RESEARCH ARTICLE



Intra-Industry Trade, Global Value Chains, and the Political Economy of Selective Trade Protection

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Abstract

Recent trade wars have confronted the trade policy literature with a major puzzle. How can we explain protectionist tendencies in the context of global economic integration? In this article, I aim to provide an answer to the question why, and under which conditions, internationally oriented companies are in favor of trade restrictions. More specially, I argue that intra-industry trade (IIT) and global value chains (GVCs) give rise to internally conflicting interests on the part of firms, generating incentives to lobby for specific, targeted measures against their closest competitors. To test whether firms' preferences are translated into trade policies pursued by governments, I use data on trade barriers imposed by Brazil, Canada, China, the European Union, India, Japan, Russia, and the United States. I find compelling evidence that the levels of IIT and to a lesser extent trade in GVCs positively affect the decision to implement selective trade measures—such as bilateral tariffs and antidumping duties—rather than broader forms of trade protection. This result suggests that IIT and GVCs have structurally altered firms' attitudes toward trade barriers and, consequently, the way in which countries protect their domestic markets against foreign competition.

Keywords: trade protection; intra-industry trade; global value chains; import competition; firm lobbying

Introduction

Over the past two decades, research on trade politics has come to focus on firm-level characteristics rather than class or industry-based models—to explain lobbying patterns and policy outcomes.¹ A central finding in this literature is that a small group of highly successful, "superstar" firms are staunch supporters of globalization with a strong ability to influence government policy in their favor.² According to this view, these firms are primarily interested in accessing new export markets and they are not concerned when reciprocal trade liberalization leads to intensified import competition in the home country. As long as they gain on net from greater trade, it is deemed unlikely that these firms that play an outsized role in trade policymaking—will seek some form of trade protection.

However, the perception that successful firms are always in favor of lower trade barriers appears to be at odds with empirical observations. Striking examples are large manufacturers that voiced their support for the several rounds of tariffs the United States imposed under the Trump administration³ and multinational corporations (MNCs) that routinely file countervailing duty and antidumping (AD) petitions in order to receive import protection. About the latter, Prusa notes that "AD has emerged as the leading obstacle to the free and fair trading system" and scholars report that the use of AD measures

¹Bernard et al. 2007; Kim et al. 2019; Madeira 2016; Melitz 2003.

²Osgood et al. 2017; Plouffe 2017.

³"These Companies Wanted Tariffs. How Are They Faring Now?" (July 10, 2019), article from The New York Times.

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alone can substantially offset the increase in trade volumes derived from trade liberalization.⁴ Over the past thirty years, many large firms—such as Monsanto⁵, Saint-Gobain⁶, Hyundai⁷—have lobbied for the imposition of such trade barriers, which stands in contrast to the view that multinational enterprises will consistently and unambiguously prefer to eliminate restrictive trade measures.

These empirical observations present a clear challenge to the trade policy literature that currently represents trade interests as if they fall along a single continuum, dividing firms and other actors into "free traders" and "protectionists."⁸ In this conventional view, the formulation of trade policy involves a struggle between, on the one hand, importers and exporters with "pro-trade" interests and, on the other hand, the "anti-trade" import-competitors with a desire for high tariffs. While this distinction seems useful and intuitive, it is too restrictive.⁹ MNCs, which are responsible for the bulk of international trade, typically have a complex network of suppliers, sell their products in multiple countries, and are in competition with a few other (global) firms. The position of such companies cannot be narrowed down to one of the traditional categories. Doing so would obscure meaningful variation in the relationship between firms' trade interests and their policy preferences.

My aim, therefore, is to move beyond the idea that all firms have unidimensional trade interests and, rather, to find ways to capture the multifaceted nature of firms' participation in the global economy. More specifically, I focus on how the prevalence of imports and exports in the same product category as well as multinational production generates mixed motives at the level of the firm. The basic premise of this study is that intra-industry trade (IIT) and the globalization of production give rise to such internally conflicting interests on the part of firms and creates a conundrum for them as political actors. Whereas these firms rely on access to foreign inputs and export markets, they also face import competition in the domestic market which can lead to a substantial reduction in profits and market share.¹⁰ Next to the benefits that would accrue to firms from blocking imports of foreign rivals, protectionist policies also entail costs: the price of vital inputs can increase, export markets may be closed, and firm's international trade and investment flows may be disrupted because of retaliation by foreign governments.¹¹ I argue that, in order to strike a balance between these various interests, firms involved in IIT and global value chains (GVCs) prefer and are likely to lobby for *selective trade protection*—that is, a trade measure that is specifically targeted against a single firm or country.

Selective protection reduces import competition while limiting the risk that access to foreign markets or crucial inputs—that are imported via arm's-length trade or intra-firm transactions—will be restricted. Under conditions of IIT and GVC integration, the number of direct competitors is likely to be small due to product differentiation and the concentration of sales in the hands of a few large companies, which enhances the effectiveness of such policy interventions. This stands in stark contrast to the global market of homogeneous commodities—such as rice and copper—that are listed on large, organized exchanges and traded among international buyers and sellers.¹² Not only do firms under conditions of IIT and GVC integration have a *preference* for selective trade barriers, but as monopolists of a particular product variety, they also have a strong incentive to convert this into political action because they cannot free ride on the lobbying activities of other producers.¹³ This constitutes another reason for why I expect to find a positive impact of the level of IIT and GVC integration on the incidence of selective trade protection.

To test my hypotheses, I examine import barriers imposed by the eight largest economies in the world (in 2019)—Brazil, Canada, China, European Union, India, Japan, Russia, and the United States

⁹Kim et al. 2019.

⁴Prusa 2005, 683; Vandenbussche and Zanardi 2010.

⁵Brazil—AD investigation of imports of Glyphosate from China (2001).

⁶EU—CVD investigation of imports of tubes and pipes of ductile cast iron from India (2015).

⁷South Korea—AD investigation of imports of 6-axis industrial robots from Japan (2004).

⁸See, for example, Bowen et al. 2022; Frieden and Rogowski 1996.

¹⁰Kono 2009.

¹¹Milner 1988.

¹²Rauch 1999.

¹³Gilligan 1997.

—accounting for more than half of world trade in goods. My empirical analysis relies on a novel dataset covering tariffs, quotas, contingent protection measures as well as various other non-tariff barriers (NTBs) to trade imposed between 2008 and 2019. I use Global Trade Alert (GTA) to obtain data on trade barriers, which I complement with political and economic data from various sources. At the six-digit level of the Harmonized System (HS), I check for each product whether a new trade barrier is imposed, and if so, whether the measure is targeted at a single country or at multiple countries. In the empirical analysis, I use a two-stage Heckman probit selection model to account for the potential interdependence between the decision to impose a protectionist measure and the choice for a particular *type* of trade barrier.¹⁴ In line with my expectation, I find that IIT has a significant and positive impact on the decision to impose selective trade measures, even after controlling for a variety of (potential) alternative explanations. The results also indicate that the incidence of selective trade protection increases with trade in GVCs, although these findings are less robust and consistent.

The implications of my argument differ from those most prevalent in the trade policy literature. While most scholars associate IIT and GVCs with the proliferation of preferential trade agreements (PTAs) and with trade liberalization in general,¹⁵ this study shows that both factors give rise to a preference for trade discrimination against individual countries and firms. Rather than lobbying for a uniform tariff on imports from every trading partner, firms request their governments to impose targeted measures against the most disruptive foreign suppliers. Given their size and resources, MNCs with a preference for market segmentation are particularly well-positioned to exert influence over policy decisions. These insights provide an explanation for the gradual buildup of country-specific trade distortions that pose a challenge to the world trading system, which led to warnings about "creeping protectionism" from the WTO's director-general.¹⁶ Scholars have noted that trade discrimination reduces global welfare by diverting trade from more efficient to less efficient producers due to unequal treatment of countries.¹⁷ From this perspective, violating the most-favored-nation (MFN) principle results in a suboptimal allocation of resources, thereby reducing the gains from trade. What is more, the use of country-specific and firm-specific trade measures can lead to frustration and a deterioration in political relations.¹⁸ If there are no underlying political tensions between countries, trade discrimination itself seems unlikely to lead to major conflict. Yet, in conjunction with other frictions in a bilateral relationship, a selective trade measure can add fuel to the fire. "When basic political relations are bad, discrimination can become a weapon of hostile policy and a tool for building and maintaining factious alliances."¹⁹ The findings of this study suggest that firms lobbying for selective trade protection have critically contributed to these developments. This study, thus, provides a novel account of trade conflicts and highlights the role of firm-level protectionist preferences in shaping political attitudes toward discrimination.

