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The Wrong Winners: Anti-Corporate Animus and Attitudes Towards Trade

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Abstract

Globalization creates winners and losers, and recent research emphasizes that large corporations are among the biggest beneficiaries of trade while smaller firms may be harmed. How do these redistributive effects impact trade attitudes? Because a growing share of Americans hold highly unfavourable views of big corporations, we argue that the belief that large firms win from trade will provoke hostility towards trade and globalization. To test this theory, we show experimentally that informing people that large corporations benefit from trade makes them markedly more hostile towards trade compared to a treatment emphasizing that firms in exporting industries benefit. Using subgroup and mediation analysis, we find that anti-corporate sentiment drives this effect, particularly concern about corporations' power in society. Our findings illustrate how distributive consequences and attitudes towards the winners and losers from policy change interact to shape public opinion on economic policy.

Keywords: trade attitudes; firms; international trade; globalization; public opinion

Introduction

Two outcomes have recently animated trade and trade politics. The first is that contemporary trade is dominated by large and highly productive firms that benefit disproportionately from opportunities to sell, source, and produce overseas. These firms are the key constituents pressing for free trade and have repeatedly secured liberalizing policy wins in recent decades. The second is that trade and globalization have come in for renewed ideological critique from the political left, right, and centre. This revived opposition has fundamentally altered trade politics and thrown sand in the gears of global economic cooperation. Our thesis is that these two outcomes are directly connected.

Voters know that trade creates winners and losers from observation, but especially from politicized discourse from media and politicians. A key element of this discourse is that large corporations are the prime beneficiaries of trade, a simple rendering of a genuine underlying truth: economists have documented startling levels of concentration of exporting, importing, and offshoring in the hands of elite corporations. As a class, large corporations are among the most unpopular groups in American culture, while small businesses are generally rated very positively by Americans for their contributions to society. Because big corporations are so unpopular, people who learn about their heavy share of trade's profits are likely to feel more negatively about trade.

We test this theory using a number of original surveys.¹ In the main experimental test of our hypothesis, respondents treated with the information that trade 'benefits large and very large

¹The authors pre-registered all surveys and analyses. Links to pre-analysis plans are provided when discussing each study. Please consult Menon and Osgood (2024) for replication materials.

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companies' and 'harms small and medium sized companies' offered significantly more negative evaluations of international trade and trade agreements than respondents given a treatment emphasizing that companies in industries that sell overseas benefit from trade and companies that compete with imports are harmed. We show in a further experiment that respondents treated with the 'trade benefits large and very large companies' message are also strikingly more negative on trade than those given a neutral control.

Consistent with our argument, we find that our treatment effect is noticeably larger among respondents with more negative evaluations of large corporations as a group. We also find our treatment has a strongly positive effect on the belief that trade increases the political power of corporations at the expense of ordinary people. These findings suggest the negative effects of the 'big firms win' treatment on trade attitudes are at least partly driven by a strengthened belief that international trade benefits 'the wrong winners': groups in society who are not popular and whose empowerment is undesirable. We also examine a classic political economy explanation for our findings that focuses on the effects of trade on personal income. Our argument might operate alongside this standard approach.

Our paper contributes to several literatures. First, we develop and test an original explanation for the recent anti-trade backlash (Ballard-Rosa et al. 2021; Broz, Frieden, and Weymouth 2019; Goldstein and Gulotty 2019; Hafner-Burton, Narang, and Rathbun 2019; Naoi 2020; Owen and Walter 2017). Because our causal mechanism – hostility to elite corporations – is not restricted to one end of the ideological spectrum, our explanation applies to opposition to trade from both the populist right and progressive left (Ehrlich 2010; Inglehart and Norris 2016; Lechner 2016). Moreover, recent surveys indicate that hostility towards large corporations has grown over the past two decades. Our approach may help explain degrading support for trade among the public and politicians over that time. Second, a small recent literature explores what firm-level models of trade politics, investigated mainly among producers (for example, Kim 2017; Kim and Osgood 2019; Osgood et al. 2017), might imply for the trade preferences of workers (Dür, Eckhardt, and Poletti 2020; Owen and Johnston 2017; Walter 2017). We develop an original answer to this question while contributing to an interdisciplinary literature on the effects of anti-corporate animus, showing its effect on trade attitudes (for example, Kaufman and Bonvehí 2021). Finally, we contribute to broader debates about the formation of attitudes toward economic policy. Standard political economy argues that voters react to distributive consequences based on pocketbook concerns; a wide variety of alternatives emphasize sociotropism, socialization, identity, and values (Hainmueller and Hiscox 2006; Mansfield and Mutz 2009; Maria Schaffer and Spilker 2019). Our approach fuses elements of each, arguing that distributive consequences are fundamentally important but are interpreted broadly in light of views towards winners and losers and their impacts on society as a whole. This links us to recent literature on economic policy and inequality,² though our focus on redistribution among businesses is distinct.³

What do our findings imply for the future of trade politics and economic policy? The recent literature on anti-trade sentiment has centred on a debate about the relative importance of geographically concentrated material effects of globalization (Frieden 2018; Margalit 2019) and identity-based backlash (Baccini and Weymouth 2021; Mutz and Lee 2020). Our argument describes a third axis: voters don't like the most prominent winners of globalization and so lash out. This approach suggests opposition to trade has a broad reach because hostility to big corporations is widespread, both geographically and ideologically. As for longevity, our approach suggests the current backlash against trade could be transient because it is founded on a current

²Bastiaens and Postnikov (2019); Lü, Scheve, and Slaughter (2012); Jamal and Milner (2019); Nguyen (2017); Rho and Tomz (2017).

³Our investigation of the impact of distributive consequences within a country echoes a recent literature on effects of the distribution of gains from international co-operation across countries (for example, Brutger and Rathbun 2021; Carnegie and Gaikwad 2022; Powers et al. 2022).

fashion for demonizing big corporations rather than the more durable economic and identitative foundations emphasized in other accounts. If, however, hostility towards big corporations only continues to grow – as it has with other elite centres of power in society – then the prospects for liberal international order may grow even dimmer.

