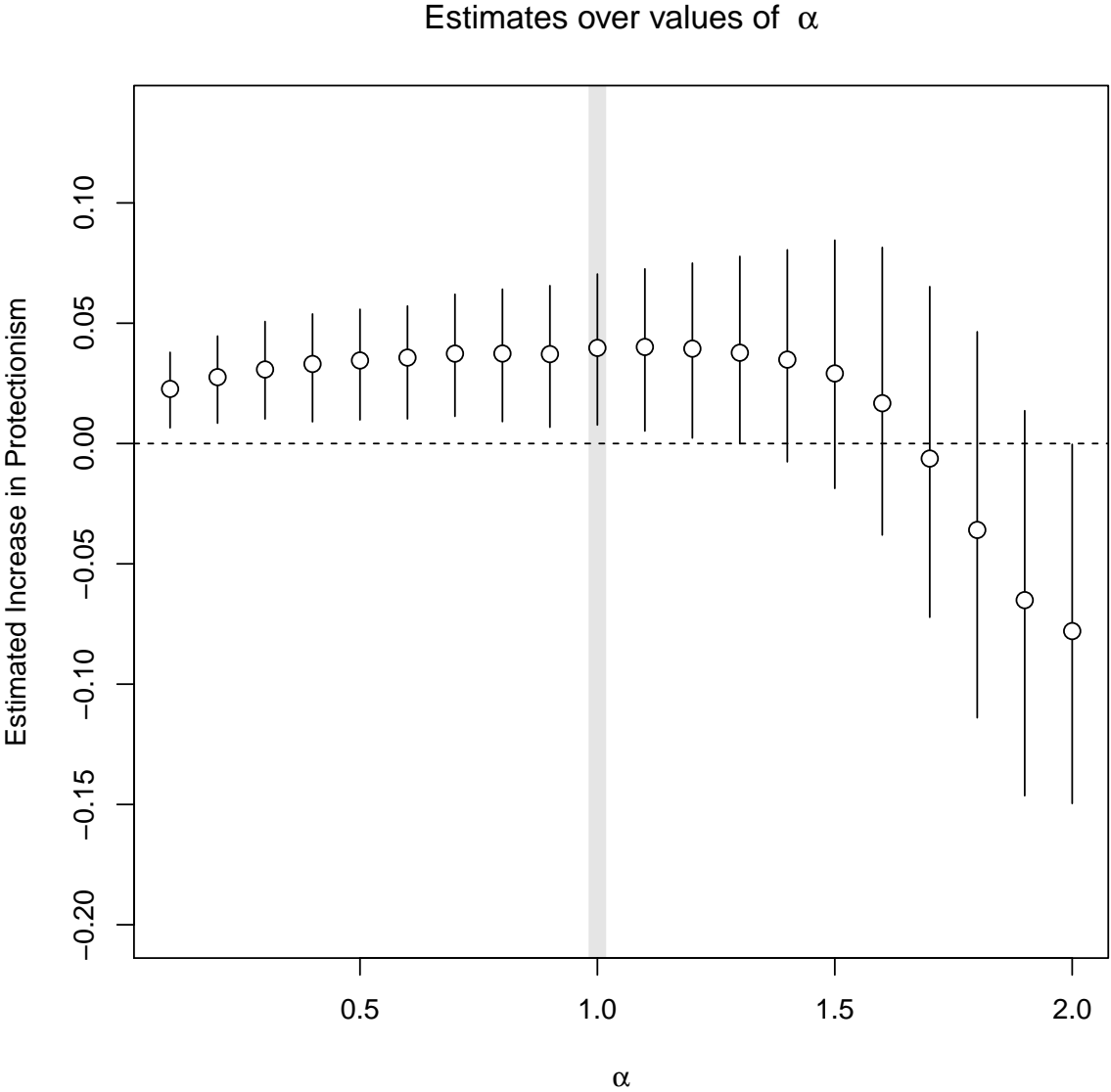
Estimates over values of α

Figure 9: Estimated increase in protectionism for different values of α.

Using the spatiotropic decay method suggests that geographic proximity to trade-related layoffs matters only for the bundled opinions, as illustrated in Figure 10. There is sig-

nificant evidence that the relationship between protectionism, xenophobia, and populism declines monotonically with distance (top row). But these inferential claims disappear for other opinions. The one discrepancy between these results and the preceding analysis is with isolationism, which does not appear to have a monotonic relationship with geographic distance from where layoffs occur. It may be that alternative types of "distance" better connect trade's negative consequences with beliefs about the US role in world affairs. In the Supporting Information, I explore alternative proxies for salience, including media coverage of trade agreements and the visibility of a county's foreign born population.

In sum, these results highlight the extent to which localness matters to how individuals update their political beliefs in response to trade's negative consequences. To emphasize this point, I run a counter-factual simulation in which I estimate America's average opposition to free trade agreements in the absence of trade-related layoffs, as predicted by different methods of aggregating local layoffs. I bootstrap to obtain these results, randomly sampling the data with replacement and estimating models with layoffs aggregated by state, commuting zone, county, 100 mile radius bin, and then with the distance-weighted measures with the α hyperparameter set to 0.4 and 1. I then set the layoffs to be equal to zero in the bootstrapped data, and extract each model's predictions. These comparisons are depicted relative to the observed average over the period of analysis in Figure 11. As illustrated, assigning layoffs to survey respondents using administrative geographic units yields an estimated effect on political beliefs that are less than half the magnitude of using distance weighted layoffs. Put simply, these counterfactuals highlight the degree to which localness matters in assessing the political response to trade-related layoffs in the United States.

Political Behaviors

What do these differences in political beliefs imply for more costly political behaviors, such as voting? And how do politicians' electoral fortunes respond to trade's negative consequences?
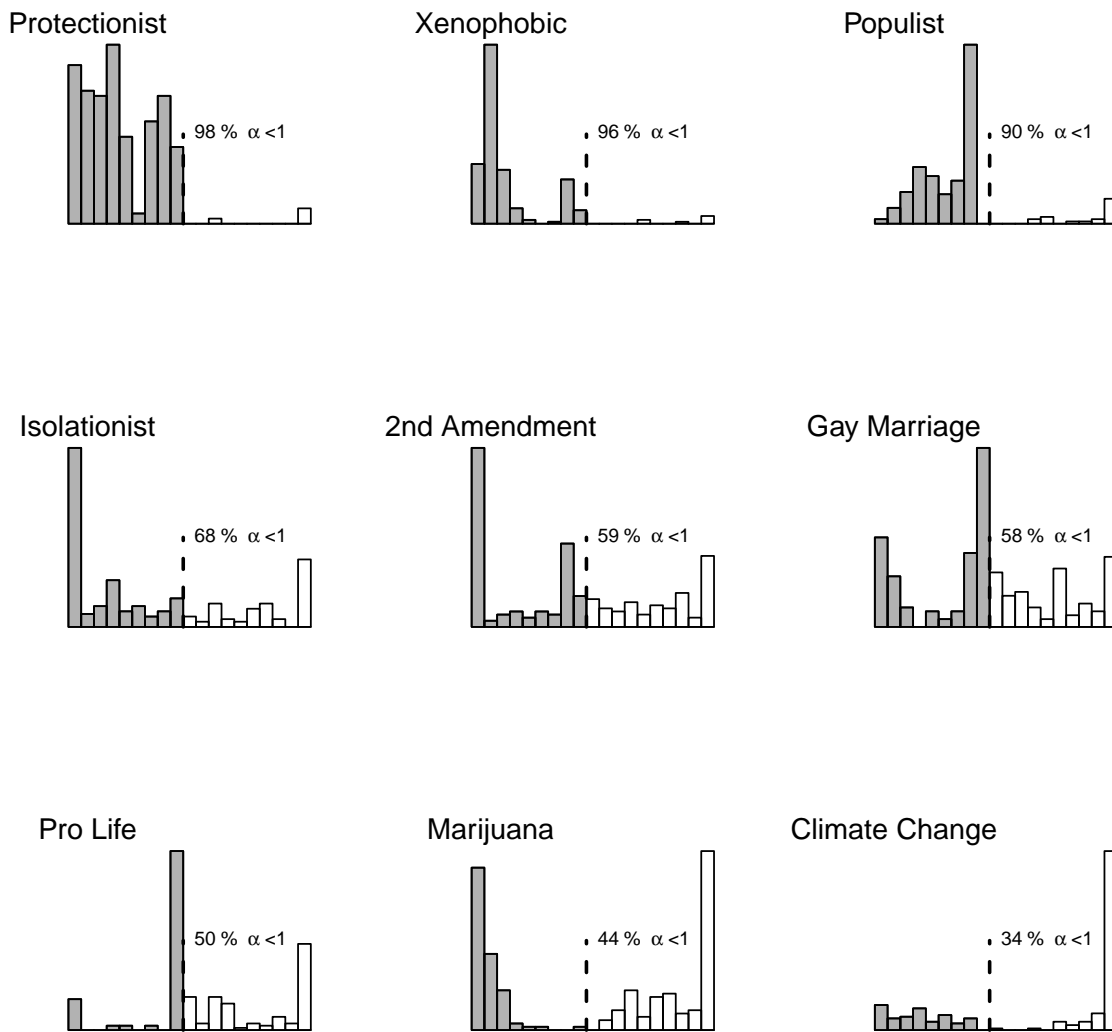
Figure 10: Distribution of α shape parameter over 200 bootstrapped simulations for other political beliefs.

Existing research yields conflicting conclusions. On the one hand, Che et al. (2016) argue that Democrats have benefitted from trade shocks in the United States. On the other hand, there are several papers showing that Republicans, particularly ideologically extreme conservatives, have gained among import-exposed constituents (Autor et al., 2016b,a). Related research

Figure 11: Bootstrapped counter-factual predictions of average opposition to free trade (left panel) and average belief that immigrants are a burden (right panel) were there no trade-related layoffs. X-axes summarize predicted counter-factuals for models using layoffs aggregated at the state, commuting zone, county, 100 mile radius bin, and distance weighted sums ($\alpha \in \{0.4, 0.5, 1\}$).

in Europe finds similar evidence of far-right parties benefitting from trade shocks (Dippel, Gold and Heblich, 2015; Colantone and Stanig, 2018).

In this section, I use county-level vote data for presidents, senators, and governors dating back to 1990 to explore these questions. In addition, I use district-level data on voting outcomes to estimate the ideology of those elected to the House of Representatives as a function of import exposure. Unlike existing research, which relies on a coarse difference-in-differences specification, I apply trajectory balancing (Hazlett and Xu, 2018) that allows me to trace the divergence between exposed and insulated counties and districts following China's accession to the WTO in 2001.

Specifically, I calculate the change in the import penetration measure for every county in the US between 1990 and 2010. I then split the data into treated and control units such that counties where the average import penetration measure exceeds \$1,500 per worker (corresponding to the top quartile of the distribution) are defined as "treated", with treatment activation occurring in December of 2001 when China entered the WTO. I then apply trajectory balancing to match treated and control counties in terms of their pre-treatment outcomes, along with a handful of controls including county population, majority vote shares for Democratic presidential candidates, demographic measures of the county's racial make-up, and economic measures of the unemployment rate and the labor force participation rate.[2]

Chinese accession to the WTO is used as the treatment intervention date since this marks the stabilization of tariff rates on Chinese goods. While Chinese productivity growth began prior to this date, the conferral of Permanent Normal Trade Relations (PNTR) meant that the annual uncertainty over subsequent tariffs disappeared discontinuously. Prior to China's

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[2]This specification is something of a hard test for existing research on these outcomes insofar as a "control" county experiencing \$1,499 of competing imports per worker is likely very similar to a "treated" county experiencing \$1,501 of competing imports per worker. Dropping these threshold counties and instead comparing the top quartile to the bottom 50% yields stronger results across all contexts.

accession to the WTO, U.S. import-competition with Chinese goods was muted as longer-term decisions made by both U.S. and Chinese firms were put off. For example, the decision by a U.S. firm to open a plant in China may have been delayed until the uncertainty over future tariffs was eliminated in 2001, making the long-term investment less risky. Similarly, Chinese firms may have foregone entering the U.S. market until future tariffs were assured (Pierce and Schott, 2016a). The causal identification claim is that (1) differences in local-level import exposure are calculated as a function of changes in Chinese productivity and trade costs that are exogenous to U.S. labor market dynamics and (2) the accession of China to the WTO creates a discontinuous spike in this import competition measure. By combining these two causal arguments, I subject previous research to a robust new specification with tighter identification.