The puzzle

The dominant view in the trade policy literature is that the growth of international economic ties and two-way trade lead to an overall reduction, rather than an increase, in the demand for trade protection. Under conditions of product differentiation and IIT, firms are exposed to import-competition but, at the same time, the benefits of increased exports tend to be higher than the (potential) adjustment costs. Krugman notes, therefore, that "the gains from intra-industry specialization outweigh the conventional

¹⁴Heckman 1976.

¹⁵Krugman 1982; Lipson 1982; Baccini et al. 2017; Osgood 2017; Madeira 2016; Kim 2017.

¹⁶News article Financial Times (June 18, 2014), "WTO warns of creeping protectionism."

¹⁷Hudec 1991; Goldstein et al. 2007.

¹⁸Jackson 1997.

¹⁹Hudec 1991, 197.

distributional effects, and everyone gains from trade."²⁰ As a result, producers involved in IIT are expected to be in favor of a removal of trade barriers. As an extension of the Krugman framework, Melitz proposed a trade model that incorporates *firm heterogeneity* in size and productivity.²¹ A crucial implication of this model is that only a fraction of all firms can enter the export market because of the high fixed costs related to exporting (e.g., investments in marketing and distribution networks). In fact, the concentration of benefits in the hands of "superstar exporters" gives them strong incentives to mobilize politically and to influence trade policy outcomes.²² Such firms are deemed to be on the protrade side, because "[b]ig exporting firms monopolizing their own varieties do not mind if trade liberalization increases imports in their industry as long as they gain access to new markets."²³ Empirical studies have indeed shown that IIT is associated with support for (preferential) trade liberalization.²⁴

In the same vein, there seems to be consensus in the literature that MNCs and import-dependent firms play an important role in reducing pressures to impose protectionist policies.²⁵ The central idea is that firms rely on access to cheap inputs and are, therefore, against an increase in import barriers. Gawande et al. describe the preferences of firms that operate in GVCs as follows: "Because a multinational firm and its network of affiliates and arm's-length suppliers drive the supply chain on both sides of the border, it has every incentive to reduce protection to zero to implement activities along the chain at the least cost."²⁶ Along the same lines, Jensen et al. suggest that the rapid expansion of GVCs can offer an explanation for "the puzzling dearth of protectionism" after the global financial crisis of 2008.²⁷ In a more recent study, Bown notes that "to the extent that international transactions occur between affiliates of the same multinational firm, exporters and importers have a shared incentive to keep markets free from new trade barriers."²⁸ Overall, the rise in the fragmentation of production and the increase in firms that adopted a global sourcing strategy are seen as powerful forces against trade protection.

Yet, two key developments have been largely overlooked by the trade policy literature. First, over the past decades, countries have frequently imposed protectionist measures that were specifically targeted against one trading partner—or even against one firm. Such targeted measures can come in many different forms. For instance, scholars have reported high levels of specific protection in the form of AD duties and countervailing duties.²⁹ Figures 1–3 show that the percentage of imports subject to AD duties has steadily increased in the United States, EU, and China, not so much because *more* petitions are filed, but existing measures tend to be (repeatedly) extended beyond the 5-year-period that WTO rules indicate they are supposed to be revoked.³⁰ This has led to a gradual build-up of "temporary" protectionist measures with a lasting adverse impact, and "[f]rom a global trade policy perspective, temporary trade barriers may thus be considered far more concerning than previous studies have suggested."³¹ Compared to across-the-board import tariffs, the level of AD duties is remarkably high: Blonigen and Prusa report that in the United States, average AD duties are 41.4 percent (1980–2005) while average applied tariff rates are 5.2 percent (1996–2007).³² Moreover, there has also been an increase in import tariffs targeted at a single country, of which the China–US trade war is a prime example³³, and governments have actively negotiated so-called voluntary export restraints (VERs) to

²⁰Krugman 1981, 971.

²¹Krugman 1980; Melitz 2003.

²²Plouffe 2017; Osgood et al. 2017.

²³Osgood et al. 2017, 149.

²⁴Lipson 1982; Milner 1997; Manger 2012; Kim 2017.

²⁵Baldwin 2010; Baccini and Dür 2018.

²⁶Gawande et al. 2015, 108.

²⁷Jensen et al. 2015, 941.

²⁸Bown 2021, 88.

²⁹Prusa 2005; Blonigen and Prusa 2016; Vandenbussche and Zanardi 2010.

³⁰Silberberger et al. 2022.

³¹Idem, 701.

³²Blonigen and Prusa 2016.

³³Evenett and Fritz 2019.



Figure 1. Import coverage by AD measures, United States.³⁴

limit foreign competition.³⁵ These restrictions are typically initiated by the importing country and negotiated under threat of sanctions and were, therefore, not truly "voluntary". In 2018, US President Trump sought to negotiate VERs with individual countries to reduce imports of steel and aluminum.³⁶ To my knowledge, there are no estimates of the total impact of all country- and firm-specific measures combined. Yet, given that AD duties *alone* affect a considerable share of imports in the United States, EU, and China (Figures 1–3), the effect is likely to be substantial.

Second, what is particularly striking is that MNCs routinely file petitions with the aim to receive protection against foreign competition, while these internationally oriented firms are "supposed" to be against protectionism. For instance, Prusa expected that the widespread use of AD would come to a halt once multinational firms were affected:

"My view is that AD can be addressed only when powerful US and EU exporters – who currently are largely unaware of the perverseness of AD rules – feel its wrath. The day that Microsoft, Intel and Hollywood media companies find their products subject to 50 per cent tariffs will be the day when Washington decides that AD rules are too easily manipulated. The day that Vivendi, BASF, Braun, SAP and Siemens find their products subject to 50 per cent tariffs will be the day that Brussels decides that AD should be reined in."³⁷

Ironically, the opposite seems to be true as companies like Intel³⁸, BASF³⁹, and Siemens⁴⁰ *themselves* have requested trade protection in the form of AD duties and countervailing duties (CVD) over the past

³⁴Bown 2014.

³⁵The US government, for example, negotiated VERs and OMAs with countries such as Japan, Taiwan and South Korea primarily for products like steel, automobiles, textiles, and electronics. See Green 1981.

³⁶These countries included Argentina, Australia, Brazil, Canada, the EU, Mexico, and South Korea. When countries did not agree to form a VER, they were hit with US tariffs. Bown 2021.

³⁷Prusa 2005, 699.

³⁸United States—AD investigation of imports of EPROM semiconductors from Japan (1985).

³⁹EU—AD investigation of imports of Ammonium Nitrate from Poland, Lithuania, and Ukraine (1999).

⁴⁰EU—AD investigation of imports of DRAMs from South Korea (1991).



Figure 2. Import coverage by AD measures, EU.⁴¹

decades. This is not exceptional as large firms such as Shell⁴², Boeing⁴³, Mitsubishi⁴⁴, Nuctech Company⁴⁵, ABB⁴⁶, TMK⁴⁷, and many more⁴⁸, have done the same in different countries. Moreover, global manufactures, including ArcelorMittal, also voiced their support for the several rounds of tariffs the United States imposed on imports from China. That is not to say that *all* petitions are filed by MNCs, yet these examples show that it is not unusual for these firms to lobby for (specific) protection, which is already a surprising observation given that MNCs are generally believed to be on the pro-trade side. In other words, the claim that large firms with export-oriented interests and global production networks are unequivocally in favor of lower trade barriers is clearly contradicted by empirical observations.

This article aims to develop an interest-driven explanation for why firms—in the presence of IIT and GVCs—lobby for *selective* trade measures rather than *general* import barriers. This distinction is crucial as the central pillar of the post-World War II trading system is the principle of non-discrimination, embedded in the MFN clause, which constrains the use of beggar-thy-neighbor discriminatory tariffs and prevents costly trade diversion. Therefore, the main economic benefits of participation in the WTO stem from MFN.⁴⁹ Selective trade measures undermine this core principle of the multilateral trading system and lead to an unequal distribution of the benefits of trade between and within countries. For instance, it has been shown that the anticompetitive effect of AD protection induces domestic firms to raise their markups and profits at the expense of consumers.⁵⁰ An empirical study of Gallaway et al. estimated that in the United States the net welfare cost of AD and CVD orders was around four billion

⁴¹Idem.

