

Firms in Trade and Trade Politics

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Abstract

We survey the literature on firms as primary actors in trade politics. In contrast with prevailing approaches, firm-centered models predict that trade internally divides industries and that larger firms are the strongest advocates for globalization. This new preference map alters extant predictions about the dynamics of interest group contestation over trade and suggests revised accounts for how political organization and institutions contribute to an open international order. We also explore the potential for new insights into the operation of the global trade regime, the politics of foreign investment, immigration and capital movements, and exchange rates. Political activities undertaken by firms are important areas for further research in international political economy: Their economic engagements directly affect the movement of goods, services, capital, and people across the globe.

INTRODUCTION

The trade politics literature devotes great attention to whether trade pits competitive industries against uncompetitive ones, or abundant factors of production against scarce ones. In this article, we introduce the literature on a competing theoretical framework that brings firms to the fore in trade politics. This firm-centered approach is motivated by the empirical ubiquity of firm heterogeneity in global engagement: Firms located in the same industry differ markedly in the extent to which they export, import, or invest abroad (e.g., Bernard et al. 2012). This simple observation has sparked a revolution in the study of trade economics and laid the foundation for examining firms as the primary actors in international political economy research, generating new insights into the politics of globalization.

The key foundation of the firm-centered approach to trade politics is within-industry differences among firms: In any given industry, a small minority of large and highly productive firms generally account for almost all global engagement. This firm heterogeneity implies that—in the same industry—some firms will gain profits from efforts to further global economic integration, while others will lose profits and even go out of business. These intraindustry reallocations of profit can occur with selling, sourcing, and producing in foreign markets. Building on these distributive consequences of trade, a firm-centered framework makes several predictions: Larger and more productive firms are more favorable to trade than are smaller firms; industries may be internally divided over whether to support or oppose liberalization; and at the broadest societal level, pro- and antitrade coalitions are likely to cross industries and unite larger firms that support trade in opposition to smaller firms.

A firm-centered approach provides several advantages and insights. First, it incorporates the various activities of globally engaged firms—exporting, importing, and foreign production—into a common framework with empirical implications that are distinct from those of the prevailing industry- and factor-centered approaches. In mirror fashion, it explains the prevalence of firm-level political activities around trade. Second, firm-centered models suggest new accounts of preference formation among workers and of how the collective action problem and domestic political institutions will impact the formation of trade policy. Third, firms' preferences contribute to the form and function of global economic order, including provisions in trade agreements and the operation of international institutions. Finally, we highlight several areas to which firm-level analysis might profitably turn, including endogenous trade barrier formation, exchange rate politics, and cross-border movements of people and money.

Producers have long been a focus of interest in trade politics (e.g., Schattschneider 1935, Milner 1988a, Grossman & Helpman 1994). The firm-centered work that we examine in this review has reinvigorated the study of producers' preferences and political activities, reaffirming the premise that producer interests are prime movers in trade politics. The latest work on firms also builds on an earlier generation of firm-centered scholarship (e.g., Destler 1987, Milner 1988b, Nollen & Quinn 1994). It adds to these studies new implications about preferences, political behavior, and collective action, along with a heightened sense of the theoretical distinctiveness of the firm-centered approach. Despite this early scholarship on firms, the debate on trade coalitions remained focused on whether factoral approaches (for example, capital versus labor) or industry-centered approaches (exporting versus import-competing industries) were more suitable. We contend that earlier work on firms, as well as the current scholarship that we survey, describes a distinct firm-centered model of trade politics that should be the centerpiece for further investigation of the political economy of trade.

FIRMS AS PRIMARY ACTORS IN INTERNATIONAL TRADE

Economists and political scientists have created a vast literature on international trade and trade politics. While economists have focused on trade flows and overall welfare, political scientists have concentrated on the domestic political cleavages that underlie trade policy making (for reviews, see Rodrik 1995, Milner 1999). We review extant theoretical frameworks for understanding trade politics and explain the need for an alternative approach founded on firm-level heterogeneity in global sales and sourcing. This firm-centered theoretical framework's core insight is that trade liberalization reallocates production within industries as some firms increase in size and profits due to new global opportunities, while others shrink or die due to enhanced competition.

Factor- and Industry-Centered Theories of International Trade

Until recently, debates over the economic determinants of trade preferences have centered on interindustry differences. These perspectives laid an important theoretical foundation for the study of trade politics in which factor ownership of individuals and the industry affiliations of firms are the primary determinants of trade attitudes.

The standard trade model. The standard trade model focuses on comparative advantage arising from differences in factor endowments among countries, most commonly capital and labor. Countries specialize to export the goods that intensively employ factors that they hold in abundance, and then import the goods that intensively employ factors that are locally scarce (Heckscher 1919, Ohlin 1933). Countries take part in interindustry trade to achieve efficiency gains—for example, exporting wine in return for automobiles—and resource reallocations take place across industries in the wake of trade liberalization. The standard trade model also accommodates industry-level differences in technology, a second leading explanation for comparative advantage (Ricardo 1817).

The literature has focused on two competing models of trade policy preferences, both special cases of the standard trade model (e.g., Rogowski 1987, Frieden 1992). The Stolper-Samuelson theorem assumes that factors of production are freely mobile across industries, and thus factoral returns (like wages or the rental rate of capital) are identical across industries. Trade pits relatively abundant factors of production, the incomes of which rise as trade expands, against relatively scarce factors of production. The Ricardo-Viner (RV) model, in contrast, assumes that factors are trapped in their current industry of occupation, and factors (like capital and labor) employed in comparative advantage industries will support trade, while factors employed in comparative disadvantage industries will oppose it. Which of these models describes political cleavages over trade therefore depends on the degree of factor mobility (Alt et al. 1996, Hiscox 2002, Imai & Tingley 2012).