Average treatment effects on the treated (ATTs) are estimated at each year in the post-treatment period, defined as 2002 and later, by comparing the average outcomes in the treated counties to those in the weighted control group. Inference is calculated via boot-strapped simulations.

There are several benefits to this methodology. First, I can exploit the causal arguments of Autor, Dorn and Hanson (2013) by using their instrumented measure of import penetration to define my treated and control counties. Second, I am able to make statements not only about the basic pre- and post-2001 differences in outcomes of interest but also can measure how these differences obtain and decay over time, and how ensuing shocks such as the financial crisis exacerbate them. Finally, the trajectory balancing weights assuage some of the concerns summarized in Goldsmith-Pinkham, Sorkin and Swift (2018) over the reliability of pre-treatment parallel trends.

I apply my data and identification strategy to voting behavior in the United States, find-ing strong evidence of an effect for the party of the incumbent president, albeit one that flips sign after 2008 (see left panel of Figure 12), suggesting that it is not an incumbent effect

per se, but rather a trend that favors republicans. This conclusion is supported in the right panel of Figure 12, with democratic presidential candidates receiving significantly less of the majority vote share among counties in the top quartile of trade exposure. These patterns only manifest at the presidential level, with no such patterns evident among Senators or Governors. Insofar as the Republican party has increasingly become home to anti-establishment movements like the Tea Party and the House Freedom Caucus, these results are similar to the anti-establishment trends seen across Europe.
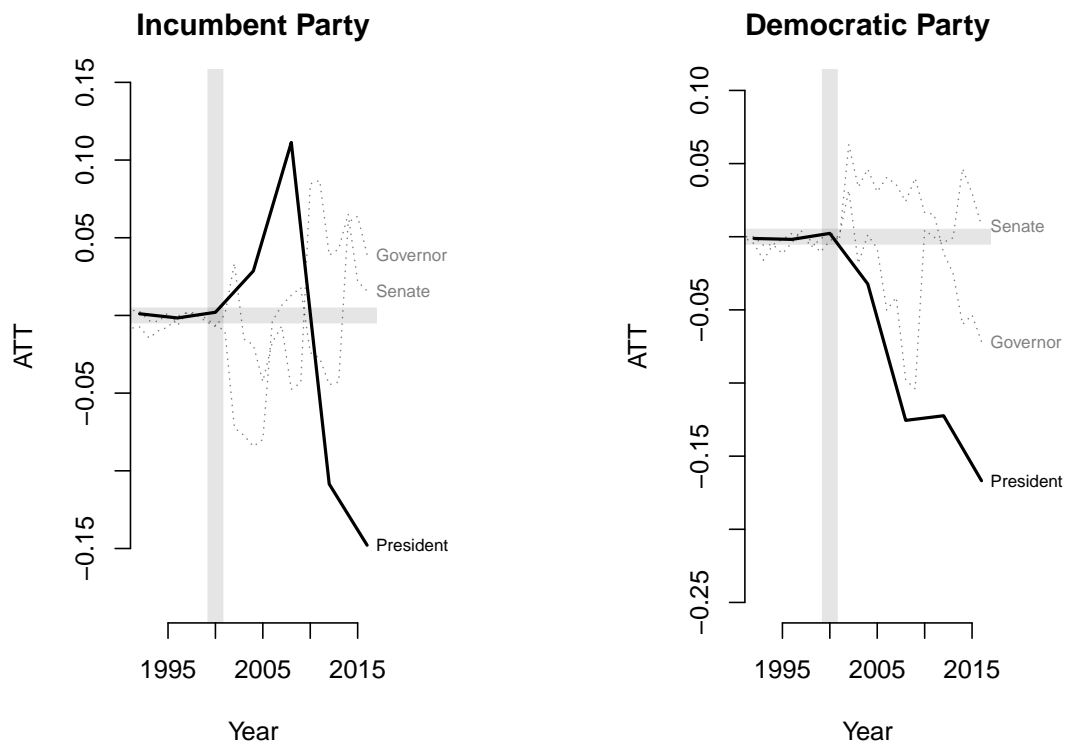

Figure 12: Differences in support for candidates of the incumbent's party between trade-exposed and insulated counties (left panel) and support for Democrats (right panel) by seat.

Data for the House of Representatives are somewhat different. Instead of estimating turnout or partisan vote shares, I regress the ideology of the Member of Congress (MC) on trade exposure using the Nokken-Poole NOMINATE scores that allows ideal points to be compared across sessions of congress (Nokken and Poole, 2004). With the 107th congress

ending just as China joined the WTO, the synthetic control treated unit doesn't begin until 2002 with the start of the 108th congress. Figure 13 plots the ATT estimates for both squared ideology and raw ideology. These measures range from -1 to +1, with negative values representing more liberal representatives and positive values representing conservatives. The squared measure thus captures how extreme members of Congress are, with significant evidence that trade-exposed districts have grown more polarized following China's accession to the WTO, consistent with work by Autor et al. (2016a). The overall effect on raw ideology in the post-accession period is insignificant, although there is suggestive evidence indicating that trade-exposed districts have begun electing more conservative MCs following the financial crisis.

5   Conclusion

Individuals update their political beliefs across a range of topics when exposed to free trade's negative consequences. They grow more protectionist, more xenophobic, and more isolationist. These bundled opinions capture a growing nativism in parts of the United States where free trade's losers are most visible. Furthermore, the null results on other types of political beliefs ranging from global warming to gay marriage to gun control are consistent with a cognitive model of preference formation. Trade-related job loss primes the salience of certain considerations that extend beyond simple free trade policies, including competing foreign workers and other types of internationalist U.S. foreign policy.

In line with existing research on the impact of the trade shock on political behaviors in Europe (Dippel, Gold and Heblich, 2015; Colantone and Stanig, 2018), I find some evidence that voters in trade-exposed counties are more likely to support Republican presidential candidates, although similar patterns do not obtain at the senate or gubernatorial levels. In addition, there is evidence of trade-exposed Congressional Districts supporting more extreme
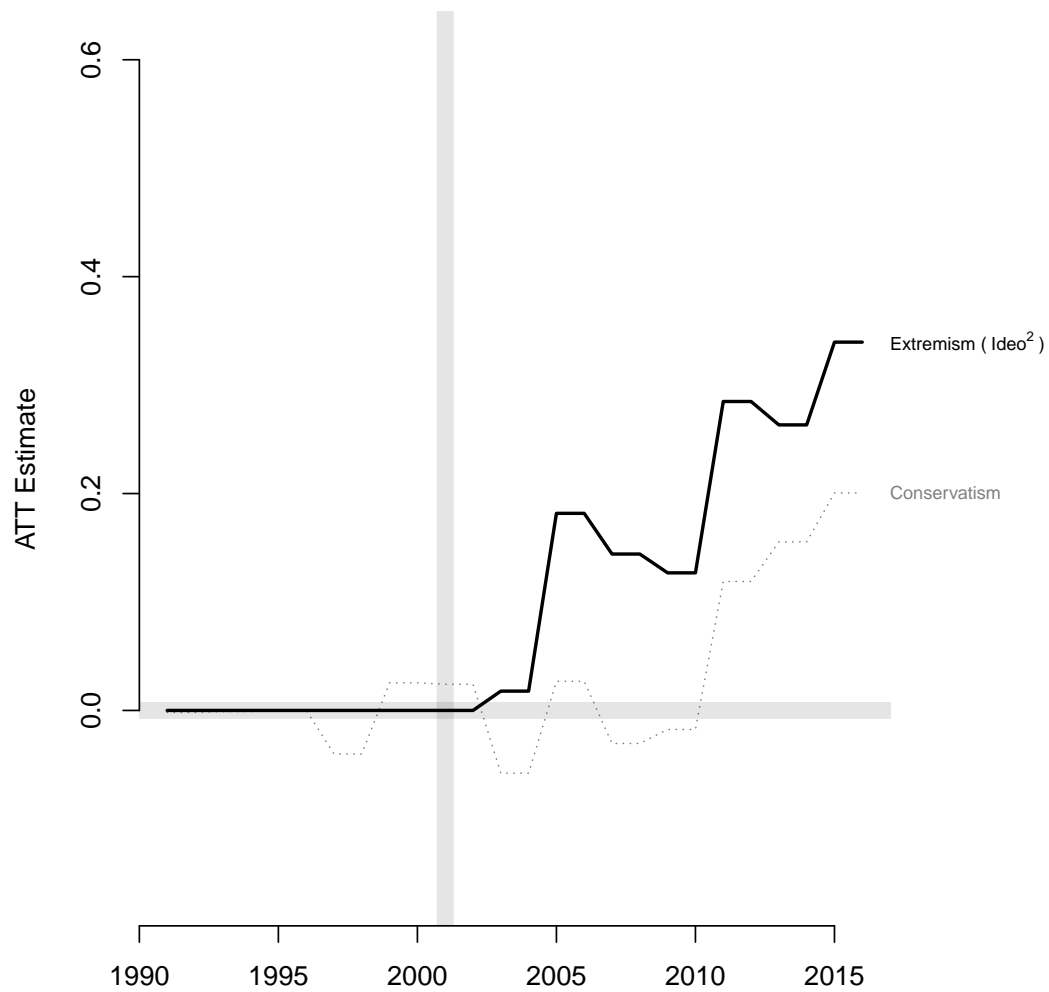
Figure 13: Differences in ideological extremism and conservatism between members of the House of Representatives from trade-exposed and trade-insulated districts.

candidates for the House of Representatives, and suggestive but insignificant evidence of conservative members of the House benefiting after the financial crisis.

In some ways, the GOP's gains in trade-exposed counties is inconsistent with the party's historical support of free trade policies (Karol, 2009). But there are two explanations that help understand these patterns. First, both Democrat and Republican presidents have

pushed free trade legislation, muddying the clear separation of the parties' relative stances on the issue, at least at the level of the president. Second, the bundling of opinions on protectionism, xenophobia, and isolationism is consistent with a more conservative platform across these issues.

This paper has compiled evidence of meaningful within-country variation in political beliefs not only on free trade specifically, but also across a range of bundled opinions. These results suggest that localness matters to trade preferences in a way that existing research has largely missed, and that the particular geographic quality of this localness is itself prognostic of the microfoundations of the political economy of trade. These findings clarify and expand on several results in published work. First, my results suggest that the sociotropism of trade preferences highlighted in Mansfield and Mutz (2009) has a local character to it. Second, the link between ethnocentrism and isolationism found in Mansfield and Mutz (2009) is also connected to proximity to trade-related job loss, suggesting these bundled opinions are a function of more than simply education. Third, the importance of geographic distance to trade-related job loss redefines who we think of when we think about trade's losers. And this point expands our definition of free trade's losers to include a much broader potential coalition with real political power. Fourth and finally, the packaging of trade preferences with other opinions on immigrants and globalization explains why the electoral rewards have predominantly benefited GOP politicians, despite that party's historically liberal position on free trade.

Together, these results describe a background context for understanding broader political trends, not the root cause of them. Nevertheless, society's collective decision to emphasize one narrative over another rises out of a background context. The decision to reify a mythical happier past, the decision to reject or ignore narratives of progress and justice, and the decision to accommodate leadership that shreds valuable norms is a complicated decision. But it is a decision that is facilitated by resentment and hardship, one source of which is

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increasing import competition that disproportionately affects certain areas of the country.

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Supporting Information

A.1: Data Descriptions

I combine a variety of data sources to construct my final dataset which nests individual survey respondents within counties / commuting zones where I aggregate the total number of layoffs. I itemize my sources below, along with a brief description of the data and link (if applicable) to download it.

1) **Survey Data:** My main outcome of interest is a randomly sampled survey respondent's opinion on free trade, immigration, and globalization. I obtained these data from the Pew Research Center [http://www.people-press.org/datasets/].

   In order to connect survey respondents with firm-level layoffs, I required as accurate a measure of their residence as possible. I used zip code centroids to assign latitude and longitude coordinates to each survey respondent and then measured the distance in miles between each respondent and all firms that laid off workers in the preceding year. The publicly available Pew Research Center data prior to 2009 includes zip codes. For more recent surveys, I obtained geocoded data via special request. I am not able to share these more recent surveys in their raw form without authorization from the Pew Research Center.

2) **Layoff Data:** My main treatment variable is the estimated number of workers laid off due to trade which I obtain from applications to the Trade Adjustment Assistance branch of the Department of Labor. A publicly available subset of these data are available from Public Citizen (Public Citizen, 2017) at [https://www.citizen.org/our-work/globalization-and-trade/trade-adjustment-assistance-taa-database-documentation-0]. Alternatively, researchers can download TAA applications directly from the Department of Labor's website at [https://www.doleta.gov/tradeact/taa/taa_search_form.cfm].

