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# Firm Heterogeneity and Asymmetric Liberalization Drive Differential Utilization of FTAs among Firms in Production Networks

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## Abstract

Firms in production networks often prefer liberalization through free trade agreements (FTAs) to multilateral liberalization, due to its potential discriminatory effects against firms outside the FTA (outside the scope of this study), but also in relation to competing firms within the FTA. The study theorizes about certain conditions—specific configurations of FTAs and inter-firm heterogeneity in the organization of production—that allow FTAs to asymmetrically (or even selectively) favor some firms within the FTA, accommodate firm heterogeneity in trade preferences, and encourage firms to lobby individually in ways that multilateral liberalization cannot. These arguments were explored in the automotive industry in the context of the FTAs signed by Thailand with other Southeast Asian countries, Japan, India, and Australia using interviews and administrative records. Empirical evidence supports the relevance of the herein identified conditions to explain the heterogeneity of firms in their trade preferences, political action, and use of FTAs. Firms pushed for FTA configurations that liberalized their trade flows as selectively as possible relative to competitors and used FTAs primarily for hierarchical and captive cross-border input trade with subsidiaries and long-term suppliers

**Keywords:** International Political Economy of Free Trade Agreements (FTAs) / Production networks / Trade Preferences / FTA utilization / Automotive industry / Southeast Asia

**Classifications.** Areas of interest and specialization: 6.5; 6.5.3; 80; 80.070. JEL classifications: F13, F15, F23, F53, F63, L23

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## 1. Introduction

Since the late 1980s, unilateral liberalization, and increased cross-border trade and investment flows have fostered the growth of international production networks, which in turn contributed to a wave of free trade agreements (FTAs) in the last three decades (Baldwin and Lopez-Gonzalez, 2015). This expansion of international production networks and FTAs has deeply transformed the politics of trade. Any form of trade liberalization can have asymmetric impacts among firms in a given industry. Although for producers in international production networks, liberalization through FTAs is inferior to multilateral non-discriminatory liberalization in its ability to maximize scales,<sup>1</sup> firms often prefer the former precisely because of its discriminatory nature and the possibility of asymmetrically distributing the benefits of trade liberalization in their favor relative to competing firms *outside* the FTA area (Chase, 2005, 2008; Manger, 2005; Ornelas, 2005). But, do firms push for FTAs to liberalize their trade flows more than those of other firms also established *within* the FTA area? What circumstances allow FTAs to have these asymmetric effects in ways that are not possible through multilateral liberalization? What FTA configurations do firms seek to gain a competitive advantage over competing firms *within* the FTA area? Compared to multilateral liberalization, do FTAs support (and, if so, how) heterogeneity between firms on trade policy preferences, as well as individual forms of lobbying?

To address these questions, the study builds on and aims to contribute to the literature on the determinants of variability in firms' trade preferences and their impact on the formation of FTAs.<sup>2</sup> Recent dynamics within many production networks—e.g., growing intra-industry

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<sup>1</sup> Herein, multilateral liberalization refers to trade liberalization among members of the WTO under the most-favored-nation principle, which states that a WTO member must not discriminate between its trading partners.

<sup>2</sup> Neoclassical trade theory associates variability in business preferences with factor and industry cleavages (Rogowski, 1987; Hiscox, 2001; reviewed in Milner 1999).

trade, vertical specialization, and input trade—have been key determinants of business preferences in favor of FTAs to support their investment and supply chains overseas (Chase, 2005; Manger, 2009; Postigo, 2014; Baccini et al., 2018; Osgood, 2018; Kim et al., 2019; Zeng et al., 2020). Building on the firm heterogeneity literature, some authors found that large and productive firms favor trade liberalization and benefit more from FTAs than smaller and less productive ones (Baccini et al., 2017; Kim, 2017; Plouffe, 2017). In addition, several analyses, primarily across industries in the US, indicate that high levels of intra-industry trade and product differentiation, as well as the prevalence of different types of firms (e.g., multinationals vs domestic firms), exacerbate firm heterogeneity over trade preferences and encourage the largest firms to lobby across borders and individually rather than through business associations (Bombardini and Trebbi, 2012; Madeira, 2016; Postigo, 2016; Baccini et al., 2017; Osgood, 2017; Kim and Osgood, 2019; Zeng et al., 2020).

However, how FTAs can facilitate more (or even selectively) the trade flows of some firms relative to the flows of others and how this affects the political economy of FTA formation and utilization remain underexplored. Similarly, the existing literature has largely overlooked how some features of FTAs can support firm heterogeneity and firm-centric forms of lobbying. Here it is argued that under certain conditions identified in the study (some related to firms' organization of production, others related to FTAs themselves), FTAs can generate asymmetric benefits between firms *within* the FTA area in ways that cannot be achieved under multilateral liberalization. In the context of international fragmentation of the production process, particularly in industries with low levels of input standardization, heterogeneity among firms across various dimensions of the organization of production (e.g., the geographical distribution of assembly plants and suppliers, degree of dependence on a small

number of suppliers abroad, possibilities for the geographical reorganizing of production) allows certain FTA configurations to asymmetrically, even selectively, favor some firms over competing firms established in the trade area. In addition, compared to multilateral liberalization, certain inherent features of FTAs not only can accommodate inter-firm heterogeneity regarding their trade preferences but also make it easier for firms to pursue and lobby individually for specific FTA configurations that generate asymmetric gains in their favor.

The paper does not use the analytical framework of the global value chain and global production network literature (e.g., Gereffi, 2014; Ponte and Sturgeon, 2014; Coe and Yeung, 2019; Dallas et al., 2019), but benefits from some of its conceptualizations. Thus, it analyzes how some FTA configurations affect and, at the same time, are affected by the organization of production of the *lead firms* (those in charge of organizing production in a network) and the interactions of lead firms with *suppliers* (those firms that provide intermediate goods to lead firms) and governments.

To test these arguments, I analyzed the Thai automotive production network in the context of the FTAs signed by Thailand.<sup>3</sup> Several reasons informed this choice. The automotive industry is one of the most promoted and protected, and has been at the center—when not at the root—of many FTAs worldwide (Carrillo et al., 2004; Staples, 2008; Covarrubias, 2020). Vehicle assembly occurs mostly within regional networks, and Southeast Asia as a group was the world's fifth-largest automotive producer in 2021, historically with Thailand as the regional hub (Doner, 2009; Doner et al., 2021; Natsuda and Thoburn, 2021).

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<sup>3</sup> Although not included in the manuscript, the study also investigated the automotive industry and FTAs in Malaysia; the Malaysian case study yielded similar results to the Thailand case, but the Malaysian data were not included due to word limit and to simplify and facilitate data presentation in the manuscript.

Thailand is a relevant case for the study of trade politics in middle-income developing countries highly integrated into international production networks.<sup>4</sup> Furthermore, Thailand was one of the first developing countries in Asia—and for much of the 2000s, it was also one of the most active—in negotiating and implementing FTAs (Manger, 2005, 2009, 2012). The empirical evidence collected here revealed significant heterogeneity among automakers in Thailand regarding their ex-ante FTA preferences and lobbying efforts, and subsequent utilization of FTAs that is not necessarily related to their country of origin or their production or export volumes, but rather depends on the interplay between the aforementioned conditions. Automakers lobbied for specific FTA configurations through their business association and/or individually depending on the FTA and the issue at stake. The differential use of FTAs occurred mainly in the trade of intermediate goods when the procurement options of lead firms are limited (e.g., sourcing from subsidiaries and long-term suppliers).

The rest of the manuscript is organized as follows. Section two outlines the theoretical and analytical framework; section three, supplemented by the Online Appendix, presents the methodology and empirical data, while section four discusses the findings and concludes.

## **2. Theoretical and analytical framework: Asymmetric distribution of the benefits of FTA liberalization among lead firms within a trade area**

The study addresses the following question:

Question 1: In what circumstances can an FTA favor some lead firms over others in the same industry and trade area and promote its differential utilization among lead firms?

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<sup>4</sup> Thailand's Global Value Chain Participation Index, which assesses the degree to which a country is involved in vertically fragmented production networks, is around 60%, surpassing most countries of the Organization for Economic Cooperation and Development (OECD) ([https://www.oecd.org/dac/aft/MappingGlobalValueChains\\_web\\_usb.pdf](https://www.oecd.org/dac/aft/MappingGlobalValueChains_web_usb.pdf)).

In approaching that question, I will also tackle two complementary questions on the politics and political economy of the interplay between some sources of firm heterogeneity and certain FTA features, namely:

Question 2: Do FTAs (and, if so, how they do it) accommodate inter-firm heterogeneity in trade preferences and favor individual firm lobbying in ways multilateral liberalization cannot? And,

Question 3: What types of configurations do individual lead firms seek and lobby for in FTAs to gain a competitive advantage over competing firms established within the trade area?

Reciprocal reductions in most-favored-nation tariffs between the host country and trading partner countries—either through multilateral non-discriminatory liberalization or through FTAs—can generate enhanced profits for competitive producers through, *inter alia*, tariff savings on imported inputs, lower barriers for their final good in the destination market, and efficiency improvements (Chase, 2005). However, unlike most-favored-nation tariffs, which apply by default to goods originating from any other WTO member, the discriminatory nature of FTA preferential tariffs can lead to an asymmetric distribution of those enhanced profits and favor firms within the FTA area at the expense of those outside it (Chase, 2008:512-513; Manger, 2005:810; Ornelas, 2005:1476-1477). However, the asymmetric effects due to the capacity (or incapacity) of FTAs to divert trade flows away from third countries out of the FTA area toward producers within it—a long-standing and unresolved debate (e.g., reviewed in Freund and Ornelas, 2010)—are outside the scope of this paper. Instead, the present study

examines under what conditions FTA liberalization may favor more (or even selectively) some lead firms within the FTA area relative to others that are *also* within the trade bloc.