New trade theory. The standard trade model is parsimonious and easily applied to many contexts, but its record at predicting actual patterns of international trade is weak (Feenstra 2015, ch. 2). Most importantly, many industries both export and face import competition at the same time (e.g., the US wine industry both exports to and faces import competition from Australia). This intraindustry trade accounts for most of the trade among industrialized countries and thus became a focus of the so-called new trade theory (NTT).

The NTT identifies increasing returns to scale and consumer love of variety as the drivers of intraindustry trade (Krugman 1980). First, where fixed costs of production are present, access to foreign markets allows firms to expand output and lower the average cost of production. For example, both Australia and the United States exchange wine because firms in each country increase efficiency by selling their products in both markets. Second, consumer love of variety explains

why countries will benefit from exchanging similar goods within the same industry as differentiated products (e.g., wine made of different grape varieties grown in varying climates) become available. When consumers' tastes differ (e.g., some like wine from California and others like Australian reds), trade occurs between countries that share similar factors of production and technology. Despite firms producing different varieties, the early literature on the NTT assumed that all firms in an industry are the same size and that all firms export in the same quantity. Thus, the NTT is still an industry-level framework, and it does not account for the firm-level heterogeneity that we consider below.

Firm Heterogeneity in Sales and Sourcing

Although differences in technology, factor endowments, and consumer love of variety successfully explain some patterns in international trade, firm-level data have revealed enormous heterogeneity in the extent of global engagement across firms within industries. This heterogeneity has implications for the economic effects of trade and trade policy but also suggests that extant accounts of cleavages over trade—in which all firms in the same industry share the same preference—may be misleading.

Export participation. A core empirical finding in the literature on firms and trade is that in any given industry, usually only a minority of firms export. Bernard et al. (2007) find that approximately 18% of all US manufacturing firms export, and that exporters are a minority of firms in nearly all manufacturing industries. Moreover, exporting is exceptionally concentrated: An elite group of superstar firms generally account for the vast majority of foreign export sales. For example, the largest 1% of US firms that export account for 81% of US exports (Bernard et al. 2009). Exporting firms also tend to be larger and more productive than nonexporters and rely more on skilled labor and financial capital. Similar patterns have been uncovered in many other countries.

The highly skewed distribution of firms' export participation and the firm-level heterogeneity in factor usage are inconsistent with the standard trade model's focus on industry-level technological advantage and factor intensities, suggesting instead that firm-level factors shape competitiveness. Firm-level heterogeneity is also inconsistent with the identical firm assumption in the NTT, which implies that all firms export. Indeed, the focus on firm heterogeneity has shifted the primary unit of analysis in the study of trade from countries and industries to firms, and incorporating firms' export participation has contributed to key debates in international trade on the productivity-enhancing effects of trade liberalization within industries, the gravity model of trade (Chaney 2008), cross-country patterns of sales (Eaton et al. 2011), and unemployment and inequality (Helpman et al. 2010).

Importing (sourcing at arm's length). Firms import intermediate inputs and final goods produced offshore if they can benefit from factor endowments, technologies, and firm-specific relationships in foreign markets. Just as with exports, only a small subset of firms actually import intermediate and final goods. Bernard et al. (2007) find that the share of importers in US manufacturing industries is even smaller than the shares of exporters, approximately 14% of firms across all of manufacturing. Importing is also extremely concentrated, with the largest 1% of all importing firms accounting for 78% of all imports. Importing firms are much larger and more productive on average (Bernard et al. 2009).

Offshore production for sales and sourcing. Firm-level heterogeneity also occurs in foreign direct investment (FDI); we consider horizontal and vertical motives. Horizontal FDI occurs when

firms locate a foreign affiliate abroad to sell into that foreign market and is driven by market access barriers like tariffs and shipping costs. Like exporting, horizontal FDI is a minority pursuit and highly concentrated among large firms (Helpman et al. 2004). Vertical FDI occurs when firms set up production facilities abroad to exploit endowments, technologies, or supply chains located in those markets. The production is usually then exported back to the home market or the rest of the world. Like importing, vertical FDI is highly concentrated among the largest and most productive firms (Antràs & Helpman 2004).

Patterns of firm heterogeneity have opened up a fast-growing empirical literature. Although firm-level data are often private, some financial databases based on public company disclosure requirements have been used in academic research (e.g., Compustat and Orbis). Firm-level data are also available to researchers under strict government permissions. For example, researchers can analyze US firms' product-level trade activities using the US Census Bureau's Longitudinal Firm Trade Transactions Database. There is a growing number of empirical studies examining firm heterogeneity in the United States (Baccini et al. 2017), Europe (Mayer & Ottaviano 2008), and beyond.

Firm-Centered Theories of International Trade

Firm-level productivity differences and the costs of international trade have been identified as the key theoretical factors that explain firms' heterogeneous global engagement. First, some firms are more productive than others; that is, they have lower costs of production (Bernard & Jensen 1999). Firms that are more productive are able to sell in higher volumes and earn greater profits. Second, engaging global markets is costlier than engaging one's own domestic market. These costs may be fixed (e.g., bringing products into compliance with foreign regulations, or researching foreign factory sites) or variable (e.g., tariff and nontariff barriers to trade, or higher costs of doing business in foreign markets). When these two factors are present, only the most productive firms have the sufficient scale (or price markups over cost) to make absorbing the higher fixed (or variable) costs of global engagement worthwhile. This rationalizes the finding that firms which export and produce abroad tend to be highly productive and large.