3) **Instrument Data:** I follow Autor, Dorn and Hanson (2013) in constructing the import penetration instrument and combine two different data sources. To calculate the share of each county employed in a particular industry, I use the County Business Patterns (CBP) data which records employment by 4-digit SIC code or 6-digit NAICS code each year for all counties and establishment sizes. These data can be found on the Census website at https://www.census.gov/programs-surveys/cbp/data.html. I run David Dorn's imputation code to account for missing data at smaller levels of geography, which can be found on his website at http://www.ddorn.net/data.htm.

   To calculate the change in imports from China in the associated product category, I download trade data from USITC which can be access at https://dataweb.usitc.gov/.

4) **County Controls:** In addition to the individual-level controls which are contained in the Pew Research Center surveys, I also control for a variety of county-level (or commuting zone level) factors, including:

- the local unemployment rate which can be found at
  https://download.bls.gov/pub/time.series/la/

- local government transfers which can be found at
  https://www.census.gov/govs/local/

- county-level income data and employment data which can be found at
  https://www.bls.gov/bls/proghome.htm#employment

- county-level demographic data which can be downloaded from
  https://data2.nhgis.org/main

- county-level voting data which can be downloaded from
  http://library.cqpress.com/elections/download-data.php

- FEC contribution data which can be downloaded in raw form from
  https://classic.fec.gov/finance/disclosure/ftp_download.shtml
  or in a more organized format from
  https://data.stanford.edu/dime

Summary statistics of the main variables are presented in Table 2.

Table 2: Summary Statistics

Individual-Level Variables				County-Level Variables			
Outcome	*N*	*Mean*	*SD*	*Treatment*	*N*	*Mean*	*SD*
Anti Free Trade	31,761	0.37	(0.48)	Total Layoffs (pc)	65,044	0.64	(1.90)
Anti Immigrants	35,846	0.37	(0.48)	Manuf. Layoffs (pc)	65,044	0.55	(1.82)
Anti Globalization	34,261	0.45	(0.50)	Non-MF Layoffs (pc)	65,044	0.09	(0.47)
Age	64,377	50.11	(17.97)	Unempl. Ins. (% Tot)	65,039	2.77	(1.71)
Less Than HS	65,008	0.08	(0.27)	Business Trans. (% Tot)	65,039	1.40	(0.87)
High School	65,008	0.27	(0.44)	Net Earnings (pc)	65,039	27.98	(20.73)
Some College	65,008	0.28	(0.45)	Proprieter's Inc. (pc)	65,039	3.28	(2.74)
College Up	65,008	0.33	(0.47)	Empl. in Manuf. (% Tot)	65,039	10.76	(7.33)
White	64,933	0.75	(0.43)	Empl. in Svcs. (% Tot)	65,039	47.12	(24.31)
Black	64,933	0.07	(0.26)	Unemp. Rate	65,039	5.98	(2.24)
Hispanic	64,933	0.08	(0.27)	GOP Voteshare	64,942	0.49	(0.13)
Asian	64,933	0.03	(0.18)	DEM Voteshare	64,942	0.51	(0.13)
Democrat	65,381	0.48	(0.50)	GOP FEC Contribs.	65,044	0.50	(0.25)
Republican	65,381	0.41	(0.49)	FEC Same Dist.	65,044	0.29	(0.24)
Liberal	62,083	0.20	(0.40)	% Black	65,044	12.18	(13.21)
Conservative	62,083	0.38	(0.49)	% White	65,044	68.88	(20.85)
Low Income	56,268	0.32	(0.47)	% Hispanic	65,044	12.74	(14.53)
Middle Income	56,268	0.40	(0.49)	% Adult	65,044	54.61	(3.37)
High Income	56,268	0.27	(0.45)	% Voting Age	65,044	74.28	(2.95)

Notes: Left column summarizes data recorded at the individual survey respondent level. Right column summarizes data recorded at the county level.

Salience

Spatiotropism is fundamentally a theory that predicts the relationship between political beliefs and informational signals decays over geographic distance because the *salience* of the signal is inversely related to geographic distance. But there are other ways in which a signal's salience can be boosted besides geographic distance. In the following section, I examine two of these alternative channels on beliefs about free trade and immigrants. These channels are news media coverage of trade agreements and the visibility of immigrants in a respondent's county.

I use interaction regressions to estimate whether issue salience along these two dimensions is an important moderator for my results. For news media, I focus on the coverage of national outlets over the prior year to avoid post-treatment bias, formalized as:

$$FT_{ict} = \alpha_{c,t-1} + \beta_1 \hat{L}_{c,t-1} + \beta_2 \sum_{m=1}^{6} News_{US,t-m} + \beta_3 \hat{L} \times News + \beta_4 \mathbf{X}_i + \beta_5 \mathbf{C}_{c,t-2} + \epsilon_{ict} \quad (5)$$

where FT_{ict} is the opinion on whether free trade has been bad for the United States for individual i living in county c at time t and $\sum_{m=1}^{6} News_{US,t-m}$ is the normalized sum of national news stories about free trade over the preceding six months. Drawing on Hopkins (2010), I measure the number of mentions of "free trade", "foreign trade", "international trade", and "trade agreement" in the largest newspapers and television stations in the United States (Figure 14). I sum all such mentions by month and normalize the measure by dividing by the average number of mentions over the entire period of my analysis.

As illustrated in Figure 15, greater national coverage of free trade in the news media predicts a stronger protectionist response to trade-related layoffs. As illustrated in the left-panel of the figure, the protectionism increases by only 2 percentage points in response to trade-related layoffs when there has been no news coverage in the preceding 6 months. But this reaction doubles when the layoffs are paired with the most media coverage of free trade. In the right-panel of Figure 15, I vary the period of time over which I aggregate news stories, finding that the strongest moderation results are within 3-6 months.

The findings above combing newspaper and television coverage across platforms to create a single measure of media coverage. In Figure 16, I disaggregate these sources and explore how trade salience varies not just by temporal intensity but also by which outlet is reporting on it.

As illustrated, cable news reporting increases the negative response to trade related layoffs across all periods while network channels like NBC actually attenuate the response up to three months preceding the interview date. These patterns comport with a stylized understanding of cable news as a more sensationalist 24-hour platform. Similar differences can be seen when comparing the New York Times to the Wall Street Journal (bottom panel). Coverage in the week directly preceding the Pew survey interview produces opposite salience effects, with WSJ coverage exacerbating the anti-free trade responses while NYT coverage attenuates them.

Turning to the salience of immigrants, I again follow Hopkins (2010) by using data on the
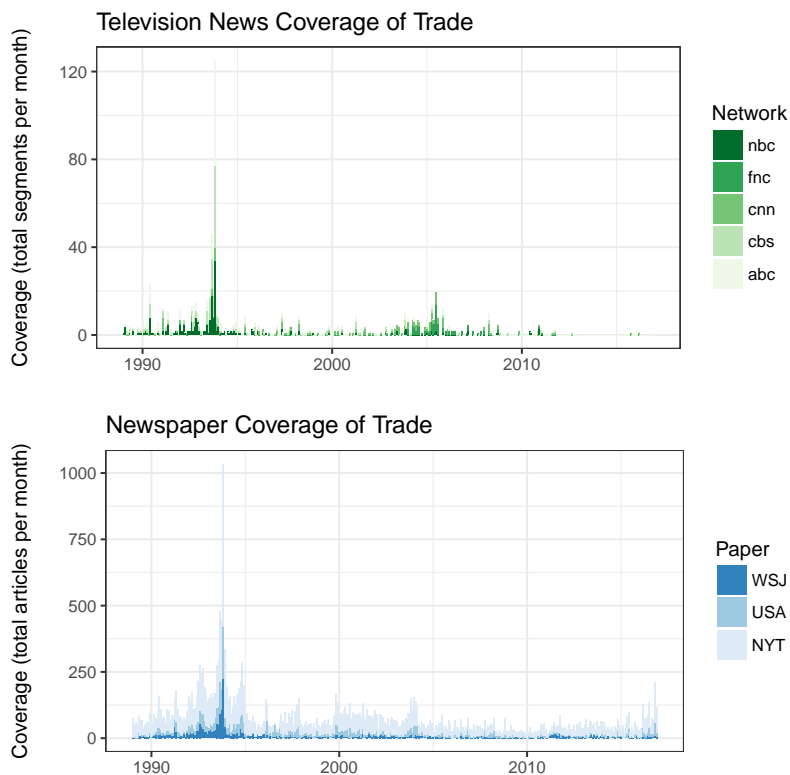
Figure 14: Monthly media coverage of free trade by national television broadcasters (top panel) and national print media (bottom panel).

share of each county's population that was foreign born in the preceding decennial census and the change in this share over the ensuing decade. To capture both attributes, I create a dummy that is equal to 1 if the county was in the lowest quartile for foreign born residents ten years prior to the survey and was in the top 75% of counties whose foreign born population increased over the following decade, and zero otherwise (Hopkins, 2010).[3] Substantively, these thresholds correspond to counties which had a less than 2% of their population foreign born in the preceding census and which grew by more than 10%. This measure identifies immigrant salience by identifying those areas in which immigrants have been traditionally rare but have grown rapidly. Figure 17 summarizes the growth in the foreign born population by county between 1990 and 2010.

I regress opinions on immigrants measured via a Likert scale (-2 corresponding to most strongly agreeing that immigrants strengthen the US, +2 corresponding to most strongly agreeing that immigrants are a burden on the US) on this dummy interacted with instru-

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[3]These results are robust to choosing different percentiles in the construction of the dummy.

Media Coverage of Free Trade: **Interaction Effects by Recency:**
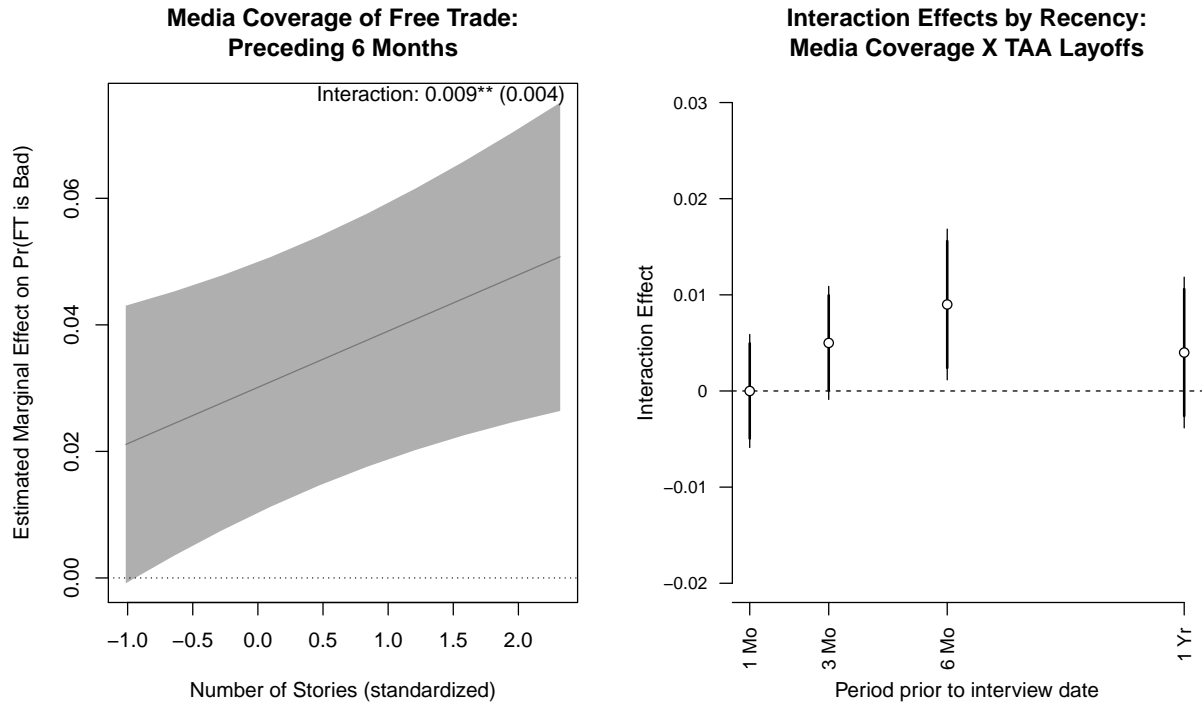**Preceding 6 Months** **Media Coverage X TAA Layoffs**

Figure 15: *Left Plot:* Marginal effects plot of opinion response to trade-related job loss (y-axis) conditional on the salience of international trade in the news (standardized values on the x-axis). *Right Plot:* Interaction coefficients and standard errors (y-axis) estimated using different windows of time preceding the interview date to sum up news coverage.

mented trade-related layoffs from the following specification:

$$Imm_{ict} = \alpha_{c,t-1} + \beta_1 \hat{L}_{c,t-1} + \beta_2 \mathbb{1}FB_c + \beta_3 \hat{L}_{c,t-1} \times \mathbb{1}FB_c + \beta_4 \mathbf{X}_i + \beta_5 \mathbf{C}_{c,t-2} + \epsilon_{ict} \quad (6)$$

where Imm is the opinion on immigrants and $\mathbb{1}FB_c$ is the dummy described above. Again, county-level covariates contained in $\mathbf{C}$ are twice lagged to put them prior to the layoffs and thus avoiding post-treatment bias. As illustrated in Figure 18, respondents living in counties with relatively low shares of foreign born residents ten years ago who saw an increase in their foreign-born population are more likely to adopt anti-immigrant views when confronted with trade-related layoffs. The right-panel of Figure 18 breaks out these effects by nationality of the foreign born population, suggesting that the effects are strongest for individuals confronted with increased foreign born populations from Oceania, the Americas, and Asia.