Lead firms can increase their competitive advantage over other firms in a production network by acquiring specific resources and capabilities, but also by lobbying and capturing available rents in the institutional setting (Frieden, 1999). Recent works in the literature on firm heterogeneity have identified new sources of inter-firm diversity—emerging from variables at the firm/plant and industry levels—that affect not only the trade policy preferences of firms but also their industry-level political organization.<sup>5</sup> The largest and most productive firms are the main beneficiaries of FTA tariff liberalization and are more likely to lobby for tariff reductions (Baccini et al., 2017; Kim, 2017; Plouffe, 2017).<sup>6</sup> In industries with high levels of intra-industry trade and/or where firms produce multiple variants of the same good, firms are more likely to hold diverging trade policy preferences. When intra-industry consensus on trade policy weakens, firms, particularly larger ones, are more likely to lobby for their preferences on their own rather than through collective action (Bombardini and Trebbi, 2012; Madeira, 2016; Osgood, 2016; Baccini et al., 2017; Kim, 2017; Osgood, 2017; Kim et al., 2019). However, it remains to be explored how the interaction between some sources of firm heterogeneity and certain features in FTAs enable FTA liberalization to: first, accommodate firm heterogeneity and firm-centric lobbying, and second, have asymmetric effects and promote the differential use of an FTA.

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<sup>5</sup> Firm heterogeneity theories emphasize that within a given industry, firms differ in several dimensions (e.g., productivity, product quality) that influence their decision to participate in international markets (e.g., exports, foreign investment) (Melitz, 2003; reviewed in Greenaway and Kneller, 2007 and Bernard et al., 2012).

<sup>6</sup> A recent analysis of firms by their trade activity and ownership structure indicates that firms involved in exports and imports within a production network and, in particular, multinational firms with foreign ownership, prioritize investment protection clauses in FTAs, while those that do not participate in production networks seek strong dispute resolution mechanisms (Kim et al., 2019).



It is argued here that FTAs support heterogeneity among firms regarding trade policy preferences in ways that multilateral liberalization cannot do. First, and compared to multilateral rounds at the WTO, FTA negotiations offer firms an easier assessment of the impacts of liberalization, as well as greater opportunities to lobby governments (domestically and in partner countries) and influence policy formulation (Freund and Ornelas, 2010; Postigo, 2016). Second, article XIV and the Enabling Clause of the General Agreement on Tariffs and Trade (GATT), under which FTAs covering goods are notified to the WTO, allow FTAs to accommodate greater flexibility and selectivity than multilateral rounds regarding the coverage and exclusion of goods, as well as the sequencing and pace of liberalization.<sup>7</sup> In addition, and unlike most of the trade carried out under most-favored-nation tariffs, to benefit from FTA preferential tariffs, the exported good must abide by specified rules of origin (RoOs) that establish whether it has undergone a sufficient transformation within the FTA area.<sup>8</sup> Most FTAs include product-specific RoOs; that is, each category of goods must meet a specific RoO. In contrast to multilateral liberalization, not only is the partner country chosen in FTAs but their inherent greater selectivity and flexibility mean that both tariff rates and RoOs can be set at the highest level of product specification, allowing the liberalization (or protection) of goods in FTAs to target narrow sub-sectors, potentially specific firms, thus creating asymmetric distributional effects between firms within the FTA area.<sup>9</sup> In sum, these inherent features of

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<sup>7</sup> For instance, although Article XXIV is commonly interpreted to mean that FTAs must liberalize at least 90% of the existing trade between partners within 10 years, these requirements are not enforced, and many FTAs liberalize a smaller share of trade flows and/or over longer periods. FTAs that liberalize trade in developing countries are notified under the Enabling Clause, which relaxes the requirements. The WTO Doha Round proposed reducing higher tariffs faster than lower ones, while in FTAs higher tariffs can be reduced gradually or excluded altogether.

<sup>8</sup> RoOs are most commonly assessed by a minimum value content of the good from within the FTA area, a change in the tariff code under which the good is classified relative to the tariff code of its component inputs, and/or by a specific production process that the good must have undergone. ROOs are more relevant for final goods that may contain inputs from various countries, some outside the FTA area.

<sup>9</sup> In the Harmonized Commodity Description and Coding System used by customs authorities around the world, goods are identified with a code of up to 6 digits (6,200 categories). But individual countries may further disaggregate goods and develop national HS codes down to a 10-digit level or have a higher product specification for imports than exports. This makes it possible to target the liberalization or protection of one good but not a very closely related good (e.g., with a slightly different inputs or production process that suits the given country).

FTAs allow for firm heterogeneity in trade preferences better than multilateral liberalization, making it easier for firms to individually lobby for specific FTA configurations (to be examined below) that generate asymmetric gains in their favor. Naturally, the trade preferences of businesses (a particular firm or an entire sector), even when they are adopted as national positions in international negotiations, do not necessarily materialize in the final text of an FTA, and firms may not use an existing FTA.<sup>10</sup> Nevertheless, here we traced firms' ex-ante preferences and evidence of lobbying during negotiations along with the formulation of FTAs and the ex-post use of FTA concessions.

It will also be argued that when certain conditions detailed below interact, the FTA liberalization of intermediate and final goods can generate asymmetric benefits between firms *within* the FTA area in ways that cannot be achieved under multilateral liberalization. Some of these conditions are related to FTA features (those inherent in FTAs described above or specific FTA configurations by design) and others to heterogeneity among lead firms across various dimensions of their organization of production.

### ***2.1 Asymmetric distribution of the benefits of the FTA liberalization of final goods among lead firms within the FTA area***

The trade preferences of a firm that produces a final good entirely within its host country are primarily determined by its competitiveness and export-oriented or import-competing nature (Hiscox, 2001). In many industries, final goods receive higher tariffs than upstream raw materials and intermediate goods (tariff escalation). Lead firms can overcome high trade barriers on their final goods by establishing production plants in multiple countries to serve

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<sup>10</sup> During trade talks, the negotiating teams may forgo their preferred positions in the course of exchanges of concessions and exclusions across sectors. Furthermore, some potentially beneficiary firms do not use the tariff concessions included in FTAs.

their respective domestic markets. Consider a scenario where A, B, and X represent three countries, and  $LF_A$  and  $LF_B$  are two lead firms that produce the final good of a given industry in their respective home countries (plant  $LF_{AA}$  in A and plant  $LF_{BB}$  in B). If X imposes high tariffs on their final good, both firms can circumvent these tariffs by establishing production in X (plants  $LF_{AX}$  and  $LF_{BX}$ ) to directly produce and sell the final good in X. When X offers locational advantages for production relative to A or B that outweigh other costs (transportation, logistics, tariffs),  $LF_{AX}$  and  $LF_{BX}$  can also export the final good back to their home countries under most-favored-nation tariffs.

**Table 1: Asymmetric distribution of the benefits of liberalization among lead firms within an FTA area and industry**

	Conditions fostering differential FTA use among lead firms within an FTA area and industry		Assessment and Data Source
FTA liberalization of final goods	Enabling Conditions	<b>FTA design</b> FTA liberalization that favors some lead firms over others, while maintaining high MFN tariffs	FTA tariff rates (FTA treaties) MFN tariff rates (WTO)
		<b>Lead firms' characteristics</b> Differences in assembly locations and export destinations of the final good	Firm-level interviews
	Facilitating Conditions	<b>FTA design</b> Restrictive RoOs on final goods	RoOs in FTA treaties
		<b>Lead firms' characteristics</b> Differences in the capacity to reorganize final assembly within the FTA area	Firm-level interviews
FTA liberalization of intermediate goods	Enabling Conditions	<b>FTA design</b> FTA liberalization that favors some lead firms over others, while maintaining high MFN tariffs	FTA tariff rates (FTA treaties) MFN tariff rates (WTO)
		<b>Lead firms' characteristics</b> Differences in the identity and input sources	Firm-level interviews
	Facilitating Conditions	<b>FTA design</b> Restrictive RoOs on inputs	RoOs in FTA treaties
		<b>Lead firms' characteristics</b> Differences in the capacity to reorganize the production of inputs within the FTA area	Firm-level interviews
		<b>Lead firms' characteristics</b> Differences in the dependence on inputs from subsidiaries or long-term suppliers in other FTA countries	Firm-level interviews