Theory

Classic Theories of Trade Preferences: Factors, Industries, and Firms

We start with three standard accounts of trade's distributive effects on businesses and workers focused on factors, industries, and firms. Although our ultimate destination is different from the classic political economy approach based on trade's effects on personal income, the key explanatory factor in our approach is public belief about trade's redistributive effects. Simple versions of these theories internalized by the public might then inform trade attitudes in light of overall attitudes towards the winners and losers of trade liberalization. We highlight that all of these models have some claim on the truth because the applicability of the scope conditions for the models varies strongly across products, industries, space, time, and time horizons. Given their diverse individual experiences and influences, members of the public might justifiably agree with the arguments from any of the following approaches.

The factor-centred (or Stolper-Samuelson) account predicts relatively abundant factors of production earn higher real incomes after trade liberalization, while relatively scarce factors of production earn less (Rogowski 1989). In a capital-rich country such as the United States, trade is predicted to benefit capital while harming labour.⁴ In the classic political economy of trade, these distributive consequences then inform egoistic and narrowly materialistic preferences over trade: workers will oppose trade while businesses will support trade in the United States.⁵

In the industry-centred Ricardo-Viner model, if an industry is export-competing, all factors of production employed in that industry see increases in real incomes with trade. In import-competing industries, all factors of production face a loss of real income despite trade's other benefits (Frieden 1991). Thus, businesses and workers in exporting industries support trade, while businesses and workers in import-competing industries oppose trade.⁶

The firm-centred model notes that global commerce is dominated by a small number of firms that do the vast majority of exporting, importing, and offshoring (Bernard et al. 2007). These 'superstars' tend to be more productive and larger and can handle the extra costs associated with engaging global markets (Mayer and Ottaviano 2008). Smaller firms cannot handle these costs and do not gain from globalization, and may be harmed by intensified competition in goods and factor markets. So, trade liberalization unleashes intra-industry redistribution of profits: big firms grow; small firms shrink or die (Melitz 2003). Thus, more productive (and generally larger) firms support trade, and less productive (smaller) firms oppose trade (Osgood 2020; Osgood et al. 2017).⁷

The firm-centered model offers several possible conclusions about the effects of trade on workers. One leading approach assumes workers are stuck at their firms due to labour market

⁴Often this is reformulated in terms of skilled and unskilled labor.

⁵Note that in our argument we maintain a clear distinction between 'workers' (labor) and 'businesses' (capital) which is a fuzzier boundary in some of the literature on political economy (for example, Grossman and Helpman (1994) where workers can own capital) and in reality (for example, where workers own equities or bonds in retirement accounts, and some workers are also business owners). We do so for conceptual clarity. We also assume 'businesses' represent the interests of capital.

⁶The most important scope conditions for the Stolper-Samuelson and Ricardo-Viner model are that factors of production – workers, capital, land – either can or cannot move freely across industries, respectively. These approaches also generally assume one-way trade in homogeneous products (Hiscox 2002b).

⁷The most important scope conditions for the firm-centred model are the existence of either intra-industry trade in differentiated products or of globalization of the firm's supply chain, alongside firm-level heterogeneity in ability to export, import, or offshore. The firm-level approach also assumes factors of production are trapped in the firm, at least in the short- to medium-term (Kim and Osgood 2019).

frictions (Helpman, Itskhoki, and Redding 2010). Under this assumption, workers benefit when their firm succeeds in global markets and are harmed when their firm falters (Lee and Liou 2022; Walter 2017).⁸ This firm-centric account of trade therefore predicts that workers employed at larger firms support trade while workers employed at smaller firms do not.

Beliefs About Distributive Consequences and Views of Trade Policy

In the standard political economy approach, individuals focus on and correctly understand the ‘true’ distributive effects of trade (Milner 1999; Schaffer and Spilker 2016). They are also narrowly materialistic and egoistic, so they concentrate on what distributive effects mean for their own income and have no concern for distributive consequences among others. In a Ricardo-Viner world, a worker in a comparative disadvantage industry opposes trade because free trade means lower income (Mayda and Rodrik 2005; Scheve and Slaughter 2001). Similarly, if the firm-centred approach is true, a worker at a big firm knows she will gain income from trade and so supports it (Lee and Liou 2022; Rommel and Walter 2018; Walter 2017).

Our model shares the classic political economy’s focus on distributive stakes but otherwise departs fundamentally. First, people focus on the distributive effects of trade that may or may not be relevant to their employment or other personal economic circumstances. They are influenced by elite cues and other public discourse (Guisinger and Saunders 2017; Hainmueller and Hiscox 2006; Hiscox 2006; Rho and Tomz 2017). Second, people use those distributive consequences to make evaluations of trade policy changes based on their overall views of the winners and losers from trade (Bastiaens and Postnikov 2019; Jamal and Milner 2019; Lü, Scheve, and Slaughter 2012; Nguyen 2017; Rho and Tomz 2017). Evaluations of the winners from trade might be rooted in intrinsic moral judgement – the winners are good or bad as such – or in material impacts – the winners winning or the losers losing will be bad for society. But in our alternative approach, views are not primarily driven by changes in personal income. As an example, if a person believes the Ricardo-Viner model, they may reflect on whether it is *right* that comparatively disadvantaged industries lose from globalization or whether the consequences for those industries are deserved. If they believe the distributive implications of the firm-centred model, they react to trade based on whether they think it is right that big firms are the main winners from trade and whether harm to small businesses is justifiable on moral or broadly material grounds. We discuss why each of these two premises should hold.