These results suggest that the opinion responses to trade shocks are moderated by how salient the issues are. When international trade is in the news, individuals are likely to respond to trade-related job losses with more negative views of free trade. And individuals that have seen a rapid increase in foreign born neighbors from relatively low starting populations are more likely to connect trade-related job losses with negative opinions of immigrants,
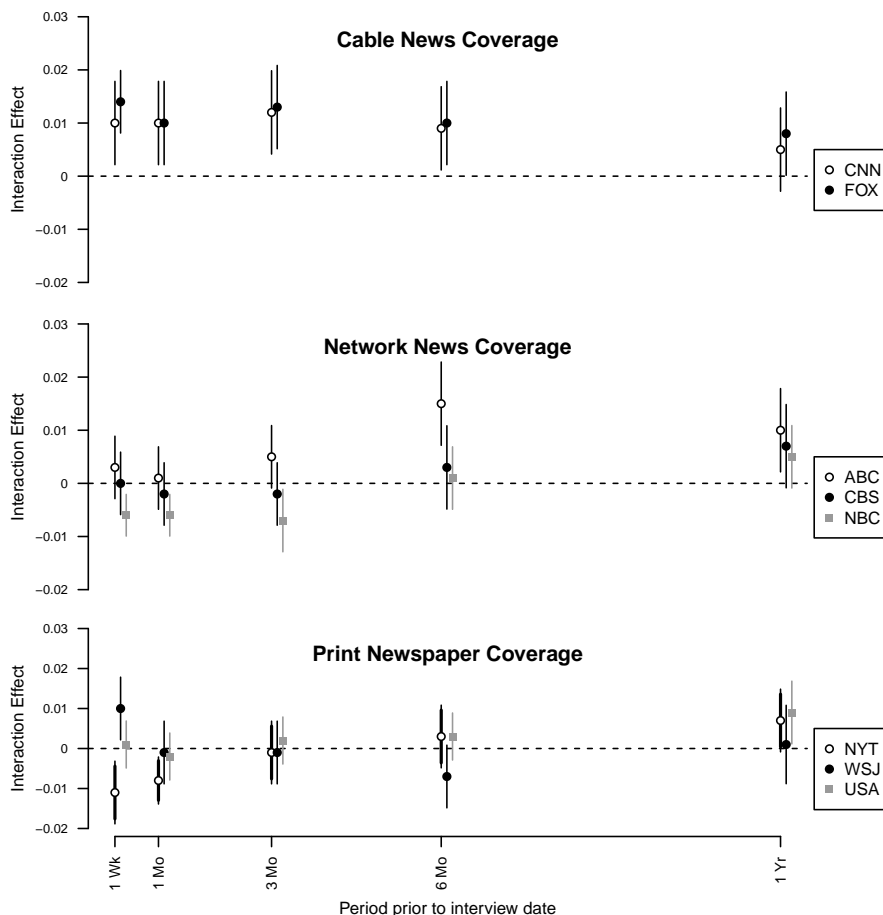
Figure 16: Effect of media coverage of free trade in relationship between trade shocks and political beliefs, disaggregated by media source.

particularly when their new foreign born neighbors are from Oceania, Mexico, and Asia.

A.2: Robustness Checks

My findings may be spurious or falsely significant if my identifying assumptions are incorrect. In the following sections, I subject the main results to a series of robustness tests and placebo checks.

A.2.2: Egotropism Tests

The main findings suggest that individuals closer to firms that have experienced layoffs are more likely to hold negative views of free trade policy. I argue that the patterns over distance from shuttered firms is consistent with a spatiotropic response. However, by itself, this analysis does not preclude a role for egotropism. In the following section, I subject my data to two additional tests to attempt to determine how much of the effect is egotropic.

The first test replaces the outcome measure asking about the impact of free trade on the US with a question about whether free trade has been good or bad for the individual "personally". As illustrated in Figure 19, there is some evidence that individuals living in
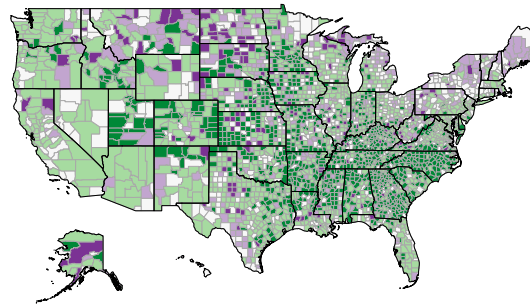
Change in FB Population: 1990 – 2000
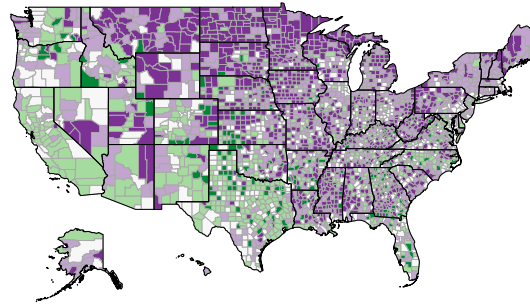
Δ Foreign Born Population

Change in FB Population: 2000 – 2010
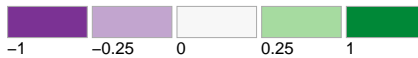
Δ Foreign Born Population

Figure 17: Change in foreign born population by county between 1990 and 2000 (top panel) and 2000 and 2010 (bottom panel).

adversely affected areas believe that free trade has been bad for them personally. However, it is unclear whether this response reflects the individual's economic outcomes due to trade or rather whether they simply connect the localized consequences with their personal well-being.

The second test subsets the available data to focus on those with low income and those who are unemployed (Figure 20). As these respondents are most likely to be those who lose their jobs due to trade, an egotropic response should manifest as stronger effects. However, these estimates are not statistically significantly different from the overall results, despite being more noisily estimated. Furthermore, it is not necessarily the case that the unemployed and low income survey respondents are unemployed and poor because of trade or due to some other circumstance. As such, I turn to a different approach for estimating the localness of the spatiotropic concerns.

A.2.3: Specification Robustness

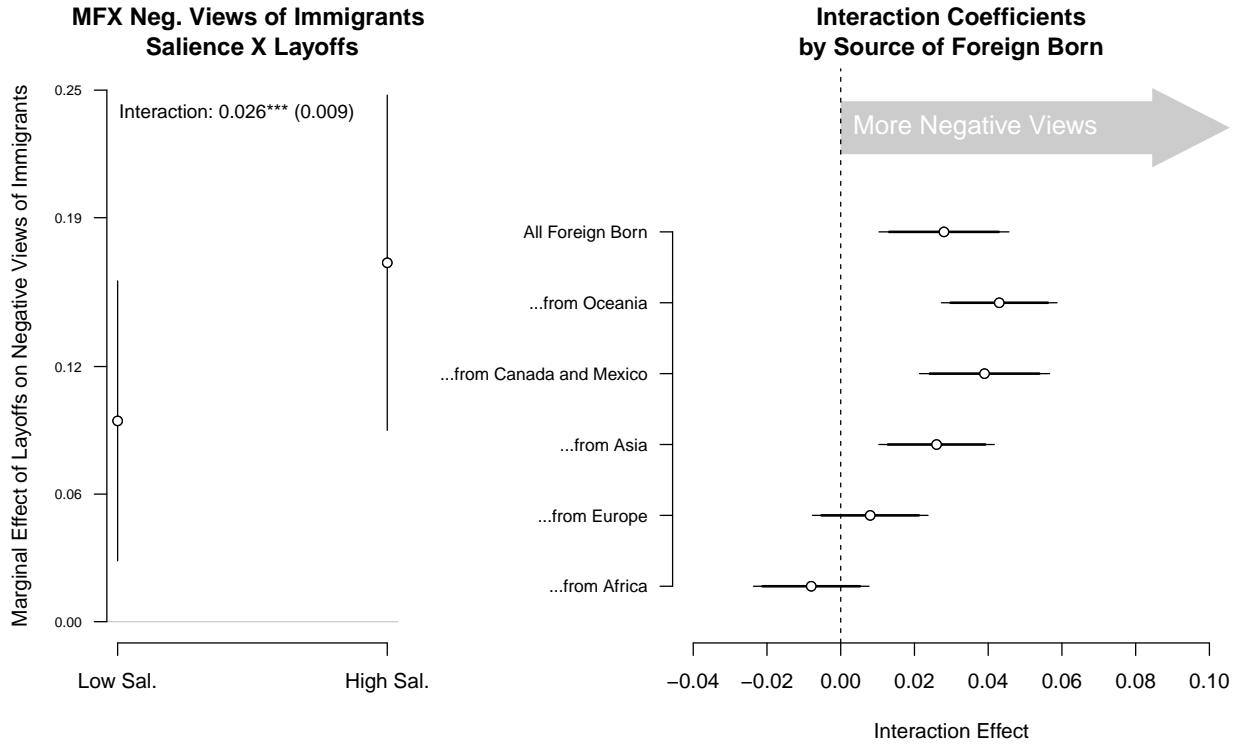I subject my findings to a variety of robustness checks, starting with alternative measures

Figure 18: *Left Plot:* Marginal effects plot of opinion response to trade-related job loss (y-axis) conditional on the salience of immigrants as proxied with the change in the foreign born population in the respondent's county relative to the share of the county's population in the preceding decade. *Right Plot:* Interaction coefficients and standard errors (x-axis) for different types of foreign populations.

of the treatment measure of layoffs. TAA applications contain information on industry of in which those affected worked, the certification status of the Department of Labor's review of the application, the group responsible for submitting the application, and the stated reason for the layoffs. While the main findings use all reported layoffs, I confirm the robustness of different measures of the layoffs in Figure 21.

As illustrated, the main results are robust to most divisions of the TAA data. And the layoffs that do not reproduce the main result are largely intuitive. Specifically, TAA applications filed by workers (those whose livelihoods are directly affected) support the main findings while those filed by non-workers (unions and state officials) do not. Also intuitive is the difference in layoffs in production versus service tasks where employees in the former category are likely less mobile and therefore more negatively affected by trade-related layoffs.