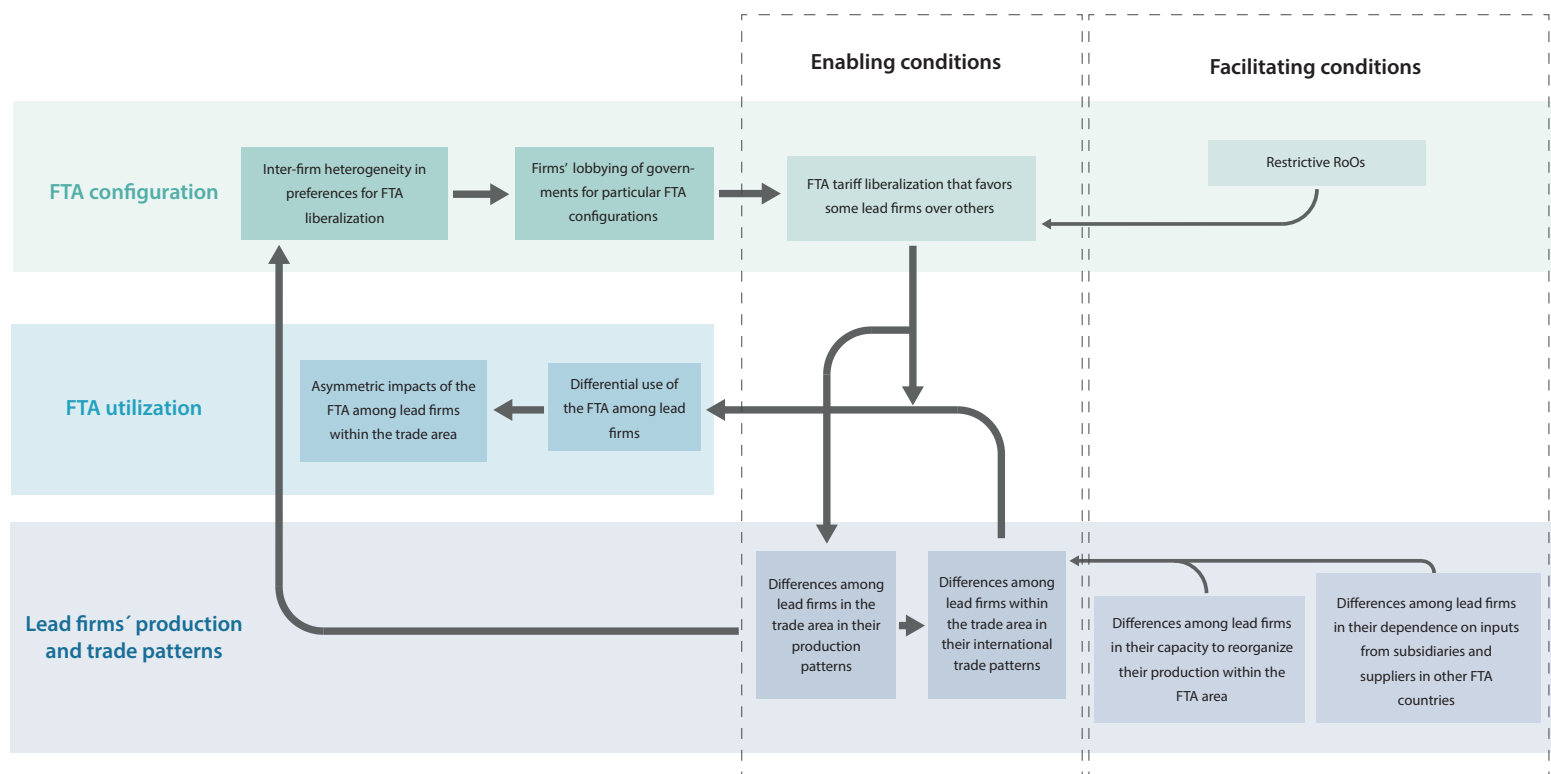
Abbreviations: MFN: most-favored-nation

In some circumstances related to the lead firms' current or foreseeable organization of production and the configuration of the FTA, the liberalization of final goods in FTAs can have differential effects among the lead firms within the trade area. Some of these circumstances must concur for FTAs to have these asymmetric effects ("enabling conditions"), while others only make it easier for FTAs to have them ("facilitating conditions") (Table 1 and Figure 1). An FTA between the host country and a partner country may favor some lead firms over others if (enabling conditions): first, lead firms exhibit different production and trade patterns (e.g., they differ in their overseas assembly locations, export destinations) or they produced closely

related variants of the final good but that can be categorized under different tariff codes (see footnote 9) and, second, the FTA liberalizes tariffs on the final good in a particular destination market but not in others, liberalizes a variant of the final good under a particular tariff code but not under others, and/or does it faster and deeper than for other countries or under other tariff codes (Figure 1 and Table 1). Concomitantly, most-favored-nation tariffs on the final good must also be high for the FTA to generate tariff savings that justify using the FTA and generate these distributional effects. Thus, an FTA between A and X (FTA A-X) that liberalizes tariffs on the final good produced by plants  $LF_{AX}$  and  $LF_{BX}$  can be used by both firms to export their final good to A (Figure 2). However,  $LF_{AX}$  is likely to use FTA A-X more than  $LF_{BX}$ , generating enhanced profits mainly for  $LF_A$ .<sup>11</sup>  $LF_A$  can also use FTA A-X to export the final good directly from  $LF_{AA}$  to X without the need to establish a presence in that country (see below).

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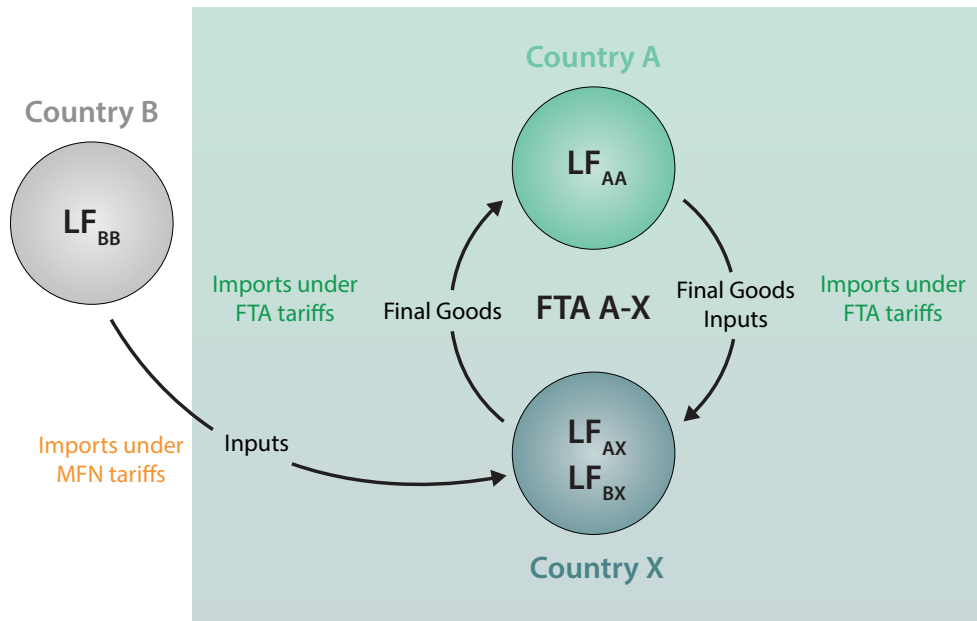
<sup>11</sup> Nonetheless, it should be noted that the distribution of benefits from the FTA liberalization of final goods is firm-specific and is not determined by the country of origin—or, as shown in the empirical section, firms' production or export volumes—as not all lead firms with home country A and plants in X necessarily export their final goods to A.



The political economy link between the two enabling conditions is that the potential beneficiary lead firm(s) lobbies the government for FTA configurations that liberalize the trade of its final good in the most selective manner possible; that is, supporting the firm's existing patterns and/or future strategies of production and trade, but especially those that are particular (potentially even exclusive) to that firm relative to competitors within the trade area. As noted above, FTA negotiations also offer greater access for firms to influence policymaking than multilateral rounds. Thus,  $LF_A$  will pressure on its own—independently of business associations—the governments in A and X for FTA configurations that liberalize its final good in both countries, especially when those configurations do not suit the production and trade patterns of the final good produced by  $LF_{BX}$ .<sup>12</sup>  $LF_{BX}$  will lobby the government in B to either

<sup>12</sup> The final goods produced by  $LF_A$  and  $LF_B$  can be classified under different tariff codes with different tariff rates and ROO levels. But even when the final goods of  $LF_A$  and  $LF_B$  are perfect substitutes with the same tariff code,  $LF_{AX}$  can not only lobby for liberalization in a particular destination market (country A), but also for ROOs that favor its own organization of production relative to that of  $LF_{BX}$ . For other provisions of FTA A-X that favor several lead firms,  $LF_{AX}$  may lobby along with other firms or intermediate its preferences through the respective business association.

join FTA A-X or create a new FTA B-X, triggering the classical *FTA domino effect* (Baldwin,



**Figure 2:** LFA and LFB are two lead firms that produce the final good of a given industry in their respective home countries (plant LFAA in A and plant LFB in B) or in offshored plants in country X (plants LFAx and LFBx, respectively). An FTA between A and X (A-X) can discriminate against plants/firm outside the trade area but, under certain conditions detailed here, it can also generate asymmetric benefits among lead firms within the trade area (e.g., favoring LFAx over LFBx). See the main text for details.

1997).

FTA liberalization can generate efficiency gains by allowing lead firms to reorganize their production from the national to the FTA scale (Chase, 2005). The possibility that the gains from trade liberalization are distributed asymmetrically within the FTA is facilitated in two additional situations (“facilitating conditions”) (Table 1 and Figure 1), namely, a) when the RoOs require that the final good undergoes a relatively high level of transformation within the FTA (restrictive RoOs, see below), and b) when lead firms exhibit differences in their capacity to reorganize final good production within the FTA area. For example, lead firms with assembly in several FTA countries before the FTA could consolidate production into fewer plants or, in the case of differentiated products, specialize the assembly of each plant after FTA implementation. In Figure 2, in the context of FTA A-X, LFA can potentially obtain efficiency

gains by reorganizing its final assembly plants between X and A, unlike  $LF_B$  with no concurrent presence in both FTA countries or unlike firms that are outside the FTA entirely.

## ***2.2 Asymmetric distribution of the benefits of the FTA liberalization of intermediate goods among lead firms within the FTA area***

Firms undertake the fragmentation and offshoring of segments of their production process (with or without outsourcing) when *production costs* elsewhere are sufficiently lower to offset the higher *service links costs* of connecting dispersed production units (Kimura, 2006). In the scenario of Figure 2, assume now that  $LF_A$  and  $LF_B$  have fragmented their production and, exploiting specific locational advantages, kept some stages (e.g., production of high-technology inputs) in their home plants ( $LF_{AA}$  and  $LF_{BB}$ , respectively) while transferring other stages (e.g., final good assembly) to plants  $LF_{AX}$  and  $LF_{BX}$  in X.<sup>13</sup>  $LF_{AX}$  and  $LF_{BX}$  can import intermediate goods from their home countries under most-favored-nation tariffs (this non-FTA scenario is not shown in Figure 2).

The rise in the international fragmentation of production and the trade of intermediate and final goods across national borders has promoted non-discriminatory unilateral and multilateral liberalization but, in particular, has been a key driver in the proliferation of FTAs (Arndt, 2001; Chase, 2005; Manger, 2009; Baldwin and Lopez-Gonzalez, 2015). Lead firms' organization of production and trade shapes their *ex-ante* preferences for or against FTA liberalization as well as their subsequent use of the FTAs; in turn, FTA liberalization affects lead firms' production strategies.