Learning about distributive implications. The first foundation of our argument is that claims about trade’s distributive impacts on both businesses (and workers) are heard and internalized by the public. These claims need not specifically apply to their employment or their broader community. For example, people may learn claims that are consistent with a firm- or industry-centric view of trade, that ‘big business benefits from trade’, or ‘competitive industries thrive in the global economy’. They may also hear ‘trade hurts workers’ and so come to believe ‘trade benefits businesses’, in line with a factor-centred account. Because prior scholarship has examined how distributive stakes *for workers* impact trade attitudes (Hiscox 2006; Jamal and Milner 2019; Mansfield and Mutz 2009; Maria Schaffer and Spilker 2019; Rho and Tomz 2017), we focus on beliefs or messages about the distributive stakes *for businesses*. Filling this gap is valuable because the effects of trade among businesses are a regular part of the discourse around trade.⁹

Where do beliefs about globalization’s distributive effects on businesses come from? People may learn these beliefs through their own direct experience as workers or business owners. Workers at large companies may sense the importance of global markets; workers (and

⁸Other approaches emphasize how occupational characteristics, especially offshorability, and firm characteristics interact (Owen 2017; Owen and Johnston 2017).

⁹See, for example, discussion of small businesses within the Congress (Lee and Osgood 2019); left-wing debates over fair trade (Ehrlich 2010; Mosley 2010); and the prominent role of large multinationals in trade debates (Kaya and Walker 2012; Margalit 2011).

communities) reliant on industries that are struggling see the effects of comparative disadvantage (Baccini and Weymouth 2021; Mansfield, Mutz, and Brackbill 2019). People may also learn messages about trade's distributive implications through indirect means; for example, by observation (stock markets are at all-time highs, the Rust Belt is struggling) or from the media (Guisinger 2017).

More importantly, though, messages about winners and losers are part of a politicized discourse around trade (De Bièvre and Poletti 2020; De Vries, Hobolt, and Walter 2021). Politicians, interest groups, and the media make claims about trade's distributive effects (Guisinger and Saunders 2017; Hicks, Milner, and Tingley 2014; Kim and Margalit 2017). For example, in line with the Ricardo-Viner approach, politicians and commentators may highlight the variation in competitiveness across industries and perhaps call for compensation or for 'fairer' competition for industries that are losing out. Left-wing and right-wing populist opponents of trade claim that trade agreements enrich and empower only large corporations (especially multinationals), which aligns with the firm-centred account (Ehrlich 2010; Mansfield, Milner, and Rudra 2021).

We highlight that our argument does not require voters to correctly understand complicated economic models or map them to their own lives. Instead, they must be susceptible to simple messages about trade, such as 'all businesses benefit' or 'uncompetitive industries are hurt', possible renderings of the factor-centred and industry-centred models, respectively. The firm-centric view is especially easy to grasp: 'Big corporations win' and 'small businesses lose'.

To examine the distribution of these beliefs, we conducted a pre-registered survey of American voters described in Supplementary Materials A. First, we asked respondents which American companies they felt benefitted the most from trade. We provided six possible answers in line with classic approaches from the literature on trade politics. 26 per cent of our sample responded that firms in exporting industries had benefitted the most, while 33 per cent of respondents thought that big firms had benefitted the most. The remaining answers – import-competing firms, small firms, all firms, no firms – see much less endorsement. Then we asked respondents which US firms have been harmed by trade; 30 per cent replied import-competing firms and 29 per cent small and medium-sized firms. These results highlight two points. First, significant numbers of Americans have absorbed models of trade's distributive effects endorsed by trade scholarship. Beliefs in line with the industry- and firm-centered approach are particularly common. Second, there is considerable variation across Americans in which model of trade's effects they believe. For example, respondents were roughly equally split between endorsing industry- and firm-centred approaches.

Evaluation of distributive implications. The second foundation of our argument is that people don't (only) react to distributive implications of trade within a narrowly material and egoistic framework of self-interest and personal income. Instead, they (also) react to distributive implications within a broader framework focused on their attitudes toward the winners and losers of trade. In this mode, the correct question about economic policy changes is not whether they increase personal well-being but whether they are consistent with one's beliefs about who should win or lose and whether the impacts of trade, broadly understood, are desirable and appropriate (Brutger and Rathbun 2021; Jamal and Milner 2019; Nguyen 2017; Spilker, Nguyen, and Bernauer 2020). Put more crudely, judging a policy is about whether the winners from that policy are good.

So, if broad evaluations of the merits of winners and losers from trade are important, what are the contents of those sentiments going to be? We consider the factor-, industry-, and firm-centred theories in turn. If citizens hold a factor-centred view, trade attitudes will likely be driven by attitudes towards business owners or capitalists. In the United States, the Stolper-Samuelson theorem predicts that business owners benefit from trade and workers are hurt. Thus, Americans who view business unfavourably (or favour workers over businesses) should react negatively to trade. While such a story is plausible in the US context, some of its bite is dulled because old-fashioned class

identity is not strong. Most Americans wouldn't lump together big multinational corporations, medium or large regional or local businesses, and small businesses, although they are all 'capitalists' (Newman and Kane 2014). For these reasons, we think it less likely that people adopting a Stolper-Samuelson view are strongly hostile to trade.

The industry-centred Ricardo-Viner model's predictions seem even less plausible as drivers of negative attitudes toward trade. For this to be true, the citizenry would need a hostile view of the small, medium, and large firms that comprise export-competitive industries. We cannot totally rule this out because it could be that citizens understand that further trade liberalization might benefit firms in industries that are already thriving and cause more pain to firms in uncompetitive sectors. But, overall, the industry-centered account lacks a clear (domestic) 'villain'. People may disapprove of the effects of comparative advantage unfolding across the nation but not be willing to blame entire industries of firms and workers for their successes.

In contrast, we think the distributive consequences suggested by the newer firm-level models are likely to provoke very strong reactions. Although individual brands or companies may be well-liked, large corporations as a group are not popular (Newman and Kane 2014). Data from Gallup (2022) shows the percentage of Americans 'somewhat dissatisfied' or 'very dissatisfied' by the 'size and influence of major corporations' increased from 48 per cent in 2001 to 74 per cent in 2022 – the 'very dissatisfied' share alone increased by a factor of 2.5 from 17 per cent to 44 per cent. The share of those who reported feeling 'somewhat satisfied' or 'very satisfied' declined from 48 per cent in 2001 to 26 per cent in 2022. Similar shifts in public opinion are also seen when the public is asked about the influence of corporations on society and confidence in big business as an American institution.