The Department of Labor's certification process both determines whether an application is credibly connected with trade and categorizes the type of trade shock that is used to justify the certification. Overall, the strongest effects are for certified layoffs, supporting the assumption that Department of Labor certifiers are able to differentiate between valid and invalid applications. The strongest relationships obtain when using only layoffs categorized
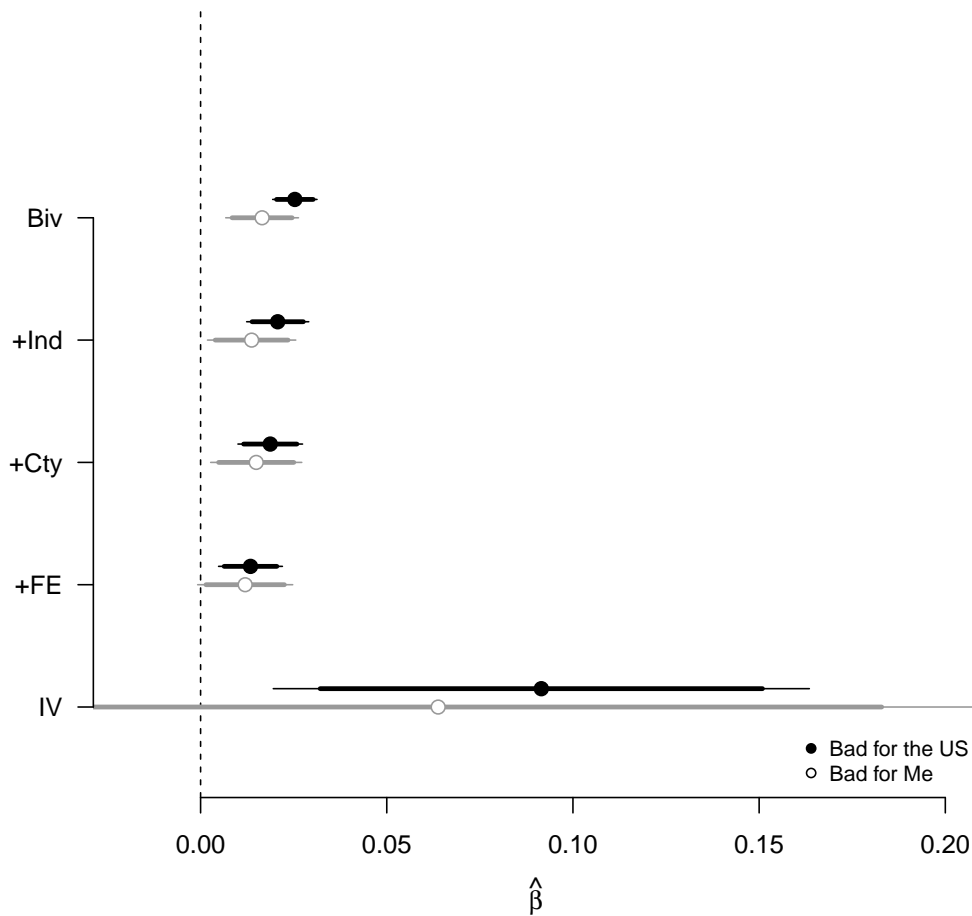
**Trade is Bad for the US
Or for Me Personally**

Figure 19: Regression coefficients for the impact of trade-related job loss on whether the respondent believes that free trade has been bad for the country (black dots) or for them personally (white dots). Thin bars contain 90% confidence intervals, thick bars contain 95% confidence intervals. Specifications listed on y-axis.

as owing to import competition or changes in upstream suppliers. Changes in downstream demand for intermediate goods has no significant relationship with opinions on trade, nor do shifts in production.

However, there is also a noisy but positive coefficient on denied TAA applications. If we view TAA applications only as signals of economic conditions, this positive coefficient is perplexing. However, when we consider that these applications are a form of adversely affected individuals seeking governmental support, the picture becomes clearer. The effect is even stronger when we explore treatment heterogeneity using the 2SLS specification (Figure

Change in Opposition to Free Trade:
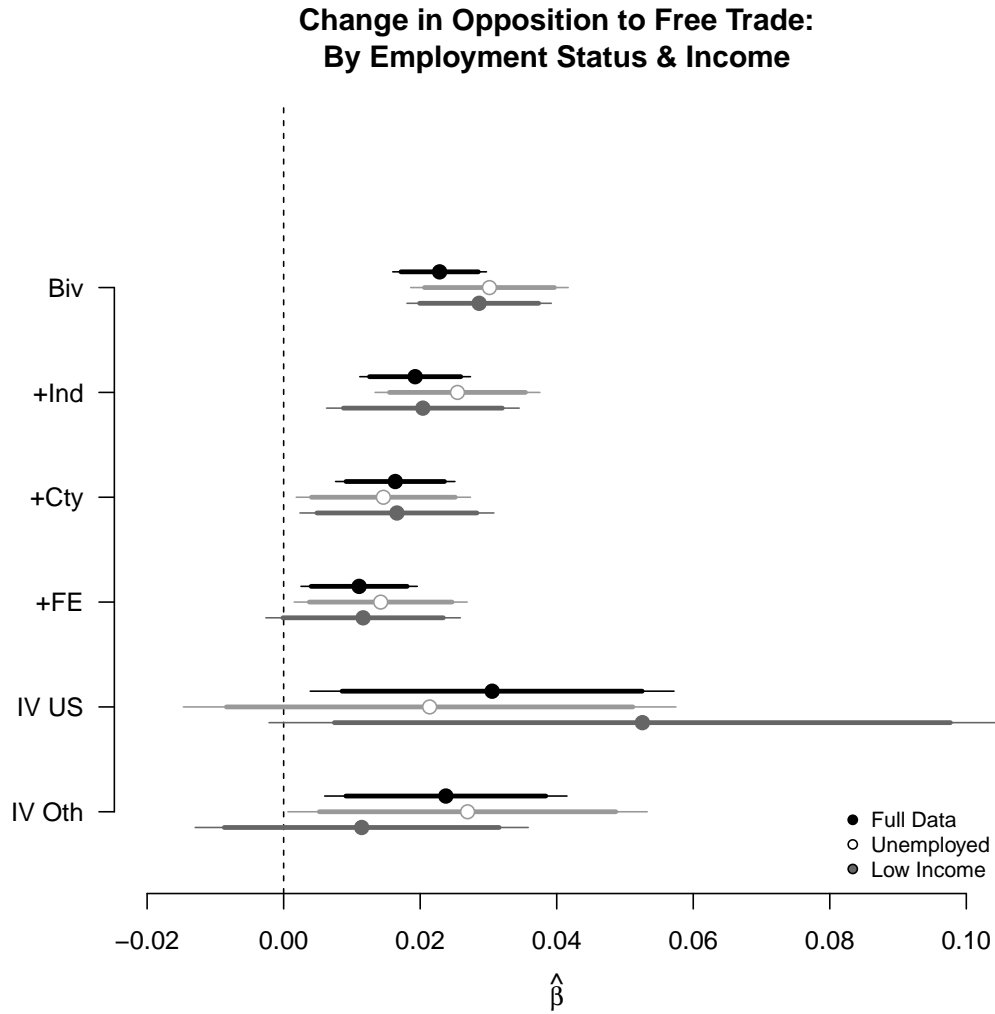**By Employment Status & Income**

Figure 20: Regression coefficients for the impact of trade-related job loss on opposition to free trade for employed (black circles) and unemployed (white circles) respondents. Thin bars contain 90% confidence intervals, thick bars contain 95% confidence intervals. Specifications listed on y-axis.

22). Here we see that the partial applications are actually the strongest, reflecting the reality that these are likely adversely affected workers who were denied the full supplemental assistance.

The main findings use a linear approximation to facilitate interpretation. However, since the outcome variables of interest are binary, I confirm the robustness of the main results to using logistic regressions. As illustrated in Table 3, the main findings hold when replacing a linear approximation with a logistic regression.

In my main analysis, I use state and date fixed effects to control for any unobserved
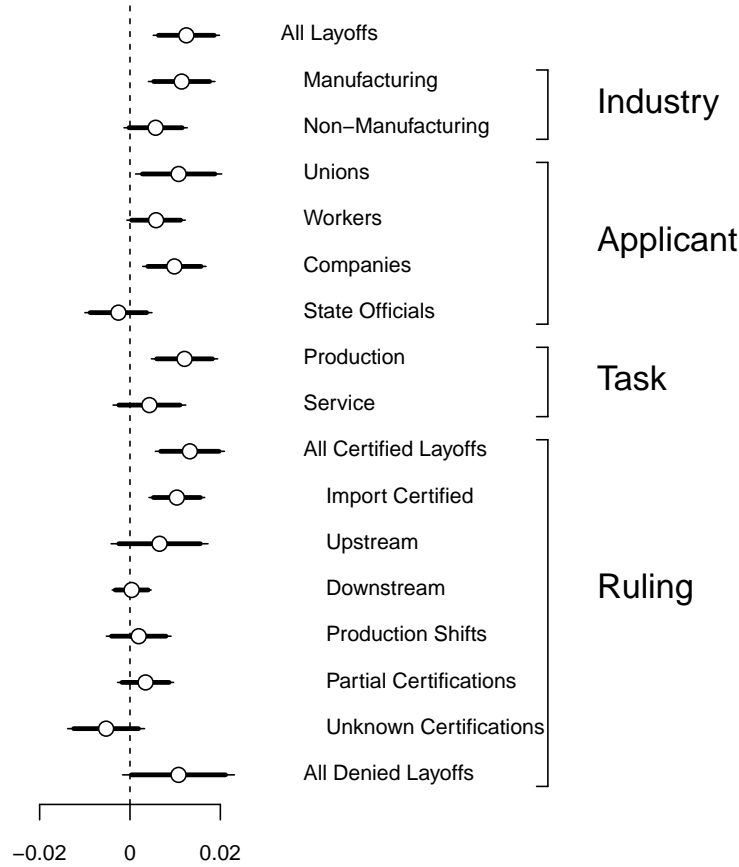
Figure 21: Treatment robustness by type of TAA application. 95% confidence intervals indicated with thin bars, 90% confidence intervals indicated with thick bars.

confounds that don't vary along these dimensions. However, the nature of my data suggest a different model described in Gelman and Hill (2006): multilevel or "mixed effects" models. Specifically, my unit of observation is the individual survey respondent who is nested within a county (or commuting zone) at which I posit that the treatment of trade shocks is realized. A multilevel model allows me to control for correlated random effects that are experienced at different levels. Specifically, I can control for random effects at the level of the county without losing unsustainable degrees of freedom. The specification can be written as:

$$y_{ict} \sim logit(\alpha_{c,t-1} + \beta_1 L_{c,t-1} + \beta_2 \mathbf{X}_i, \sigma_y^2); \quad \text{where} \quad \alpha_{c,t-1} \sim N(\gamma_0 + \gamma_1 \mathbf{C}_c, \sigma_\alpha^2) \qquad (7)$$

where L represents layoffs, y is the individual's response to the survey question regarding whether free trade has been good or bad for the United States, $\mathbf{X}$ is a vector of individual-level controls, and $\mathbf{C}$ is a vector of county-level (or commuting zone-level) controls. Individuals i are nested within both counties c and time periods t.
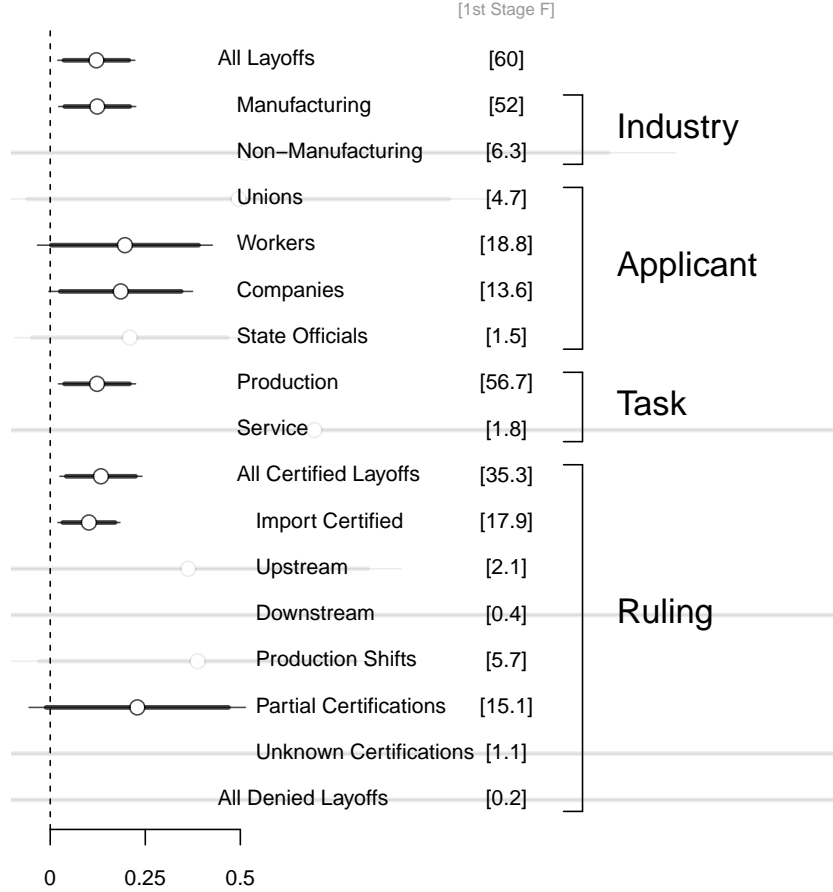
Figure 22: Treatment robustness by type of TAA application using 2SLS with the Chinese import instrument. 95% confidence intervals indicated with thin bars, 90% confidence intervals indicated with thick bars.

Figure 23 plots the coefficients estimated using multilevel models that include random effects for geography and date, aggregating layoffs at both the level of the county (black bars and solid points) and the commuting zone (gray bars and hollow points). As illustrated, the coefficients are substantively similar to those summarized in the main results and are even more significant across all specifications.