As for final goods, the liberalization of intermediate goods through FTAs can be more easily targeted than through multilateral liberalization to benefit some firm(s) within the FTA

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<sup>13</sup> Service link costs are mostly related to trade barriers and transportation and logistics costs.  $LF_A$  plants in A and X do not necessarily have to be within the boundaries of the same firm but, for simplicity, they will be referred to as if both were part of  $LF_A$ ; the same applies to  $LF_B$ .



area more than others. For these asymmetric effects to be possible, two enabling conditions must concur (Table 1 and Figure 1): first, lead firms should exhibit distinct international sources of and dependence on imports of intermediate goods; and second, the FTA liberalizes certain intermediate goods originating in a particular country but not (or less or more slowly) other intermediate goods or from other countries. In Figure 2, if  $LF_{AX}$  and  $LF_{BX}$  exhibit distinct patterns in their production and/or trade of intermediate goods (e.g., sourced inputs differ in their identity or origin), FTA A-X will allow  $LF_A$  to trade intermediate goods between  $LF_{AA}$  and  $LF_{AX}$  with reduced or no tariffs, unlike  $LF_{BB}$  concerning  $LF_{BX}$ . All lead firms in X can use the FTA A-X to import inputs from A, but  $LF_{AX}$  is likely to depend on inputs from A (from  $LF_{AA}$  or other suppliers in A) more than  $LF_{BX}$ , generating savings from input liberalization mainly for  $LF_A$ . Not all lead firms with home country A and plants in X necessarily import or equally depend on inputs from A, and the ultimate distribution of benefits from FTA liberalization will be firm-specific.<sup>14</sup> Again, the political economy link between the two enabling conditions is  $LF_{AX}$  pressuring the governments of X and/or A on its own for FTA A-X to liberalize the intermediate goods that  $LF_{AX}$  imports from A under more favorable conditions—potentially, in a selective manner—relative to those imported by  $LF_{BX}$  from A or elsewhere.<sup>15</sup>

In sectors whose inputs have relatively lower industry-level standardization, the international sourcing options of lead firms can be limited to a reduced number of countries and/or suppliers abroad.<sup>16</sup> In this scenario, the asymmetric distribution of the benefits of FTA

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<sup>14</sup> For instance, in industries with limited opportunities for global sourcing,  $LF_{BX}$  can depend more on inputs from regional hub A than from a potentially distant home country B outside the region.

<sup>15</sup> Similar to final goods,  $LF_{AX}$  may lobby along other firms or intermediate its preferences through the respective business association for those provisions of FTA A-X that favor several lead firms.

<sup>16</sup> To the best of the author's knowledge, there are no classifications of industries by their level of input standardization or whether inputs can be obtained from multiple or a reduced number of sources. Sturgeon and Memedović (2011) categorized the intermediate manufacturing goods of several industries as “generic” or “customized” depending on whether they can be used in multiple or a few final goods, respectively.

liberalization of inputs within the FTA area will be facilitated (“facilitating conditions” in Table 1 and Table 1) when: a) RoOs require that imported intermediate goods have undergone a high level of transformation within the bloc (see below); b) lead firms show differences in their ability to reorganize the geographical distribution of their input manufacturing plants in the context of the FTA; and c) lead firms exhibit differences in the prevalence of and dependence on hierarchical or captive relationships with suppliers in other FTA member countries (e.g., intra-firm cross-border procurement flows between subsidiaries or between offshored lead firms and long-term suppliers at home or elsewhere). Conversely, the asymmetric distribution of the benefits of FTA input liberalization will be less relevant when RoOs allow for a high level of non-FTA content, in sectors with relatively standardized inputs that can be obtained from multiple sources, as well as when imported inputs are exempt from tariffs (e.g., duty drawbacks, export processing zones).<sup>17</sup>

### ***2.3 Restrictive RoOs and the asymmetric distribution of benefits from FTA liberalization within the trade area***

Compliance with ROOs in FTAs can increase production costs, and when they require a high level of intra-FTA transformation, RoOs can restrict, distort, or even prevent trade (Yeung, 2001; Anson et al., 2005; Curran et al., 2019). Several restrictiveness indexes have been created to assess how demanding RoOs are (e.g., Estevadeordal and Suominen, 2005; Estevadeordal et al., 2008). Trade-restricting RoOs can be used to discriminate against exporters *outside* the FTA area (Chase, 2008:512-513).<sup>18</sup> In the example of Figure 2, if FTA A-X imposes highly

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<sup>17</sup> Duty drawback schemes and export processing zones exempt tariffs on imported inputs under certain conditions; for instance, when inputs are later incorporated into export goods. In contrast, FTAs liberalize tariffs on imported inputs without export conditionality.

<sup>18</sup> The greater the tariff savings that an FTA offers, the tougher the RoOs must be to prevent the entry of goods from outside the FTA through the FTA country with the lowest external tariff (Chase, 2008:513).

restrictive RoOs on the final good produced by  $LF_A$  and  $LF_B$ , the good produced by  $LF_{BB}$  (or by other plants outside the A-X area) may not qualify to use FTA A-X tariffs and must incur a higher most-favored-nation tariff to enter A and/or X.

Importantly, restrictive RoOs also facilitate the asymmetric distribution of the tariff saving examined in the previous two sections among lead firms *within* the FTA area (Table 1 and Figure 1). For any given good, its level of intra-FTA transformation is likely to differ among the lead firms producing it. For instance, the final good produced by  $LF_{AX}$  is more likely to have a higher level of transformation from within the area A-X than the final good produced by other firms also based in X like  $LF_{BX}$ . If FTA A-X imposes highly restrictive RoOs on a good (particularly for final goods), the good produced by  $LF_{AX}$  may qualify for FTA A-X tariffs, while the good produced by  $LF_{BX}$  (or other firms established in X or A) may not.  $LF_{AX}$  will lobby governments in X and A on its own for FTA configurations, not only regarding partner countries and tariff rates but also for a level of RoO restrictiveness that supports its input procurement pattern and production structure over those of other firms established within the area A-X.

### **3. Political economy of automotive liberalization in Thai FTAs and differential FTA utilization among automakers**

In the automotive production network, the lead firms are the automakers and brand-bearing original equipment manufacturers (OEMs) (e.g., Toyota). Several structural features of the automotive production network favor compliance with the conditions stated above for the asymmetric distribution of the benefits of FTA liberalization within a trade area. The automotive industry is characterized by an intense international fragmentation of production

and trade flows of intermediate goods and vehicles across nations. Beyond product differentiation in the final good (vehicles), compared to other sectors, automotive manufacturing has lower sector-wide and higher firm-specific standardization of inputs (Sturgeon et al., 2008, 2009). Since vehicle manufacturing is highly capital-intensive, the regional rationalization of production is of great importance. Trade and investment liberalization allow automakers to consolidate or specialize operations at the regional level, and to trade parts and components, complete-knocked-down kits, and assembled vehicles within the regional network and beyond. As a result, a large share of automakers' exports and imports occurs between subsidiaries and/or with long-term suppliers—in some cases, with equity ties—making input procurement less flexible.<sup>19</sup> At the same time, due to the logistics in the sector, automakers often require some of their first-tier suppliers, those who supply them with intermediate goods directly, to cluster around their plants. All these factors, along with tariff escalation on automotive goods in most countries, imply that FTAs tend to be more relevant to automakers than to most automotive suppliers.

Until the late 1980s, high tariffs on vehicles in most Southeast Asia encouraged international automakers to operate independent assembly plants in several countries. With the impending implementation of the *Association of South East Asian Nations* (ASEAN) FTA (AFTA) in 1992 and the launch of the WTO in 1995, international automakers began to reorganize their production strategies in Southeast Asia and prioritized Thailand as their regional hub due to its large domestic market and the lack of a government-sponsored automotive program, which other ASEAN countries had (Doner, 1991; Yoshimatsu, 1999;

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<sup>19</sup> Up to 65% of the exports and 27% of the imports by automakers in Thailand correspond to intra-firm trade (UNCTAD, 2013:137-139). Western automakers, especially American firms, favor shorter-term market links with suppliers; in contrast, although weakened over time and abroad, Japanese automakers rely more on closer and longer-term OEM-supplier relationships (Sturgeon et al., 2009).

Abbott, 2004; Natsuda and Thoburn, 2014; Doner et al., 2021; Natsuda and Thoburn, 2021). Today, Thailand is not only home to the largest vehicle and automotive parts manufacturing base in Southeast Asia but is also among the world's largest vehicle producers and exporters. The Thai automotive industry is export-oriented and driven by foreign investment, mainly from Japanese firms (Suppl. Figure S1 and Suppl. Table S1).<sup>20</sup> During the last three decades, automakers in Thailand have lobbied the government—collectively through their business association (the Automotive Industry Club) or as individual firms—for FTAs that liberalize imported inputs and improve access to their vehicles in destination markets. At the same time, automakers have resisted reciprocity in most FTAs, and most-favored-nation tariffs on automotive products are among the highest in the country.<sup>21</sup>

### ***3.1 Source of data and methodology***

The data source and methodology for assessing the conditions outlined in Section 2 for FTAs to favor some lead firms over others within a trade area, as well as the ex-ante trade preferences and subsequent use of the FTAs by automakers in Thailand are as follows (see a summary in Table 1 and additional details in the Online Appendix). Briefly, semi-structured interviews with government officials and automotive industry's business representatives (both business associations and individual firms) in Thailand were analyzed to: a) map the organization of production and the trade patterns of automakers in Thailand; b) trace the political economy of

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<sup>20</sup> In 2021, Thailand was the 10th largest vehicle producer in the world and the 5th largest in the commercial vehicles category. Japanese automakers manufacture in Thailand a wide range of passenger cars and commercial vehicles (light pickup trucks), but large-engine passenger cars from premium brands (e.g., Lexus, Infinity, Acura) are imported directly from Japan. American automakers manufacture both passenger cars and light pickup trucks. European automakers, which are only prevalent in the large-engine passenger car segment, have simpler operations than Japanese and American automakers and mostly assemble passenger cars from complete-knocked-down kits. South Korean and Chinese automakers assemble a small number of vehicles from complete-knocked-down kits.