These insights are formalized in a new generation of firm-centered trade theory, known as new, new trade theory. Melitz (2003) introduced a canonical model of international trade with firm-level heterogeneity in productivity. In the model, firms considering entering the market face uncertainty about their productivity. After paying a nonrecoverable fixed cost, each firm learns about its own productivity. Low-productivity firms will exit the market immediately. The remaining firms engage in competition to sell their differentiated varieties given consumers' love of variety, as in the NTT. Importantly, however, these firms differ in terms of their variable production cost: A firm with greater productivity uses less labor to produce one unit of its differentiated product. Consequently, more productive firms have lower production costs, and so only highly productive firms can export, as they can generate enough profits to cover the fixed costs of trade.

A key theoretical implication of this firm-centered model is that trade liberalization results in reallocations of production and profit within industries (Melitz 2003). Firms with low productivity shrink production due to intensified competition in goods and factor markets and may even go out of business (Pavcnik 2002, Tybout 2003). Highly productive exporting firms enjoy significant increases in profit from foreign markets due to expanded sales and increasing returns to scale. A very similar set of redistributive consequences can take place in the areas of importing and multinationalization of production. Only the most productive firms can benefit from enhanced opportunities for foreign sourcing and production. Less productive firms see no benefits and may be harmed by intensified competition from their own compatriot firms as well

as foreign firms (Topalova & Khandelwal 2011). Overall, global economic integration will redistribute profits within an industry—to firms that can engage global markets and away from firms that cannot.

These intraindustry reallocations of profit have crucial scope conditions, which delimit the reach of firm-centered accounts of trade. With respect to exports and import competition (ordinary trade), the key scope conditions for intraindustry reallocations of profit are that products be differentiated and that trade liberalization be reciprocal between two reasonably competitive partners (Osgood 2016, Kim 2017). Under these conditions, both trade partners will have exporting firms that benefit on net from trade, and both will have nonexporting firms that lose out from intensified competition in their home market. Major intraindustry reallocations of profit are less likely in industries where trade flows in one direction and where products are homogeneous commodities with a single price. As an example, all firms producing standardized products like sugar, coal, or basic steel will either benefit from or be harmed by trade depending on whether the price of their good is pushed up or down by trade liberalization.

In sourcing inputs from abroad at arm's length (that is, outside the boundaries of the firm), intraindustry allocations of profit require that there be significant opportunities for importing arising from trade liberalization, and that some feature of importing limit these opportunities to a subset of firms. For example, importable inputs might be relatively differentiated (or firm specific) and thus require the cultivation of close relationships with foreign producers, which may be too costly for smaller firms. Intraindustry reallocations are less likely for homogeneous inputs (e.g., imported gasoline or standardized printer paper) that are easily imported and distributed by intermediaries. The offshoring of production of components and final products has fewer scope conditions, requiring only that liberalization generate new opportunities for the offshoring of production restricted to a subset of firms.

Finally, we emphasize the prominent role of unrecoverable sunk costs of investment in production in most firm-level models. These sunk costs represent the inability of firms to repurpose capital outside of its present use, even within the same industry. This idea connects and contrasts the firm-centered approach with the debate on factor mobility in factor- and industry-centered approaches.

A FIRM-CENTERED MODEL OF TRADE POLITICS

Firm-centered models lead to a new and distinct approach to trade politics. This approach is founded on different assumptions than the prevailing approaches, especially firm heterogeneity in global engagement. These assumptions give rise to starkly different distributive consequences from liberalization of trade and investment, particularly intraindustry reallocations of profit from less productive firms to larger, more productive firms. In this section, we consider the original implications about preferences over trade that arise from these distributive consequences at the level of the firm and the industry and among all producers. We then consider how firm-centered approaches can contribute to understanding mass preferences over trade, the collective action problem, and the role of political institutions in shaping trade policy outcomes.

Trade Preferences

The study of trade politics begins with understanding the preferences of key political actors. We examine heterogeneous preferences over trade across firms, as well as firms' political activities. We then discuss several implications for understanding broader political coalitions in society over trade policy arising from firm-centered approaches.