⁴²EU—AD investigation of imports of Glycine from China (1999).

⁴³United States—AD investigation of imports of 100–150 Seat Large Civil Aircraft from Canada (2017).

⁴⁴Japan—AD investigation of imports of Polyethylene Terephtalate from China (2016).

⁴⁵China—AD investigation of imports of X-Ray Security Inspection Equipment from the EU (2009).

⁴⁶Canada—AD investigation of imports of Certain Liquid Dielectric Transformers from South Korea (2012).

⁴⁷Russia—AD investigation of imports of Welded Stainless Steel Pipes from China (2019).

⁴⁸See Temporary Trade Barriers Database (TTBD), available at the Word Bank website.

⁴⁹Goldstein et al. 2007; Saggi 2004.

⁵⁰Nieberding 1999; Konings and Vandenbussche 2005.



Figure 3. Import coverage by AD measures, China.⁵¹

dollars annually.⁵² Several economists address the problems that are associated with trade discrimination,⁵³ but, to date, no study has examined how the political choice between selective and more general forms of trade protection is made. In the following section, I discuss the effect of IIT and GVC integration on firms' trade policy preferences and lobbying behavior in detail.

The argument

Standard trade theory does not provide an explanation for the empirical patterns observed. While scholars expect import-competing *sectors* and unproductive *firms* to be in favor of trade protection,⁵⁴ the political-economic rationale for firms with export-oriented and import-dependent interests to lobby for trade barriers is unclear. Indeed, the general assumption is that protectionist policies are too costly for firms that rely on either exports or foreign inputs—hence, these firms are expected to be *against* protectionism.⁵⁵

As I will discuss throughout this section, firms' trade *interests* are strongly influenced by the extent to which firms are involved in IIT and GVCs. In turn, I consider firms' policy *preferences*, which stem directly from firms' trade interests and the relative costs and benefits of different trade measures. Just as trade liberalization can have dual effects on firms—that is, export market expansion vs. increasing import competition⁵⁶—so can trade protection have opposing effects for firms: they may (re)gain domestic market share and increase profits once tariffs are imposed, but they may also lose access to crucial inputs or export markets due to foreign-government retaliation. Yet, the degree to which these effects manifest depends much on firms' engagement in international trade and the *type* of protectionist measure, just as distinct forms of trade liberalization—for example, preferential and multilateral agreements—have different consequences for firms and countries. As two extreme or polar types of

⁵¹Idem.

⁵²Gallaway et al. 1999.

⁵³Prusa 2005; Chowdhury 2011.

⁵⁴Hiscox 2002; Osgood 2017.

⁵⁵Milner 1988.

⁵⁶Bernhofen 2002; Osgood 2017.

protection, I consider *selective* trade protection which discriminates against one country (or a single firm within that country) and *general* trade measures affecting several countries. Naturally, firms may also be *against* any form of trade protection, which constitutes the third option.

A breakdown of firms' trade interests

The rise of IIT and trade in GVCs are two of the most important developments in the contemporary global economy and both types of trade are estimated to account for about 80 percent of international commerce.⁵⁷ I argue that firms involved in IIT and trade in GVCs are particularly likely to have ambiguous and conflicting trade interests.

For one, IIT—that is, two-way trade in the same product category—depends on the existence of economies of scale in production as well as product differentiation.⁵⁸ Consumers' taste for variety, on the one hand, creates opportunities to export to multiple countries while, on the other hand, increased imports of similar products can place severe costs on firms because (i) they can lose domestic market share, resulting in lower profits or losses, (ii) they may be forced to develop and produce whole new varieties, or worse, (iii) foreign competition may drive them out of business entirely.⁵⁹ Profit-maximizing firms, therefore, can be expected to seek ways to reduce import competition while maintaining access to export markets. Given the reciprocal nature of trade obligations, firms with export-oriented interests are unlikely to be in favor of across-the-board tariffs for fear of costly countermeasures.⁶⁰ Instead, I contend that firms involved in IIT put pressure on policymakers to adopt targeted protectionist policies against their main rival(s), which can be identified relatively easily because producers of differentiated goods are only in direct competition with the producers of varieties that are closest to theirs.⁶¹ Although firms are not immune to trade retaliation when selective measures are imposed, the firm's vulnerability to retaliation is likely to be low as (i) exports of large firms tend to be widely dispersed across the globe since *all* consumers have a love of variety, 6^2 and (ii) the country that potentially retaliates is the rival company's home market, where it is already difficult to expand export sales due to competitive pressures.⁶³ Since differentiated products are not easily substitutable and because consumers become loyal to certain brands and companies, differentiated products tend to have relatively weak price elasticities of demand.⁶⁴ This means that a high rate of duty is often needed to reduce pressures from foreign competition.⁶⁵ Again, selective trade measures form an attractive option because, if the import tariff needs to be exceptionally high, the number of offended parties and the (potential) loss of market opportunity remain limited.

For a firm operating in GVCs,⁶⁶ foreign competition can also threaten to overtake domestic market share. A large proportion of trade in GVCs is carried out by MNCs that enjoy relatively high global

⁵⁷Baccini and Dür 2018; Feenstra and Hanson 1996; Gereffi et al. 2005; OECD, WTO, and UNCTAD 2013.

⁵⁸Krugman 1981.

⁵⁹Gilligan 1997; Kono 2009.

⁶⁰Milner 1988.

⁶¹Helpman and Krugman 1985; Gilligan 1997. Please note that this stands in stark contrast to the global market of homogeneous commodities that are listed on large, organized exchanges and traded among numerous international buyers and sellers. Under these conditions, a selective trade measure would be ineffective.

⁶²Bernard et al. (2018) report that US firms exporting to eleven or more destinations account for 86.0 percent of export value. ⁶³Firms tend to enjoy a "home market advantage" because consumers prefer "home brands." It is therefore more difficult for a global company (e.g., Apple) to penetrate a rival's company home market (e.g., Samsung in Korea) than other foreign markets. Cosar et al. 2018.

⁶⁴Goldberg 1995; Broda and Weinstein 2006.

⁶⁵Corden 1971; Lee and Swagel 1997.

⁶⁶To deal with the challenge of sorting out the trade interests and policy preferences of different types of firms both theoretically and empirically, I remain agnostic about the specific organizational form of a GVC (e.g., whether inputs are sourced through arm's-length trade or intra-firm transactions). Instead, I choose to focus on the *trade interests* resulting from GVC integration (i.e., import-dependent interests). Although I do not develop separate hypotheses for different forms of GVCs, I use different indicators and data sources to measure GVC integration in the empirical analysis.

		Global value chain (GVC) integration		
		Low	High	
Intra-industry trade (IIT)	Low	Import-competing → general trade protection Export-oriented → no trade protection	Import-dependent → no trade protection Import-dependent <i>and</i> import-competing → selective trade protection	
	High	Import-competing <i>and</i> export- oriented → selective trade protection	Import-competing and export-oriented and import- dependent → selective trade protection	

Table 1. Types of firm-level trade interests and preferences for protection

market shares as they possess the firm-specific assets needed (e.g., marketing skills and supplies of funds) to enter national product markets surrounded by high entry barriers.⁶⁷ While these firms often rely on low-cost imports (and exports) to generate added value within their supply chains, they may also face import competition from foreign companies producing similar product varieties. To give an example, in the US market of audio and video equipment almost half of all imports involve related-party transactions while the other half of imports are coming from foreign producers that are not related to US firms.⁶⁸ The largest share of related-party transactions consists of imports from Mexico, whereas unrelated imports are coming mainly from China. In other words, firms might have "pro-trade" interests when it comes to trade with Mexico and "anti-trade" interests vis-à-vis trade with China. Rather than being unambiguously for or against protectionism, the MNCs around which GVCs are centered are likely to take a position based on which trading relationship or interest is at stake. Since imports from unrelated firms can negatively affect their profitability (e.g., because of price-depressing effects), this gives them an incentive to seek selective trade protection. Selective measures suit their interests better than trade barriers that are implemented across the board, because the latter can negatively affect intrafirm trade and may disrupt supply chains, hence hurting import-dependent interests. Trade barriers are only beneficial for MNCs as long as their own supply chains are kept out of the firing line.