<sup>21</sup> Interviews with officials at the Ministries of Industry and Commerce and representatives from business associations and individual automakers. Most-favored-nation tariffs on vehicles stand at 80% and up to 42% on automotive parts and components. Within the Federation of Thai Industries, one of the three peak business associations in Thailand, vehicle assemblers/manufacturers, and suppliers are represented by the Automotive Industry Club and the Auto Parts Industry Club, respectively. The interests of suppliers are also mediated by the Thailand Auto Parts Manufacturers Association.

automotive liberalization in Thai FTAs, uncover their ex-ante preferences regarding tariff liberalization and how demanding should be the RoOs, as well as find evidence of lobbying by automakers for (or against) FTA liberalization (see the Appendix on how evidence of corporate lobbying was assessed in semi-structured interviews); and c) investigate the utilization of each FTA by individual automakers. The automakers interviewed account for virtually all of Thailand's vehicle production, domestic sales, and exports (Suppl. Table S1). FTA preferential tariff rates and RoOs were obtained from the treaties' texts, and levels of RoO restrictiveness were calculated using the Harris index (Estevadeordal et al., 2008:355) as detailed in the Online Appendix. The aggregate utilization of Thai FTAs to trade automotive products was calculated from administrative records provided by the Thai Ministry of Commerce. Table 2 summarizes the presence or absence of the enabling and facilitating conditions in each of the Thai FTAs analyzed below. The geographical distribution of vehicle production plants that automakers based in Thailand also have or have had in Thailand's FTA partners around 2004, 2011, and 2020 are summarized in Table 3.

In the analysis of trade of automotive intermediate goods, the study built on and expanded the classification by Nag (2009) and questioned automakers regarding their use of each trade agreement to trade products within three groups of parts and components (see pages S3 and S4 of the Online Appendix). If an automaker did not use an FTA, its utilization was scored as "0" in Tables 4 to 7. The use of a trade agreement to trade parts and components in one group, two groups, or all three groups was scored as "1", "2", or "3", respectively. Automakers were also asked about their utilization of each trade agreement to trade assembled vehicles. When an automaker reported that it did not use a trade agreement to trade vehicles, its utilization was scored as "0" in Tables 4 to 7; when it used a trade agreement to trade vehicles

in up to one-third, up to two-thirds, or more than two-thirds of its model line-up, its utilization were scored as “1”, “2”, or “3”, respectively. Tables 4 to 7 also indicate whether this research found evidence that the automaker lobbied individually in favor of tariff liberalization of parts and/or vehicles through the different FTAs (see the Appendix on how lobbying was assessed).

**Table 2: Asymmetric distribution of benefits among automakers in Thai FTAs**

	Conditions fostering differential FTA use among automakers	AFTA / ATIGA	Thailand India EHS	Thailand Australia FTA	Thailand Japan FTA	Results
FTA liberalization of vehicles	<u>Enabling condition:</u> Vehicle liberalization favoring some automakers over others, while keeping high MFN tariffs	Yes	N/A	Yes	Limited	* Main text (Section 3) & footnote 21
	<u>Enabling condition:</u> Differences among automakers in assembly locations and export destinations	Limited	N/A	Yes	Limited	* Main text (Section 3), Tables 3-8 & Suppl Table S3
	<u>Facilitating condition:</u> Restrictive RoOs on vehicles. Harris' index (0-20)	5	N/A	11	5	* Main text (Section 3) & footnotes 25, 29, 32 & 37
	<u>Facilitating condition:</u> Differences among automakers in their capacity to reorganize vehicle production within the FTA area	Limited	N/A	Yes	No	* Main text (Section 3), Table 3, Suppl Table 3, & footnotes 23 & 33
FTA liberalization of automotive intermediate goods	<u>Enabling condition:</u> Input liberalization favoring some automakers over others, while keeping high MFN tariffs	Yes	Yes	Yes	Yes	* Main text (Section 3) & footnote 21
	<u>Enabling condition:</u> Differences among automakers in the procurement of automotive inputs	Limited	Yes	Yes	Yes	* Main text (Section 3), Tables 4-8 & Suppl. Table S3
	<u>Facilitating condition:</u> Restrictive RoOs on automotive inputs. Harris' index (0-20)	1-5	11	3-13	1-3	* Main text (Section 3) & footnotes 25, 29, 32 & 37
	<u>Facilitating condition:</u> Differences among automakers in the capacity to reorganize input production within the FTA area	Limited	Yes	Yes	Yes	* Main text (Section 3) & Suppl Table 3
	<u>Facilitating condition:</u> Differences among automakers in the dependence on inputs from subsidiaries or long-term suppliers in other FTA countries	Limited	Yes	Yes	Yes	* Main text (Section 3) & Tables 4-8

Notes: See additional details in Section 3, Table 1, and the Online Appendix.

Abbreviations: N/A: not applicable. MFN: most-favored-nation

**Table 3: Vehicle production plants in Thailand's FTA partner countries by automakers with presence in Thailand \***

			Vehicle assembly/manufacturing plants in Thailand's FTA partners																
Thailand			Automakers in Thailand	Malaysia			Indonesia			India			Australia			Japan			
2004	2011	2020		2004	2011	2020	2004	2011	2020	2004	2011	2020	2004	2011	2020	2004	2011	2020	
			Toyota											2017					
			Mitsubishi			2016						2016	2009						
			Isuzu																
			Honda																
			Nissan																
			Mazda																
			Ford					2016				2021		2016					
		2020	General Motors				2005	2015						2017					
			Suzuki																
			Mercedes Benz																
			BMW Group																
	2013		Volvo																
			Hyundai																

Source: Interviews with representatives of automotive business associations and individual automakers.

\* Plants for the manufacturing (orange shaded cells) or assembly from complete-knock-down kits (grey shaded cells) of passenger and commercial vehicles in key Thailand's FTA partner countries by automakers based in Thailand. Wherever indicated, numbers within cells refer to the year in which manufacturing/assembly was terminated.

### 3.2. Organization of production, trade preferences, and FTA utilization of automakers in Thailand

In the early 1990s, automotive firms in Southeast Asia sought to rationalize their procurement and production scales regionally, and lobbied governments for intra-ASEAN automotive liberalization; however, the initial implementation of AFTA left ample room for protectionism (Yoshimatsu, 1999; Abbot, 2004; Ravenhill, 2008).<sup>22</sup> It was only after the reduction of AFTA tariffs in 2003 and, particularly, their elimination in 2010, that the trade in automotive inputs and vehicles between the main ASEAN vehicle-producing countries increased rapidly, with

<sup>22</sup>Japanese and American automakers and suppliers lobbied the governments of ASEAN countries, both individually and through business associations, to speed up intra-ASEAN automotive liberalization (interviews with officials of the Thai Ministry of Commerce; Doner et al., 2021; Natsuda and Thoburn, 2021). Japan's peak business association (Keidanren) and the Japan Automobile Manufacturers Association lobbied not only the Japanese government but also directly Thai officials (Yoshimatsu, 1999, 2002; Manger, 2005, 2009; Postigo, 2016). Largely in response to pressure from the automotive industry ASEAN launched the ASEAN Industrial Cooperation (AICO) program as an interim scheme while liberalization under AFTA proceeded (Yoshimatsu, 1999, 2002). Although covering all manufacturing sectors, reflecting those original lobbying pressures, the present study found that 90% of AICO use in Thailand was for the trade in automotive parts and components (data not shown).



Thailand at the center of the regional network (Suppl. Table S2).

**Table 4: Utilization of AFTA/ATIGA by automakers in Thailand**

	AFTA/ATIGA					
	Parts and Components			Vehicles		
	Evidence of Lobbying *	EXP **	IMP **	Evidence of Lobbying *	EXP **	IMP **
<b>Toyota</b>	Yes	3	2	Yes	3	2
<b>Mitsubishi</b>		1	1		2	1
<b>Isuzu</b>	Yes	3	1	Yes	3	1
<b>Honda</b>	Yes	3	1	Yes	3	2
<b>Nissan</b>	Yes	3	1	Yes	3	2
<b>Mazda</b>	Yes	2	1	Yes	2	2
<b>Ford</b>	Yes	1	0	Yes	3	0
<b>General Motors</b>	Yes	1	0		2	1
<b>Suzuki</b>		1	1		2	1
<b>Mercedes Benz</b>		0	0		2	1
<b>BMW Group</b>		0	0		2	1
<b>Volvo</b>		0	0		2	2
<b>Hyundai</b>		0	0		0	0

*Source:* Interviews with representatives from the Automotive Industry Club and individual automakers.

*Abbreviations:* EXP: exports; IMP: imports

\* Cells marked with a “Yes” indicate that there is evidence of individual lobbying by the lead firm in favor of AFTA liberalization. See Section 3 and the Online Appendix for more details

\*\* The score (0 to 3) refers to the extent of FTA utilization by each automaker to trade automotive intermediate goods or vehicles. Volvo closed its vehicle manufacturing plants in Thailand in 2013 and General Motors did so in late 2020. See Section 3 and the online Appendix for more details

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complete liberalization of automotive parts and components in AFTA (now *ASEAN Trade in Goods Agreement*, ATIGA) has allowed automakers to rationalize their procurement strategies regionally, but not all OEMs have benefited equally (Tables 2 and 4). The subsidiaries in Thailand of Toyota, Isuzu, Honda, and Nissan, with the largest regional procurement network, indicated extensive use of AFTA/ATIGA to trade components and modules with other subsidiaries and long-term suppliers within the trade area (Table 4 and Suppl. Table S3). In contrast, Mitsubishi (despite being the second largest vehicle manufacturer in the country and

exporting over 80% of its Thai production, but operates primarily from within tariff-free export-processing zones) and European automakers (whose passenger cars are assembled from complete-knocked-down kits imported from Europe and supplemented locally with a relatively lower content of non-critical parts) have made more limited or no use of AFTA/ATIGA to source automotive inputs from other ASEAN countries. A greater number of automakers have used this FTA to export and import vehicles and reorganized their ASEAN network by consolidating vehicle production in a single country and/or specializing their plants to produce specific models (Tables 3 and 4, and Suppl. Table S3).<sup>23</sup>

Since most ASEAN countries impose high most-favored-nation tariffs on automotive products, the aggregate utilization of AFTA/ATIGA to trade them has been higher than to trade other goods. In 2019, about a third of total Thai exports and 14.2% of total Thai imports through AFTA/ATIGA were automotive products, and virtually all of Thailand's automotive trade uses AFTA/ATIGA tariffs.<sup>24</sup> The more homogeneous use of AFTA/ATIGA among automakers than the use of the other Thai FTAs explored below, particularly for vehicle trade, has been supported by the low restrictiveness of AFTA/ATIGA RoOs (Table 2).<sup>25</sup>

At the turn of the 21<sup>st</sup> century, automakers in Thailand started lobbying the government for bilateral FTAs to integrate their Thai plants into their procurement and production networks outside of ASEAN (see below; Manger 2005, 2009, 2012). As of February 2023, Thailand has implemented six bilateral FTAs, but only the agreements with India, Australia, and Japan are relevant to the automotive industry, whose liberalization constituted the main driver of the

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<sup>23</sup> Ford closed its plants in Malaysia in 2008 and the Philippines in 2012 and now serves both markets from Thailand. Volvo abandoned Thailand in 2013 and consolidated its ASEAN production in Malaysia. General Motors left Indonesia in 2015 and Vietnam in 2018 and served all of ASEAN from Thailand until it closed its Thai plants in late 2020.