Big corporations are often seen as selfish, corrupt, unpatriotic, or undeserving of their wealth and status (Halliday and Thrasher 2020). They are lumped together with other unpopular elite groups. Hostility to large corporations features in both left- and right-wing populism and has created coincidences of interest across the ideological spectrum, for example, around strengthening anti-trust or limiting offshoring. Negative views of corporations are one area in which Americans have become less ideologically polarized in recent years, as Americans of all ideological stripes have soured on big firms (PEW Research, 2022). Firm-level models of trade also map nicely onto ideas that are readily comprehensible among ordinary voters: 'big corporations are taking all of the gains' or 'big corporations have too much power'. These simple ideas are a powerful focusing mechanism for politicians and other political entrepreneurs as they identify a clear and easily defined target for vitriol and one that is blamed in many areas beyond trade.

In sharp contrast, the public generally views small businesses positively. In a recent survey, 80 per cent of Americans identified small businesses as having a positive impact on the country (while 71 per cent said large corporations were having a *negative* impact) (PEW Research, 2022). Although small businesses are a traditionally Republican-leaning constituency, these views are shared in common across both Republicans and Democrats: 79 per cent of Republicans and 83 per cent of Democrats said small businesses have a positive effect on the country. This positive affect towards small companies is likely to impact the public's views of trade if they come to believe that trade does not benefit, or even harms, small businesses.

Main Predictions and Mechanisms

Thus, we predict that voters who perceive that larger firms take most of the gains from globalization while smaller firms are hurt will react particularly negatively to globalization. Specifically, voters who believe that firms of all sizes in export-competitive industries win from globalization (and import-competing firms lose) should be more positively disposed towards trade than those who believe that big firms win (and small firms lose). This contrast of the firm-centred and industry-centred model highlights the two most prominent contrasting accounts of trade's winners among businesses in the contemporary era (Hiscox 2002a; Kim

and Osgood 2019)¹⁰ and also on the accounts that are most widely believed among Americans, as described above.

We consider moderating factors and mechanisms to further probe our claim that attitudes towards big business are an important driver of trade preferences. First, we argue that voters react with disapproval or dismay to the news that big firms are the primary beneficiaries of global economic integration. This mechanism should be particularly potent among people who don't like big corporations as a group. Translating this into an expected heterogeneous response, we predict that respondents with the most negative views of big corporations or 'corporate America' will have the strongest anti-trade response when given the news that large firms are the prime beneficiaries of trade integration. Second, our argument also suggests a belief that 'big corporations are winning' will make voters more upset about the broad economic and political consequences of trade and not just their own personal income or job security. These broader concerns should mediate hostility towards trade.

Our experimental setup and data also afford us the opportunity to examine an employment-based theory, which, although not our original contribution, is fundamentally important in the literature on the political economy of trade. Testing this is particularly important because it provides a potential alternative explanation for an association between beliefs that 'big firms win' and 'small firms lose' and negative attitudes toward trade, because more people work for small businesses than big companies. To test this idea, we examine a heterogeneous response: are people working at big firms less hostile to trade and people working at small firms more hostile when apprised of the news that big firms dominate global trade? This argument also suggests believing that 'big corporations are winning' will make respondents more pessimistic about their jobs, and this concern will mediate hostility towards trade.

Experimental Study

Experimental Hypotheses

We now translate our theory above into hypotheses for a survey experimental study. We compare a treatment emphasizing that large and very large companies benefit from trade (while small and medium-sized companies lose) relative to a treatment emphasizing that export-competing industries gain (while import-competing industries lose).

Hypothesis 1. Respondents exposed to the treatment emphasizing large companies' gains and small companies' losses from trade will be more opposed to trade and trade agreements than respondents exposed to a treatment emphasizing export-competing industries' gains and import-competing industries' losses.

Hereafter we refer to the individual-level treatment effect as the difference in trade attitudes for a respondent receiving the 'large companies win and small companies lose' treatment and the 'export-competing industries win, import-competing industries lose' treatment. For outcome variables which measure support for trade, we expect a negative average treatment effect across the respondents. (A supplementary experiment with a neutral control condition is described below.)

In line with our theory of reactions to distributive consequences, we examine whether the treatment effect is greater among respondents with pre-existing negative attitudes towards 'corporate America', reflecting a channel by which information about big corporations' gains interacts with overall negative affect towards big business, leading to negative reactions to trade.

¹⁰While the factor-centred approach is fruitfully applied to labor in the contemporary period, few argue there are no differences among businesses on trade preferences.

Hypothesis 2a. Respondents with relatively negative attitudes toward corporations should have a stronger negative treatment effect.

We also examine whether workers employed at smaller firms have a larger treatment effect, which would be consistent with a theory about job insecurity.

Hypothesis 2b. Respondents employed at relatively smaller firms, companies, or organizations should have a stronger negative treatment effect.

Finally, we have three hypotheses about causal mechanisms which reflect our focus on holistic evaluations of the merits of trade's winners and losers and their role in society (3a and 3b) and a more narrowly construed employment channel emphasized in existing literature (3c).

Hypothesis 3a. Opposition to trade generated by the large corporation treatment will occur due to a heightened feeling that international trade induces economic inequality.

Hypothesis 3b. Opposition to trade generated by the large corporation treatment will occur due to a heightened feeling that international trade politically empowers large corporations.

Hypothesis 3c. Opposition to trade generated by the large corporation treatment will occur due to a heightened feeling that international trade increases personal job insecurity.