The key message here is that firm's policy preferences depend on their involvement in international trade and that high levels of IIT and GVC integration can give rise to mixed trade interests. The question is not whether firms are pro-trade or anti-trade, but *how* firms weigh these different interests when taking a position on specific trade policy issues. In terms of the *type* of trade protection, I therefore argue that firms with mixed interests are more likely to prefer *selective* trade barriers because these measures—targeted against individual firms or countries—limit import competition while reducing the risk that access to foreign markets and crucial inputs will be restricted (see Table 1). In the next section, I explain why firms involved in IIT and GVCs can be expected to have the resources and the political incentives to successfully lobby the government.

From preferences to trade policy lobbying

Firms need to mobilize enough political support to see their preferences translated into trade policies. In line with previous studies on trade politics, I make the simplifying assumption that politicians implement trade policies with the goal of maximizing the chances of re-election and are in need of

⁶⁷As pointed out by Caves, the presence of MNCs can be a two-edged sword: "If the multinational company is good at scaling existing industrial barriers to the entry of new firms, it is also good at building up such barriers." Caves 1979, 61; Markusen and Venables 2000.

⁶⁸Data are retrieved from the Related Party Database for the year 2019 (NAICS 334310). Following the definition of the US Census Related Party Database, firms are "related" if one company either owns, controls, or holds voting power equivalent to 6 percent of the outstanding voting stock or shares of another company. Several scholars have used US Census data to measure intra-firm trade and GVC integration. For instance, see Kim and Spilker 2019; Baccini et al. 2018; Bown et al. 2021; Antràs and Chor 2013.

resources and support from economic actors.⁶⁹ The assumption seems reasonable for several reasons. First, politicians are likely to care about the welfare of the companies in their constituency to secure future support from the firms' voting employees.⁷⁰ As explained by Dür, "in a situation of electoral competition [politicians] fear that organized groups could induce voters to punish the incumbent politicians or parties."⁷¹ Second, there is a large (mainly United States) literature about the effect of campaign contributions on trade policy decision-making based on the "protection for sale" framework.⁷² Empirical research has shown that the vast amounts of money spent by firms on lobbying and campaign contributions do have an influence on the trade policies pursued by governments.⁷³ Third, politicians and bureaucrats in trade ministries depend on information from private entities about foreign market conditions, experiences with existing trade policies, or (technical) issues that come along when drafting new legislation. This is also reflected in the institutions that govern trade policymaking. For instance, the identification of market access barriers or illegal (or "unfair") trade practices is in many countries designed to be bottom-up process with businesses alerting the trade authorities about (potential) issues and policy responses.⁷⁴ These institutional structures underscore the importance of firms' input in the trade policymaking process. Fourth, firm lobbying appears to be more effective when issues and procedures are less visible.⁷⁵ As noted by Drope and Hansen, the general public has very little knowledge of the activities of the bureaucratic agencies that administer trade barriers (such as the US International Trade Commission or the EU's Trade Defence Instruments Committee), which makes protectionist issues particularly susceptible to pressures from business actors.⁷⁶

Yet not all firms mobilize politically, and not all lobbying is successful. Concerning the decision to engage in political activities, the incentives of actors are strongly shaped by collective action problems that directly depend on the size of the group and the distribution of costs and benefits.⁷⁴ In turn, to influence political outcomes firms need to have the resources that are valuable to policymakers.⁷⁸

First, the link between group size and the mobilization of business interests has received considerable attention in the trade policy literature.⁷⁹ Smaller groups have an advantage over larger groups because individual contributions have a higher impact on the (potential) provision of the collective good. Large groups suffer from free-riding behavior because individuals suppose that their efforts cannot make a difference as each member's stake is negligible.⁸⁰ The firms with mixed interests—with a preference for selective trade protection—are particularly likely to overcome the problems of collective action due to the interactive effects with market structure.⁸¹ First, the number of firms that directly compete is relatively small when the degree of IIT is high. It is well established that product differentiation has the effect of insulating submarkets and creating high barriers to entry.⁸² While large firms can exploit scale economies, new entrants are at a severe disadvantage because of the fixed costs involved in product design, establishing unique production facilities and setting-up marketing campaigns to create brand loyalty.⁸³ A major implication of IIT is, therefore, that firms become de facto "monopolists" in a particular variety. This essentially eliminates the collective action problem as there will be no other firm lobbying for the same trade barrier. This means that single firms involved in IIT have stronger

⁷³Gawande and Bandyopadhyay 2000; Kim and Osgood 2019.

⁶⁹Baccini et al. 2018; Madeira 2016.

⁷⁰Drope and Hansen 2004.

⁷¹Dür 2010, 19.

⁷²Grossman and Helpman 1994; Goldberg and Maggi 1999; McCalman 2004.

⁷⁴Shaffer 2003; van Ommeren et al. 2021.

⁷⁵Wright 1990.

⁷⁶Drope and Hansen 2004.

⁷⁷Olson 1965.

⁷⁸Dür and De Bièvre 2007.

⁷⁹Frieden and Rogowski 1996; Alt and Gilligan 1994.

⁸⁰Olson, 1965.

⁸¹Gilligan 1997; Kono 2009.

⁸²Mueller and Hamm 1974.

⁸³Grossman and Shapiro 1984; Geroski 1995; Melitz 2003.

incentives to try to alter policy outcomes. Sectors that are organized around GVCs tend to be dominated by a small number of large companies.⁸⁴ Over the past decades, vertically integrated MNCs have captured increasing market shares due to mergers and acquisitions. Given these high levels of industrial concentration, such firms are far more likely to organize politically than smaller firms in rather atomistic sectors.⁸⁵

Second, although many firms and industry associations try to secure preferred policy outcomes, fewer actors succeed in gaining access to the relevant institutions in order to influence the political decision-making processes. For instance, there is large asymmetry among private actors regarding their capacity to provide relevant information about national electorates and (technical) expert knowledge that is demanded by policy officials and politicians.⁸⁶ Dür and De Bièvre state that actors with more political and financial resources should be more successful in their lobbying efforts: forms of resources include campaign funding and expertise on certain policy issues and market conditions.⁸⁷ In general, large companies are better able to influence political decision-making as they have stronger organizational capacity and can devote larger financial and human resources to lobbying activities.⁸⁸ Firms involved in IIT have been able to enter the export market, which shows that they belong to the most productive companies in their industry.⁸⁹ These firms can be expected to have strong political power as they possess the financial and social capital needed to steer the decision-making process in a way that suits their interests. In a similar vein, MNCs that govern trade in GVCs or firms that concentrate on a particular niche market are likely to play an important role in trade politics because they own useful resources that can be traded for access to decision-makers, such as money and issuespecific information.⁹⁰

In practice, trade policy measures such as tariffs, quotas, and NTBs are imposed against countries, not against firms.⁹¹ For this reason, firms can be expected to lobby for targeted measures against the *country of origin*⁸⁹ of the competing product variety that has entered the domestic market. In other words, the empirically observable implication of my argument is a positive effect of IIT and/or trade in GVCs on the imposition of country-specific trade barriers.

Hypothesis 1: The greater the extent of intra-industry trade, the higher the incidence of selective trade protection.

Hypothesis 2: The greater the extent of trade in global value chains, the higher the incidence of selective trade protection.

Data and measures

The goal of this study is to examine the relationship between firm-level interests—depending on their involvement in IIT and GVCs—and the political choice for selective trade protection. To do so, I rely on data from GTA to identify trade barriers imposed by the eight largest economies in the world (in 2019): Brazil, Canada, China, European Union⁹³, India, Japan, Russia, and the United States. GTA

⁸⁴Eckhardt 2015.

⁸⁵Greier et al. 1994; Weymouth 2012; Jensen et al. 2015.

⁸⁶Bouwen 2004; Stevens 2022.

⁸⁷Dür and De Bièvre 2007; Hansen 1991; Grossman and Helpman 2001.

⁸⁸Osgood et al. 2017; Baccini et al. 2017; Kim and Osgood 2019.

⁸⁹Melitz 2003; Mayer and Ottaviano 2007.

⁹⁰Hillman et al. 2004.

⁹¹Except for antidumping duties, which can be imposed on imports from individual firms.