<sup>24</sup> Interviews with officials from the Ministries of Commerce, and Industry.

<sup>25</sup> RoOs in AFTA/ATIGA are flexible and relatively uniform across all goods and are set at a regional value content of no less than 40%, a level that all automakers in Thailand, including European automakers, can comply with. Additionally, ATIGA RoOs also allow partial cumulation.

negotiations and, in the cases of India and Japan, also its main obstacle.<sup>26</sup>

Despite Thailand and India being among the world's largest automotive manufacturers, bilateral trade in vehicles has been almost negligible given automakers' strategies and the high most-favored-nation tariffs applied by both countries. While they still negotiate a full-fledged FTA, Thailand, and India have implemented the *Thailand-India Early Harvest Scheme* (TIEHS), a partial scope trade agreement covering only 82 goods.<sup>27</sup> The year before it was signed, Toyota had established a plant in India to produce gearboxes, and Toyota and Ford had planned to source engine parts from Thailand. Automakers on both sides opposed the liberalization of vehicles, but Toyota and Ford lobbied the Thai government on their own and outside the Automotive Industry Club for the Scheme to eliminate bilateral tariffs on gearboxes and engine parts.<sup>28</sup> Exploiting the greater flexibility and selectivity available in liberalization through preferential trade agreements relative to multilateral liberalization, the Thailand-India Scheme liberalized gearboxes, engine parts, lighting equipment, and car seat parts, but excluded all other automotive parts and components as well as vehicles. Toyota and Ford also succeeded in this agreement to impose restrictive RoOs on gearboxes and engine parts, thus limiting its use by other automakers with lower intra-FTA content (Table 2).<sup>29</sup> In line with the conditions stated in Table 1, the Thailand-India Scheme liberalized the rather particular procurement flows of Toyota and Ford, generating asymmetric benefits for both firms that would not have been possible through multilateral liberalization (Tables 2 and 5). Although

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<sup>26</sup> Thailand has bilateral trade agreements with India (implemented in 2004), Australia (2005), New Zealand (2005), Japan (2007), Peru (2011), and Chile (2015). The Thailand-China FTA (2003) was later subsumed into the China-ASEAN FTA. Thailand is also a party of the six ASEAN-centered FTAs and of the Regional Comprehensive Economic Partnership (2022), which are less comprehensive, provide for slower liberalization than bilateral FTAs, and have maintained most of the protection of the Thai automotive industry.

<sup>27</sup> The 82 goods included are specified at the tariff subheading level; that is, out of the approximately 6,200 goods at the HS6 level. Negotiations for the full-fledged FTA have been on hold since 2015.

<sup>28</sup> Interviews with officials from the Thai Ministries of Commerce and of Industry, representatives of automotive business associations, and individual automakers. Automakers in Thailand collectively opposed tariff reductions on Korean or Indian passenger cars manufactured in India, while automakers in India sought protection from Japanese-brand models made in Thailand.

<sup>29</sup> RoOs for gearboxes and engine parts require a 40% regional value content plus a change in tariff heading, while RoOs in many other manufactured goods included in the Scheme require a 40% regional value content plus a change in tariff subheading.

automotive intermediate goods represent 6% of the products covered by this trade agreement, they accounted for most of its initial use, mainly for the intra-firm trade in gearboxes and engine parts by Toyota and Ford (Table 5).<sup>30</sup>

**Table 5: Utilization of Thailand-India trade scheme by automakers in Thailand**

	Thailand-India trade scheme					
	Parts and Components			Vehicles		
	Evidence of Lobbying *	EXP **	IMP **	Evidence of Lobbying *	EXP **	IMP **
<b>Toyota</b>	Yes	2	2		0	0
<b>Mitsubishi</b>		0	0		0	0
<b>Isuzu</b>		0	0		0	0
<b>Honda</b>		0	0		0	0
<b>Nissan</b>		0	0		0	0
<b>Mazda</b>		0	0		0	0
<b>Ford</b>	Yes	2	0		0	0
<b>General Motors</b>		0	0		0	0
<b>Suzuki</b>		0	0		0	0
<b>Mercedes Benz</b>		0	0		0	0
<b>BMW Group</b>		0	0		0	0
<b>Volvo</b>		0	0		0	0
<b>Hyundai</b>		0	0		0	0

Source: Interviews with representatives from the Automotive Industry Club and individual automakers.

Abbreviations: EXP: exports; IMP: imports

\* Cells marked with a “Yes” indicate that there is evidence of individual lobbying by the lead firm in favor of AFTA liberalization. See Section 3 and the Online Appendix for more details

\*\* The score (0 to 3) refers to the extent of FTA utilization by each automaker to trade automotive intermediate goods. See Section 3 and the Online Appendix for more details. The Thailand-India trade scheme did not liberalize tariffs on vehicles.

<sup>30</sup> In the first two years after its implementation, 82.9% of all Thai imports through the Thailand-India trade Scheme were gearboxes. With the implementation of the ASEAN-India FTA, significant shares of Thai imports of gearboxes and exports of engine parts to/from India take place now through the ASEAN-India FTA.

The main automakers in Australia (until 5-10 years ago, General Motors/Holden, Toyota, Mitsubishi, and Ford) and Thailand sought to integrate their operations and pressured both governments through their respective business associations to launch negotiations for the *Thailand-Australia FTA*. Anticipating increased demand from automakers, automotive parts manufacturers' associations in both countries also supported the agreement.<sup>31</sup> General Motors and Toyota, the main backers of the deal, had engine manufacturing plants in Australia from which they wanted to supply Thailand and lobbied the Thai government individually for automotive parts liberalization. Similarly, several years before negotiations began, Toyota had transferred some of its Australian vehicle production to Thailand and, expectedly, also pushed to liberalize Australian tariffs on vehicles. The FTA has eliminated all tariffs on the bilateral trade in vehicles and parts and components (Tables 2 and 6) and, together with AFTA/ATIGA, they are the only FTAs that have fully liberalized the Thai automotive sector. During the time that General Motors and Toyota kept their engine plants in Australia open, both companies benefited more than other automakers from the liberalization of automotive inputs in the Thailand-Australia FTA (Table 6). This asymmetric use of the FTA to trade automotive inputs was backed by more diverse and restrictive RoOs than those in AFTA/ATIGA, which made it possible to delimit the impacts of the Thailand-Australia FTA among automakers in a more differentiated manner than the former (Table 2).

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<sup>31</sup> Interviews with officials from the Thai Ministries of Commerce and Industry, representatives of automotive business associations, and individual automakers. The position of the Australian Federal Chamber of Automotive Industries on the FTA is available at: <https://www.aph.gov.au/binaries/hansard/joint/commtee/j7814.pdf>. At the time of the negotiations, the Australian and Thai automotive industries were more complementary than competitive. Thailand's main strength was in light pickup trucks and smaller-engine passenger cars, while Australia's was larger-engine passenger cars and higher-technology components.

**Table 6: Utilization of Thailand-Australia FTA by automakers in Thailand**

	Thailand-Australia FTA					
	Parts and Components			Vehicles		
	Evidence of Lobbying *	EXP **	IMP **	Evidence of Lobbying *	EXP **	IMP **
<b>Toyota</b>	Yes	2	2	Yes	3	0
<b>Mitsubishi</b>		0	0	Yes	1	1
<b>Isuzu</b>		0	0	Yes	1	0
<b>Honda</b>		0	0	Yes	2	0
<b>Nissan</b>		0	0		2	0
<b>Mazda</b>		0	0		2	0
<b>Ford</b>	Yes	1	1	Yes	2	0
<b>General Motors / Holden</b>	Yes	2	2	Yes	3	0
<b>Suzuki</b>		0	0		2	0
<b>Mercedes Benz</b>		0	0		0	0
<b>BMW Group</b>		0	0		0	0
<b>Volvo</b>		0	0		0	0
<b>Hyundai</b>		0	0		0	0

Source: Interviews with representatives from the Automotive Industry Club and individual automakers.

Abbreviations: EXP: exports; IMP: imports

\* Cells marked with a “Yes” indicate that there is evidence of individual lobbying by the lead firm in favor of AFTA liberalization. See Section 3 and the Online Appendix for more details

\*\* The score (0 to 3) refers to the extent of FTA utilization by each automaker to trade automotive intermediate goods or vehicles. Several automakers closed their plants in Australia after FTA implementation (see footnote 33). See Section 3 and the Online Appendix for more details

Nonetheless, the Thailand-Australia FTA has been used primarily to export Thailand-made vehicles to Australia, accounting for more than half of all Thai exports through this FTA. Although its use for exporting vehicles has been more evenly distributed than for the trade of parts, not all automakers have used it equally; Toyota, General Motors, Ford, and Isuzu have been the main beneficiaries, while most European carmakers in Australia, which import vehicles directly from Europe, have not used the FTA (Table 6). RoOs for vehicles in the Thailand-Australia FTA are relatively restrictive, but they have not limited the procurement strategies of Japanese and American automakers in Thailand, many of which depend on inputs

from outside the bilateral area (Table 2). Toyota, whose vehicles have a higher bilateral content than other automakers, individually lobbied for more restrictive RoOs.<sup>32</sup> The asymmetric use of the Thailand-Australia FTA has also been fueled by differences between automakers in their ability to reorganize their production after the implementation of the FTA. For instance, General Motors, Toyota, Mitsubishi, and Ford have closed their plants in Australia whose market they now serve from Thailand (Table 3).<sup>33</sup>

For Japan, the main interest of the *Japan-Thailand Economic Partnership Agreement* lay in the liberalization of the Thai automotive sector and the protection of the investments of Japanese firms in Thailand (this research; Manger, 2005, 2009, 2012; Staples, 2008).<sup>34</sup> Japan already provided most-favored-nation tariff-free access to all imports of automotive goods. Compared to other Thai FTAs, this FTA offered Japanese automakers greater potential for asymmetric benefits relative to other Thailand-based automakers and that cannot be realized through multilateral liberalization. Japanese automakers (chiefly Toyota, but also Honda and Nissan) and first-tier suppliers (e.g., Denso) lobbied the Thai government—on their own and outside their sectoral associations in Thailand—to remove all tariffs on Japan-made automotive intermediate goods and vehicles, as Thailand had granted to Australia.