A.2.4: Alternative Economic Shocks

The main results use trade-related layoffs as recorded by the TAA as the main treatment of interest. The motivation to do so is two-fold. First, the TAA data is geocoded down to the firm address, allow for more sophisticated treatment assignment while accounting for potential SUTVA violations. Second, the TAA data represent layoffs that those who were adversely affected *recognized* as occurring due to trade. Other measures of economic shocks (i.e., unemployment rates, GDP per capita, etc.) must rely on one of several competing economic models of trade's winners and losers in order to connect these coarser measures

Table 3: Agreement that "free trade has been bad for the US" predicted by trade-related layoffs

	Biv. (1)	+Ind. Ctrls (2)	+Cty Ctrls (3)	+RE (4)	2SLS (5)
Layoffs (% of pop.)	0.101*** (0.012)	0.091*** (0.016)	0.073*** (0.015)	0.057*** (0.016)	0.045** (0.016)
Age (18 to 30)		−0.245*** (0.021)	−0.237*** (0.021)	−0.243*** (0.022)	−0.226*** (0.020)
Age (31 to 40)		−0.030 (0.018)	−0.025 (0.018)	−0.032† (0.019)	−0.032† (0.019)
Age (41 to 50)		0.078*** (0.018)	0.082*** (0.018)	0.080*** (0.019)	0.082*** (0.019)
Age (51 to 65)		0.151*** (0.019)	0.146*** (0.019)	0.145*** (0.019)	0.148*** (0.020)
Female		−0.217*** (0.015)	−0.220*** (0.015)	−0.224*** (0.016)	−0.224*** (0.016)
White		−0.022 (0.025)	−0.046† (0.026)	−0.035 (0.027)	−0.034 (0.026)
Black		−0.039* (0.019)	−0.041* (0.020)	−0.029 (0.021)	−0.031 (0.022)
Hispanic		−0.143*** (0.023)	−0.103*** (0.023)	−0.097*** (0.024)	−0.090*** (0.022)
< HS		0.045* (0.019)	0.030 (0.019)	0.031 (0.019)	0.028 (0.017)
HS Grad		0.162*** (0.018)	0.145*** (0.018)	0.153*** (0.019)	0.151*** (0.018)
Some College		0.140*** (0.017)	0.130*** (0.017)	0.130*** (0.018)	0.132*** (0.018)
Democrat		0.083*** (0.025)	0.088*** (0.025)	0.083** (0.026)	0.084** (0.026)
Independent		0.083*** (0.023)	0.087*** (0.023)	0.098*** (0.024)	0.071*** (0.017)
Pres Vote GOP		0.083*** (0.024)	0.079** (0.024)	0.073** (0.025)	0.074** (0.025)
Liberal		−0.008 (0.019)	0.007 (0.019)	0.009 (0.019)	0.009 (0.020)
Moderate		−0.037* (0.018)	−0.031† (0.018)	−0.029 (0.018)	−0.029 (0.018)
Low Income		0.076*** (0.021)	0.036† (0.021)	0.025 (0.022)	0.024 (0.021)
Middle Income		0.117*** (0.018)	0.093*** (0.019)	0.088*** (0.019)	0.088*** (0.019)
% Black (county)			−0.002 (0.019)	−0.020 (0.022)	−0.020 (0.022)
% Hispanic (county)			−0.047† (0.029)	−0.052 (0.035)	−0.050 (0.034)
% Adult (county)			0.026 (0.022)	0.021 (0.027)	0.019 (0.027)
% Female (county)			−0.001 (0.017)	0.004 (0.019)	0.003 (0.019)
% Foreign Born (county)			−0.098** (0.033)	−0.124** (0.044)	−0.119** (0.043)
FEC pc (county)			−0.044 (0.029)	−0.023 (0.025)	−0.025 (0.027)
FEC % local (county)			0.034* (0.016)	0.036* (0.017)	0.036* (0.017)
Pres Vote GOP (county)			0.065** (0.021)	0.043† (0.026)	0.043† (0.025)
Welfare Transfers (county)			0.017 (0.037)	0.019 (0.043)	0.018 (0.040)
Medical Transfers (county)			0.151*** (0.031)	0.098* (0.039)	0.094* (0.038)
Non-Profit Transfers (county)			−0.102*** (0.029)	−0.058† (0.031)	−0.041† (0.022)
Labor Force			−0.032 (0.023)	−0.024 (0.047)	−0.023 (0.045)
Unemp. Rate			0.032 (0.026)	0.095** (0.031)	0.082** (0.027)
Constant	−0.547*** (0.012)	−0.593*** (0.016)	−0.598*** (0.016)	−0.665*** (0.035)	−0.650*** (0.035)
RE	No	No	No	Yes	Yes
Individual Controls	No	Yes	Yes	Yes	Yes
County Controls	No	No	Yes	Yes	Yes
Observations	31,749	20,756	20,712	20,712	20,712

Notes: Logistic regressions of opposition to free trade policy on trade-related layoffs as a share of county labor force, standardized. A simple bivariate regression is reported in column (1). Column (2) adds individual-level demographic controls. Column (3) includes county-level controls. Column (4) adds controls for date and county random effects while column (5) uses the import penetration instrument described in Autor, Dorn and Hanson (2013). * p < 0.05; ** p < 0.01; *** p < 0.001.
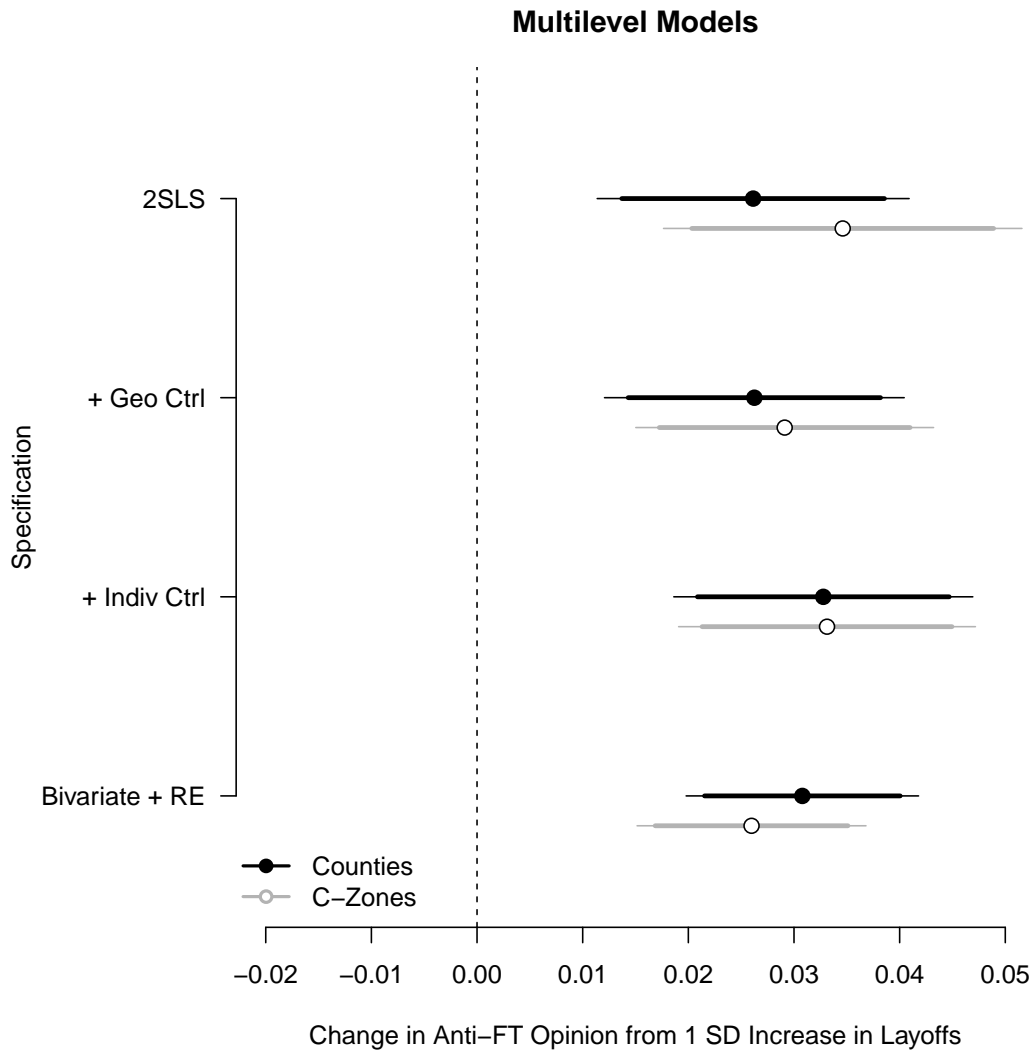
Multilevel Models

Figure 23: Coefficients (x-axis) estimated using different specifications (described on y-axis) that capture the relationship between a 1 standard deviation increase in trade-related layoffs and opposition to free trade. Thin bars capture 95% confidence intervals and thick bars capture 90% confidence intervals. Solid points and black bars represent trade-related layoffs aggregated to the county level while hollow points and gray bars represent the commuting zone level.

to trade. The benefit of the TAA data is that these data are generated by trade's losers to *perceive* themselves to have lost due to trade.

Nevertheless, the instrumental variables strategy should, in theory, capture exogenous economic shocks due to trade. As such, alternative measures of local economic outcomes would be expected to yield similar results. In Figure 24, I regress negative views of free trade on county-level economic measures that are instrumented using the Autor, Dorn and Hanson

(2013) strategy. Given that increases in Chinese import penetration produce differently signed first stage coefficients, I normalize all estimates to reflect a standard deviation decline in the economic outcomes listed on the y-axis. For example, an increase in Chinese imports produces an increase in the unemployment rate as well as a decrease in net earnings at the county level. Both of these produce increases in opposition to free trade policy and are signed as such, yielding the consistently positive coefficient plot summarized in Figure 24. As illustrated, all coefficients with first-stage t-statistics in excess of 10 are positive and significant, suggesting that trade-shocks consistently produce more negative views of free trade policy, regardless of the treatment measure adopted. Indeed, the only measures of local economic outcomes that are not significant are those for whom the first-stage relationship is extremely weak.
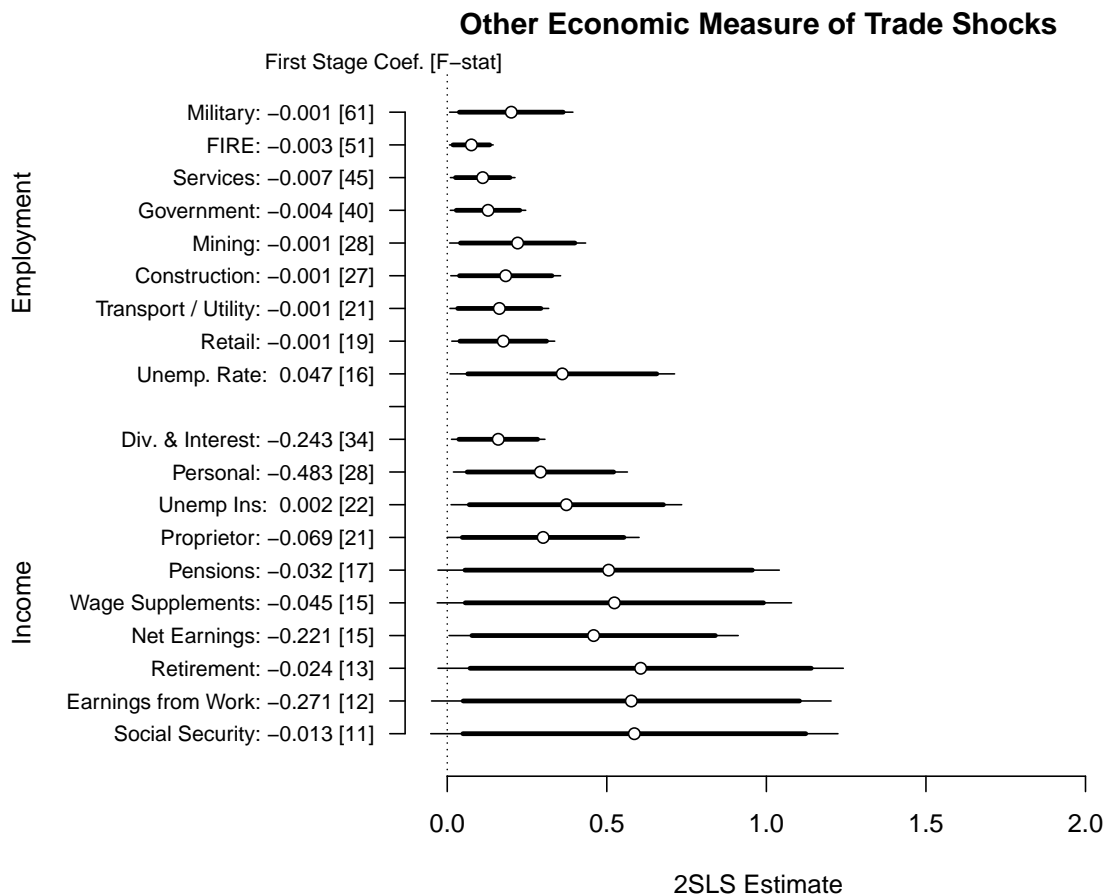

Figure 24: 2SLS estimates of how trade shocks impact free trade views via a number of different local economic measures (y-axis). Coefficients are re-signed to capture the impact of an economic decline in the indicator–stemming from Chinese imports–on the opinion that free trade has been bad for the United States.