⁹²The country of origin of the product at hand determines which rules, duties and requirements are applied at the customs office. Each country is obliged to formulate rules of origin to define the "economic nationality" of a product. According to the WTO Agreement on Rules or Origin (RoO), when products are not "wholly obtained" in one country, the country where the last "substantial transformation" has been carried out is determined as the origin of a particular good.

⁹³The EU includes all the extra-EU measures taken by the 28 EU member states and the measures taken by the European Commission.

documents trade policy *changes* rather than the height or size of any trade distortion,⁹⁴ which serves the purpose of this study well. The GTA database contains information on the policy instrument and establishes which products and foreign trading partner(s) are affected by the trade barrier. The countries selected for this study represent different political regimes as well as different levels of economic development, which is important to account for (potential) alternative explanations and, therefore, to enhance the generalizability of the findings. Since GTA data are only available as of 2008, this study covers the time period from 2008 to 2019. The year of 2019 is chosen as the final year because significant changes in global trade patterns took effect in 2020 due to the United Kingdom's withdrawal from the EU and the coronavirus outbreak, which hinders the accurate analysis of some key parameters. Moreover, I draw on data from the World Integrated Trade Solution (WITS), among other sources, to complement the analysis and to account for other factors that may influence the relationship between IIT, GVC integration, and selective trade protection.

The unit of analysis is a six-digit HS product in a given country and year. Although I am primarily interested in the effect of IIT and trade in GVCs on the choice between selective and more general forms of trade protection, dropping the observations of products that are *not* targeted by a trade barrier in the sample period may introduce selection bias. The selection problem arises if measured and unmeasured factors affect both the decision to impose a trade barrier as well as the choice for a particular type of trade barrier. Consequently, the error terms in the selection and outcome equation may be correlated, which in turn can lead to biased estimates. To account for this potential bias, I employ a Heckman selection model which consists of two stages:⁹⁵ in the first stage, I analyze all six-digit HS products; in the second stage I consider the selected sample of products that are affected by a trade barrier in a given year.

For the correct identification of the Heckman selection model, an exclusion restriction is required, meaning at least one variable must have a statistically significant (non-zero) coefficient in the selection equation without affecting the outcome in the second stage. Without a valid instrument, the Heckman selection model may produce unreliable estimates because its distributional assumptions are violated.⁹⁶ In this study, the *Trade value* of a product (as a share of total imports and exports of a country) seems to be an appropriate instrument for two reasons: on the one hand, high value products—such as cars or petroleum—are more likely to be produced by firms with strong lobbying power, which can be expected to positively affect the incidence of protection in the first stage. On the other hand, *Trade value* does not capture the type (and combination) of trade interests and, hence, is not associated *a priori* with a preference for a particular trade measure in the second stage. This variable, therefore, will be included as a regressor in the selection equation.

First stage variables

Dependent variable

In the first stage, the dependent variable indicates whether or not a product i is affected by a trade barrier that is announced by country c in year t. I examine a wide range of trade barriers that affect the importation of goods. Measures that are imposed "behind-the-border" such as subsidies and intellectual property rules are not included in the dataset. Still, the dataset includes contingent trade-protective measures, import licensing, additional taxes, quotas, and tariffs.⁹⁷ In the data sample, 9.1 percent of the products are affected by a new, additional trade measure (across all countries in the 2008–2019 period).

⁹⁷The following trade-related measures of all MAST-chapters from the United Nations (UN) classification are excluded: A (Sanitary and phytosanitary measures), B (Technical barriers to trade), L (subsidies), M (government procurement), N (intellectual property), and P (export-related measures).

⁹⁴Evenett 2021.

⁹⁵Heckman 1976.

⁹⁶Wolfolds and Siegel 2019.

Independent variables

There are several political-economic factors that might have an influence on the imposition of (new) trade barriers. First, firms can be expected to lobby for trade protection when there has been an increase in imports of the goods they produce. Hence, I include a variable Import increase as an important scope condition that takes the value of 1 if the value of imports has increased in the years before the trade barrier was announced (that is, between t-1 and t-2), and 0 otherwise. Second, I include a measure of the effectively applied Tariff rate at the six-digit HS product-level as high, pre-existing tariffs may decrease the probability that additional protectionist policies are implemented. The data of the effectively applied (weighted average⁹⁸) tariff rate comes from WITS. Third, I account for the *Trade value* of the product (as a share of total imports and exports of a country) because the trade of products with high economic value might be represented by relatively influential interest groups, which could mean that their protectionist demands are more likely to be heard. As shown in Table A.4 in the Appendix, this variable also satisfies the exclusion restriction (i.e., having no direct effect on the outcome in the equation of interest), which is important for the identification of the Heckman selection model. Fourth, I add a measure for Government ideology to control for the possibility that partisanship affects trade policy actions. While scholars find that right-wing parties take more free trade stances than left-wing parties, they also stress that trade policy strongly depends on country-specific characteristics.⁹⁹ I use the Database of Political Institutions (DPI) to identify the political orientation of the largest party in government. Using a set of dummy variables, I distinguish between right-wing parties, center parties, and left-wing parties (reference category).¹⁰⁰ Fifth, I include a dummy for homogeneous Raw materials to capture the interests of importers that are strongly dependent on access to foreign inputs for their production process. Trade in raw materials-such as wool and natural rubber-is likely to be determined by the forces of comparative advantage and trade preferences should be relatively straightforward (i.e., against protection), which contrasts with other forms of GVC integration (introduced below) featuring trade in differentiated intermediates and end-products.¹⁰¹ The variable takes the value of 1 if the product is homogeneous (as classified by Rauch¹⁰²) and a raw material (as classified by WITS), and 0 otherwise. Furthermore, I rely on the inclusion of sector (θ_s) and country (δ_c) dummies to account for any omitted variables for which data could not be obtained (e.g., market concentration). I use the Standard Product Groups from WITS to distinguish between 16 broad economic sectors. All in all, the selection equation can be expressed as follows:

$$TradeBarrier_{i,c,t} = \alpha_0 + \gamma_1 Import Increase_{i,c,t-1} + \gamma_2 Tariff Rate_{i,c,t-1} + \gamma_3 TradeValue_{i,c,t-1} + \gamma_4 Ideology_{i,c,t} + \gamma_5 RawMaterials_i + \delta_c + \theta_s + \varepsilon_{1i,c,t}.$$

Second stage variables

Dependent variable

The dependent variable in the outcome equation—selective trade protection (STP)—is operationalized as a dummy indicating whether a trade barrier affects a single country or multiple countries (i.e., general trade protection). This information comes from the GTA database. The dummy takes the value of 1 if a product is protected by a trade barrier that is country-specific¹⁰³, and 0 otherwise.

⁹⁸The applied tariff rate is weighted by the corresponding value of trade with all countries.

⁹⁹Milner and Judkins 2004; Dutt and Mitra 2006.

¹⁰⁰In the DPI, data are not coded at the level of the EU. However, given the fact that the European Commission since 2004 has been led by politicians affiliated with the conservative European People's Party (EPP), I assign the value of 1 to the EU in the data sample. The largest party in the EPP, CDU/CSU of Germany, is also a right-wing party according to DPI. See Table A.2 in the Appendix for an overview.

¹⁰¹Baccini and Dür 2018.

¹⁰²Rauch 1999.

¹⁰³Selective trade protection also includes trade barriers that are *firm-specific* as many trade measures are targeted against individual companies in a single country (e.g., antidumping). Yet, based on the available Global Trade Alert data, the distinction between country-specific and firm-specific trade barriers cannot be operationalized.

