

Firms and Global Value Chains: Identifying Firms' Multidimensional Trade Preferences

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Trade policy has become increasingly multidimensional. Current trade agreements not only address market access but also encompass rules and provisions related to flexibility of commitment, investment protection, and dispute settlement mechanisms. Yet, rigorous evidence about how interest groups evaluate each of these in relation to the others remains scarce. We develop a firm-level theoretical framework to explain how firms' international operations affect their preferences on different trade policy measures. We experimentally evaluate preferences over multiple policy dimensions using a conjoint analysis on firms in Costa Rica. Notably, for many types of firms, the standard trade policy measures of yesteryear—tariffs and subsidies—are no longer their most important concerns. Instead, the degree of firms' involvement in global value chains shapes their preferences. Multinational corporations care most about protection of their foreign investments. Those exporters who are not central to global supply networks most value strong dispute settlement procedures. Finally, we find that preferences over these policy dimensions are more likely to vary by firm than by industry, which calls into question the existing literature's focus on interindustry distinctions.

Introduction

A vast literature examines the distributional implications of trade policy across different interest groups and individuals. Scholars identify the winners and losers based on numerous political and economic factors, such as factor ownership and mobility (Rogowski 1987; Alt, et al. 1996; Hiscox 2002), electoral politics and political institutions (Mayer 1984; Mansfield, Milner, and Rosendorff 2000; Milner and Kubota 2005), asset ownership (Scheve and Slaughter 2001), and industry characteristics (Grossman and Helpman 1994). In general, existing studies tend to characterize trade preferences based on whether an actor favors or opposes trade liberalization.

The increasing multidimensionality of trade policy, however, presents an important challenge to examinations of trade preferences that focus exclusively on market access and its distributional implications. Current trade agreements not only address the elimination of tariffs and non-tariff barriers for freer trade, but also encompass a variety of rules and standards regarding production, environmental protection, flexibility of commitments, investment protection, and dispute settlement mechanisms (DSMs) (Rosendorff and Milner 2001; Andonova, Mansfield, and Milner 2007; Busch 2007; Estevadeordal, Suominen, and

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Teh 2009; Kucik 2012; Mansfield and Milner 2012; Dür, Baccini, and Elsig 2014; Kim, Mansfield, and Milner 2016; Hahm, et al.). These types of policies have much more complicated implications for trade. Over the last several decades, scholars have carefully examined the political implications of each of these policy dimensions (Goodman, Spar, and Yoffie 1996; Busch 2007; Kucik and Reinhardt 2008; Blanchard 2010; Wellhausen 2015). However, they do not generally study how interest groups evaluate trade policy when a number of distinct issues are at stake simultaneously; we also lack a sufficient understanding of how interest groups consider each policy dimension in relation to the others.

We show that the most important trade policy issue varies significantly across firms depending on the degree of their involvement in global value chains (GVCs, hereafter). Structural transformations in the international trade environment appear to have affected the domestic politics of trade and the preferences of firms (Farrell and Newman 2016). In comparing five of the most important dimensions of trade policy, we demonstrate that firms embedded within a global production network perceive strong measures to protect their investments as the *most* important aspect of trade policy. In contrast, for firms outside of such networks, powerful dispute settlement mechanisms will be more important.¹ Our argument relies on the assumption that firms positioned differently in terms of GVCs cope with the risks and uncertainties inherent in global trade differently. Firms in GVCs are parts of interrelated contractual relations, sharing the risks of time-inconsistency problems among themselves. Firms that engage in trade autonomously must rely on other instruments, such as strong dispute settlement mechanisms, to ensure that their international trade flows are not disrupted. As Johns and Wellhausen (2016, 31) point out, global supply chains may serve as “informal property rights” institutions, whereby firms’ activities in multiple nations are tightly linked.

We depart from many studies of trade politics, which focus on each trade policy dimension *separately* from others. Instead, we consider firms’ preferences across multiple policy dimensions as a whole. Firms’ preferences over one policy issue likely depend on the availability and utility of other trade policies. But when firms consider multiple aspects of trade policy at once, we expect that certain policy dimensions will become more or less salient than others. Hence, our study suggests that the conventional way of portraying interest groups’ preferences as *either* in favor of protectionism *or* trade liberalization across a single dimensional space is too restrictive.

To estimate a firm’s preferences over multiple policy areas, we employ conjoint analysis (Hainmueller, Hopkins, and Yamamoto 2014, and references therein). This survey method allows us to identify firms’ relative preferences across multiple policy dimensions based on a fully randomized design. This method allows us to estimate the intensity of firms’ preferences over each policy dimension in relation to others, while accounting for the correlations across them. Thus, it serves our goal of obtaining a comprehensive picture of the multidimensional preferences of firms.

We conducted our study in Costa Rica, which is a middle-income developing democracy that has opened up to trade by joining the General Agreement on Tariffs and Trade

¹To understand the growing importance of investment protection and DSMs in recent trade agreements (for example, Manger 2009), we argue that firms should be our primary focus. Consumers are unlikely to know much about, or have well-defined preferences over, these dimensions of trade. And industries, as we show later, are also less appropriate for this analysis.

(GATT) in 1990 and signing thirteen preferential trade agreements (PTAs) over the years. Costa Rica provides a valuable case for the study of trade politics in developing countries that have become integral members of global trade networks. We surveyed top executives in 214 Costa Rican firms who were presented with five sets of paired trade policies that differ along five dimensions: (1) investment protection, (2) reduction of tariff and nontariff barriers, (3) export subsidies, (4) use of dispute settlement mechanisms, and (5) flexibility of international commitments.

Notably, for many types of firms, the standard trade policy measures—tariffs and subsidies—are no longer their most important concerns. Instead, exporters and multinationals, but especially the latter, evaluate investment protection as the most salient policy issue. However, there exists much heterogeneity among exporters. First, exporters that are involved in GVCs consider investment protection as the most important policy dimension, unlike exporters outside of GVCs and domestic firms. Second, exporters that are outside of these global production networks favor strong dispute settlement procedures the most. Finally, using various measures of industry classifications, we fail to find consistent evidence for interindustry variation in trade policy preferences. Rather, firm characteristics seem to matter more than industry characteristics in shaping preferences over trade policies. Our findings call into question whether existing accounts of why governments engage in trade agreements apply to trade agreements with multiple policy instruments (Grossman and Helpman 1994; Bagwell and Staiger 1999). Our study allows researchers to reconcile “new” new trade theory (NNTT) with the empirical literature on international trade agreements and their designs.

Our work builds upon the growing literature on firm-level theories of international political economy (Weymouth and Broz 2013; Plouffe 2015; Osgood 2016; Kim 2017; Osgood et al. 2017; Kim and Osgood 2019). It is directly related to Meckling and Hughes (2017) who examine the effects of firm’s participation in GVCs on their trade preferences. Our investigation of firms’ preferences over multiple policy dimensions links to the literature on firms’ heterogeneous interests regarding a specific policy issue, such as foreign direct investment (FDI) regulation, antidumping, or market access (Jensen, Quinn, and Weymouth 2015; Pandya 2016). Consistent with the literature, we find that preferences over different dimensions of trade policy vary by firm, not industry. Our theoretical framework extends NNTT (for example, Melitz 2003). While NNTT focuses on firms’ productivity differences in explaining firms’ heterogeneity, we further distinguish among the preferences of exporters over other policy dimensions by highlighting the differences arising from their involvement in GVCs.²

How Firm Preferences Vary with the Extent of their Involvement in Global Trade

Important changes have occurred in the nature of global trade flows: while overall trade has grown fast, intra-industry trade and global production networks have grown the fastest (Krugman 1980; Antràs 2003; Bernard et al. 2010). These two forms of trade account for well over 80 percent of all trade flows (OECD, WTO, and UNCTAD 2013, 23). The prevalence of import and export flows within the same industry in a country and the growth of global production

²MNC-coordinated production chains account for 80 percent of global trade, with local firms contributing 40 to 50 percent of export value added. See Johns and Wellhausen (2016, 33).

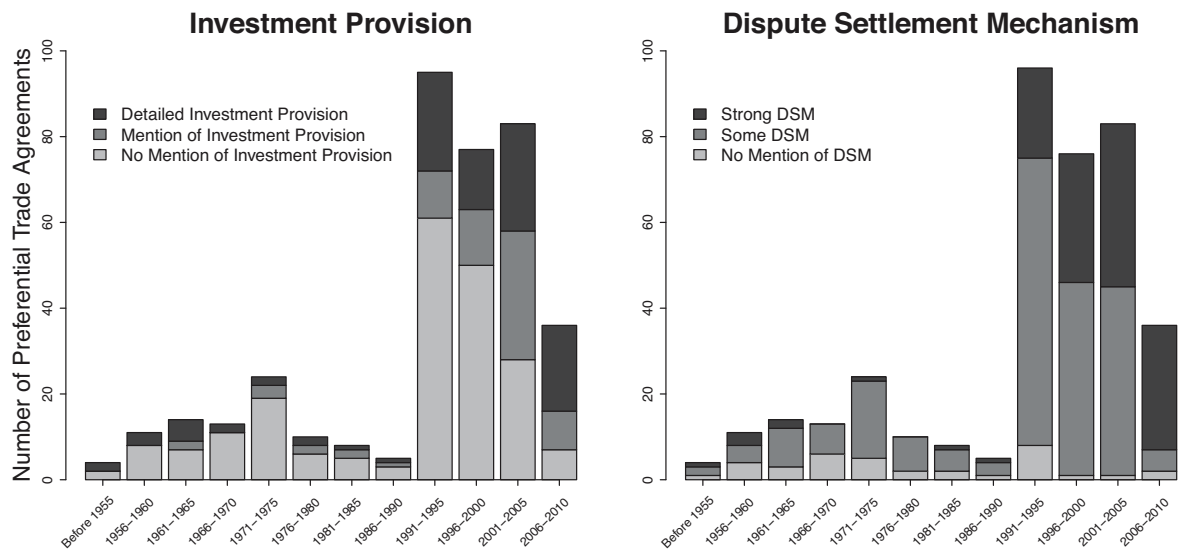


Figure 1. The rising importance and depth of investment provisions and dispute settlement mechanisms in PTAs
Note. This figure displays the number of trade agreements having investment provisions and dispute settlement mechanisms.

networks suggest that theories of trade politics need to consider firms as primary political actors. Rising intra-industry trade and global production networks have accompanied the growing importance of different types of trade policies (for example, [Büthe and Milner 2008](#); [Dür et al. 2014](#)). All major bilateral and multilateral trade negotiations recently have focused not only on traditional policy measures affecting market access, such as tariffs, subsidies, and nontariff barriers (NTBs), but also increasingly on other policy instruments such as investment provisions and dispute settlement mechanisms.