Experimental Design and Data

To test our experimental hypotheses, we fielded a survey of American adults using YouGov Omnibus. The survey was administered from January 28 to February 2, 2022.¹¹ The sample was generated using stratified random sampling of the YouGov Omnibus panel based on gender, age, race, and education. YouGov supplied us with post-stratification weights to ensure that the sample was nationally representative on presidential vote (in 2016 and 2020) and gender, age, race, years of education, and region. National representativeness on presidential votes in 2016 and 2020 should provide substantial help with representativeness in partisanship and ideology. The sample size for the survey was 2000. Some respondents did not provide answers to demographic questions asked by YouGov.

Our experiment was designed to gauge the effect of priming the firm-centric model of trade's distributive consequences relative to the industry-centric model. We randomly assigned the following treatment texts to our respondents:

Treatment I: Research suggests that international trade has many benefits, but also costs for some groups in the United States. In particular, increased openness to international trade is likely to **benefit large and very large American companies**. However, trade is likely to **harm small and medium sized American companies**.

Treatment II: Research suggests that international trade has many benefits, but also costs for some groups in the United States. In particular, increased openness to international trade is likely to **benefit American companies in industries that sell their products outside the US**. However, trade is likely to **harm American companies in industries that compete domestically with products made overseas**.

¹¹This survey experiment was pre-registered on 25/01/2022: Registration ID: [20220125AA](https://doi.org/10.1017/S0007123424000152).

For the rest of the paper, we refer to Treatment I as the ‘big firms win’ treatment and Treatment II as the ‘competitive industries win’ treatment. These provide short but intelligible references to the more detailed formulations of the treatments. Note also the use of the adjective ‘American’ in ‘American companies’ at all points where companies are described. We do so to avoid confusion from the respondents about whether, for example, foreign multinationals – which might provoke very different responses – are under consideration (Kerner, Sumner, and Richter 2020; Margalit 2011).

The treatment text was immediately followed on the same page by two trade attitude questions that are standard in the literature: ‘Do you favor or oppose the US becoming more open to international trade?’ and ‘Do you favor or oppose the U.S. making free trade agreements with other countries?’ Both have 5-point Likert scale responses from ‘Oppose a great deal’ to ‘Favor a great deal’.

Manipulation checks indicate the treatments successfully altered respondents’ beliefs about the winners and losers from trade. To assess this, we fielded a separate, pre-registered survey (link to [pre-analysis plan](#)) described in Supplementary Materials C. Our treatments have significant effects on respondent beliefs in the predicted direction, and our manipulation check hypotheses are supported at the 5 per cent level in forty-four out of forty-eight pre-registered hypothesis tests. The remaining four tests are in the expected direction and are significant at the 10 per cent level. In the manipulation checks, we find that the ‘big firms win’ treatment raises the percentage of respondents who believe large firms benefit from trade by 17 per cent relative to the ‘competitive industries win’ treatment. The share of respondents who believe small firms are harmed also increased by 19 per cent in absolute terms. These are relative increases of 73 per cent and 82 per cent. Likewise, we find that Treatment II increases the percentage of respondents reporting that companies in exporting industries benefit or import-competing industries are harmed by 52 per cent and 66 per cent in relative terms (13 per cent and 16 per cent in absolute terms, respectively). We note these changed beliefs do not account for the full impact of our treatments because our treatments may prime the availability or intensity of existing beliefs.

We ask the following questions for our subgroup analyses to evaluate heterogeneous treatment effects. To identify individuals who hold negative sentiments toward big businesses in general, we use the answers on the second item in the following multi-item feeling thermometer question.¹²

We would like to learn about your feelings toward the groups listed below. Please position each one on a feeling scale/thermometer. The higher the number, the warmer your feelings toward this group. For instance, a ranking of 0–49 means you feel negative/cold feelings toward the group. A ranking of 51–100 means you feel positive feelings toward the group. If your feelings are neutral, please select exactly 50.

- The US Congress (Senate and House of Representatives)
- Corporate America (aka ‘Big Business’ or the Fortune 500)
- The Entertainment Industry (aka ‘Hollywood’)
- The Catholic Church
- The World Health Organization (WHO)
- The National Football League (NFL)

To examine whether treatment effects might be driven by feelings of job insecurity resulting from the size of the firm an individual works at, we ask respondents to report their firm’s size:

Roughly how many employees would you say work at the company, business, or organization where you are currently employed? If you work at a company with more than one

¹²We asked this question before respondents were randomly assigned into one of the two treatment groups.

location or branch, please try to answer for the company as a whole, not just your location or branch. If you work at multiple companies, please answer for the company that is your main source of income.

The respondents were given seven options that increased the number of employees exponentially (for example, 1–5, 6–19, 20–49, 50–199, etc.) For respondents who previously answered they were not employed, we provide a reworded question asking them to answer the above for the last place where they worked and providing an additional response: ‘I have never been employed’. We ask the following question for our causal mediation analysis.

To what extent do you agree or disagree with the following statements:

- ‘International trade makes the economy unfair. The rich get richer.’
- ‘International trade gives corporations more political power at the expense of ordinary people.’
- ‘International trade puts the jobs of people like me at risk.’

Individuals can provide one of five responses: strongly disagree, somewhat disagree, neither agree nor disagree, somewhat agree, and strongly agree.

We introduce additional covariates known to shape trade attitudes sequentially in our main tests of Hypothesis 1 to improve the precision of the estimates. These are demographic factors like age, gender, and racial/ethnic identity; level of education; and a categorical variable for whether respondents are employed, currently unemployed (but seeking work), or otherwise unemployed; and political party and ideology on a 7-point Likert scale. These are described in detail in the supplemental materials (Supplementary Materials A and B). We employ the same covariates in our mediation analysis.

Experimental Results

Main finding. We begin by presenting the average treatment effect of the ‘big firms win’ treatment relative to the ‘competitive industries win’ treatment. In our survey, the ‘big firms win’ treatment reduced support for trade openness by –0.18 on average, while support for trade agreements was reduced by –0.16. All of the ninety-five per cent confidence intervals exclude zero. In Table 1, we show that our estimates are not driven by failures in randomization, as we sequentially introduce covariates across columns.