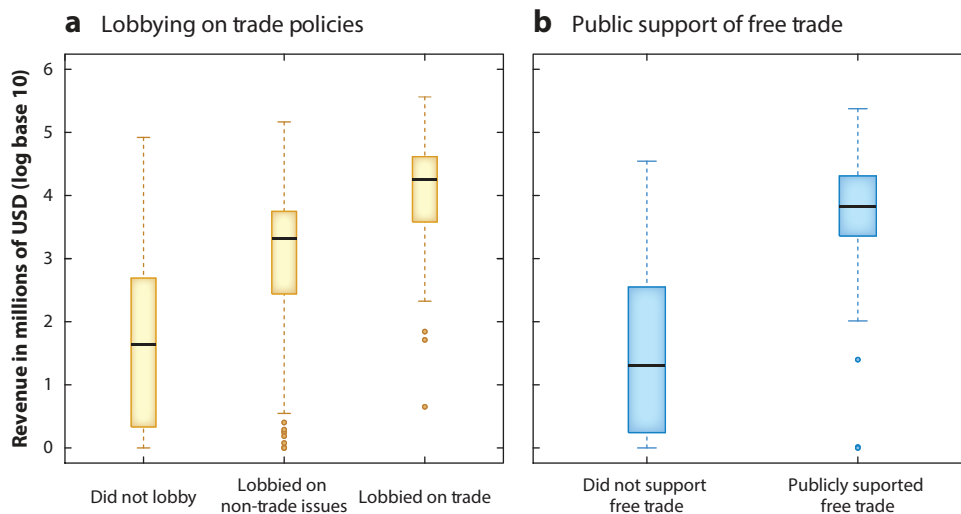


Figure 1

Revenue differences between politically active and inactive firms. (a) Comparison of the revenues (in logged US dollars) among firms that did not lobby (*left*), lobbied on issues other than trade (*middle*), and lobbied on trade issues (*right*). Note that firms that lobby on trade are significantly larger than other firms. (b) Firms that have publicly expressed support for open trade are larger than those that have not. This figure is based on all public manufacturing firms in 2014; data are from Compustat (a) and Orbis (b).

Firm preferences and political activities. The first major prediction of a firm-centered model of trade preferences is that more productive (or larger) firms should support trade liberalization, while less productive firms should not. This is a straightforward consequence of the intraindustry reallocations arising from liberalization described above. To illustrate this claim, **Figure 1a** shows that public US manufacturing firms that lobby on trade issues are significantly larger than other firms, even compared to politically active firms that lobby on nontrade issues (<http://www.LobbyView.org>). Because the Lobby Disclosure Act does not require firms to disclose the direction of their lobbying (e.g., for or against trade agreements), we also investigate whether firms supported trade in public statements. **Figure 1b** shows a remarkably similar contrast between firms that did and did not publicly support trade. Larger firms support trade liberalization and are more likely to engage in trade-related lobbying.

Heterogeneity in trade preferences is not limited to US firms. Plouffe (2017) and Osgood et al. (2017) find that larger firms are significantly more likely to support trade liberalization in Japan and Costa Rica, respectively. These patterns are not a result of the fact that larger firms concentrate in export-competitive industries: Both studies employ controls for industry-level competitiveness and find that firm-level features remain critical to explain preferences. In this vein, **Table 1** shows that the size and preference differences illustrated in **Figure 1** remain consistently stark across industries. The table provides descriptive statistics on the size distribution of publicly traded firms in 21 North American Industry Classification System (NAICS) manufacturing industries. It shows the number of firms in those sectors, the share of those firms that lobbied on trade issues, and the share of firms that publicly supported free trade.

These findings highlight differences between a firm-centered approach and the RV model of trade preferences. In the RV model, unproductive firms in comparative-advantage industries support trade, and productive firms in comparative-disadvantage industries oppose trade. In a firm-centered account, product differentiation severs the links between firms in an industry by

Table 1 Heterogeneous political activities within manufacturing industries

NAICS description (code)	Number of firms	Percent that lobby on trade ^a	Percent that support free trade ^b	Revenue differences		Example firm ^e
				Lobby ^c	Support ^d	
Food (311)	92	17.4	11.9	2.3	3.3	Tyson Foods, Inc.
Beverage and Tobacco (312)	36	27.8	11.3	2.2	4.1	Coca-Cola Company
Textile Mills (313)	11	9.1	16.7	0.2	3.5	Polymer Group, Inc.
Textile Product Mills (314)	5	20.0	0.0	-0.4	NA	Pillowtex Corp.
Apparel (315)	46	10.9	21.1	1.5	2.9	Hanesbrands, Inc.
Leather (316)	20	10.0	12.5	2.8	1.6	Nike, Inc.
Wood (321)	22	4.5	9.5	2.1	2.3	Western Forest
Paper (322)	40	12.5	24.1	1.9	2.5	MeadWestvaco Corp.
Printing (323)	21	0.0	12.5	2.2	2.1	R.R. Donnelley & Sons
Petroleum and Coal (324)	35	20.0	22.2	3.1	3.4	Chevron USA, Inc.
Chemical (325)	674	7.3	4.7	3.6	4.2	Pfizer, Inc.
Plastics and Rubber (326)	51	7.8	10.7	2.5	1.9	Armstrong World Ind.
Nonmetallic Minerals (327)	28	14.3	7.1	1.4	2.7	Owens-Illinois, Inc.
Primary Metal (331)	54	22.2	6.8	1.5	1.5	US Steel Corp.
Fabricated Metal (332)	74	5.4	10.3	1.0	2.3	Timken Company
Machinery (333)	200	8.5	8.2	2.7	3.4	Caterpillar, Inc.
Computer and Electronics (334)	642	6.1	4.7	3.6	3.1	Microsoft Corp.
Electrical Equipment (335)	88	8.0	3.0	2.7	3.1	General Electric
Transportation Equipment (336)	132	13.6	14.6	3.1	3.4	Boeing
Furniture (337)	25	4.0	13.8	1.2	1.2	Leggett & Platt, Inc.
Miscellaneous (339)	171	5.8	4.0	2.1	3.4	3M Company
Total	2,516	8.6	7.2	2.1	3.4	NA

Abbreviations: NA, not applicable; NAICS, North American Industry Classification System.

^aLobby data are from LobbyView (<http://www.LobbyView.org>).

^bFirms' support for free trade is measured with participation in ad hoc coalitions that support trade, press releases, submissions, and congressional testimony.