We depart from conventional studies by examining firms' heterogeneous interests over multiple trade policy issues, in particular investment protection and DSMs. Although market access remains important, firms engaged in trade pay increasing attention to protecting their foreign investments and maintaining the rules-based trading system. These two policy dimensions have become essential components of trade agreements, both in their frequency and strength over time ([Dür et al. 2014](#)). Figure 1 shows the growing prevalence and the depth of investment provisions and DSMs in all reciprocal trade agreements using updated data available from [Büthe and Milner \(2008\)](#).

Firms' heterogeneous engagements in international trade—even within the same industry—have important implications for understanding trade politics. We focus on two key sources of heterogeneity: in firms' export engagements and in their connections to global value chains. First, firms differ in the extent of their export performance ([Melitz 2003](#)). Only a very small number of productive firms export, and firms in different countries export similar products within the same industry ([Bernard et al. 2007](#), 108). Although differences across industries are still relevant, intra-industry trade implies that firms within the same industry are producing highly differentiated products and that some of them face import competition while others export. The presence of intra-industry trade (that is, import and export flows in an industry concurrently) requires the recognition of heterogeneous preferences across firms

because firms with different levels of engagement in trade coexist in the same industry. Industries are now populated with import-competing domestic firms, exporting firms, and multinational firms, with little overlap in their main trade policy preferences. Firms within the same industry thus will have different preferences for different aspects of trade policy and different interests in political activity related to trade.

Second, the expansion of global production networks generates firm-level differences even among exporters ([Hummels, Ishii, and Yi 2001](#); [Yi 2003](#)). Some firms engage in exports autonomously, that is outside of such networks, while some firms import and export intermediate goods as a part of a network of global production. Such firms are incorporated into GVCs in two distinct ways, which, despite their differences, lead to many shared interests. First, multinational firms establish production facilities in various countries and use the different products they make in each to source inputs into their final products in a global production network. Second, many local firms now import and export mainly to serve GVCs; they import inputs from their upstream partners and export parts and components, which then become inputs into production by their downstream partners. These local firms are key elements in global supply chains as they contribute almost 50 percent of export value added ([OECD, WTO, and UNCTAD 2013](#)).

To operationalize a firm's involvement in GVCs, we go beyond the version of NNTT that focuses primarily on distinguishing firms' engagement in *exporting* based on their productivity differences (for example, [Melitz 2003](#)). We explore the differences among exporters based on their import activity and ownership structure. First, we distinguish "exporting-only" firms (denoted by *autonomous exporter*) from exporters that also engage in importing inputs (denoted by *exporter in GVCs*). As [Bernard, Jensen, and Schott \(2009, 128\)](#) find, using detailed US firm-level data, "[f]irms that both export and import have greater breadth of global engagement than firms that do not trade or firms that just export or just import." Although few studies investigate the

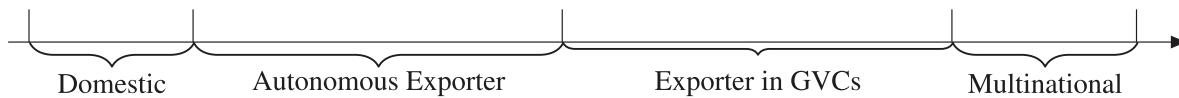


Figure 2. Sorting firms based on their involvement in global production chains

Note. We distinguish among exporting firms depending on their levels of engagement in global production networks. Firms without imports that export final goods without being involved in complex contractual relations with foreign partners are Autonomous Exporters. Firms that simultaneously export and import within global production chains are Exporters in GVCs. Multinational firms are most involved in GVCs as they make foreign direct investments to serve their own production chains.

co-occurrence of exports and imports, firms in GVCs often import intermediate goods from abroad while exporting their own goods for further processing, as noted above.³ Second, we distinguish *multinational* firms with international ownership from other exporters with domestic ownership. We define a firm multinational if the firm owns at least one foreign subsidiary or is itself a subsidiary of a foreign firm. As Helpman, Melitz, and Yeaple (2004) show, the high productivity of multinational firms allows them to serve foreign markets directly through foreign investments rather than relying on exports. Moreover, they also tend to serve foreign markets through subsidiaries within their own network. Multinationals are fundamentally different from other firms with domestic ownership because they engage extensively in related-party trade to serve their own global production chains as well as foreign markets. We summarize our operationalization of firms' involvement in GVCs in Figure 2.

Investment Protection

How do these different types of firms assess these different dimensions of trade policy? First, we examine the protection of firms' investments abroad. Investment protection involves different types of clauses that include not only general commitments to foster FDI, but specific provisions regarding the treatment of foreign investors. In general, several elements could be in an investment provision. Typically, investments are protected through a series of nondiscrimination clauses that require governments to provide investors with the same protections afforded to domestic investors or third parties (for example, "national treatment," "most favored nation treatment" (MFN), and "standard of treatment") (see Price 2000, 110). Additionally, governments are often required to provide protections against direct or indirect expropriation and make commitments for transferring funds across borders at market-exchange rates. Many investment provisions also call for restricting "performance requirements," such as technology transfer agreements, local labor requirements, joint ventures with national companies, export quotas, or local content rules. Various anticorruption, labor and environmental regulatory standards, and transparency requirements are also standard elements in investment provisions. Finally, investors can be provided with a right to initiate litigation against governments in international arbitration (that is, investor-state dispute settlement [ISDS]). In the North American Free Trade Agreement (NAFTA), for instance, Articles 1102 and 1103 (part of its investment chapter) promise both national treatment and MFN treatment. The inclusion of these different elements determines

³One might alternatively define intermediate goods exporters as firms in GVCs. We note, however, that a lot of final goods exporters in developing nations are also part of GVCs. In fact, more than 60 percent of final goods producers in our sample are importing foreign products. These firms are mostly in manufacturing industries.

the strength of an investment provision from the perspective of the firm. The strength of investment provisions then varies across agreements. Kim, Lee, and Tay (2017) identify thirteen elements that account for the strength of an investment protection clause. They then combine these into an index that ranks 317 such provisions. For example, the Japan-Malaysia PTA includes national treatment, MFN treatment, and an investor dispute settlement mechanism that relies upon an international arbitration board. By contrast, the European Free Trade Agreement (EFTA)–Mexico PTA of 2000 is much weaker; it contains an investment provision that offers some assurances regarding FDI, but makes no mention even of MFN or national treatment.

We argue that a firm's evaluation of investment protection will depend on its involvement in global production networks. The protection of firms' investments abroad has become particularly important because governments cannot credibly commit to forgoing exploitative policies such as nationalization or discriminatory regulation and taxation (Li 2009; Jensen, Quinn, and Weymouth 2015). Firms in GVCs tend to import intermediate goods from their upstream partners, while exporting their own products to firms in downstream production stages. In fact, a set of foreign direct investments across multiple nations governs global production. Consequently, these firms, even when they do not make direct investments abroad and are not MNCs themselves, rely heavily on the stability of both production facilities and trade flows across various countries along the entire production chain. Although firms in GVCs will still value freer trade, investment protection will be the most salient issue because a disruption at *any* point in the production network is likely to affect the profitability and even survival of the many firms involved. Thus, firms involved in global production networks will desire strong investment protection against any "expropriative motive" of foreign governments (Blanchard 2010; Wellhausen 2014, 2015).

However, the importance of investment protection will be particularly pronounced for multinational firms. Multinational firms internalize the externalities of the "holdup problems" they face by vertically integrating with foreign firms. That is, trading within the boundary of firms but across national borders can prevent potential underinvestments by their partners (Antràs 2003). The key assumption underlying the stability of such contractual relations is that asset ownership will be protected by governments. Multinational firms rely on complex investment protection provisions as they operate in many countries. Multinational firms frequently cite investment protection as the most important factors in their company's decision to invest in developing countries (for example, World Bank Group 2018, 27–28). Ample evidence demonstrates that multinational firms embedded in global value chains are active promoters of investment protection.

An example of the importance of investment protection is the US agricultural multinational Cargill, which initiated International Centre for Settlement of Investment Disputes (ICSID) arbitration against Poland in 2004. Cargill alleged that “Poland’s imposition of quotas on isoglucose” caused losses for its investment in various processing facilities, forcing the company’s isoglucose production below its planned capacity and breaching the US-Poland Bilateral Investment Treaty (BIT) (Cargill v. Poland 2004). Before the quotas were enacted, Cargill sought assurances against losses by writing to Poland’s Minister of Agriculture and Rural Development: “Cargill has so far invest[ed] 85 million dollars in Poland and the expansion of its Wroclaw plant is under way . . . [I]f the production quota is not increased to that level, serious doubts as to the future of the plant will arise” (International Centre for Settlement of Investment Disputes 2008, 53). In response to the quotas, Cargill along with its partners such as Coca-Cola Beverages Polska and Hoop S.A. demanded the increase or complete elimination of the quota before the company initiated arbitration (International Centre for Settlement of Investment Disputes 2008, 29–30).⁴

We expect exporters with imports and multinationals to be increasingly concerned with investment protection. The recent “explosion” of investment protection-related disputes Pelc (2017, 561) suggests that firms understand the importance of strong investment protection measures. Recent studies have identified the importance of related-party intrafirm trade in shaping multinational firms’ preferences. Jensen et al. (2015) in particular show the importance of related-party contracts to trade preferences for firms. Blanchard (2010) further demonstrates that adding foreign ownership into a model of NNTT fundamentally changes the nature of trade politics; for profitable foreign investment to occur, it becomes imperative for governments to constrain themselves from using domestic policy tools to shift profits away from multinational firms. Using this theoretical framework, we present our first hypothesis.

H1: *Strong investment protection will be most preferred by firms most involved in GVCs.*

Dispute Settlement Mechanisms (DSMs)

Next, we consider dispute settlements mechanisms, which are trade policy instruments that can mitigate global risks and uncertainties for firms. DSMs differ from investment protection (including ISDS) in that they concern trade-related disputes specifically, and firms cannot bring cases on their own against foreign governments. By definition, ISDS requires that an investor firm launch a case claiming foreign investment expropriation or discrimination, whereas for DSMs a firm or industry must convince a government to launch a case of unfair trade practices. Many DSMs follow the World Trade Organization’s (WTO) successful formula for such processes (Busch 2007). They involve a long process to resolve government-to-government trade disputes, involving consultations, impartial panels and rulings, and perhaps compensation. Like investment protection provisions, however, there exists large variation in the degree of legalism across dispute settlement mechanisms in international trade agreements. Some agreements include DSMs that are mostly diplomatic, while others are more much

more developed and legalistic (Smith 2000, 138). For example, the India-Nepal Free Trade Agreement does not include any third-party review nor institutionalized means to reduce trade tensions. On the other hand, the Trans-Pacific Partnership Agreement (TPP) stipulated that any complaining member state could select a panel or a tribunal in which they could arbitrate the dispute between governments.