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<sup>32</sup> Interviews as in footnote 31. RoOs on vehicles in the Thailand-Australia FTA were set at 40% of bilateral value content *plus* a change in tariff heading, a level of restrictiveness that was supported by the Thai government and most automakers, which prioritized having the flexibility to include inputs from third countries. The Australian government sought RoOs that impose a change in tariff heading, but with a higher value content requirement of 50% to further limit the imports of European large-engine passenger cars made in Thailand, which competed with Australia's core production. This latter level of RoO restrictiveness was also supported by Toyota.

<sup>33</sup> Mitsubishi closed its plants in Australia in 2009, Ford in 2016, and Toyota and General Motors in 2017. As noted above, General Motors also pulled out of Thailand, and of Southeast Asia altogether, at the end of 2020.

<sup>34</sup> Interviews with officials from the Thai Ministries of Commerce, of Foreign Affairs, and of Industry, representatives of business associations and individual automakers and suppliers, as well as with officials from Japanese government-related organizations and the Japanese Chamber of Commerce in Thailand. For Thailand, the main goal of this FTA was the liberalization of Japanese tariffs on agricultural and processed food goods, but many of these products were excluded from the accord (Manger, 2005; Postigo, 2022).

**Table 7: Utilization of Thailand-Japan FTA by automakers in Thailand**

	Thailand-Japan FTA					
	Parts and Components			Vehicles		
	Evidence of Lobbying *	EXP **	IMP **	Evidence of Lobbying *	EXP **	IMP **
<b>Toyota</b>	Yes	0	3	Yes	0	1
<b>Mitsubishi</b>		0	1		0	0
<b>Isuzu</b>		0	1		0	0
<b>Honda</b>	Yes	0	3	Yes	0	1
<b>Nissan</b>	Yes	0	2	Yes	0	1
<b>Mazda</b>		0	2		0	0
<b>Ford</b>		0	1		0	0
<b>General Motors</b>		0	1		0	0
<b>Suzuki</b>		0	1		0	0
<b>Mercedes Benz</b>		0	0		0	0
<b>BMW Group</b>		0	0		0	0
<b>Volvo</b>		0	0		0	0
<b>Hyundai</b>		0	0		0	0

Source: Interviews with representatives from the Automotive Industry Club and individual automakers

Abbreviations: EXP: exports; IMP: imports

\* Cells marked with a “Yes” indicate that there is evidence of individual lobbying by the lead firm in favor of AFTA liberalization. See Section 3 and the Online Appendix for more details

\*\* The score (0 to 3) refers to the extent of FTA utilization by each automaker to trade automotive intermediate goods or vehicles. See the main text of Section 3 and the Online Appendix for more details. Automakers in Thailand did not use the FTA to export automotive goods to Japan because Japan offers zero most-favored-nation tariffs on these products.



The liberalization of Japanese automotive intermediate goods faced the resistance of Western automakers and most parts manufacturers in Thailand, including some small Japanese suppliers with plants in the country, who pressed the Thai officials both individually and through their respective commercial associations.<sup>35</sup> However, since Thailand's status as the regional automotive hub depended on Japanese automakers' access to inputs at competitive prices, the Thai government eventually agreed to eliminate tariffs on automotive intermediate goods and hot-rolled steel from Japan, although during a long phase period of up to 8 and 11 years, respectively. The use of this FTA to import automotive inputs from Japan has varied between firms and has been greater by Japanese automakers Toyota and Honda and, to a lesser extent, Nissan and Mazda (Table 7). Nevertheless, as argued in Section 2, the benefits from automotive input liberalization are not allocated necessarily or exclusively according to automakers' country of origin or production and export volumes as not all Japanese automakers (and not only Japanese automakers) or the largest exporters have used this FTA the most (Table 7). To illustrate, Japanese Isuzu (which manufactures commercial vehicles with high Thai content and is less dependent on imports from Japan) and Mitsubishi (which operates mainly

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<sup>35</sup> Despite the weight of Japanese companies within them, the two associations of automotive parts producers in Thailand opposed the liberalization of Japanese parts. American and European automakers and the European Union representative in Thailand also lobbied directly the Thai Cabinet opposing the elimination of Thai tariffs on Japanese automotive products (mimeograph documents).

within tariff-free export-processing zones) have made only limited use of this FTA to import Japanese inputs (Table 7). American Ford and, until its departure from Thailand, General Motors have also made little use of the Thailand-Japan FTA to import Japanese automotive-grade steel, while European automakers have not benefited from this FTA. The broad utilization of this FTA to import Japanese automotive inputs is supported by relatively low restrictive RoOs, similar to those in AFTA/ATIGA (Table 2).

As with automotive inputs, Western automakers and suppliers pressured the Thai government individually and via their business associations against the elimination of tariffs on Japan-made vehicles.<sup>36</sup> The Thai government, which feared it would lead to divestments in the automotive industry, also opposed the liberalization of Japanese vehicles in the Thailand-Japan FTA. Since Japan had refused to make concessions on some key Thai exports in this FTA and Japanese automakers already manufacture an extensive portfolio of vehicles in Thailand (footnotes 20 and 34), Japan eventually settled to exclude vehicles from the agreement (barring a partial liberalization of large-engine passenger cars that are not produced in Thailand), while Thailand accepted more relaxed RoOs in this FTA than in the one it signed with Australia (Table 2).<sup>37</sup> Of note, Toyota initially lobbied the two governments individually to make RoOs based solely on value content, something more difficult for other Japanese automakers with lower production volumes to achieve. Consequently, the FTA has not prompted a significant reorganization of vehicle manufacturing by Japanese automakers in Thailand and, as far as vehicle trade is concerned, it has been only used by Lexus (Toyota

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<sup>36</sup> Of note, the Automotive Industry Club, which represents all automakers regardless of country of origin, opposed the liberalization of Japanese-made vehicles. American automakers agreed to small tariff reductions for less price-sensitive passenger cars with engines over 3,000 cc that represent 0.1% of the Thai market. European automakers, which dominate Thai domestic sales in that vehicle segment, strongly opposed the proposal because they produce passenger cars in Thailand at less efficient scales than Japanese automakers do in Japan.

<sup>37</sup> Interviews as in footnote 34. Japanese automakers initially sought the elimination of Thai tariffs on all Japan-made vehicles to gain flexibility in future regional production strategies. The FTA left Thai tariffs on Japanese-made vehicles unchanged except for passenger cars with engines larger than 3,000cc whose tariffs were reduced from 80% to 60%. RoOs on vehicles in this FTA require either a minimum value content of 40% or a change in tariff heading.

group), Acura (Honda group), and Infiniti (Nissan group) to import small numbers of large-engine passenger cars made in Japan (Table 7).<sup>38</sup>

#### **4. Discussion**

FTA negotiations constitute arenas for cooperation and competition among and between states and firms and provide frameworks for the asymmetric distribution of power and value within production networks. Individual firms may support FTA liberalization not only to discriminate against competing firms outside the FTA area but also to gain a competitive advantage relative to rival firms within the FTA area in ways that they cannot through multilateral liberalization. The present study identified several conditions that allow FTAs to asymmetrically—and, in some cases, selectively—liberalize (or do it deeper or faster) the trade flows of some lead firms within the trade area relative to those of others also within it (Table 1 and Figure 1)

Firm-level studies have shown how certain sources of firm heterogeneity affect not only the participation of firms in international markets and their trade policy preferences but also their political organization (reviewed in Kim and Osgood, 2019). Firms tend to hold diverging policy preferences and lobby individually rather than through collective action in sectors with high levels of intra-industry trade, product differentiation, and firm concentration (Bombardini and Trebbi, 2012; Madeira, 2016; Kim, 2017; Osgood, 2017). Within a given sector, larger and more productive firms are more likely to pressure in favor of tariff liberalization than smaller and less productive ones (Baccini et al., 2017; Kim, 2017; Plouffe, 2017). This study explored how, due to some inherent characteristics of FTAs and certain configurations by design, FTAs can be better tailored to the particular production organization