^cDifference in revenue (in millions of US dollars, logged) between lobbying and nonlobbying firms.

^dDifference in revenue (in millions of US dollars, logged) between companies that publicly supported free trade and those that did not.

^eCompanies with the most lobbying reports related to trade issues in each NAICS industry, 1999–2016.

turning them into quasimonopolists of their own product varieties while also generating intraindustry trade. The literature has thus examined product differentiation as a key scope condition. Kim (2017) demonstrates that productive firms lobby on their own to support trade liberalization when their products are sufficiently differentiated. Osgood (2017a) identifies inconsistencies with the RV model in public attitudes toward trade among US producers (e.g., support for trade in net-importing industries), which primarily occur where products are differentiated.

The literature has also examined opportunities for the development of global supply chains as a determinant of firms' trade policy preferences. Jensen et al. (2015) show that firms heavily engaged in global production for export back to the United States are far less likely to file antidumping petitions. Blanchard & Matschke (2015) show, using firm-level data on the global production of US multinational corporations (MNCs), that industries with significant multinationalization have lower tariffs, suggesting that US MNCs have pushed down tariffs in the United States. Kim et al. (2019) use a conjoint experiment to examine the contrasting interests of import-competing domestic firms, exporting firms, and multinational firms across several key facets of modern trade agreements.

Divisions within industries. The firm-level drivers of preferences examined in these studies suggest a second implication for preferences over trade: Industries might be internally divided over whether to support or oppose trade liberalization. The literature examines two observable implications of these divisions: public intraindustry divisions over trade, where some firms support a trade liberalizing measure that other firms in the same industry oppose, and firm-centered patterns of lobbying and position taking, where individual firms lobby or publicly take positions on trade while industry associations remain inactive. For example, US Steel lobbies heavily on trade although the firm itself is also a member of American Iron and Steel Institute, an industry association. **Table 1** provides more systematic detail on firm-centered patterns of lobbying and public support across US manufacturing industries, illustrating that political engagement on trade is a minority pursuit, with much activity undertaken by individual firms.

Several studies have examined intraindustry disagreements and firm-centered political activities. Madeira (2016) and Osgood (2017a) find that public intraindustry disagreements and firm-centered (rather than association-centered) patterns of lobbying are greater in industries with product differentiation or intraindustry trade. Milner (1988a) and Osgood (2017b) find that these manifestations of intraindustry cleavages are also associated with the sourcing of intermediate inputs and offshoring. Jensen et al. (2015) argue that disagreements between onshore and offshore producers undermine efforts (at the level of the industry) to counter foreign currency undervaluation. The heterogeneity in firms' political activity examined in these studies calls into question the assumption of homogeneous preferences across members of an industry, suggesting that industry organizations may not fully represent heterogeneous interests among their members.

Broad-based cleavages and coalitions. A third major implication for preferences over trade concerns the macro structure of pro- and antitrade forces. In factor- and industry-centered accounts, protrade forces at the societal level are abundant factors or competitive industries, respectively. In these two cases, all firms, large and small, support trade if capital is locally abundant; or all firms located in competitive industries support trade. In our firm-centered account, the protrade coalition includes very large firms that cut across both net-exporting and net-importing industries. The antitrade coalition includes the less productive firms from across all industries, including industries that are net exporting. These patterns seem to be evident in the constellation of peak associations and coalitions that regularly support trade in the United States. For example, large firms are heavily represented in the protrade US Chamber of Commerce and National Foreign Trade Council. Major corporations also play a prominent role in the ad hoc coalitions that form to support US trade agreements. The broad outlines of the US protrade coalition are also evident in **Table 1**, which shows that lobbying on and support for trade occurs across nearly all US manufacturing, even as it is concentrated among the largest firms. Many opportunities remain to investigate firms' preferences, intraindustry divisions, and coalition formation amid firm heterogeneity outside the United States.

Protrade firms' allies: workers and owners of equities. A firm-centered approach to trade has implications for workers' attitudes toward global economic integration because workers' interests in trade may be directly tied to the success of their firm in the global economy. Bernard et al. (1995) show that larger and more productive firms pay higher wages to their workers, while Helpman et al. (2010) show that there exists significant wage inequality within industries across firms. This may be because high-productivity firms employ different kinds of workers (e.g., higher-skilled workers to produce higher-quality products), or because search frictions allow workers at larger firms to bargain for higher wages. Either way, the heterogeneous impact of globalization on firms in the same industry naturally leads to heterogeneous effects on workers (Dancygier & Walter 2015). Workers employed in larger and more globally competitive firms will be more likely to support integration; workers employed in smaller, uncompetitive firms will be more likely to oppose trade.

This firm-centered approach has already brought renewed focus to material drivers of mass preferences over trade. Walter (2017) provides evidence on the globalization preferences of workers in Europe, showing that high-skilled workers are less concerned about labor market risk than are low-skilled workers, especially where exposure to the global economy is high. This latter conditional effect is crucial for disambiguating these results from a standard factorial approach (which might argue that high-skill workers in any industry might support trade in skill-abundant Europe). This approach might be extended by further examining interfirm mobility of workers across professions and industries. For example, data entry workers may be highly substitutable across firms and thus have a weaker attachment to the trade policy preferences of their current employer. Workers with highly specialized skills may be far less substitutable, and their preferences may thus align closely with those of their current employer. Alternatively, Owen (2017) and Owen & Johnston (2017) emphasize the importance of offshorability of particular types of tasks or jobs. Offshorability of tasks ought to interact naturally with a firm-centered model of trade because highly productive firms are more likely to engage in offshoring. In this way, workers engaged in offshorable tasks may be especially opposed to globalization if they happen to work at large, globally engaged firms (Rommel & Walter 2018). This complicates the initial conjecture that workers at large firms might be more proglobalization. Many opportunities for research remain in this area.