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Independent variables

The main variables of interest are IIT and GVC integration. First, to measure the extent to which IIT is present for the products in the data sample, I calculate the Grubel Lloyd index $(1 - \frac{[imports - exports]}{imports + exports})$ of IIT based on trade flows at the HS six-digit product level. The Grubel Lloyd index ranges between 0 (products are only imported or exported) and 1 (imports and exports are equal in value) and is widely applied in trade policy research.¹⁰⁴ The trade data come from WITS¹⁰⁵. Since I expect that a higher degree of IIT increases the probability of selective trade protection (H1), the coefficient on IIT should have a positive sign. Second, GVC integration is measured in two ways. For one, I include a variable-GVC trade—that indicates whether a product is a GVC product as classified by WITS. The list provided by WITS consist of 1,814 products that are heavily traded within GVCs and are likely to grasp the role of firms operating in GVCs that do face import competition (which tend to be more downstream producers) as separate from firms with purely import-dependent interests (which tend to be more upstream). At this stage, the choice of trade protection is conditional on the decision to raise barriers in the first place and, hence, on import competition. The imports of these GVC products (e.g., textiles and electronics) may come into competition with the goods produced by domestic downstream firms, giving them an incentive to lobby for (selective) trade protection. In addition, I use Intra-firm trade as an alternative measure of GVC integration that primarily captures the trade activities of vertically integrated MNCs. Based on data from the US Census Related Party Database, I calculate intra-firm imports as a share of total imports. This information is available at the NAICS six-digit level, and I use the correspondence tables provided by Pierce and Schott to match these data with six-digit HS product codes.¹⁰⁶ The drawback of this measure is that it only covers the United States, and it will, therefore, not be included in most estimations. Following the second hypothesis, I predict that a higher level of GVC integration gives rise to a preference for selective trade protection.

A set of control variables is added to the analysis in order to account for other factors that might interfere in the relationship between IIT, GVC integration, and the choice of protectionist means. First, the decision to use specific trade measures rather than general tariffs may depend on the magnitude of the Import surge for a given product: general tariff hikes might be more costly as other countries start doubting the government's commitment to negotiated trade agreements, while narrowly tailored policies can reassure trading partners that the measures are exceptional and may be temporary.¹⁰⁷ For this reason, governments might consider general trade barriers only to be cost-effective when import surges are large. To check whether this affects the type of protection, I add a dummy to the analysis using different thresholds (rise of 45% and 75%) to distinguish between small and large import surges, which is in line with previous research.¹⁰⁸ If the increase in imports between t-1 and t-2 moves past the threshold point, the dummy takes a value of 1, and 0 otherwise. Second, I include a measure for Government ideology here as well because party orientation of the government might also affect the choice between trade barriers. For instance, if right-wing politicians do take more free trade stances, they might also be more likely to support export-oriented interests by limiting the scope of protectionist measures. Third, I control for the number of preferential trade agreements as PTAs might complicate the imposition of general trade barriers. Information on the number of PTAs is retrieved from the International Trade Centre (ITC). Lastly, I add dummy variables to control for unobserved heterogeneity across countries (δ_c) and sectors (θ_s), which leads to the full model of the outcome equation:

¹⁰⁴Grubel and Lloyd 1971.

¹⁰⁵In the Global Trade Alert database, HS 2012 codes are used to identify the products that are affected by trade barriers. In order to gather trade data for earlier years, I converted the HS 2012 codes into HS 2007 codes using UN correspondence tables.

¹⁰⁶Pierce and Schott 2012. ¹⁰⁷Busch and Pelc 2014.

¹⁰⁸T Jam

Selective TradeProtection_{i,c,t} =
$$\alpha_1 + \beta_1$$
IntraIndustryTrade_{i,c,t-1} + β_2 GVCtrade_i
+ β_3 ImportSurge(> 45%)_{i,c,t-1} + β_4 Ideology_{i,c,t} + β_5 PTAs_{c,t} + δ_c
+ $\theta_s + \varepsilon_{2i,c,t}$

Results

To test my argument about how firms' involvement in IIT and GVCs affects the political economy of trade protection, and in particular, the *type* of trade barriers that countries impose, I rely on the Heckman probit model with sample selection.¹⁰⁹ The statistical analysis includes six-digit HS products from 8 countries— Brazil, Canada, China, European Union, India, Japan, Russia, and the United States—in the period from 2008 to 2019. In total, there are 484,800 observations in the first stage, in which I estimate the incidence of new trade barriers for all six-digit HS products in the dataset. The second stage analyses the selected sample of products that are affected by a trade barrier in a given year and includes 43,950 observations. The goal of these estimations is to identify the factors that influence the choice of trade protection.

Main findings

The main results are presented in Table 2, which shows estimates from the Heckman (1976) probit selection model. Robust standard errors are used to account for potential heteroskedasticity. In the first column (Model I), I analyze a highly parsimonious specification that only includes the level of *IIT*, *GVC trade* and *Import increase* as explanatory factors. The coefficient on IIT is positive and significant at the 1 percent level, which supports the expectation that the probability of selective trade protection increases with IIT. This implies that governments are more likely to impose country-specific trade measures when products are imported and exported to a similar degree (i.e., when IIT is high). In addition, GVC products are more likely to be protected by selective trade measures than non-GVC products, which lends support to my second hypothesis. *Import increase* also has the expected sign, meaning that a rise in imports positively affects the incidence of trade barriers.

Column 2 displays the results from the estimation in which control variables are added. The effect of IIT remains positive and statistically significant. The result for GVC trade is also unaffected by the inclusion of the control variables, still showing a positive relationship with the incidence of selective trade protection at the 5 percent level of significance. Moreover, I find that large Import surges (greater than 45%) are negatively associated with the choice for selective trade protection. This is in line with previous findings by Busch and Pelc, who contend that tariff increases across the board are only cost-effective for governments when import surges are large, while countries are more likely to impose specific (AD) duties when import surges are smaller.¹¹⁰ Furthermore, the coefficients on Government ideology show that right-wing parties are less likely to impose selective measures than governments dominated by left-wing (and center) parties, which is at odds with my expectations based on the existing literature.¹¹¹ The number of PTAs is positively related to the incidence of selective trade protection. In other words, this implies that countries are less likely to impose general trade barriers as they participate in more PTAs. While PTAs often include provisions that aim to restrict the use of specific trade remedies (e.g., CVD and AD), Prusa notes that the "adoption of PTAspecific trade remedy rules increases [the] risk of trade discrimination" as it may lead to "reduced trade remedy actions against PTA partners but a greater frequency of such actions against non-members."¹¹² As noted earlier, firms' preference for the segmentation of markets in the form of PTAs, and thus trade discrimination, may well be the flip side of the story of *selective* protection presented here.¹¹³ The positive link between the number PTAs and selective trade protection seems to be in line with this conjecture. An alternative (functional) explanation is that general measures are more difficult to implement when this

¹⁰⁹Heckman 1976.

¹¹⁰Busch and Pelc 2014.

¹¹¹Milner and Judkins 2004; Dutt and Mitra 2006.

¹¹²Prusa 2020, 323.

¹¹³De Bièvre and van Ommeren 2021.

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Table 2. Heckman probit selection model

Second stage: Prob (STP = 1)	(I)	(11)	(111)	(IV)
Intra-industry trade	0.202*** (0.026)	0.204*** (0.026)	0.185*** (0.026)	0.156*** (0.051)
GVC trade	0.060** (0.024)	0.058** (0.024)	0.039 (0.025)	
Intra-firm trade				0.216** (0.100)
> 45% import surge		-0.052** (0.022)		0.190*** (0.046)
> 75% import surge			-0.074** (0.030)	
Government ideology				
Center party		-0.080 (0.113)	-0.064 (0.113)	
Right-wing party		-0.060** (0.023)	-0.074*** (0.024)	-0.048 (0.108)
PTAs		0.033*** (0.006)	0.031*** (0.006)	0.252*** (0.034)
Constant	-1.361*** (0.172)	-1.965*** (0.219)	-1.778*** (0.230)	-6.468*** (0.576)
First stage: Prob (TB = 1)				
Import increase	0.066*** (0.006)	0.066*** (0.006)	0.066*** (0.006)	0.178*** (0.018)
Tariff rate (applied)		-0.002*** (0.000)	-0.003*** (0.000)	0.034*** (0.004)
Trade value		0.099*** (0.012)	0.100*** (0.012)	-0.064 (0.111)
Government ideology				
Center party		-0.253*** (0.032)	-0.241*** (0.032)	
Right-wing party		0.195*** (0.009)	0.190*** (0.010)	0.853*** (0.019)
Raw materials			-0.094*** (0.016)	-0.235*** (0.043)
Intra-industry trade			0.037*** (0.010)	0.160*** (0.033)
GVC trade			0.036*** (0.010)	
Intra-firm trade				0.031 (0.063)
Constant	-1.784*** (0.019)	-1.678*** (0.022)	-1.641*** (0.023)	-1.823*** (0.053)
Country dummies?	Yes	Yes	Yes	No
Sector dummies?	Yes	Yes	Yes	Yes
No. of observations	456,678	430,163	407,360	30,698
Wald χ^2	11881.57 [0.000]	11674.97 [0.000]	10429.11 [0.000]	1031.95 [0.000]
Wald test of indep. eqns.	41.03 [0.000]	91.18 [0.000]	107.42 [0.000]	53.62 [0.000]

Notes: Robust standard errors in parentheses, p-values in square brackets. *** p<0.01, ** p<0.05, * p<0.1.