Table 1. Attitudes toward trade when primed about which firms benefit from trade

Outcome: attitude towards trade openness, oppose (1) to favor (5):				
Average treatment effect	–0.18***	–0.16***	–0.19***	–0.16**
ATE 95% CI	[–0.28, –0.09]	[–0.25, –0.07]	[–0.29, –0.09]	[–0.27, –0.05]
N	2,000	2,000	1,722	1,511
Outcome: attitude towards trade agreements, oppose (1) to favor (5):				
Average treatment effect	–0.16***	–0.14**	–0.16**	–0.15**
ATE 95% CI	[–0.25, –0.07]	[–0.23, –0.05]	[–0.26, –0.07]	[–0.25, –0.04]
N	2,000	2,000	1,722	1,511
Controls employed:				
Demo. Controls	No	Yes	Yes	Yes
Educ./Emp. controls	No	No	Yes	Yes
Party/ideology controls	No	No	No	Yes

Notes: *p < 0.05, **p < 0.01, ***p < 0.001. All models are WLS with WLS standard errors. Treated = 1 for large firms benefit/small firms harmed prompt; treated = 0 for firms in exporting industries benefits/firms in import-competing industries harmed. Complete fitted models are reported in Tables B4–B5.

These effects are substantial in terms of size. The support for the trade openness question has a standard deviation of 1.08. Thus, the treatment effect represents roughly 17 per cent of a standard deviation. In our sample, this effect is comparable to the predicted effects of not attending college, being unemployed, or being a woman. Overall, we interpret our findings as providing solid support for Hypothesis 1.

We complement our main survey experiment with three additional pre-registered studies. First, we replicate the findings described above in a separate pre-registered survey conducted on the Lucid platform. We find overall treatment effects very similar to those in our main YouGov study: -0.16 for the trade openness outcome and -0.15 for the trade agreements outcome.

Second, we explore the effects of our two treatments relative to a neutral control with no language on winners and losers in another pre-registered study conducted on Lucid. Comparing respondent attitudes toward trade between the 'big firms win' condition and a neutral control provides us with an estimate of the treatment effect compared to baseline attitudes toward trade. Moreover, it mitigates any concern that we only recover a significant treatment effect in the previous studies because the two vignettes move attitudes toward trade in opposite directions, with 'big firms win' reducing support for trade and 'competitive industries win' increasing support for trade. Such an effect would be interesting but not in line with our focus on the unpopularity of large firms and public support for small firms. The details of the design and results are described in Supplementary Materials C.

In summary, the 'big firms win' treatment induces a sharply negative response to trade attitudes relative to control (about -0.31 for the trade attitudes question and -0.26 for the trade agreements questions). These effects align with our theory and pre-registered hypotheses for the experiment. The 'competitive industries win' treatment induces a noticeably smaller negative response, about -0.16 and -0.17 , respectively. These additional findings suggest that hearing about winners and losers from trade generally depresses support for trade, which makes some sense because respondents are primed to think about some groups in society being hurt. But hearing about small firms being hurt – and unpopular large firms winning – has an especially strong negative impact on support for trade.

Finally, we conducted a non-experimental survey-based test of our theory. Our experimental results show that priming respondents' beliefs that large firms benefit from trade makes them more hostile to trade. But is it true that, amid the many other factors driving trade beliefs, people who believe that big firms benefit from trade absent any prime are more negative about trade? We show that these beliefs are robustly and conditionally correlated among the public in Supplementary Materials A. This provides observational evidence in line with our theory and motivation – that large firms' gains from trade can help us explain opposition to trade among the public. These results also help overcome issues with uncertainty about how our experimental treatment is received. For some respondents, our prime may change or create new beliefs, as confirmed by our manipulation check; for others, they may reinforce existing beliefs or have no impact on existing beliefs. For example, it is plausible that some respondents already believe that large firms win from trade, so the knowledge embedded in our prime is neither new nor impactful. For the remaining respondents whose beliefs are actually changed or strengthened, the treatment effect may be larger than our ATE suggests.

Treatment effect heterogeneity. We now examine why the belief that 'big firms win' sparks opposition to trade. We do so initially by looking at differing treatment effects across subgroups within our sample. In our theoretical development, we emphasized the importance of hostility toward corporations as a building block for our theory of trade attitudes. Thus, we predict in Hypothesis 2a that respondents with more negative attitudes toward corporations will have a stronger (negative) average treatment effect.

Models 1 and 2 in Table 2 examine this claim. We see good evidence that views of corporations moderate our treatment effects (H2a). Using a dichotomous version of the variable

Table 2. Treatment effect heterogeneity

	Openness to trade: Oppose (1) to Favor (5):			
	1	2	3	4
Treated (Large firms ben./Small firms harmed)	−0.29*** (0.07)	−0.39*** (0.08)	−0.15* (0.07)	−0.15 (0.09)
Positive view of corporations	0.22** (0.07)			
Treated Pos. view of corps.	0.23* (0.09)			
View of corporations (0–100)		0.01*** (0.00)		
Treated view of corps.		0.01** (0.00)		
Large employer			0.07 (0.07)	
Treated large employer			−0.12 (0.10)	
Employer size (0–6)				0.02 (0.02)
Treated employer size				−0.02 (0.03)
<i>N</i>	2,000	2,000	1,774	1,774

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. All models are WLS with WLS standard errors. Treated = 1 for large firms benefit/small firms harmed prompt; treated = 0 for firms in exporting industries benefits/firms in import-competing industries harmed. Models include no controls per our pre-registration.

(see Supplementary Materials B for details), respondents in the survey with a negative view of corporations have an average treatment effect of -0.29 . By contrast, respondents with a positive view of corporations have an average treatment effect of -0.06 . We see a similar pattern using the continuous evaluation of corporations from our thermometer scores under an assumed linear functional form. The fitted model is in column 2 of Table 2 and illustrated in Figure 1. We examine the analogous models using the trade deals outcome variable in the supplementary materials (Table B6 and Figure B1). We see similarly sized and significant effects. Our findings on the moderating role of attitudes toward big business suggest these underlying views present a scope condition for our argument. Among the majority of Americans with neutral or negative views towards big corporations, we see a clear negative treatment effect. The treatment effect is more modest among Americans with extremely positive views of corporations.