The distinction that we made for exporters based on their levels of involvement in GVCs is also useful for understanding firms’ preferences about DSMs. Specifically, we argue that the added value of DSMs in dealing with time inconsistency problems related to trade is lower for firms in GVCs than for autonomous firms. Firms in GVCs have already reduced many uncertainties associated with trade through their contracts with international partners within their network. Firms in GVCs create relationship-specific contracts among each other that can reduce the costs and risks of changes in foreign government policies through both economic and political means. These “relation-specific” contracts with their import and export partners occur within the boundary of the firm (through vertical and horizontal FDI) or by using their arm’s-length interfirm contracts. These contracts are more efficient for firms because they have direct control in writing contracts *specific to* their business relations than they do in crafting international trade agreements. Firms in GVCs rely on these relation-specific contracts with their import and export partners to flexibly respond to government policy changes. These between-firm contracts, over which firms have direct control, can serve as insurance against unexpected changes in government trade policies, lowering the relative value of other policy means such as DSMs. Autonomous exporters lack such contractual mechanism, prompting them to rely more on DSMs.

Second, firms in GVCs share the costs and risks of trade through their contractual relations, and uncertainties can be more effectively managed among themselves at the firm-level rather than by relying on formal dispute settlement mechanisms through their government. As Johns and Wellhausen (2016, 34) note, “[f]irms in a supply chain are partners: if the host government breaches its contract with one firm in the chain, then all members of the chain can be harmed . . . When a firm in a supply chain is targeted, other firms in the chain have incentives to exert effort to protect the target.” This implies that a host government is most likely to honor its commitments to foreign firms, which are economically linked to other firms in the host economy, and to violate its commitments to foreign firms, which operate in isolation. Hence, relation-specific contracts in GVCs and investment protection can help these firms build political alliances within host countries, which allow them to mitigate the risk of expropriation without using DSMs. Such strategies are not available to autonomous exporters.

In contrast, firms that are not a part of GVCs—that is, *autonomous exporter* in Figure 2—will have to bear the costs by themselves. Unlike firms integrated in global production networks, these firms do not have added insurance through relation-specific production chains, making them more vulnerable to unexpected government policy changes. Thus, for autonomous exporters outside of GVCs, the availability of other policy instruments such as DSMs is important for their profitability and survival. They enhance the predictability and stability of the terms agreed to in international trade agreements. Autonomous exporters face the risk that foreign governments change their policies in ways that reduce their exports or the profitability of them. There are myriad ways this can happen: governments can impose import quotas or bans, they can change laws or regulations

⁴Similarly, Cargill successfully sued Mexico in 2004 for harming its investments in high-fructose corn-syrup production after Mexico imposed a 20 percent tax on sweeteners other than sugar.

about product quality or characteristics, they can give subsidies to domestic firms, etc. The list of WTO cases for dispute settlement shows the very many problems that exporters can face. For example, Fonterra, a dairy processor and exporter from New Zealand, demanded the active use of dispute settlement mechanisms against several foreign governments' support for their dairy industry. New Zealand Trade Negotiations Minister Jim Sutton said "[t]he WTO dispute settlement mechanism has proved extremely valuable for New Zealand. It has enabled better access for our butter to Europe and the removal of unjustified restrictions on our lamb exports to the [United States]" (Grey 2015). Thus, autonomous exporters should demand that their governments have access to aggressive dispute settlement mechanisms to insure themselves against unexpected policy changes by foreign governments. This set of claims leads to our second hypothesis.

H2: *Strong dispute settlement mechanisms will be most preferred by autonomous exporters, that is, those outside of GVCs.*

If DSMs are important policy instruments that provide insurance against volatile trading environments for firms that engage in international trade, other flexibility measures built into trade agreements can serve similar functions for domestic firms that experience foreign competition. Indeed, various escape clauses that allow flexibility in implementing the terms of agreements have grown in their importance and frequency over the last decades to mitigate risks and uncertainties associated with trade (Mansfield and Reinhardt 2008; Pelc 2009; Busch and Pelc 2014). Most agreements now include various escape clauses and safeguards that allow trading parties to temporarily suspend parts of their agreements (through antidumping, countervailing duties, and national security exceptions, for example) (Rosendorff and Milner 2001). In fact, Jensen et al. (2015, 917) find that firms making vertical intrafirm investments for global production are less likely to file antidumping measures. We also explore firms' preferences for these types of escape clauses.

Intra-Industry Heterogeneity

Finally, the prevalence of intra-industry trade and global production networks implies heterogeneity across firms even within the same industry, as we have argued above. Our theory suggests that firms' heterogeneity in export performance and their engagement in GVCs are key to understanding the politics of trade with multiple policy issues. This is in stark contrast to the conventional focus on interindustry distinctions in the literature (for example, Rogowski 1987; Hiscox 2002). We should instead see the four types of firms we delineated above as having different preferences over the different dimensions of trade policy. To the extent that all four types operate within the same industry, we should not see homogeneous preferences within that industry. We hypothesize thus that intra-industry variation in preferences should be greater than interindustry variation with respect to the aforementioned policy dimensions.

H3: *Trade policy preferences will vary more by the type of firm than by their industry.*

In sum, unlike most studies that tend to view interest groups' preferred trade policy as defined on a single dimension along a continuum from protection to free trade, we consider the preferences of firms to be multidimensional.

Moreover, we argue that firms will evaluate each dimension differently, according to the nature of their insertion into the global economy. That is, for some firms, investment provisions might be the most salient issue area, while for others, traditional market access might have more direct impacts when each dimension is compared against others. Evaluating each dimension *in relation to* others poses significant empirical challenges, which conjoint analysis enables us to overcome.

Conjoint Design and Data

This section describes the design of our survey to estimate firms' preferences across multiple policy dimensions. First, we introduce our paired profiles conjoint design. We then describe some of the empirical challenges in a firm-level survey and introduce our data.

A Paired-Profiles Conjoint Design

Our main empirical challenge is to identify the relative salience of each dimension of the multidimensional preferences of firms. Conventional survey techniques are not suitable for this task as they are designed to elicit preferences over one dimension only (or a single policy that is a composite of many dimensions) in isolation from others, for example, support for tariff reductions (or support for NAFTA). Such an approach is particularly problematic if firms have preference-ordering across multiple policy dimensions and their views on a given dimension change as other dimensions are considered at the same time.

We overcome this problem by employing randomized conjoint analysis (Hainmueller et al. 2014). Conjoint analysis is an experimental design that allows us to simultaneously identify priority ranking of multiple policy dimensions as well as preference-ordering between specific policy options within each dimension. That is, we can identify dimensions of trade policy (for example, investment protection) that are especially salient for respondents relative to other issues (for example, dispute settlement mechanisms). In this article, we focus on estimating the average marginal component effect (AMCE) of each policy on a firm's support for a set of proposed trade policies. As noted, when preferences are multidimensional, the effect of one dimension (for example, investment protection) may differ depending on the valuations of other policy dimensions (for example, adoption of aggressive use of DSMs). The AMCE is useful for finding out how different valuations of a specific policy (for example, strong investment protection) increases or decreases a firm's utility for choosing a policy bundle that contains that specific policy, while averaging over the effects of all other policy dimensions. Thus, conjoint analysis is suited for obtaining a comprehensive picture of the multidimensional preferences of firms.

We focus on five aspects of trade policy: (1) investment protection, (2) reduction of tariff and nontariff barriers, (3) export subsidies, (4) use of dispute settlement mechanisms, and (5) flexibility of international commitments. We chose these five aspects of trade policy because they are the most prominent dimensions in contemporary trade agreements (for example, Büthe and Milner 2008; Dür, Baccini, and Elsig, 2014; Osnago, Rocha, and Ruta 2017). All five affect either the prices of goods and services produced by firms or the costs firms face from other governments' policies on trade. Two of the five dimensions are very traditional measures: tariff reductions and export subsidies. Almost all studies of trade policy preferences examine tariffs and/or

nontariff barriers since they are the most common forms of trade protection. In fact, tariffs still play an important role in deterring market access in many countries. For example, as of 2014, Costa Rica's mean applied MFN tariff rate was 7 percent. Its mean tariff rate on 4,898 dutiable products was 13.28 percent. By comparison, more than 91 percent of tariff lines are dutiable in China, and its mean MFN applied ad valorem rate is 10.62 percent. Export subsidies are a common topic within the WTO and an important aspect of trade relations. We want to see if these traditional policies are still the most important aspects of trade agreements for firms when other aspects of trade policy are considered simultaneously.

We use a paired conjoint design where firm representatives are asked to complete five tasks.⁵ To ensure that the orderings of five dimensions do not affect the evaluation of other dimensions, we randomly vary the order across all tasks. In each task, respondents compare two trade policies that have randomly varying attributes across the five dimensions and choose the overall policy that reflects the preferences of their firm. To help respondents understand the context, we also provided a brief summary of the meaning of each policy dimension. We do not allow an option of choosing neither. This forced-choice conjoint design is known to encourage survey respondents to more carefully examine the information about each policy and, more importantly, to increase their engagement with each task, relative to other designs such as single-profile conjoint (Hainmueller, Hangartner, and Yamamoto 2015, 4–5). In fact, our respondents completed 4.89 tasks out of 5 tasks on average. The paired design, where two profiles are presented next to each other, also makes it easy for firm representatives to compare the two policies on each dimension. Appendix A1 contains the complete wording we used for the conjoint experiment.⁶

Firm-Level Data on Costa Rican Firms

Firm-level theory has become an integral part of the international political economy literature. However, few empirical studies have directly examined the heterogeneity in firms' preferences toward various dimensions of trade policy. This is primarily due to the limited access to firms by researchers. In general, firms are reluctant to share information on their operations and performance as such data might be used to their disadvantage by competitors. The confidential nature of firm-level data also makes it difficult for researchers to examine sample selection problems even after a survey is conducted. That is, it is often impossible to verify whether a survey sample represents the population of interest because no information about the population, if not the sample, is available. Furthermore, a specific challenge for our study of firms' preferences over international trade policy is that it is even more difficult to obtain a reasonable number of exporting firms in our sample because only a very small number of firms export (Bernard et al. 2007, 108).