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would require making exceptions and exemptions to adhere to the PTAs signed with different trading partners.

Turning to the estimated coefficients in the first stage (Model II), I note that almost all signs—except for the coefficient on *Government ideology*—point into the theoretically expected direction. Products with a higher pre-existing (applied) *Tariff rate* are less likely to be targeted by import barriers, while products with a large *Trade value* are more likely to receive protection. The result with respect to *Government ideology* is not in line with the existing literature since right-wing politicians are generally associated with liberal trade policies.¹¹⁴ The outcome that right-wing governments are *more* likely to impose trade barriers can potentially be explained by the recent political winds of right-wing, populist nationalism that have strengthened the forces of protectionism.¹¹⁵ Yet, an important counterargument to this ad-hoc interpretation is the observation that there has been no major reversal in protectionist trade policies following the end of a populist leaders' terms (e.g., President Trump in the United States, and President Bolsonaro in Brazil). In fact, there is far more continuity between different administrations' trade agendas than is generally recognized and expected,¹¹⁶ which calls for a more systematic and society-centered approach to understanding trade policy formulation and the role of ideology.

Column 3 reports the results from the estimation that includes the main explanatory variables in both the outcome equation and the selection equation. The variable with the lowest number of observations, Raw materials, is also added.¹¹⁷ The previous literature hypothesizes that IIT and GVCs are powerful forces against protectionism and should have a negative effect on the incidence of trade barriers,¹¹⁸ while I argue that these firms prefer selective trade barriers and possess the necessary resources to successfully influence government. As can be seen in Column 3, the findings indicate that IIT is associated with a higher incidence of trade barriers, and IIT has a positive effect on the choice for selective trade protection, which is in line with my hypothesis (H1). However, the coefficient on GVC trade is no longer statistically significant at conventional levels, suggesting that the results of the relationship between GVC integration and selective trade protection should be approached with greater caution. The control variables in the third model display similar values to the ones obtained in the previous estimation. Raw materials, added to the 1st stage estimation, shows a negative sign and is statistically significant at the 1 percent level, which lends support to the idea that "pure" importers are against any form of trade protection. Overall, the results so far appear to be most consistent with my hypothesis on the link between IIT and selective trade protection. The findings also offer support for the second hypothesis (on the link between GVCs and selective trade protection), albeit at lower significance levels (in Model I and II).

In the fourth column (Model IV), I include an alternative measure for firms' involvement in GVCs, namely *Intra-firm trade*. Since these data are only available for the United States, product-level observations from other countries are excluded from the sample.¹¹⁹ Column 4 largely confirms the results obtained from prior estimations. The sign of the coefficient on *IIT* remains positive and statistically significant at the 1 percent level. As expected, I also find a strong relationship between *Intra-firm trade* and the imposition of selective trade protection. This implies that large US multinational firms—which account for the bulk of *intra-firm trade*—are successful in obtaining protection against competition from foreign rivals. Similar to the third column, products characterized by high levels of *IIT* are also more likely to be protected by a trade barrier in the first place, which provides further support to the view that firms can more easily overcome collective action problems under intra-industry trade.¹²⁰

Regarding the control variables, I find that in the United States the incidence of selective trade barriers is relatively high when the US President is a Republican. This result is not particularly surprising given that US President Trump launched a trade war with China in 2018, which led to a

¹¹⁴Milner and Judkins 2004.

¹¹⁵Kim and Spilker 2019. The coefficient on *Right-wing party*, indeed, takes the opposite (negative) sign when I account for the "Populist era," as can be seen in the Appendix (Table A.5).

¹¹⁶Haass 2021.

¹¹⁷As a result, 22,803 observations are dropped from the sample.

¹¹⁸Krugman 1981; Lipson 1982; Milner 1988; Baccini and Dür 2018; Gawande et al. 2015; Jensen et al. 2015; Osgood et al. 2017. ¹¹⁹The sample is reduced by 376,662 observations.

¹²⁰Gilligan, 1997.

steep increase in country-specific tariffs. Yet, from a historical perspective, the *bilateral* nature of this trade war represents a break from the past. The Smoot-Hawley tariffs in the 1930s—the only event that comes "close" to the China–US trade war in terms of welfare effects¹²¹—were also imposed under a Republican administration, but these measures involved across-the-board tariff increases on imports from *all* trading partners. This begs the question whether ideology can really explain this move toward country-specific trade discrimination by President Trump. While ideas and beliefs may have an influence, this study provides an explanation for how firm-level trade interests and lobbying behavior can shape the conditions under which such *selective* trade measures can be evoked. In contrast to prior estimations, I find that products with a higher (applied) *Tariff rate* in the United States are more likely to be protected by a new trade barrier. A possible explanation is that high pre-existing tariff rates are endogenous to the decision-making context in which some firms, and hence products, are more likely to receive protection than others.¹²² The presence of endogeneity, however, is not likely to play a major role in the overall analysis, given the negative coefficient on *Tariff rate* in other estimations.

To further check the robustness of the results, I repeated the analyses using different estimation techniques. First, I estimated the model using a multinomial probit regression in which the dependent variable takes on three outcomes (no trade barrier, selective trade protection, general trade protection) with no natural ordering. Second, I controlled for several alternative explanations and checked whether the results are driven by the rise of populism, China-specific protection, and contingency trade measures. Although the magnitude of the effects of IIT and GVCs were smaller in some cases, the main results were not altered and appeared to be robust to various specifications and estimation techniques. These results are presented in the Appendix (Tables A.5–A.10).

Substantive effects

While the variables of interests appear to have a *statistically* significant effect on the choice of protectionist means (at least in some estimations), the question remains whether these effects are also *substantively* important. I first discuss the effects of IIT and then I turn to the interpretation of the findings with respect to GVCs.

Intra-industry trade

The previous sections have shown that *IIT* consistently explains the choice for country-specific trade barriers throughout all model specifications and estimation techniques. This result is in line with my hypothesis (H1) that firms lobby for targeted measures against their main rivals when competing product varieties enter the domestic market. As the coefficients of the Heckman probit selection model cannot be interpreted directly as in linear regressions, I also provide a graphical illustration of the magnitude of the observed effect of IIT. Figure 4 presents the predicted probability of selective trade protection based on Model II in Table 2, conditional on the decision to raise trade barriers in the first place (TB = 1). The shaded region gives the 97.5 percent confidence interval. The upward slope represents the increase in the probability of selective trade protection when IIT increases. On average, for every 10 percent rise in IIT, the likelihood of seeing usage of country-specific barriers increases with 0.8 percent points (p.p.). To give an example, this implies that EU producers of vacuum cleaners (IIT = 0.9 in 2018), conditional on selection (TB = 1), are 5.6 p.p. more likely than EU peach farmers (IIT = 0.2 in 2018) to receive selective rather than general forms of trade protection, *ceteris paribus*.

¹²¹Evenett 2019.

¹²²Baldwin 1985; Nelson 1988.



Figure 4. Predicted values of selective trade protection and the effect of IIT.¹²³

Global value chains

The extent to which firms have import-dependent interests has been measured in two ways—GVC trade and Intra-firm trade—that capture different aspects of firms' integration in GVCs. First, Figure 5 presents a graphical illustration of the magnitude of the observed effect of GVC trade based on Model II in Table 2 and, again, conditional on the decision to raise trade barriers in the first place (TB = 1). What can be seen is the small difference in the probability of selective trade protection between a GVC product (1) and a non-GVC product (0). This is not surprising given that the null hypothesis in some cases could not be rejected. Substantively, the result suggests that motor vehicle parts manufactures (e.g., brakes) are 2.3 p.p. more likely than producers of cement (a non-GVC product) to receive selective rather than general trade protection, *ceteris paribus*. Since the United States, Russia, and Canada seem most dependent on the imports of GVC products in my data sample, these might be the countries where such effects on the imposition of selective trade barriers are relatively likely to occur.