A.2.5: IV Duration

In Autor, Dorn and Hanson (2013)'s original paper and in many of the ensuing applications, they examine the impact of changes in Chinese imports over long periods of time (1990 to 2000 and then 2000 to 2007). My work uses a shorter one-year period. While the exclusion restriction argument doesn't change based on the time period, it is possible that the first-stage strength is sensitive to the choice of duration. To test, I estimate the first-stage relationship between trade-related layoffs and the change in Chinese import penetration calculated over different periods. As illustrated in Figure 25, the choice of duration does impact the first-stage strength of the IV regression although longer periods yield *weaker* relationships.
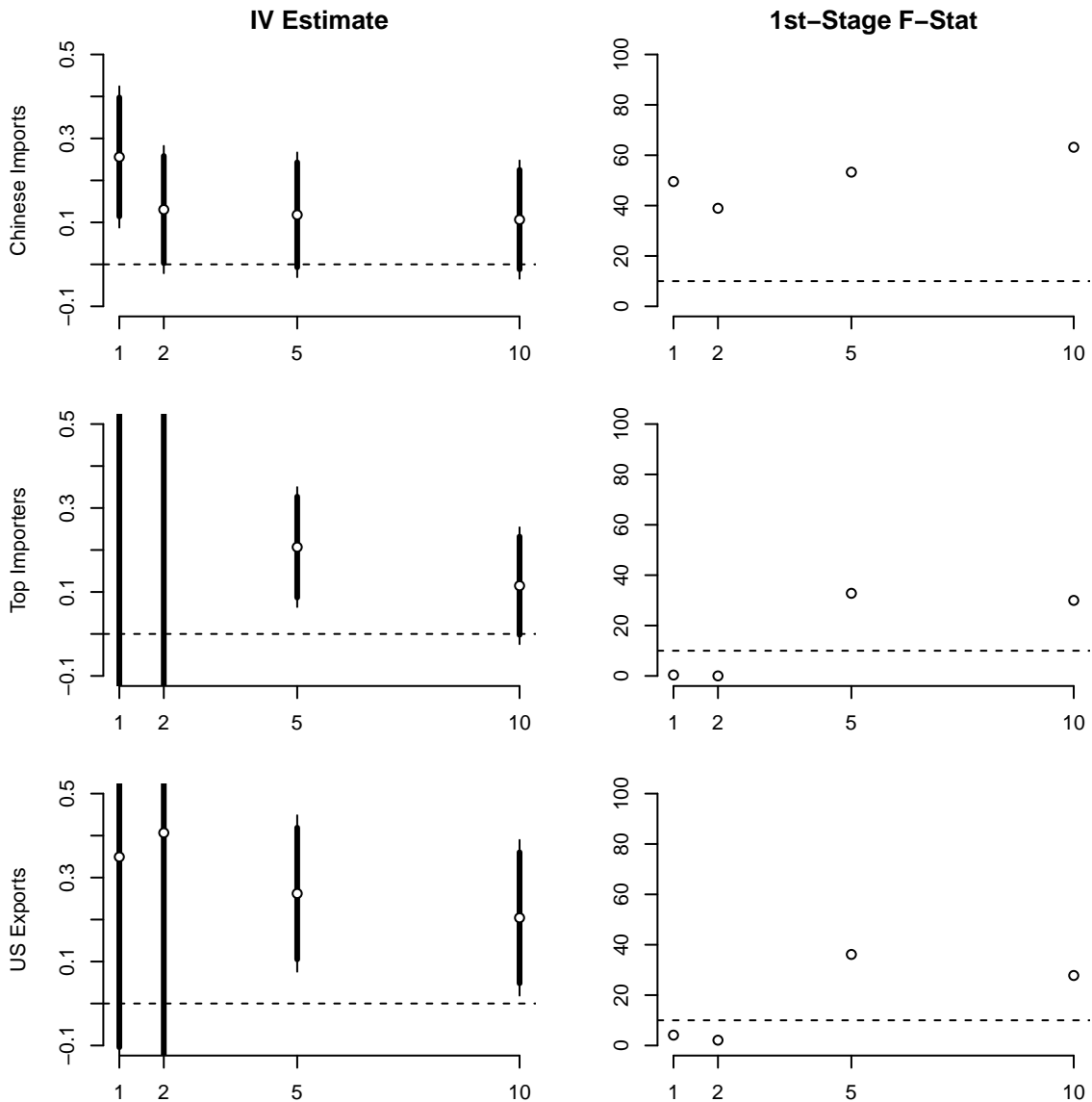

Figure 25: Sensitivity of results and first-stage strength to duration of period over which import penetration instrument is measured.

A.2.6: Clustering Choices

In theory, one should cluster standard errors at the unit at which treatment is administered. In practice, determining this unit isn't always straightforward. My main results aggregate layoffs to the county level and place individual survey respondents within these geographic units. However, it is also possible to consider using states or commuting zones as alternative units. Furthermore, as illustrated by my distance-measure robustness checks, the proper geographic distance that circumscribes spatiotropism may vary.

My main results are estimated clustering the standard errors at the county level. In Figure 26 below, I re-estimate my results clustering the standard errors at the level of the county, the commuting zone, the state, and at the interview date-county, interview date-commuting zone, and interview date-state level.

My main findings on free trade preferences are robust to different clustering choices. However, the findings on the packaged nativist opinions are less so. The least significant specification is produced by clustering the standard errors at the level of the state. I argue that the state is (in most cases) too large a geographic area to realistically be considered the unit at which treatment is assigned. Buying this argument would require believing that layoffs at a firm in one part of Oklahoma are experienced equally by every member living in the state and not experienced at all by individuals living in Nebraska. Nevertheless, the sensitivity of my findings to the choice of clustering unit warrants caution when interpreting my results.

A.2.7: Sensitivity Analysis

An alternative way to check the robustness of my results is to ask how strong an unobserved confound would have to be to undermine my findings. To do so, I generate a random variable that is correlated with both my layoff data and the opinion data and then include it as an additional control in the main specification (Imbens, 2003). I compare the coefficient on layoffs in this adjusted specification with my original estimate in Figure 27 by plotting the correlation between the simulated unobservable and layoffs (x-axis) and opinion (y-axis) and shade the points by whether the revised coefficient estimate on layoffs is outside the 95% confidence interval around the original estimate. For the sake of comparison, I also plot the observable covariates based on their correlations with layoffs and opinions.

As illustrated, in cases where the unobserved confound is correlated relatively strongly with either layoffs or opinions, the adjusted coefficient on layoffs is outside the original coefficient's 95% confidence interval. However, the position of the most strongly correlated of the observed covariates gives reason for confidence in the sensitivity of the main findings. Substantively, the unobserved confound must be more strongly associated with layoffs than the either share of the county that is Hispanic or unemployment insurance transfers to undermine my findings. Similarly, the unobserved confound must be more strongly correlated with opinions on trade than either the youngest or oldest age cohorts. It is difficult to imagine what such an unobservable may be.

A.2.8: SUTVA Violations

The main results placed individual survey respondents within counties and assign layoffs aggregated at the county level. As such, these results hinge on the assumption that an
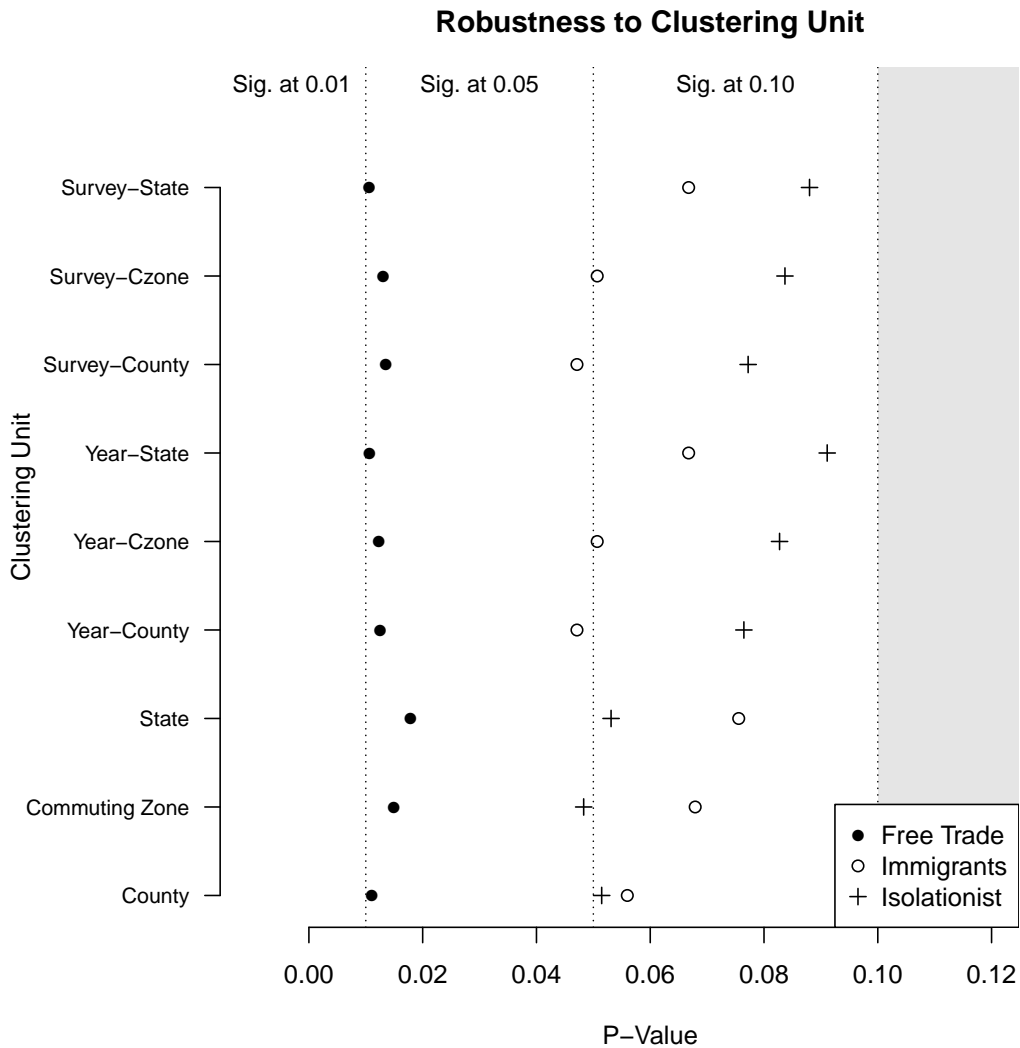
Robustness to Clustering Unit

Figure 26: Sensitivity of findings to choice of clustering unit. P-values of main findings summarized on x-axis for opinions on free trade (dark circles), opinions on immigrants (hollow circles), and opinions on globalization (crosses). The y-axis lists the different units at which I cluster my standard errors.

individual only notices layoffs that occur within her county but is oblivious to layoffs in neighboring counties. This assumption is known as the Stable Unit Treatment Assignment Assumption or SUTVA.