While not our primary theoretical contribution, we also examined whether respondents employed at smaller firms will have a stronger (negative) treatment effect (Hypothesis 2b). In contrast to our mostly consistent findings on the moderating role of attitudes toward corporations, we see no statistically significant or directionally consistent effect that employer size moderates the effect of the ‘big firms win’ treatment. We are cautious about over-interpreting these findings because the impact of employer size might interact with other employer features. For example, workers employed at big firms who are hard to offshore might support trade liberalization, while workers who are easy to offshore might find liberalization more threatening (Owen 2017; Owen and Johnston 2017). Overall, the link between employer characteristics and trade attitudes may be subtler and more contingent than we hypothesized and so merits more theoretical and empirical scrutiny.

Overall, these heterogeneous treatment effects align with our theory that evaluations of trade winners and losers among corporations meaningfully drive trade preferences.¹³ Consistent with such a theory, a stimulus meant to prime readers on trade’s benefits for big companies provokes a

¹³We show that the heterogeneous treatment effects replicated in our Lucid-run survey in Supplementary Materials B.

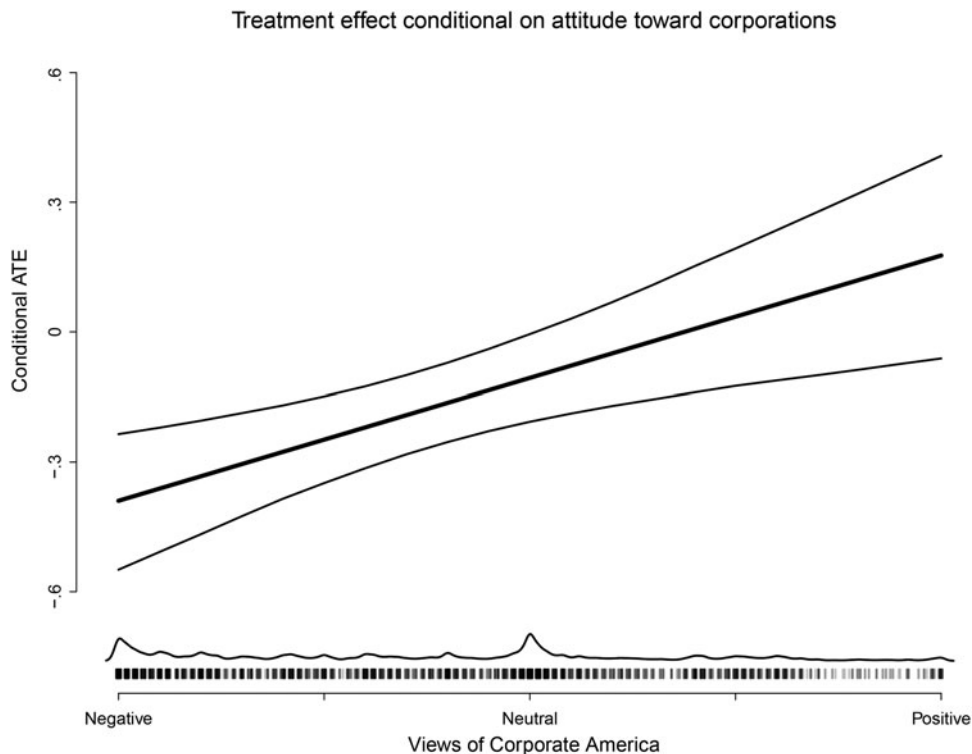


Figure 1. Conditional average treatment effect for the trade openness outcome. Estimates are derived from Model 2 in Table 2.

strongly negative reaction from respondents who dislike big companies. A simple pocketbook mechanism about concern over the health of one's employer (and the consequent implications for one's own job) does not seem to be operative.

Mediation. We follow up on these ideas by looking at causal mediation tests (Tingley et al. 2014). If our theoretical channel is operative, we expect treated respondents will have stronger feelings that globalization induces either economic inequality (as corporations and their owners become richer) or broader forms of political or social inequality (as corporations and their owners become more powerful). These two ideas are captured in Hypotheses 3a and 3b, respectively. We also examine whether the negative effects of 'big firms win' are mediated by an increase in feelings of job insecurity, as might be predicted in a pocketbook/employment account. Our results are presented in Table 3.

We see three consistent patterns across the three outcome variables we examine.¹⁴ First, our 'big firms win' treatment has a positive causal effect on each of our proposed mediators, though this is not significant at ordinary levels for the economic inequality effects of trade mediators. Second, the estimated average causal mediation effect for each of the three potential mediators is negative (as expected) and accounts for anywhere from 17–32 per cent of the total effect. Third, the average causal mediation effect is generally smaller for feelings of job security and our measure of whether trade increases economic inequality and largest for feelings that trade induces broader socio-political inequality. Only the last of these average causal medication effects is significant at the 5 per cent level.

¹⁴We see nearly identical patterns in our Lucid-run survey in Supplementary Materials B.