To overcome the difficulty in approaching exporters, we partnered with PROCOMER (Promotora del Comercio Ex-

terior de Costa Rica), the export promotion agency of Costa Rica. They provided us with contact information for a random sample of 1,506 exporters. In fact, this list covers a significant proportion of the entire universe of exporters in the country. For example, the number of firms that export at least one product in 2012 was 2,504. PROCOMER also provided firm-level export transactions data at the Harmonized System (HS) ten-digit product-level for the universe of Costa Rican exporters from 2000 to 2013. This confidential dataset offers unique data on (a) the identity of exporters and domestic producers, (b) the export destinations for each product, (c) product-level trade volumes (in US dollars), and (d) the types of products exported (for example, intermediate or final goods), not only by our exporting respondents but also by any exporting firms in the population.

We ensured that our survey also included domestic firms with no engagement in international trade. Since PROCOMER does not maintain contact information for nontrading domestic firms, we made our best efforts to contact three other institutions that have such contacts: the Census Bureau, the Chamber of Industries of Costa Rica, and INCAE Business School. First, the Census Bureau provided contact information for 353 firms in our survey that are randomly sampled from their database. The Census used a stratified sampling method at the industry level in order to ensure that firms from different industries were included in the sample. Second, the Chamber of Industries of Costa Rica provided contact information for 656 firms out of their 986 registered members. Finally, we added 136 firms to our contact list using our local partner INCAE's previous firm-level surveys.

We sent our survey via email to 2,577 firms, and 389 firms responded.⁷ Our response rate of approximately 15 percent is comparable to most firm-level surveys (for example, White and Luo 2005). Many firms from the latter three organizations are from sectors with nontradable analysis focuses on 214 firms in agriculture, mining, and manufacturing industries (that is, tradable goods producers).⁸ To ensure sufficient statistical power for our empirical test, each respondent is asked to complete five tasks resulting in a total of 1,049 observations. To the best of our knowledge, this is the first firm-level survey linked to confidential trade data that rigorously investigates firm's preferences over multiple trade policy dimensions.⁹

One of the main benefits of using PROCOMER data is that we directly observe the export activities of all exporting firms. Specifically, we have data on the HS ten-digit product-level annual exports across 9,209 unique products by all Costa Rican exporting firms. This allows us to overcome the aforementioned empirical challenges in comparing the characteristics of the sample against the population of interest. Figure 3 compares 191 respondents who exported at least one HS ten-digit product in 2012 against all other 2,313 Costa Rican exporters. The left panel shows the distributions of the median values of product-level exports across all products by the two groups (in logged US dollar). The two distributions are remarkably similar, and the difference in their means is statistically insignificant ($p = 0.161$). The right panel compares the proportion of product-destination combinations across the two groups. As is clear from the figure, the top ten export destinations are also similar although

⁵To ensure that we have representatives whose interests are aligned with the broad interests of firms, we asked that following: "What is your position in the company?" with four choices: (1) owner/co-owner, (2) director or manager, (3) analyst, and (4) other. We find that 41.8 percent of the respondents who answered the question identified themselves as an owner and 48.8 percent as a director or manager. Given this, we believe that respondents generally understand the availability of various policy measures and their differential impacts on their firm's interests.

⁶Appendix A2 contains original Spanish wording used for the conjoint experiment.

⁷The survey was conducted in two waves, from November 2013 to February 2014 and then May to June 2014.

⁸These correspond to all ISIC Revision 4 codes 01 through 33.

⁹All results reported in this article are aggregated to ensure that no confidential information at the firm level is disclosed under the arrangement with PROCOMER to maintain legal confidentiality.

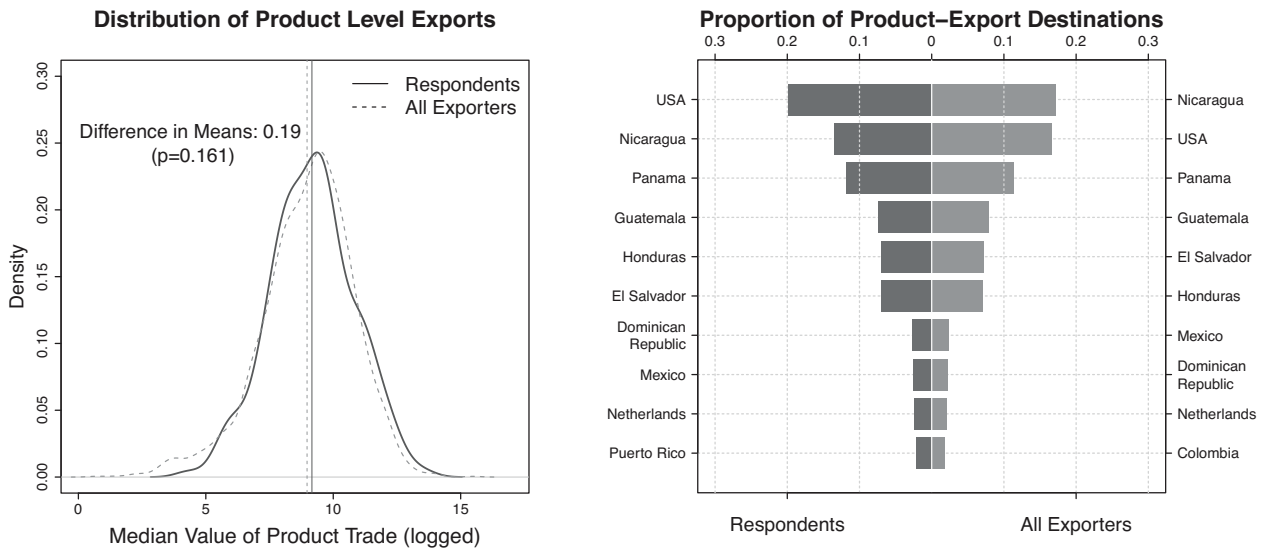


Figure 3. Comparison between exporting respondents and all PROCOMER exporters
Note. This graph shows that little differences exist between our respondents that export and the population of Costa Rican exporters. Left panel compares the export volumes while the right panel reports the top ten exporting destinations at the product level. The two vertical lines in the left panel correspond to the means of each distribution, which are not statistically different from each other.

firms in our sample tend to export more products to the United States. To further examine the product-level export behavior, we also compare the mean number of products exported by firms. On average, Costa Rican exporters export 10.87 products. Our exporting respondents export 1.91 more products than that, but the difference is statistically indistinguishable from each other ($p = 0.338$).

Finally, we examine the composition of products that firms export. Since most of the exporters are multi-product firms producing intermediate and/or final consumption goods, we compare the proportion of intermediate goods exported by the respondents against that of the entire exporters. To do this, we first create a mapping from each HS product to a business economic categories (BEC) because the latter categorizes products based on their main end use.¹⁰ The proportion is then calculated by dividing the sum over all exports mapped to the list of BEC categories for intermediate goods by the firm’s total exports.¹¹

Using this measure, we also check whether our exporting respondents are representative of Costa Rican exporters in terms of their product profile. Figure 4 compares the distribution of intermediate goods exports from all Costa Rican exporters (solid line) against the distribution from exporters in our sample (histogram). We also compare other factors such as (1) average annual exports, (2) the number of years firms exported, and (3) the sectoral distribution of our respondents against the population of exporters. We find no differences. Taken together, we are able to generate unbiased estimates of issue-specific effects across each policy dimension because of the randomization of policy attributes and use of a sample that is representative of the population of interest.

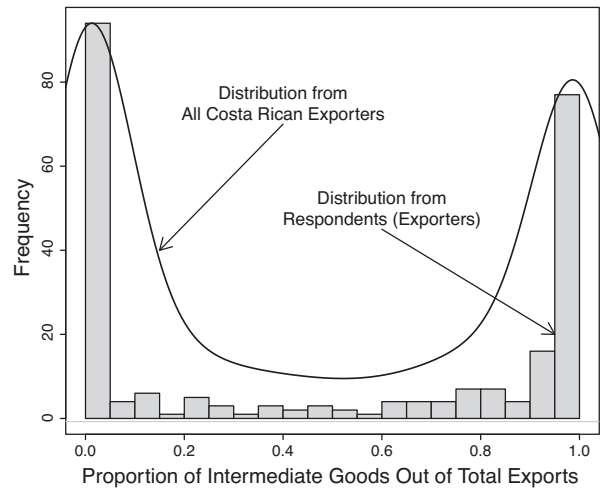


Figure 4. Distribution of intermediate goods exporters
Notes. This figure demonstrates that the firms in our sample have product profiles similar to the universe of Costa Rican firms. The histogram shows the distribution of intermediate goods exports by our respondents. The solid line is a kernel density line of intermediate goods exports from all 2,412 Costa Rican firms who exported at least one product in 2011.

Empirical Results

In this section, we present our main empirical findings from the conjoint analysis regarding our three hypotheses. To begin, we provide detailed subgroup analyses to examine the heterogeneous interests among firms by adjusting for firms’ different levels of engagement in international trade.¹² We

¹⁰We used the concordance available from WITS (World Integrated Trade Solution).

¹¹The following BEC products are categorized as intermediate goods used as inputs for downstream production: 111, 121, 21, 22, 31, 322, 42, 53.

¹²The results pooled across all respondents are available in the supplementary files A4.1.