Second, the effects of *Intra-firm trade* could only be observed for the United States since these data were not available in other countries. The results from Table 2 show that intra-firm trade has a strong and positive effect on the implementation of selective trade barriers. When focusing on the second stage, I find that this type of trade, which is mainly carried out by MNCs, increases the probability of selective trade protection—compared to general measures—by 13.6 percentage points. This means, for instance, that US vaccine producers (IFT = 0.8 in 2008) are 8.2 p.p. more likely than producers of sheep meat (IFT = 0.2 in 2008) to obtain selective rather than general trade protection in response to import competition. The size of this effect is depicted in Figure 6, which provides strong support for the notion that large internationally oriented companies dispose of the crucial resources to influence government

 $^{^{123}}$ Margins of IIT estimated at the means of other covariates and the probability of selective trade protection (STP) is conditional on selection (TB = 1).



Figure 5. Predicted values of selective trade protection and the effect of GVC trade.¹²⁴



Figure 6. Predicted values of selective trade protection and the effect of intra-firm trade.¹²⁵

and that these firms (with internally conflicting interests) have a preference for selective trade protection. A further illustration of the link between IIT, GVCs, and firm-level preferences and the trade policy outcome is given in Box 1.

 $^{^{124}}$ Margins of GVC trade estimated at the means of other covariates and the probability of selective trade protection (STP) is conditional on selection (TB = 1).

 $^{^{125}}$ Margins of intra-firm estimated at the means of other covariates and the probability of selective trade protection (STP) is conditional on selection (TB = 1).

Box 1. Empirical illustration (United States—Steel wheels).

In March 2018, Accuride Corporation and Iochpe-Maxion filed AD and CVD petitions with the US International Trade Commission (USITC), alleging that imports of steel wheels from China are being subsidized and sold in the United States at less than fair value. Both multinational companies had production facilities in several countries and their customer base included companies such as Ford, Volkswagen, GM, Caterpillar, and Hyundai. Following the complaint, the USITC started an inquiry into whether Chinese steel wheels were being sold in the United States at less than normal value.¹²⁶

In May 2019, the USITC revealed that Accuride Corporation and Iochpe-Maxion accounted for 100 percent of domestic production of steel wheels of a certain diameter size, and that subsidized and dumped imports from China had caused material injury to the US industry. In terms of volume, the USITC estimated that imports of Chinese steel wheels accounted for 82.0% of total US imports of steel wheels between March 2017 and February 2018. The investigation found dumping and subsidy margins up to 457.1% and, as a result, high additional duties were levied on Chinese companies such as Xiamen Sunrise Wheel Group and the Zhejiang Jingu Company.

From this brief empirical illustration, it becomes clear how country-specific measures can be used to target the main rivals of domestic companies in the face of import competition. In this example, the subject goods were differentiated, and the market was highly concentrated with only two domestic producers, which strongly reduced the collective action problem. Given the high level of IIT (0.72 in 2017), the domestic producers were not likely to lobby for a general trade barriers as retaliatory responses could potentially limit access to export markets around the globe. Moreover, Accuride Corporation and lochpe-Maxion owned manufacturing facilities in countries like Canada, Mexico, and Turkey, meaning that their supply chain activities (the level of intra-firm trade was 0.50 in 2017) may also be negatively affected by tariffs implemented across the board. In this case, selective trade protection provided a means to effectively reduce import competition without disturbing trading relationships with other countries. For this reason, it is not surprising that both companies lobbied for specific trade measures against China, not only in the United States, but also in the EU.¹²⁷

Conclusion

This study has investigated how firms' international trade ties affect their preferences *vis-à-vis* different types of trade protection. More specifically, I have focused on the impact of IIT and GVCs on firm-level trade interests to provide an answer to the question why, and under which conditions, internationally oriented firms lobby for the imposition of *selective* trade protection. In the eyes of many scholars, large firms and MNCs are the "winners" from globalization and the staunchest supporters of reciprocal trade liberalization.¹²⁸ It is therefore puzzling to observe that such firms are frequently the ones who file petitions requesting the government to raise—not lower—trade barriers against their closest competitor(s). The goal of this work has been to explore firms' trade interests and to understand how their policy preferences are translated into different types of trade measures implemented by governments.

To this end, I have developed an analytical framework that builds upon the idea that firms do not have singular trade interests when they are involved in IIT and GVCs.¹²⁹ Instead of making a traditional distinction between "pro-trade" and "anti-trade" firms, my theory focuses on how trade can give rise to internally conflicting interests, which leads to expectations about firms' lobbying behavior that are more likely to be accurate than existing typologies. Most crucially, I have explained that many firms are

¹²⁶US International Trade Commission (May 18, 2018). "Steel Wheels from China: Investigation Nos. 701-TA-602 and 731-TA-1412 (Preliminary)," *Publication 4785*.

¹²⁷European Commission (February 2, 2019), "Notice of initiation of an anti-dumping proceeding concerning imports of steel road wheels originating in the People's Republic of China," *2019/C 60/07*.

¹²⁸Osgood et al. 2017; Plouffe 2017; Baccini et al. 2017.

¹²⁹Kim et al. 2019.

subject to mixed motives because of different combinations of import-competing, import-dependent, and export-oriented interests. My central claim has been that such firms are likely to lobby for selective trade protection—that is, measures targeted against a single country or firm—in order to reduce import competition while limiting the risks that foreign sales, supply chain activities, and domestic production processes will be negatively impacted. Moreover, I contended that firms involved in IIT and GVCs also have the capacity to mobilize and to influence political decision-making processes.

The results of this study provide support for my hypotheses. I have found that IIT and trade in GVCs have a significant and positive impact on the decision to impose country-specific trade barriers rather than more general forms of trade protection. I have used data from GTA to analyze the effect of IIT and trade in GVCs on the types of trade barriers imposed by Brazil, Canada, China, the EU, India, Japan, Russia, and the United States. I have presented clear evidence that high levels of IIT and (to a lesser extent) GVC integration are positively related to the choice for selective trade protection. Throughout, I have argued why firms with mixed trade interests have an incentive to lobby for selective trade measures rather than general import barriers, and why their political pressure is likely to be translated in trade policy outcomes.

Existing explanations cannot sufficiently account for these outcomes. As I have outlined, most of the trade policy literature has often associated IIT and GVCs with greater support for (reciprocal) trade liberalization because firms—MNCs in particular—have become increasingly reliant on exports and imports of intermediate goods.¹³⁰ While I do not dispute that these firms seek preferential (that is, discriminatory) access to foreign markets and inputs, I have shown throughout my analysis that their image as "pro-trade" firms is deceiving as they also lobby for higher levels of selective import protection against individual countries and firms. Hence, I have started to specify the conditions under which firms engaged in IIT and GVCs advocate for protection against specific countries and competitors while preserving (or enhancing) access to other markets. While this study has primarily addressed "discrimination-against" through selective trade protection, the framework could also be applied to "discrimination-in-favor" in the form of PTAs.¹³¹ A logical next step is to develop a unified model that accounts for how firm-level preferences for both protection and liberalization can coexist. In pursuing this goal, future work could extend the dataset and aim to incorporate additional policy dimensions that might play a role in shaping firms' trade preferences.

In conclusion, I have made clear that politically powerful MNCs often prefer discriminatory trade policies, not as an intermediate stage but rather as the final goal that allows them to maximize profits in segmented world markets with differentiated access to resources and export opportunities. While firms involved in IIT and GVCs might benefit from trade discrimination, they certainly do not want to destabilize the international trading system, given their vested interest in the continuity of cross-border trade between their headquarters, affiliates, and export markets.¹³² In other words, upholding the multilateral trading system may be understood as a collective action problem in which individual incentives and group interests are at odds. Seen in this light, the retreat non-discrimination as a principle is likely to remain an enduring property of the global trading system, which poses a risk of (further) escalation of trade disputes and political conflicts. This is a topic on which additional research must be done and, specifically, it should be further assessed how firms and governments attempt to attain the seemingly impossible goal of maintaining the WTO as the guardian of international trade rules while systematically undermining one of its core principles.

Supplementary material. The supplementary material for this article can be found at https://doi.org/10.1017/bap.2025.1

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¹³⁰Manger 2009; Gawande et al. 2015; Baccini et al. 2017; Osgood et al. 2017.

¹³¹The distinction between "discrimination-against" and "discrimination-in-favor" comes from Hudec (1991).

¹³²De Bièvre and van Ommeren 2021.

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