Table 3. Mediation analysis of trade attitudes and beliefs about trade's distributive effects

Effect:	Openness to trade:	
	Estimate	95% CI
Total average treatment effect	−0.16**	[−0.27, 0.05]
Mediator: economic inequality effects of trade:		
Coefficient from mediator model	0.14	[−0.05, 0.32]
Average causal mediation effect	−0.03	[−0.07, 0.02]
Average direct effect	−0.14**	[−0.24, 0.03]
Mediator: socio-political inequality effects of trade:		
Coefficient from mediator model	0.34***	[0.15, 0.52]
Average causal mediation effect	−0.05**	[−0.09, 0.02]
Average direct effect	−0.11*	[−0.21, 0.01]
Mediator: job insecurity effects of trade:		
Coefficient from mediator model	0.20*	[0.01, 0.38]
Average causal mediation effect	−0.04	[−0.09, 0.01]
Average direct effect	−0.12*	[−0.22, 0.02]
Effect:	Trade agreements:	
	Estimate	95% CI
Total average treatment effect	−0.15**	[−0.25, 0.04]
Mediator: economic inequality effects of trade:		
Coefficient from mediator model	0.14	[−0.05, 0.32]
Average causal mediation effect	−0.02	[−0.06, 0.02]
Average direct effect	−0.13*	[−0.23, 0.03]
Mediator: socio-political inequality effects of trade:		
Coefficient from mediator model	0.34***	[0.15, 0.52]
Average causal mediation effect	−0.05**	[−0.08, 0.02]
Average direct effect	−0.10*	[−0.20, 0.00]
Mediator: job insecurity effects of trade:		
Coefficient from mediator model	0.20*	[0.01, 0.38]
Average causal mediation effect	−0.04	[−0.08, 0.00]
Average direct effect	−0.12*	[−0.21, 0.02]

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. All mediator models are ordinal logistic regression with a treatment dummy and the following controls: age, gender, race, college, income, employed, unemployed, party, and ideology. All outcome models are WLS with WLS standard errors. Treated = 1 for large firms benefit/small firms harmed prompt; treated = 0 for firms in exporting industries benefits/firms in import-competing industries harmed. Complete fitted models are reported in Tables B11–B12.

Causal mediation requires strong assumptions (Keele 2015), which we discuss to contextualize our findings. Randomization of the treatment satisfies one part of sequential ignorability; the unconfoundedness of the mediator and the outcome is required, too, but can only be assumed. To see the difficulty of satisfying this assumption, first note that the effect of the mediator on the outcome must be estimated within a typical observational data setting without any experimental control or obvious natural experiment. Potential confounding factors are common causes of both trade attitudes and our mediators. For example, these might include political ideology or party (which we have measured and introduced as controls) but also the respondent's job title/status or attitudes toward capitalism (which we have not measured). For practical reasons, we cannot control for all known causes of trade attitudes or unknown confounders, though hopefully some of these unmeasured factors are correlated with our measured controls. We can also gauge the robustness of our main findings to unmeasured confounding using sensitivity analysis. Our findings suggest that our estimates' fragility is moderate but not overwhelming. For example, for our ACME estimate around socio-political inequality effects of trade, the causal mediation effect is zeroed out where $\rho = -0.30$, a fairly high degree of unmeasured confounding given our measured confounders. The cleanest element of our mediation analysis is the robustly positive effect of our treatment on the mediators because that is identified. While not proving mediation, those results speak to the plausibility of our proposed argument.

Overall, we view the causal mediation analysis as providing qualified support for our main theoretical claims regarding the redistributive effects of trade on trade attitudes. Respondents who are treated with the information that trade creates cleavages of opportunity between large and small firms respond to those messages with an increased belief that trade exacerbates economic and political inequality (though only the latter estimate in the mediation models is significant). In turn, those beliefs in trade's effects are linked to more hostility towards trade and trade agreements.

Conclusion

We discuss opportunities for future scholarship and then our contributions. First, scholars may wish to test more nuanced versions of the firm-centered model's material implications for workers. It may also be that the vulnerability to offshoring moderates such an effect since big firms are better able to move production offshore (Owen 2017; Owen and Johnston 2017). Second, our categories of firms could be further disaggregated to examine attitudes toward, for example, large American firms that produce domestically versus large American firms that produce globally versus large foreign firms that produce domestically. The nationality, production location, and activities (exporting, serving local markets) could be crossed in a variety of permutations to dig deeper into how respondents react to 'big corporations' and why. Third, and related, future scholarship could investigate in more detail how the origins of industries' comparative advantage impact public opinion. Industries that export successfully because of hard-won advances in production technology, management, or human capital might provoke much more sympathetic reactions than industries that succeed thanks to subsidies, artificial protection, or political connections. There may also be important differences across industries in their ability to elicit sympathy. Consider small-farm agriculture versus capital-intensive manufacturing as examples. Finally, we tested our theory only among US residents. We expect that our main argument will travel to other countries where large corporations are present and politically controversial, but that is truer for some places than others.

Our paper makes several contributions. First, we provide a new answer to the question of what the firm-centred model of trade means for trade preferences. Extant scholarship has focused primarily on the employment implications of trade for workers embedded in an economy where big firms are prime beneficiaries of globalization (Owen and Johnston 2017; Walter 2017). Our theory and findings highlight the broader moral and material dimension of these distributive consequences. Second, we contribute to the study of the formation of preferences over economic policy. Like other areas, trade has focused on a standard political economy approach that focuses on distributive effects interpreted materially and egoistically and on a set of non-material or non-egoistic alternatives emphasizing varieties of sociotropism, ideology, and identity. Our approach is most in line with work on economic inequality, which shares our premise that distributive consequences interact with moral sentiments to generate trade policy attitudes (Bastiaens and Postnikov 2019; Jamal and Milner 2019; Lü, Scheve, and Slaughter 2012; Nguyen 2017).

Finally, we offer and rigorously test an explanation for the rise of anti-trade sentiment in our era. Rather than emphasizing concentrated material effects or identity politics, we focus on a core piece of contemporary globalization emphasized by trade critics and confirmed by trade economists: the very largest corporations control a huge share of global trade flows and are the main beneficiaries from trade liberalization in many industries. To the extent that large corporations aren't viewed favourably by the public – and they are not – freer trade means channelling profit and power to a disfavoured and heavily criticized group. The future course of globalization may depend on highlighting or actualizing trade's many potential benefits among smaller firms, workers, consumers, and the world.

Supplementary material. The supplementary material for this article can be found at <https://doi.org/10.1017/S0007123424000152>.

Data availability statement. Replication data for this article can be found in Harvard Dataverse at: <https://doi.org/10.7910/DVN/GYXVPQ>.

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