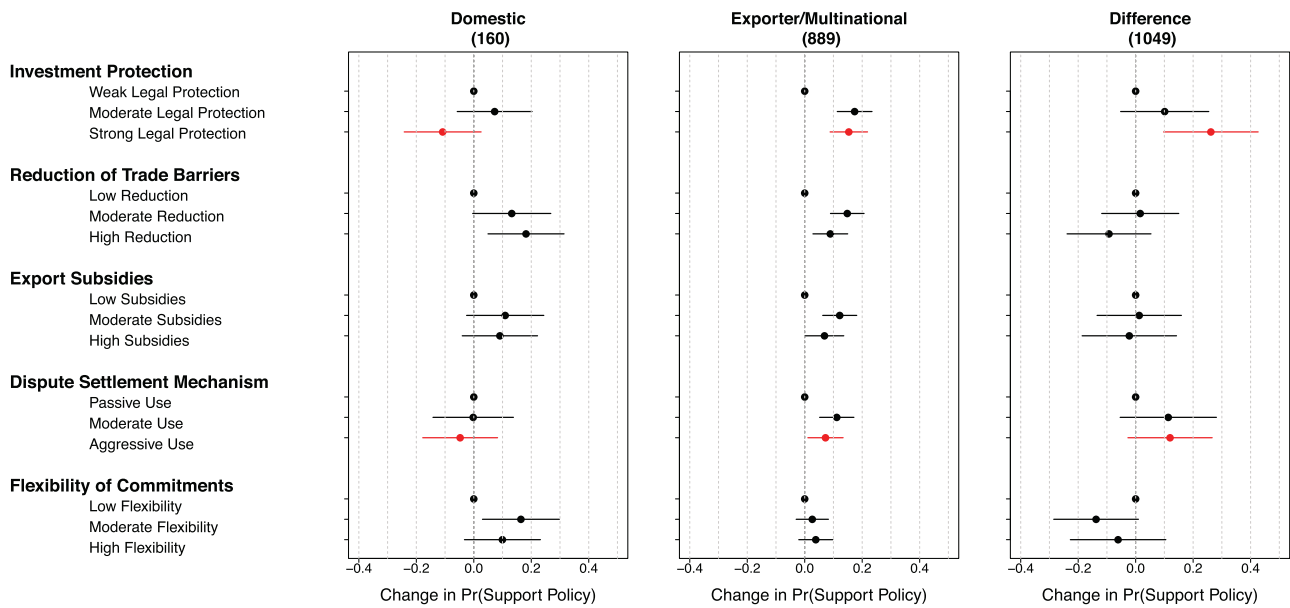


Figure 5. Importance of strong investment protection

Note. This figure compares preferences of firms for firms that engage in trade (exporter/multinational) against firms who only operate in the domestic market (domestic). The main difference comes from the investment protection dimension. Black dots are our point estimates for the average marginal component effect. Horizontal lines are 95 percent confidence intervals. The result is based on 1,049 tasks (presented in parentheses). We highlight the estimated effects for strong investment protection and aggressive use of DSMs in red.

find that investment protection is considered to be the most important dimension of trade policy for firms in GVCs and that strong DSMs are most favored by exporters not in GVCs. We then discuss the validity of interindustry comparisons in the presence of high within-industry heterogeneity.

Firm Preferences over Investment Provisions and DSMs

We estimate the AMCE of each policy dimension to examine our first two hypotheses. Since the AMCEs are estimated on the same scale for each issue, we can easily compare the effect sizes across different issues and make inferences about the relative priority of the issues when firms choose the most preferred policy. For instance, we can directly verify whether certain firms put highest priority on investment protection when evaluating a multidimensional trade policy, while averaging over all possible combinations of the values in all the other four-policy dimensions. We regress the choice dummy of whether respondents favor Trade Policy 1 or Trade Policy 2 on sets of binary indicators for the randomly generated policy attributes. Following convention, we use the lowest level of liberalization in each dimension (for example, *weak legal protection*) as our reference category. Thus, the estimated coefficient can be interpreted as the causal effect of including the given attribute level (for example, *strong legal protection*) in changing the probability of support for the trade policy against an alternative policy with the reference category. We also use cluster-robust standard errors to account for the correlation across tasks completed by the same firm. Furthermore, informed by our theory, we estimate heterogeneous treatment effects across different pre-treatment group categories by conducting a set of subgroup analyses. We present the results from our conjoint analyses

graphically to facilitate comparison across multiple policy dimensions and corresponding subgroups.¹³

To investigate the importance of investment provisions across firms with different levels of engagement in trade, we begin by sorting firms into three categories following Helpman et al. (2004): domestic firms, exporters, and multinationals. To do this, we check to see if our survey respondents appear on the list of firms in the PROCOMER data in order to distinguish domestic firms from exporters. That is, a given firm is coded as *domestic* if it has not exported any product since 2000. We then examine the ownership structure of the remaining firms to identify multinational firms. Specifically, we define a firm as *multinational* if more than 80 percent of its share is owned by foreign firms. Note that all of the multinational firms export. We have a total of 49 multinationals, 133 exporters, and 32 domestic firms.¹⁴

We first compare the difference between domestic firms and other firms that engage in international trade. Figure 5 shows that the main difference comes from firms' preferences over investment protection. Specifically, firms that engage in trade value investment provisions the most, while market access and flexibility of commitments tend to be the two most salient dimensions for domestic firms.¹⁵ On average, the former favors a trade policy with strong

¹³Numeric values for point estimates and standard errors from the regressions are available in table format in Appendix A4.2.

¹⁴Using different cutoff values for foreign ownership such as 10 percent and 50 percent does not change the results as shown in Appendix A4.2. We ask the following question to measure foreign ownership: "Please indicate (roughly) the percentage of your company that is: owned by the domestic private sector, state-owned, foreign-owned."

¹⁵That domestic firms support reducing trade barriers in Figure 6 might seem counterintuitive, but again the changing nature of trade is influencing this. Domestic firms differ in the amount of imports they use in their production. Domestic firms that benefit from cheaper foreign inputs favor reduction of tariffs and nontariff barriers, whereas others value a more flexible trade policy that enables

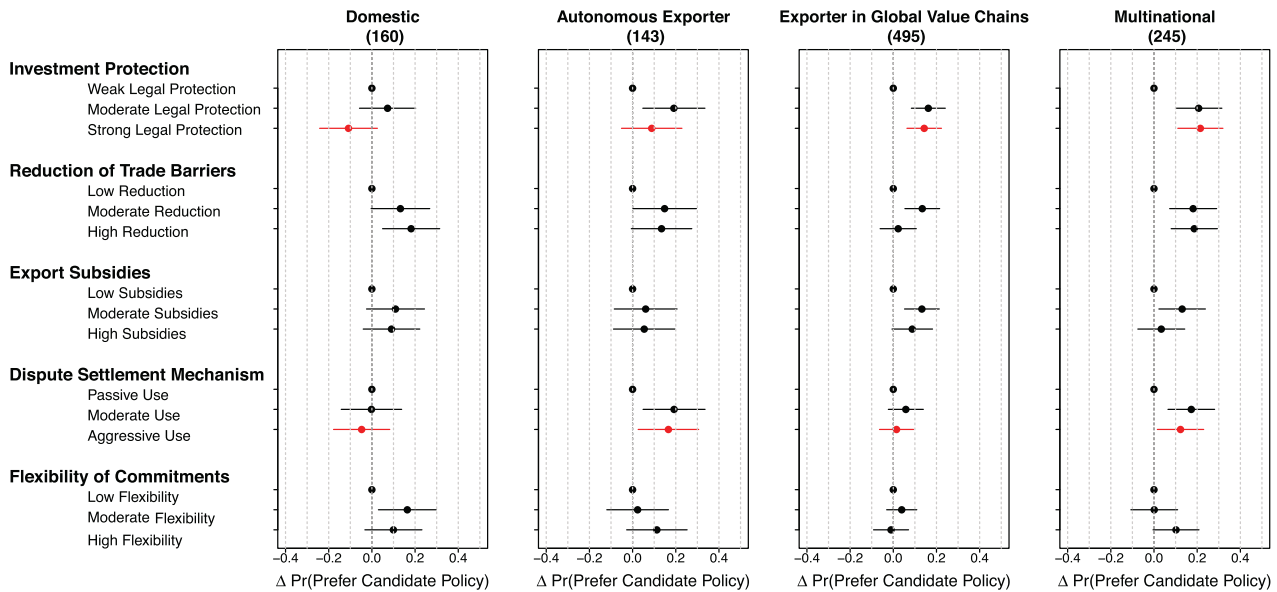


Figure 6. Relation-specific trade and firms' preferences

Note. This figure distinguishes autonomous exporters from firms that export and import. The latter are parts of GVCs and prefer strong investment protection. On the other hand, autonomous exporters who do not engage in relation-specific trade evaluate DSMs higher than any other dimension.

investment protection by 26 percentage points more than the latter, a statistically significant difference.

We further investigate firms' interests based on our theoretical expectations. That is, we conduct a set of subgroup analyses across the four types of firms: domestic firms, autonomous exporters, exporters in GVCs, and multinationals (see Figure 2). We classify a firm as an *exporter in GVCs* if a firm exports and imports. These firms are parts of GVCs because they import foreign inputs to produce outputs, which they export. The remaining firms, which are not owned by foreign firms and which do not import foreign products, are defined to be an *autonomous exporter*. The subgroup analysis includes a full set of dummy variables for each group (that is, saturated model), which identifies group-specific treatment effects nonparametrically. Although one can include a set of many other pretreatment covariates as well as various interactive terms, doing so might result in "p-hacking" and multiple testing problems (Imai and Ratkovic 2013, 446). Thus, our analysis focuses primarily on the different levels of firms' engagement in global trade consistent with our theory. Furthermore, we note that since both the policy attributes and their order as given to respondents are fully randomized in our conjoint design, our estimates are unbiased for the AMCE within each group, if there exists no other confounders conditional on their engagement in trade. Thus, we focus on the heterogeneous treatment effects across each group.

Figure 6 corroborates our Hypothesis 1 that preferences for investment provisions will differ depending on firms' levels of engagement in GVCs. Investment protection is the most salient policy issue for multinational firms (fourth column), and they are more than 20 percentage points more likely to favor a policy with strong legal protection of investments than a policy with weak protection; the effect is very strong both substantively and statistically. Consistent

with Hypothesis 1, exporters in GVCs (third column) also support policies with strong investment protection; indeed, investment protection gets the highest salience. They are 15 percentage points more likely to choose a policy with strong legal protection than a policy with the baseline category. Simply put, investment protection is the most important dimension for these two groups even compared to traditional elements of trade policy such as tariffs and subsidies. This is in stark contrast with domestic firms (first column) and autonomous exporters (second column), for whom strong investment protection is not the most salient issue. Our sample size does not give sufficient statistical power to distinguish the statistical differences across these two groups. However, the subgroup analysis shows that the effects are heterogeneous with a clear ordering. Only firms actively engaged in GVCs are found to value strong investment protection.

Firm-level preferences regarding dispute settlement mechanisms vary. We expect that *autonomous exporters* will be most concerned with DSMs in order to cope with the risks and uncertainties they face in the global trading environment. Consistent with Hypothesis 2, Figure 6 shows that dispute settlement mechanisms are the *most* important dimension for these exporters. Autonomous exporters are almost 20 percentage points more likely to support a policy with aggressive use of DSMs than a policy with passive DSMs.

In contrast, exporters in GVCs do not consider DSMs as being that important relative to investment protection. Our finding suggests that it is important to distinguish firms based on their involvement in GVCs. Multinationals tend to favor embedding strong DSMs into trade agreements, unlike domestic firms for which we find negative point estimates. Although the salience of preference over strong DSMs is still significantly weaker than investment protection and market access, this finding suggests that multinational firms might care about DSMs to the extent that they are related to investment protection. We leave further investigation of the full interaction effects across all policy

them to raise barriers if imports threaten them. We provide this result along with other robustness results on domestic firms and exporters in the appendix.