Because the firms that are the greatest beneficiaries of global integration are large and highly productive, many of them are also public corporations. Thus, protrade firms and large owners of equities may share a strong stake in globalization. While the ownership of stocks is relatively concentrated, many citizens may own equities through retirement savings, pension plans, and even charitable endowments (as in our own profession). In this way, support for the current global economic order may extend beyond the small number of very large corporations that dominate trade and investment.

Firm-Centered Approaches and Collective Action

A foundational claim in the study of the political economy of trade is that concentrated protection-seeking special interests have organizational advantages (they are small in number and have intense preferences) compared to dispersed protrade consumers (who are numerous and have weaker preferences over any protective measure) (Schattschneider 1935, pp. 127–28). This argument is adduced to explain why trade has been relatively unfree across time (Pareto 1927, p. 379). Yet trade is remarkably free in the present era.

A firm-centered account of collective action over trade may shed light on this puzzle. Because the benefits of global economic integration are highly concentrated, big firms have strongly held

preferences for integration, and they are also few in number (De Bièvre & Dür 2005). In models of firm heterogeneity, the costs of integration (as greater home market competition from either foreign firms or globally engaged home market firms) are widely spread, and so firms opposed to trade are many but have weaker preferences. Protrade firms may therefore have advantages in individual forms of political action, like lobbying (see **Table 1**) and campaign contributions. Larger firms have both greater financial resources to invest in political influence and the scale to make those investments profitable to the extent that political investment has fixed costs. In this way, the drivers of firm engagement in international markets mirror the drivers of firm engagement in political markets.

Protrade firms may also have advantages in industry-based forms of collective action, such as industry trade associations. A long-running theme in the literature on trade protection concerns the size distribution of firms in industries: It is argued that industries with significant heterogeneity in firm size will be more likely to organize and secure trade protection, as the largest firms pay the costs of organization (Bombardini 2008). This argument might be extended by considering preference heterogeneity between large firms and small firms. Highly skewed distributions of firm sizes may give rise to industry associations dominated by large firms, which therefore support global economic integration. This pattern may explain empirical estimates of the weight placed on consumers' preferences for trade in the Grossman & Helpman (1994) model, which suggest that politicians discount the demands of protection-seeking producers in their objective functions (Gawande & Bandyopadhyay 2000).

Finally, big protrade firms may also be structurally advantaged in their society-wide effort to form a broad-based protrade coalition. Because large protrade firms are fewer in number than smaller antitrade firms, protrade firms are likely to find collective organization easier. Lines of responsibility are clearer, and monitoring contributions is simpler, among smaller groups. Larger firms which concentrate the gains from trade also hold more intense preferences, increasing the marginal benefits of contribution to collective efforts in favor of liberalization. This argument therefore reverses the usual formulation about the collective advantages of trade's opponents and thus suggests a new explanation for the current era of global economic integration. The patterns we describe above of highly organized protrade coalitions in the United States (and a corresponding lack of organization and influence at the broadest levels among antitrade firms) provide *prima facie* evidence of this claim, although more research is certainly needed.

Our discussion of the organizational advantages of protrade firms raises two questions. First, if protrade firms have these advantages, why has trade not always been free? One tentative answer is that the scope conditions for firm-centered models of trade politics hold in the present more than they did in the past. Product differentiation may have increased over time, activating intraindustry divisions over trade; moreover, global supply chains have become more developed due to improvements in shipping and logistics. Second, couldn't product differentiation make trade protection a private good if firms are able to secure narrow tariffs on the precise varieties that they monopolize (Gilligan 1997, Goldstein & Gulotty 2014)? In this alternative account of how firm-specific interests affect trade politics, firm-level factors reinforce, rather than weaken, protectionism (Bombardini & Trebbi 2012). This is a powerful argument, which may coexist with our argument about the collective advantages of protrade firms: Those same broadly protrade firms may be pursuing individually tailored forms of protection at the same time that they seek greater market access abroad. Overall, we suspect that very large protrade firms may resist that temptation to the extent that individual carve-outs undermine reciprocal efforts at liberalization or directly harm their own interests, as with vertical MNCs.

Firms and Political Institutions

The ways in which firm-centered models interact with domestic political institutions have received little attention. We advance some conjectures building off the following question: If very large firms and MNCs are the primary supporters of international integration, then what are the political institutions that amplify their voices? One answer is permissive rules on lobbying and campaign contributions. Among corporations, these activities tend to be dominated by the largest firms (Drope & Hansen 2006). Institutional changes that facilitate lobbying or increase limits on corporate contributions to politicians will therefore strengthen the voices of primarily protrade actors. In polities where the influence of large corporations is more circumscribed, an important protrade voice will tend to be diminished. The literature lacks a cross-national examination of the effects of regulations governing special interest access on trade openness.