To the extent that SUTVA fails, estimates comparing affected and unaffected survey respondents are likely to be biased. The direction of the bias could go in one of two ways. If treated individuals receive a stronger "dose" of trade-related layoffs due to exposure to both layoffs in their county as well as layoffs in adjacent areas, they may inflate the estimated effect of layoffs. Conversely, the estimates may be attenuated if individuals assigned to con-
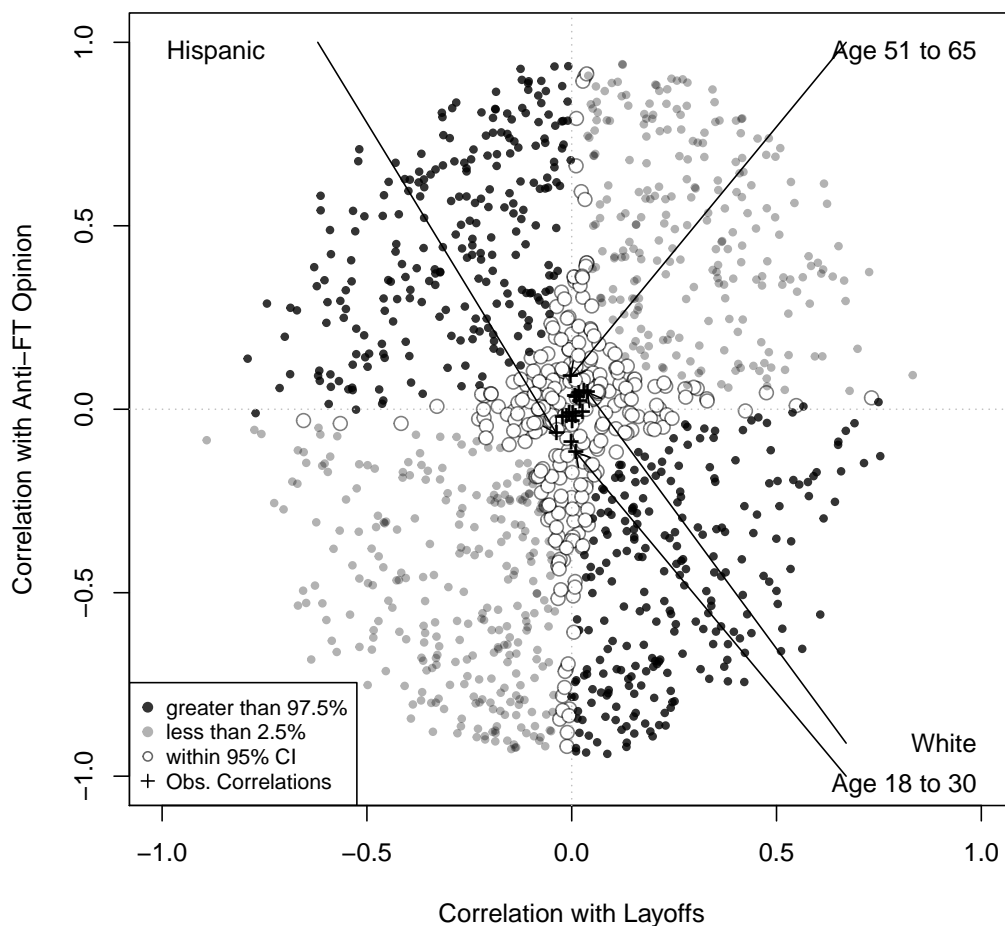
Figure 27: Sensitivity analysis. Each point is a randomly generated confound which is correlated with layoffs and opinion as indicated on the x and y-axes respectively. Points are shaded by how significantly the updated estimate of the effect of layoffs on opinion differs from the original estimate. Black solid circles represent updated estimates greater than the 97.5% confidence bound on the original estimate while grey solid circles represent updated estimates less than the 2.5% lower bound on the original estimate. Hollow circles are updated estimates that fall within the 95% confidence interval of the original estimate. Black crosses represent the observable covariates used in the main specification. The covariates most strongly correlated with layoffs and opinion are labeled.

trol actually experience trade-related layoffs from adjacent areas, muddying the comparison between treated and control opinions.

My analysis of local sociotropism in the body of my paper speaks to the SUTVA concern

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by leveraging the precise geocoded nature of my data to estimate the relationship between trade shocks and opinions as a function of distance. In addition, I also substitute counties with commuting zones. Commuting zones are geographic areas that are defined by a high degree of within-zone commuting patterns and a low degree of between zone commuting patterns Tolbert and Sizer (1996). They are designed to more accurately capture geographic units associated with economic activity. The main findings persist – and are in fact magnified – when using commuting zones, as illustrated in Table 4.

Table 4: Opposition to Free Trade $\sim$ Trade-Related Layoffs: Commuting Zone Aggregation

	Biv.	+Ind. Ctrls	+Cty Ctrls	+RE	2SLS (US)	2SLS (CHN Oth)
	(1)	(2)	(3)	(4)	(5)	(6)
Layoffs (% of pop.)	0.048***	0.047***	0.039***	0.028***	0.140**	0.080**
	(0.007)	(0.009)	(0.009)	(0.008)	(0.058)	(0.032)
RE	No	No	No	Yes	Yes	Yes
Individual Controls	No	Yes	Yes	Yes	Yes	Yes
County Controls	No	No	Yes	Yes	Yes	Yes
1st Stage F-Stat					27.95	110.99
Observations	31,737	20,748	20,692	20,692	20,692	20,675

Notes: Linear probability regressions of opposition to free trade policy on trade-related layoffs as a share of county labor force, standardized. A simple bivariate regression is reported in column (1). Column (2) adds individual-level demographic controls. Column (3) includes county-level controls. Column (4) adds controls for date and county random effects while column (5) uses coarsened exact matching to pair counties by government transfers and labor market characteristics. Column (6) uses the import penetration instrument described in Autor, Dorn and Hanson (2013). * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

A.3: Heterogeneous Effects

My main results control for a number of individual-level characteristics, including economic covariates (education and income), demographic covariates (age, gender, and race), and political covariates (party affiliation and ideology). In the figures below, I document heterogeneous effects across these covariates to speak to the existing reduced form research connecting individual characteristics with opinions on trade. My results are largely intuitive, with stronger effects among less educated and less wealthy respondents, as well as among respondents in the prime of their careers (age 31 - 65).

One interesting nuance in these heterogeneous effects appears when I look at party affiliation by presidential term. Here we see significant effects for self-identified Republicans during Obama's presidency and significant effects for self-identified Democrats during Bush's presidency. I posit that these patterns reflect the influence of elite communication as both president's pursued free trade legislation during their tenure (Bush with CAFTA, Obama with TPP). The difference is particularly strong for self-identified Democrats who respond strongly to trade-related job loss during the Bush years but exhibit no response whatsoever during Obama's term.
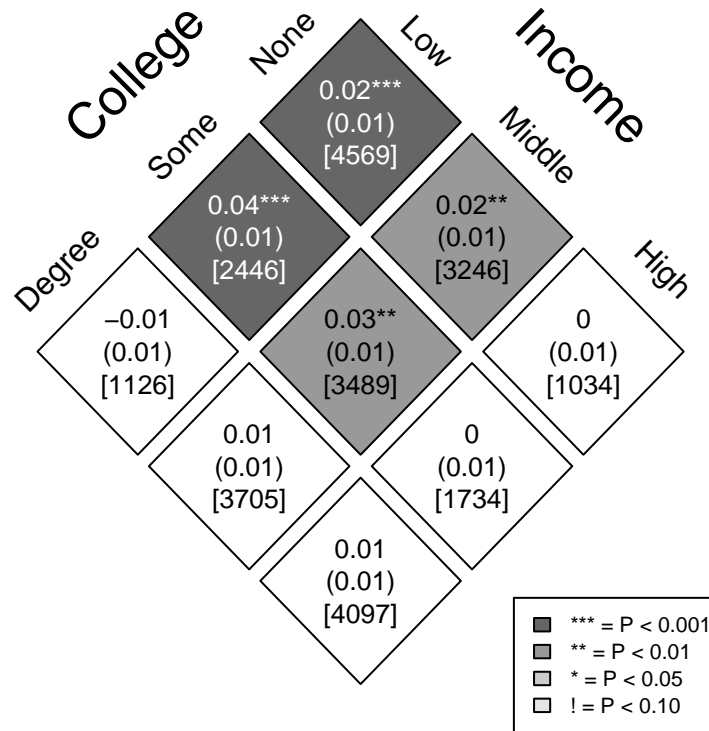
Figure 28: Heterogeneous effects by income and educational attainment. Each diamond presents the estimated effect of trade-related job loss on the probability that the respondent indicates that free trade has been bad for the US, the standard error in parentheses, and the number of observations falling into each category in brackets. Diamonds are shaded by statistical significance, given in the legend.
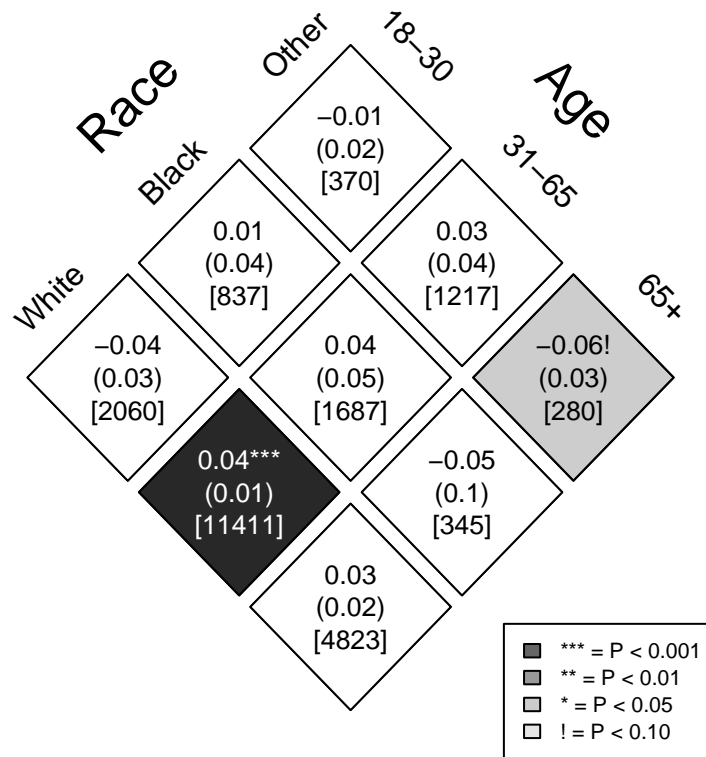
Figure 29: Heterogeneous effects by age and race. Each diamond presents the estimated effect of trade-related job loss on the probability that the respondent indicates that free trade has been bad for the US, the standard error in parentheses, and the number of observations falling into each category in brackets. Diamonds are shaded by statistical significance, given in the legend.
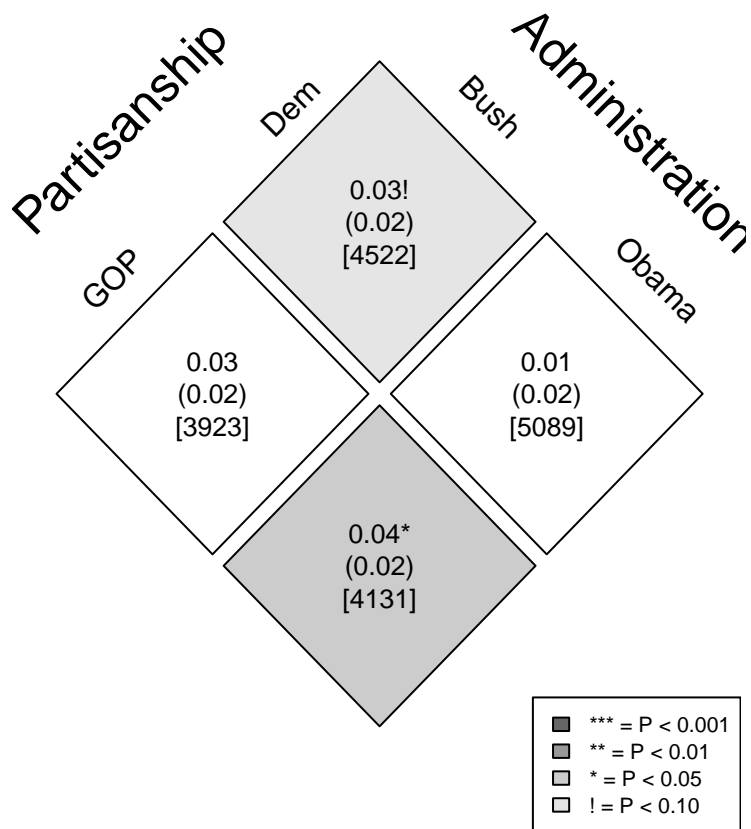
Figure 30: Heterogeneous effects by party alignment with the president over the Bush and Obama administrations. Each diamond presents the estimated effect of trade-related job loss on the probability that the respondent indicates that free trade has been bad for the US, the standard error in parentheses, and the number of observations falling into each category in brackets. Diamonds are shaded by statistical significance, given in the legend.