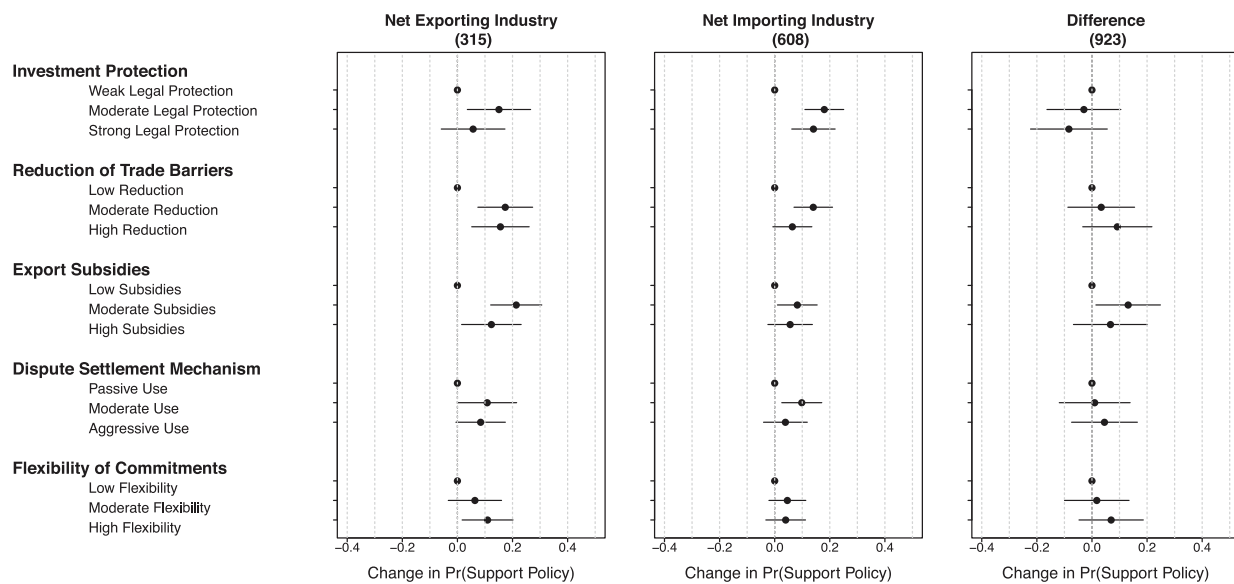


Figure 7. Net exporting vs. net importing industries

Note: The first two columns present estimated effects for net exporting and importing industry, respectively. The last column shows the differences between the two estimates, which shows that there is little difference between the two industries.

dimensions for future research. In sum, these findings accord with our theory that exporting firms outside of GVCs should desire to offset the risks and costs of sudden changes in trade costs through DSMs, whereas GVCs can serve as insurance by sharing unexpected costs through contractual relations.

Interindustry Comparison

In the foregoing analysis, we assumed that firms are the unit of analysis that we should privilege. Both the rise of intra-industry trade and NNTT imply that this should be our focus. But much previous research has focused on industries, and so we now try to relate our findings to that literature. In order to examine Hypothesis 3, we classify our firms into industries with either net exports or net imports, as a focus on comparative advantage as in a Ricardo-Viner model might suggest. We examine the preferences of the two groups over our five trade policies. Conventional trade theory would expect that they should differ strongly on tariff reductions and subsidies. That is, exporters should want tariff reductions and export subsidies most and importers should not want either. Figure 7 presents the results from this analysis for our five trade policies. We see little evidence for interindustry differences; the right-most column shows the lack of differences across the two types of firms. This result arises largely because we are pooling firms with very different preferences by aggregating them at the industry level. To directly examine whether firms within an industry differ as much or more than across industries, we compare domestic firms and exporting/multinational firms *within* a net-importing industry. We find that the latter favors a trade policy with strong investment protection by 25.1 percentage points ($p < 0.019$) more than domestic firms. This is in contrast to the lack of evidence for interindustry difference. This difference-in-differences analysis suggests that interindustry differences are not sufficient for understanding the preferences of firms.

In Figure 8, we present more evidence consistent with the view that firm-level heterogeneity is more relevant than that of industries when it comes to understanding trade preferences, as in Hypothesis 3. This time, we compare firms in agriculture against those in manufacturing industries. Traditionally, agricultural products (for example, bananas) have constituted the biggest share of Costa Rican exports, while manufacturing has been more import-competing. In general, we find no significant interindustry difference in preferences especially with respect to investment protection. In contrast, exporting and multinational firms within manufacturing industry are 26.8 percentage points more likely to support a policy with strong investment protection than domestic firms. Indeed, investment protection is the most salient dimension where the intra-industry differences arise.¹⁶ Again, the direct comparison of the differences confirms that aggregating firms into these broad industry groups blurs their preferences and obscures the fact that firms differ greatly within these categories. This is not to say that interindustry distinctions are entirely irrelevant. In fact, we find that firms in agricultural sector value DSMs. We note, however, that this is consistent with our expectation that firms that are not inserted in GVCs (for example, firms in agriculture industry) tend to value DSMs.

Our analysis suggests that industries do not map consistently onto preferences over trade policy, as standard theories of trade might predict. The main reason for this is because trade flows are just as likely to be intra-industry or intrafirm as they are to be interindustry. As we show in Appendix A3, Costa Rica's intra-industry trade has grown significantly over time, and almost all industries in Costa Rica have both exports and imports. Thus, firms within an industry will vary in how much they export or import. In fact, in our data, we have the following distribution of firms in industries that are classified as net exporting (that is, where the volume of exports is higher than volume of imports): 12 domestic firms, 69 exporters, and 1 multinational. We get

¹⁶The results across all policy dimensions from the within-industry analyses are available in Appendix A4.4.

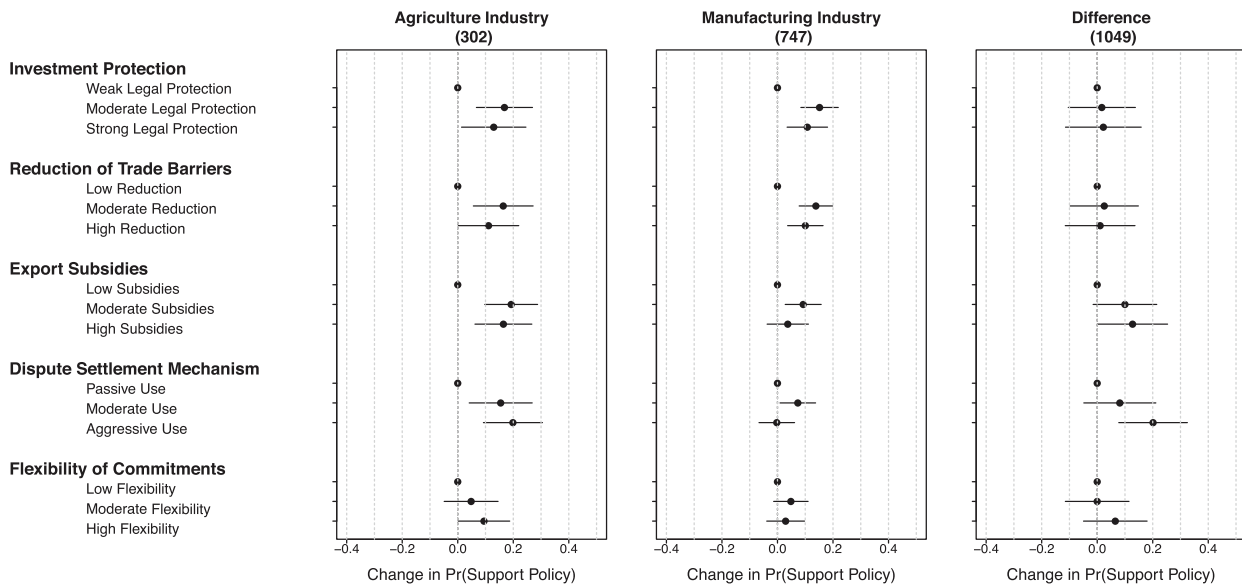


Figure 8. Agriculture vs. manufacturing industries

Note. This figure makes a comparison between agriculture and manufacturing industries. Consistent with our theory, we find very little differences between the two industries.

a distribution from netimporting industries that is similarly varied: 22 domestic firms, 128 exporters, and 14 multinationals. As is evident, each industry has exporters and multinationals, and in fact we have a lot of multinationals in industries that would be classified as net-importing. All of this data supports Hypothesis 3 and adds confidence to our focus on firm-level variation.

Discussion

Do firms' preferences matter? Previous studies suggest that firms do exercise a powerful role in trade policy (Milner 1988; Goldberg and Maggi 1999; Gawande and Bandyopadhyay 2000; Manger 2005). Recent research indicates that firms lobby heavily, that the biggest firms lobby the most, and that many lobby for liberalizing trade given the type of products they produce (Kim 2017). Indeed, ample evidence shows that firms are politically active in shaping the contents of trade policies through lobbying. It is difficult to directly observe firm's political activities on the policy dimensions that we consider. However, an extensive text search of lobbying reports filed under the Lobbying Disclosure Act of 1995 in the United States reveals that firms across various industries do express direct concerns about their investments and dispute settlements related to international trade. For example, Pepsico lobbied in 2011 on "[m]arket reform and investment issues in Uzbekistan." A recent report from Samsung Electronics says that it is interested in "[f]oreign manufacturing investment in the [United States]; Marketplace Fairness Act," while Toyota lobbied on the 109th Congress Senate bill S.3549 that deals with strengthening oversight of foreign investment in the United States. Similarly, the Bose Corporation expressed their concerns about "Brazil's retaliation list, following the US-Brazil cotton dispute," while multinational brewing company Anheuser-Busch lobbied on "brewing-related commodity issues, international dispute settlement." In this regard, our analysis of firms' preferences sheds light on the growing importance of investment protection and DSMs in international trade agreements in contrast

to many conventional studies with their focus on political preferences across industries and consumers.

While we cannot directly observe firms' lobbying activities in other countries due to legal constraints, many firms in our sample from Costa Rica are politically active. Our data indicate that the biggest firms—the multinationals—are the most active. In our survey we asked firms if they took political action with the following question: "Some firms are quite active in politics, while others tend not to take an active part. We would like to know if, during the last three to four years, your firm has contacted a member of Congress, COMEX (Foreign Trade Ministry), or the presidency about some political issue or problem?" Overall, one-third of respondents said they did. The proportion of those politically active increases with their firm's integration into the world economy. In response to this, 28 percent, 34.4 percent, and 40 percent of domestic firms, exporters, and multinationals, respectively, said that they contacted politicians directly regarding trade policies. Our study suggests the importance of firms in trade politics consistent with other studies of firms' political activity in different contexts (Blanchard and Matschke 2015).