Electoral institutions may also be worth investigating, although it is not obvious which electoral institutions empower the narrow slice of globally engaged firms (Rickard 2015). Betz (2017) provides one model, arguing that institutions that privilege narrow interests (such as plurality rule) may amplify either protrade or antitrade special interests, creating a greater variance in trade policy outcomes. Rickard (2012) and Park & Jensen (2007) argue that narrow-interest institutions conduce toward subsidies, which naturally target individual firms, including exporters and MNCs. This points toward a more careful examination of the varieties of trade protection and how they might target different levels of aggregation—firm, industry, or factor. An alternative view might hold that plurality or majoritarian systems, with their smaller districts and candidate-centered politics, grant more power to very large corporations, as particular districts look like company towns. To the extent that larger corporations are more organized and influential, plurality rule may then lead to more liberal trade.

The leading role of a small number of very large, protrade firms in supporting globalization also suggests new channels by which democratic institutions can affect trade policy (Mansfield et al. 2002, Dutt & Mitra 2002). If democratic institutions tend to disempower elite producer interests, then democratization might threaten free trade. If, in contrast, democracy has the effect of weakening both elite and nonelite producers equally, then the effects of democratization on the special interest politics of trade may be ambiguous. Another unanswered question is whether mass publics are reacting to the fact that a small number of very large firms are taking the lion's share of the benefits from the open economic order. Further investigation of this point is critical in light of renewed populist opposition to globalization.

Finally, a firm-centered approach is easily integrated into a long-standing theme in the literature on international trade institutions, that such institutions turn trade policy from a unilateral decision to a reciprocal bargain. In a firm-centered model, rather than activating export-oriented industries, reciprocity will activate export-oriented firms. Moreover, these firms cut across industrial boundaries and so undermine efforts by less competitive industries to hold a united front against trade. As such, the steady march of liberalization through the General Agreement on Tariffs and Trade (GATT)/World Trade Organization (WTO) (at least up to the present round of negotiations) may reflect the shared interests of globally engaged firms.

FURTHER APPLICATIONS OF FIRM HETEROGENEITY

The Design of International Economic Cooperation

A firm-centered framework has important implications for the design of international trade agreements (Kim 2015, Dür et al. 2014). The rise of investment protections strongly reflects the

interests of the small proportion of firms that have significant multinational operations and the resources to handle arbitration costs. Kim et al. (2019) examine how firm characteristics affect preferences over investment provisions and dispute settlement mechanisms. Johns & Wellhausen (2016) and Wellhausen (2014) examine MNCs' efforts to cultivate networks of host-country and conational allies as a backstop when investment provisions are absent or fail to deter expropriation. Malesky & Mosley (2018) and Distelhorst & Locke (2018) focus on firms' responsibilities in the area of labor standards. Both of these papers identify firm-level mechanisms that induce compliance with labor standards, whether from exporting firms abroad or from sourcing firms at home. Following this work, we highlight that firms are often the appropriate unit of analysis for investigating deep integration beyond market access (Antràs & Staiger 2012).

Trade agreement chapters protecting owners of intellectual property (IP) are also likely to reflect the demands of very large firms because ownership of IP is concentrated among large firms. Because large firms also dominate foreign trade, they have strong incentives to see that ownership rights are respected globally. In this view, the rise of IP provisions in trade agreements not only is a functional spillover, but also may represent the interests and power of the firms that set much of the global trade agenda. There is a need for further work in other issue-specific chapters (e.g., services trade, financial services, telecommunications, and e-commerce) to employ firm-centered approaches to understanding why these industries and sectors have received specific attention, while others have not. It also remains to be shown if and how the content of these chapters reflects the specific interests of very large firms.

Firms' preferences may also drive the regulatory provisions of trade agreements. Globally engaged firms may lobby to reduce foreign regulatory barriers while also standardizing regulation across the various markets in which they operate. Alternatively, Gulotty (2014) argues that foreign regulation often acts as an additional fixed cost of production for exporting firms. Because larger firms can absorb these costs, they may support higher fixed costs in their export markets to defeat export market entry of less productive rivals. This argument is supported by an examination of the demands of multinational firms in trade negotiations, as well as by several prominent cases of regulatory protection.

Finally, firms also impact the functioning of the international economic order. For example, temporary trade remedies like duties on dumped or subsidized products are generally requested by individual firms in WTO member states, raising several questions: What are the characteristics of firms that seek temporary protection? Which firms in an industry are hurt by temporary protections, which damage their ability to source abroad or export due to retaliation, and how are these intraindustry conflicts managed (Konings & Vandenbussche 2013, Jensen et al. 2015)? What firm-level features impact the functioning of the system of trade remedies? In answer to these questions, some literature has developed on the role that firms play in initiating disputes at the WTO. Bown (2010, ch. 5) provides an overview of the various roles that individual firms play in the WTO's dispute settlement process. Brutger (2016) argues that firms subsidize states' legal efforts, both to lower the costs of WTO litigation to their own government and as a costly signal of the seriousness of their injury.

Foreign Direct Investment

Trade and FDI are interlocking arenas reflecting different options available to globally engaged firms (Pandya 2016). The economics literature identifies two distinct trade-offs that reflect our separation of global sales and sourcing. First, horizontal FDI (selling goods made in a foreign market rather than exporting to that market) is likely when the costs of trade outweigh the costs

of opening and maintaining foreign subsidiaries, including in diseconomies of scale from international fragmentation. This is the proximity–concentration trade-off (Helpman et al. 2004). Because there may be firm-level heterogeneity in the ability of firms to open foreign affiliates, this trade-off may generate conflicts of interest within industries, as potential exporters push for trade liberalization that horizontal MNCs resist (and MNCs push for investment liberalization that exporters resist). The literature lacks a definitive account of such intraindustry clashes of preferences and their effects on equilibrium tariffs.