Is our finding generalizable? Our extensive data analyses in Appendix A3 demonstrate that Costa Rica is a typical developing nation on the most important factors that are relevant to our theoretical logic such as its involvement in intra-industry trade, global value chains, and the size of its exports and imports across numerous industries. Like many other developing nations, the government has actively sought growth through globalization, using FDI to insert the national economy into GVCs. In fact, our data and UNCTAD (2013, 6) data show that Central American economies, like Costa Rica's, number among the most involved in GVCs, rivaling East and Southeast Asia. In this regard, we believe that the results from our analysis have important implications for understanding the preferences of firms operating in nations that are part of global production networks.

Because Costa Rica has signed many PTAs, firms in the country have a good knowledge of the different elements of

trade policy, which these agreements contain. Given that we are examining firms in Costa Rica, we do not think that we have overlooked factors specific to our context that would lead to external validity problems. In fact, Kim et al. (2017) show, by examining more than three hundred PTAs, that stronger investment protection clauses lead to more global production chains in the world economy generally. Their finding implies that firms condition their global investment strategies on the presence and strength of investment protections. Moreover, currently there are more than three thousand bilateral investment treaties in operation around the globe (Jacobs 2017), testifying to the demand by firms for assurance about investment flows.

Further, the list of ISDS cases shows that the multinationals involved come from a wide range of sectors and the cases involve many different countries around the globe (Cimino-Isaacs and Schott 2016, 206–7). Indeed, investors in a wide variety of industries file investment arbitration. Wellhausen (2016) documents that 18 percent of ISDS cases from 1990 to 2014 were initiated by investors in services and a further 13 percent in manufacturing. Finally, a recent World Bank survey shows that multinational firms frequently cite investment protection as among the most important factors in their company's decision to invest in developing countries (for example, World Bank Group 2018, 27–28). For example, more than 90 percent of 754 multinational firm executives in a 2017 World Bank survey listed legal protections such as financial guarantees to transfer currency at market exchange rates, "protections against expropriation [and] against breach of contract," as "critically important" in their decision to invest (World Bank Group 2018, 20). Forty-five percent of the same respondents spanning all sectors viewed investment protection guarantees as "deal-breakers" and more important than any other environmental factor, such as tax incentives or bureaucratic complexity (World Bank Group 2018, 27). All of these data points suggest that the demand for investor protection by firms is widespread and especially so among multinational firms in GVCs.

Conclusions

Understanding the policy preferences of interest groups is a fundamental endeavor in many subfields in political science. We use conjoint analysis to measure the intensity of firms' preferences over different trade policy instruments that are prevalent in contemporary trade agreements. Our research is among the first to characterize the multidimensional preferences of firms regarding trade policy.

We theorize firm preferences as stemming from the different problems they face depending on their different linkages to the global economy. We identify four types of firms: domestic, autonomous exporters, exporters within GVCs, and multinationals. We advance NNTT by distinguishing exporters based on their involvement in GVCs and hypothesize that multinational firms would be most interested in investment protection given their global production networks, while it would be least salient for domestic firms. We also expect that exporters, which are part of GVCs, would be strongly supportive of investment protection. On the other hand, we hypothesize that autonomous exporters who are not members of global production networks should value DSMs the most. Our results based on a conjoint experiment corroborate these hypotheses.

The changes in trade flows and heterogeneous firm preferences pose existential issues for the current world trading regime, governed by the WTO. Recent trade agreements tend to deal more with "deep integration" than market ac-

cess, presenting institutional challenges to the WTO (Antràs and Staiger 2012, 3144). Not only is the exchange of tariff concessions less important these days for some firms, but another major element of the WTO, its dispute settlement mechanism (DSM), may also be less relevant. In this regard, our research helps illuminate the effects of multinational firms and firms in GVCs, operating in countries with diverse political institutions, in shaping the future character of the global trading system.

Our research speaks to the design of trade agreements. If large exporters and multinationals are the ones that lobby the most, then we expect that their preferences would be very salient in shaping trade agreements. Scholars have claimed that firms are a key source of pressure on governments in devising their trade policies and trade agreements. This is consistent with our data and suggests one reason why more and more trade agreements include strong investment provisions as well as dispute settlement ones. Firms demand them, and countries agree because they want to attract firms and be integrated into their global production chains. Recent reactions against such provisions by governments in developed and developing countries may also illuminate the divergences in preferences between firms in GVCs who seek to maximize global profits and national governments worried about their local economy.

Research in comparative and international political economy often focuses on the demand for tariffs, subsidies, and nontariff barriers by industry. Our research suggests that more attention should be paid to firms, rather than industries, and to other dimensions of trade policy. Furthermore, research on public opinion about trade should investigate the differential labor market implications of trade liberalization across individuals working at firms with varying levels of international trade engagement. In fact, researchers find that inequality occurs *within* occupations and sectors because internationally trading firms pay higher wages (Helpman et al. 2017, 369). This contrasts starkly with existing studies that link wages to industries, rather than firms. When researchers look at interindustry differences as they relate to public attitudes, they should examine the composition of firms (for example, domestic, exporters, multinationals) within an industry to ensure that their analysis is not affected by firm-level heterogeneities. In sum, new types of trade flows engender new types of trade politics.

References

- ALT, JAMES E., JEFFREY FRIEDEN, MICHAEL J. GILLIGAN, DANI RODRIK, AND RONALD ROGOWSKI. 1996. "The Political Economy of International Trade Enduring Puzzles and an Agenda for Inquiry." *Comparative Political Studies* 29 (6): 689–717.
- ANDONOVA, LILIANA, EDWARD D. MANSFIELD, AND HELEN V. MILNER. 2007. "International Trade and Environmental Policy in the Postcommunist World." *Comparative Political Studies* 40 (7): 782–807.
- ANTRÀS, POL. 2003. "Firms, Contracts, and Trade Structure." *Quarterly Journal of Economics* 118 (November): 1375–418.
- ANTRÀS, POL, AND ROBERT W. STAIGER. 2012. "Offshoring and the Role of Trade Agreements." *American Economic Review* 102 (7): 3140–83.
- BAGWELL, KYLE, AND ROBERT W. STAIGER. 1999. "An Economic Theory of GATT." *American Economic Review* 89 (1): 215–48.
- BERNARD, ANDREW B., J. BRADFORD JENSEN, AND PETER K. SCHOTT. 2009. "Importers, Exporters, and Multinationals: A Portrait of Firms in the US

- that Trade Goods." In *Producer Dynamics: New Evidence from Micro Data*, edited by Timothy Dunne, J. Bradford Jensen and Mark J. Roberts, 133–63. Chicago: University of Chicago Press.
- BERNARD, ANDREW B., J. BRADFORD JENSEN, STEPHEN J. REDDING, AND PETER K. SCHOTT. 2007. "Firms in International Trade." *Journal of Economic Perspectives* 21 (3): 105–30.
- . 2010. "Intrafirm Trade and Product Contractibility." *American Economic Review* 100 (2): 444–48.
- BLANCHARD, EMILY J. 2010. "Reevaluating the Role of Trade Agreements: Does Investment Globalization Make the WTO Obsolete?" *Journal of International Economics* 82 (1): 63–72.
- BLANCHARD, EMILY J., AND XENIA MATSCHKE. 2015. "US Multinationals and Preferential Market Access." *Review of Economics and Statistics* 97 (4): 839–54.
- BUSCH, MARC L. 2007. "Overlapping Institutions, Forum Shopping, and Dispute Settlement in International Trade." *International Organization* 61 (4): 735–61.
- BUSCH, MARC L., AND KRZYSZTOF J. PELC. 2014. "Law, Politics, and the True Cost of Protectionism: The Choice of Trade Remedies or Binding Overhang." *World Trade Review* 13 (01): 39–64.
- BÜTHE, TIM, AND HELEN V. MILNER. 2008. "The Politics of Foreign Direct Investment into Developing Countries: Increasing FDI Through International Trade Agreements?" *American Journal of Political Science* 52 (4): 741–62.
- CARGILL, V. POLAND, ICSID Case No. ARB (AF)/04/2. Accessed January 22, 2018, <http://investmentpolicyhub.unctad.org/ISDS/Details/153>.
- CIMINO-ISAACS, CATHLEEN, AND JEFFREY J. SCHOTT. 2016. *Trans-Pacific Partnership: An Assessment*. Washington, DC: Peterson Institute for International Economics.
- DÜR, ANDREAS, LEONARDO BACCINI, AND MANFRED ELSIG. 2014. "The Design of International Trade Agreements: Introducing a New Dataset." *Review of International Organizations* 9 (3): 353–75.
- ESTEVADEORDAL, ANTONI, KATI SUOMINEN, AND ROBERT TEH. 2009. *Regional Rules in the Global Trading System*. New York: Cambridge University Press.
- FARRELL, HENRY, AND ABRAHAM NEWMAN. 2016. "The New Interdependence Approach: Theoretical Development and Empirical Demonstration." *Review of International Political Economy* 23 (5): 713–36.
- GAWANDE, KISHORE, AND USREE BANDYOPADHYAY. 2000. "Is Protection for Sale? Evidence on the Grossman-Helpman Theory of Endogenous Protection." *Review of Economics and Statistics* 82 (1): 139–52.
- GOLDBERG, PINELOPI KOUJIANOU, AND GIOVANNI MAGGI. 1999. "Protection for Sale: An Empirical Investigation." *American Economic Review* 89 (5): 1135–55.
- GOODMAN, JOHN B., DEBORA SPAR, AND DAVID B. YOFFIE. 1996. "Foreign Direct Investment and the Demand for Protection in the United States." *International Organization* 50 (4): 565–91.
- GREY, JAMIE. 2015. "Dairy's Decline Here to Stay?" *New Zealand Herald*, July 31. https://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11489246.
- GROSSMAN, GENE M., AND ELHANAN HELPMAN. 1994. "Protection for Sale." *American Economic Review* 84 (4): 833–50.
- HAHM, HYEONHO, MORTIZ OSNABRUGGE, ELENA FRECH, AND THOMAS KONIG. "Who Settles Disputes? Treaty Design and Trade Attitudes Towards the Transatlantic Trade and Investment Partnership (TTIP)." *International Organization* (forthcoming, conditionally accepted). Accessed November 13, 2018. <https://www.dropbox.com/s/gr13h62nj23eazg/Hahm%20et%20al.TTIP.pdf?dl=0>.
- HAINMUELLER, JENS, DANIEL J. HOPKINS, AND TEPPEI YAMAMOTO. 2014. "Causal Inference in Conjoint Analysis: Understanding Multidimensional Choices Via Stated Preference Experiments." *Political Analysis* 22 (1): 1–30.
- HAINMUELLER, JENS, DOMINIK HANGARTNER, AND TEPPEI YAMAMOTO. 2015. "Validating Vignette and Conjoint Survey Experiments Against Real-World Behavior." *Proceedings of the National Academy of Sciences* 112 (8): 2395–400.
- HELPMAN, ELHANAN, MARC J. MELITZ, AND STEPHEN R. YEAPLE. 2004. "Export Versus FDI with Heterogeneous Firms." *American Economic Review* 94 (1): 300–16.
- HELPMAN, ELHANAN, OLEG ITSKHOKI, MARC-ANDREAS MUENDLER, AND STEPHEN REDDING. 2017. "Trade and Inequality: From Theory to Estimation." *Review of Economic Studies* 84 (1): 357–405.
- HISCOX, MICHAEL J. 2002. "Commerce, Coalitions, and Factor Mobility: Evidence from Congressional Votes on Trade Legislation." *American Political Science Review* 96 (3): 593–608.
- HUMMELS, DAVID, JUN ISHII, AND KEI-MU YI. 2001. "The Nature and Growth of Vertical Specialization in World Trade." *Journal of International Economics* 54 (June): 75–96.
- IMAI, KOSUKE, AND MARC RATKOVIC. 2013. "Estimating Treatment Effect Heterogeneity in Randomized Program Evaluation." *Annals of Applied Statistics* 7 (1): 443–70.
- INTERNATIONAL CENTRE FOR SETTLEMENT OF INVESTMENT DISPUTES. 2008. "Cargill, Incorporated V. Republic of Poland." UNCITRAL Arbitration Rules Proceeding, March 5. Accessed January 22, 2018. <https://www.italaw.com/sites/default/files/case-documents/italaw9275.pdf>.
- JACOBS, MICHAEL N. 2017. "Do Bilateral Investment Treaties Attract Foreign Direct Investment to Developing Countries? A Review of the Empirical Literature." *International Relations* 5 (10): 583–93.
- JENSEN, J. BRADFORD, DENNIS P. QUINN, AND STEPHEN WEYMOUTH. 2015. "The Influence of Firm Global Supply Chains and Foreign Currency Undervaluations on US Trade Disputes." *International Organization* 69 (4): 913–47.
- JOHNS, LESLIE, AND RACHEL L. WELLHAUSEN. 2016. "Under One Roof: Supply Chains and the Protection of Foreign Investment." *American Political Science Review* 110 (1): 31–51.
- KIM, IN SONG. 2017. "Political Cleavages Within Industry: Firm-level Lobbying for Trade Liberalization." *American Political Science Review* 111 (1): 1–20.
- KIM, IN SONG, AND IAIN OSGOOD. 2019. "Firms in Trade and Trade Politics." *Annual Review of Political Science* (forthcoming). Accessed November 13, 2018. <http://web.mit.edu/insong/www/pdf/rev-firm.pdf>.
- KIM, SOO YEON, CLARA LEE, AND MELVIN TAY. 2017. "Setting Up Shop in Foreign Lands: Do Investment Commitments in PTAs Promote Production Networks?" Working paper. Department of Political Science, National University of Singapore. Accessed January 31, 2018. http://wp.peio.me/wp-content/uploads/2016/12/PEIO10_paper_60.pdf.
- KIM, SOO YEON, EDWARD D. MANSFIELD, AND HELEN V. MILNER. 2016. "Regional Trade Governance." In *The Oxford Handbook of Comparative Regionalism*, edited by Tanja A. Börzel and Thomas Risse, 323–50. New York: Oxford University Press.
- KRUGMAN, PAUL. 1980. "Scale Economies, Product Differentiation, and the Pattern of Trade." *American Economic Review* 70 (5): 950–59.
- KUCIK, JEFFREY. 2012. "The Domestic Politics of Institutional Design: Producer Preferences over Trade Agreement Rules." *Economics & Politics* 24 (2): 95–118.
- KUCIK, JEFFREY, AND ERIC REINHARDT. 2008. "Does Flexibility Promote Cooperation? An Application to the Global Trade Regime." *International Organization* 62 (3): 477–505.
- LI, QUAN. 2009. "Democracy, Autocracy, and Expropriation of Foreign Direct Investment." *Comparative Political Studies* 42 (8): 1098–127.
- MANGER, MARK S. 2005. "Competition and Bilateralism in Trade Policy: The Case of Japan's Free Trade Agreements." *Review of International Political Economy* 12 (5): 804–28.
- . 2009. *Investing in Protection: The Politics of Preferential Trade Agreements between North and South*. New York, NY: Cambridge University Press.
- MANSFIELD, EDWARD D., AND ERIC REINHARDT. 2008. "International Institutions and the Volatility of International Trade." *International Organization* 62 (4): 621–52.
- MANSFIELD, EDWARD D., AND HELEN V. MILNER. 2012. *Votes, Vetoes, and the Political Economy of International Trade Agreements*. Princeton, NJ: Princeton University Press.
- MANSFIELD, EDWARD D., HELEN V. MILNER, AND B. PETER ROSENDORFF. 2000. "Free to Trade: Democracies, Autocracies, and International Trade." *American Political Science Review* 94 (2): 305–21.
- MAYER, WOLFGANG. 1984. "Endogenous Tariff Formation." *American Economic Review* 74 (5): 970–85.
- MECKLING, JONAS, AND LLEWELYN HUGHES. 2017. "Globalizing Solar: Global Supply Chains and Trade Preferences." *International Studies Quarterly* 61 (2): 225–35.
- MELITZ, MARC J. 2003. "The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity." *Econometrica* 71 (6): 1695–725.
- MILNER, HELEN V. 1988. *Resisting Protectionism: Global Industries and the Politics of International Trade*. Princeton, NJ: Princeton University Press.
- MILNER, HELEN V., AND KEIKO KUBOTA. 2005. "Why the Move to Free Trade? Democracy and Trade Policy in the Developing Countries." *International Organization* 59 (1): 107–43.
- OECD, WTO, AND UNCTAD. 2013. "Implications of Global Value Chains for Trade, Investment, Development, and Jobs." Technical report pre-

- pared for the G-20 Leaders Summit, St. Petersburg, Russia. Accessed December 18, 2018. https://unctad.org/en/PublicationsLibrary/unctad_oecd_wto_2013d1_en.pdf.
- OSGOOD, IAIN. 2016. "Differentiated Products, Divided Industries: Firm Preferences over Trade Liberalization." *Economics and Politics* 28 (2): 161–80.
- OSGOOD, IAIN, DUSTIN TINGLEY, THOMAS BERNAUER, IN SONG KIM, HELEN V. MILNER, AND GABRIELE SPILKER. 2017. "The Charmed Life of Superstar Exporters: Survey Evidence on Firms and Trade Policy." *Journal of Politics* 79 (1): 133–52.
- OSNAGO, ALBERTO, NADIA ROCHA, AND MICHELE RUTA. 2017. "Do Deep Trade Agreements Boost Vertical FDI?" *World Bank Economic Review* 30 (Supplement 1): S119.
- PANDYA, SONAL S. 2016. *Trading Spaces: Foreign Direct Investment Regulation, 1970–2000*. New York: Cambridge University Press.
- PELC, KRZYSZTOF J. 2009. "Seeking Escape: The Use of Escape Clauses in International Trade Agreements." *International Studies Quarterly* 53 (2): 349–68.
- . 2017. "What Explains the Low Success Rate of Investor-State Disputes?" *International Organization* 71 (3): 1–25.
- PLOUFFE, MICHAEL. 2015. "Heterogeneous Firms and Policy Preferences." In *The Oxford Handbook on the Political Economy of International Trade*, edited by Lisa Martin, 196–212. New York: Oxford University Press.
- PRICE, DANIEL M. 2000. "Chapter 11 – Private Party vs. Government, Investor-State Dispute Settlement: Frankenstein Or Safety Valve." *Canada–United States Law Journal* 26 (22): 107–14.
- ROGOWSKI, RONALD. 1987. "Political Cleavages and Changing Exposure to Trade." *American Political Science Review* 81 (4): 1121–37.
- ROSENDORFF, B. PETER, AND HELEN V. MILNER. 2001. "The Optimal Design of International Trade Institutions: Uncertainty and Escape." *International Organization* 55 (4): 829–57.
- SCHEVE, KENNETH F., AND MATTHEW J. SLAUGHTER. 2001. "What Determines Individual Trade-Policy Preferences?" *Journal of International Economics* 54 (2): 267–92.
- SMITH, JAMES MCCALL. 2000. "The Politics of Dispute Settlement Design: Explaining Legalism in Regional Trade Pacts." *International Organization* 54 (1): 137–80.
- UNCTAD. 2013. "Global Value Chains and Development: Investment in Value Added Trade in the Global Economy." Technical report for UNCTAD, Washington, DC. Accessed January 31, 2018. http://unctad.org/en/PublicationsLibrary/diae2013d1_en.pdf.
- WELLHAUSEN, RACHEL L. 2014. *The Shield of Nationality: When Governments Break Contracts with Foreign Firms*. New York: Cambridge University Press.
- . 2015. "Bondholders vs. Direct Investors? Competing Responses to Expropriation." *International Studies Quarterly* 59 (4): 750–64.
- . 2016. "Recent Trends in Investor–State Dispute Settlement." *Journal of International Dispute Settlement* 7 (1): 117–35.
- WEYMOUTH, STEPHEN, AND J. LAWRENCE BROZ. 2013. "Government Partisanship and Property Rights: Cross-Country Firm-Level Evidence." *Economics & Politics* 25 (2): 229–56.
- WHITE, GLENN, AND AMY LUO. 2005. "Business Survey Response Rates: Can They Be Improved." *Proceedings of the American Statistical Association, Section on Survey Research Methods* 4 (493): 3666–8.
- WORLD BANK GROUP. 2018. *Global Investment Competitiveness Report 2017/2018*. Technical report, World Bank, Washington, DC. Accessed January 31, 2018. <https://openknowledge.worldbank.org/handle/10986/28493>.
- YI, KEI-MU. 2003. "Can Vertical Specialization Explain the Growth of World Trade?" *Journal of Political Economy* 111 (1): 52–102.