Firms that are considering sourcing abroad also face a trade-off. Foreign sourcing of inputs and final goods within the boundaries of the firm (vertical FDI) ensures control and eliminates the hold-up problem but is generally thought to have larger start-up costs than sourcing at arm's length from foreign suppliers (Antràs & Helpman 2004). Vertical MNCs and offshore outsourcers therefore do not have a direct clash of interest over trade policy—both prefer that home-market trade barriers on the inputs and final products that they produce abroad be lowered. However, they might disagree on whether to prioritize protections for foreign investment or for IP (as in recent debates about rules on investment, technology transfer, and IP in China). The effects of foreign property rights have been a key focus of the trade literature on this trade-off; endogenizing those property rights in a model of trade and FDI politics with interstate bargaining would be a valuable contribution.

Extensive and Intensive Margins of Trade

Firm-centered models identify firms' selection into foreign markets as the primary variable of interest in international trade. Specifically, the gravity equation of international trade, which relates bilateral trade volume and distance between countries, is mostly accounted for by the extensive margin (i.e., the number of exporting firms and number of products) alone, rather than the intensive margin (i.e., the volume of trade) (Chaney 2008). Indeed, Eaton et al. (2011) show that the number of French firms exporting to a certain market (i.e., the extensive margin) is strongly correlated with market size, while sales distributions of firms are notably similar across markets. Firms exporting to smaller markets are also more likely to serve large markets, confirming the importance of analyzing firms' export participation in and of itself.

These findings have implications for empirical studies of trade, in which the gravity equation has been a primary workhorse model with little attention paid to extensive margins. Scholars often relate bilateral trade volume to other political variables of interest (e.g., a regression of bilateral trade on a measure of democracy), while entirely excluding country pairs that do not engage in trade from their analysis. Such analysis, however, introduces selection bias if there exist systematic reasons why countries do not trade to begin with. We expect that a promising area for future research will be related to distinguishing firms' selection into foreign markets when scholars evaluate the effects on trade of various domestic and international institutions, such as the GATT/WTO (Tomz et al. 2007), democracy (Mansfield et al. 2000), and alliances (Gowa 1989).

Other Areas of International Political Economy

Several other areas in international political economy might benefit from closer attention to the political activities of firms. Peters (2014) argues that burgeoning multinationalization and trade liberalization have eroded demand for immigrant labor from labor-intensive firms in the United States, and examines patterns of firm-level lobbying (Peters 2017, ch. 5). Kerr et al. (2014) examine corporate lobbying in favor of high-skilled immigration. In these papers, only some firms can go abroad to employ less-skilled workers, and only some firms can afford to lobby in favor of fewer

restrictions on the immigration of high-skilled workers. In this way, the politics of immigration can divide industries.

Analogously, firm-centered approaches to the politics of capital movements are ripe for further exploration. Following Pinto & Pinto (2008) and Pandya (2013), one approach might consider how foreign capital can either complement or compete with domestic capital depending on the size of the firm or some other firm-level characteristic. Deepening supplies of foreign capital might particularly benefit the larger firms that issue commercial paper, bonds, or publicly traded equity shares, for example, while increasing competition for smaller firms not participating in capital markets. Future research might consider financial development's role in firms' global competitiveness—and vice versa—in a setting where trade and financial policy are endogenous (Do & Levchenko 2007).

Firm-level analysis also holds new insights for exchange rate politics. Broz et al. (2008) examine firm-level survey data on exchange rate preferences but find no consistent effect of firm size on exchange rate attitudes. A possible extension might consider how heterogeneity in firms' global operations affects preferences over the exchange rate, as when vertical MNCs welcome home-country appreciations that both exporters and domestic firms oppose. Walter (2008) examines how the composition of firms' balance sheets may impact preferences over the level of the exchange rate and the exchange rate regime. For example, firms that borrow in foreign currencies are vulnerable to currency depreciation; firms that borrow domestically are vulnerable when a currency peg requires monetary tightening. Both of these ideas suggest that there may be significant heterogeneity that cuts across the sectoral and industrial lines that are emphasized in the literature on exchange rate preferences.

CONCLUSION

We conclude by synthesizing several benefits associated with reorienting the study of the political economy of globalization around the close examination of firms. Firms are key players in trade and trade politics, but their economic and political activities have not been fully incorporated into the field of international political economy. Many of the movements of goods, money, and people that are attributed to industries or countries are actually undertaken by individual firms. Understanding the politics of global economic integration therefore requires a new standard unit of analysis both theoretically and empirically, which also demands more granular theory, data collection, and empirical methods.

The extant literature on trade politics has conventionally focused on a debate over whether trade coalitions are essentially factoral or industrial. A firm-centered approach presents a competing model, with distinct observable implications that can help us to understand outstanding puzzles in the literature on trade preferences: Why do so many firms support trade in import-competing industries in the United States, and why is so much lobbying on trade conducted by firms? Why are so many big firms supportive of trade liberalization in capital-poor countries, and why are high-skilled workers supportive of trade in the developing world, too? As the debate over factors or industries remains unresolved, scholars have increasingly turned their attention to noneconomic motivations for mass preferences over trade. A new focus on firms has usefully rebalanced scholarship by refocusing on producers' trade policy preferences. Understanding how these firms have contributed to our present era of globalization, and how they will respond to a global economic order that is under increasing strain from both mass hostility and nationalist politicians, will provide a rich set of research opportunities in the years to come.

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Errata

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