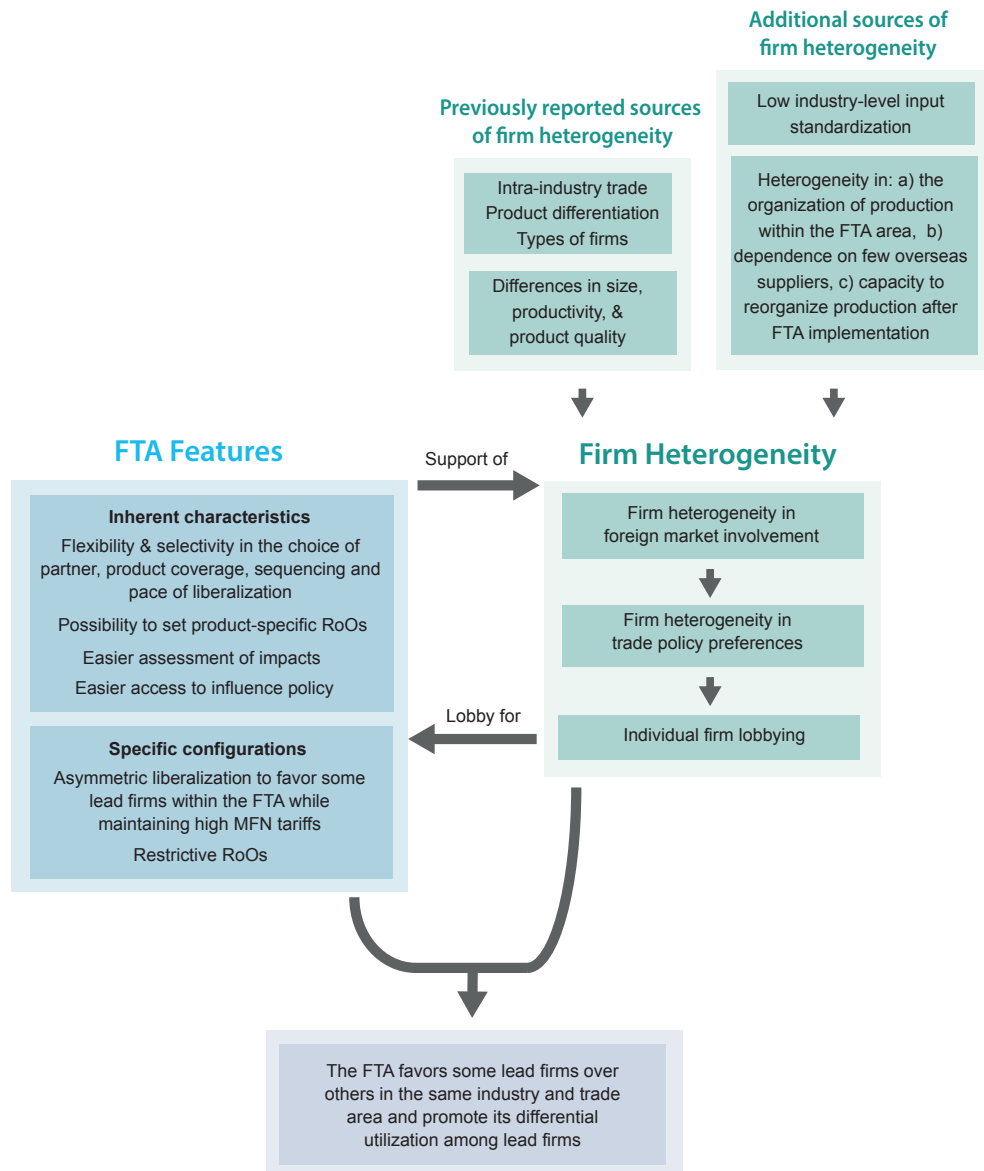
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<sup>38</sup> Several Japanese automakers in Thailand manufacture and export small-engine electric vehicles to Japan under zero most-favored-nation tariffs.

of firms than multilateral liberalization; FTAs can narrowly target the liberalization or protection of goods, potentially the specific firms producing them, and facilitate the trade flows of some firms more than those of competitors.<sup>39</sup> At the same time, because FTAs offer firms a greater chance to influence policymaking than multilateral rounds (Freund and Ornelas, 2010), FTAs can also better accommodate firm heterogeneity in trade preferences and encourage firms to lobby individually for those FTA configurations that favor them over other firms (Figure 3). The study also examined new sources of heterogeneity among lead firms in production networks that allow FTAs to generate those asymmetric effects; namely, the prevalence among firms of differences in their ex-ante geographical organization of production and in their ability to reorganize those patterns after the FTA entered into force. FTAs can more easily delineate these asymmetric effects among lead firms when the industry-level standardization of inputs is low and lead firms exhibit heterogeneity in their dependence on hierarchical or captive relationships with subsidiaries or long-term suppliers in other FTA member countries.

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<sup>39</sup> In FTAs it is not only possible to choose partner countries and establish RoOs that suit the specific production process of some firms (e.g., Toyota in the Thai FTAs with Australia and Japan), but FTAs also provide greater flexibility and selectivity in the coverage and exclusion of goods and in the sequence and pace of liberalization.



**Figure 3:** The interaction between some features of FTAs and the heterogeneity of firms in various dimensions of their organization of production allows FTAs to distribute the benefits of liberalization asymmetrically within a given production network and trade area

The empirical evidence in the Thai case supported the above arguments. Whenever a prospective FTA had the opportunity to generate distributional effects among automakers, potential beneficiary firms lobbied on their own for FTA configurations that could materialize benefits that are particular (or even exclusive) to them relative to other automakers in the trade area. In some cases, automakers sought not only skewed or relatively selective benefits in

FTAs but also ensured that competitors will not obtain better concessions in future FTAs.<sup>40</sup> The findings here also indicated that heterogeneity among automakers in their FTA preferences, and the extent to which they lobbied for and later used Thai FTAs was not simply a function of their country of origin or vehicle production and export volumes. Instead, firm heterogeneity in these dimensions has mainly depended on the specific configurations of trade agreements and automakers' differentiated patterns of production and trade. To illustrate it, Mitsubishi, which is Thailand's second largest vehicle producer and exporter but operates mainly within free-trade export processing zones, did not pressure for and has benefited less from FTAs, including the Thailand-Japan FTA, than other automakers that produce and export fewer vehicles. Meanwhile, American automakers have used the Thailand-Japan FTA to import Japan-made steel. Automakers lobbied for specific FTA configurations through their business association and/or individually depending not only on the FTA but, for a given FTA, on the issue at stake.<sup>41</sup>

The asymmetric effects of FTA liberalization among lead firms within the trade area examined here are fostered by the international fragmentation of production. At the same time, the reorganization of production from the national to the bilateral/regional level, which is facilitated by FTAs, often promotes the reverse effect, that is, the consolidation of production into fewer manufacturing units. Nevertheless, some automakers have continued to assemble in multiple countries after the implementation of FTAs, citing various reasons for doing so, such

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<sup>40</sup> In the Thailand-Japan FTA, Japanese automakers succeeded in obtaining Thailand's commitment to not extend better concessions in the automotive sector than those granted to Japan to other countries in future FTAs (<https://www.mofa.go.jp/region/asia-paci/thailand/epa0704/joint.html>).

<sup>41</sup> Automakers lobbied individually for FTA configurations that supported their existing or planned organization of production, especially relative to other automakers in the country. Notably, Western automakers pressured through their business association against the liberalization of Japanese passenger cars in the Thailand-Japan FTA, even though Japanese automakers are the most members in the association.

as manufacturing logistics, reducing economic risks, savings from selling locally produced vehicles, and/or retaining policy leverage in each FTA member country.

Asymmetric FTA utilization among automakers has not been the same in all Thai FTAs and has been more noticeable in the trade in automotive intermediate goods. Automakers in Thailand have sought out and then utilized FTAs primarily for cross-border trade between subsidiaries or with long-term suppliers. For example, in the trade of automotive intermediate goods, there has been a greater asymmetry among automakers' use of the Thailand-India and Thailand-Australia agreements than in AFTA/ATIGA. This can be attributed to specific configurations in the first two (e.g., bilateral agreements, limited coverage in the Thailand-India Scheme, more restrictive RoOs), but also to the more disparate input sourcing patterns between automakers using them. Concerning vehicle trade, Thailand, being a net exporter of vehicles in both trading blocs, liberalized vehicles in AFTA/ATIGA and the Thailand-Australia FTA, but using the flexibility and selectivity in FTAs, it excluded them from its agreements with India and Japan to protect manufacturing in Thailand. Again, the asymmetry in the use of the Thailand-Australia FTA to trade vehicles was greater than in AFTA/ATIGA due to the more restrictive RoOs and more differentiated patterns of vehicle assembly among automakers in the former.

Are the findings of this study generalizable? First, can the evidence here extend beyond the automotive production network? I suggest that the asymmetric effects of FTAs examined here are more likely to be found in other sectors where, as in the automotive industry, firm-specific or "customized" intermediate goods—using the terminology of Sturgeon and Memedović (2011), see footnote 16—are prevalent; for example, the precision equipment, machinery, and metal parts industries. In contrast, in sectors where intermediate goods receive

relatively low most-favored-nation tariffs, can be imported from multiple sources and countries, and are relatively standardized (or for “generic” intermediate goods as in Sturgeon and Memedović, 2011), the possibility of an FTA distributing its benefits asymmetrically would be reduced; for instance, in industries such as jewelry, chemicals, plastics, and basic materials (metal, wood, paper). Second, can the results of the case study be extended to other countries and FTAs? I contend that the Thai case study is relevant to the political economy of firm preferences in other developing countries highly integrated into international production networks.<sup>42</sup> As noted in footnote 3, although not included in the manuscript, the study also investigated automakers and FTAs in Malaysia with similar findings to those presented here. The prevalence of high most-favored-nation tariffs on vehicles in many countries has made liberalization of the automotive industry a key issue, either as a driver or an obstacle, in many FTA negotiations (Carrillo et al., 2004; Staples, 2008; Covarrubias et al., 2020). Approximately, a third of all Thai exports through AFTA/ATIGA and half of those through the Thailand-Australia FTA are automotive goods. Automotive products also make up an important part of intra-bloc trade flows and of the overall FTA utilization in some other trade agreements where the automotive sector has been liberalized. For instance, in 2019 vehicles represented 46.5% of all Mexican exports to the United States through the North American Free Trade Agreement (NAFTA). In the same year, automotive goods accounted for 32.4% of total Brazilian exports to other members of the Southern Common Market (MERCOSUR) and

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<sup>42</sup> Overall, Thailand has pursued a combination of FDI-driven import-substitution and export-led growth strategies (See footnote 4 on Thailand's Global Value Chain participation index). Likewise, the analysis of trade in upstream and downstream industrial goods in 59 countries included in the Appendix of the aforementioned work by Kim et al. (2019) attest to Thailand's integration in production networks and suggest that, as these authors concluded for their Costa Rica case study, our findings in Thailand can be extended to other middle-income developing countries integrated in the global economy.



22.1% of Spanish exports to other European Union countries.<sup>43</sup> Therefore, the conclusions on Thai FTAs are likely to hold in other preferential trade areas as well.<sup>44</sup>

Developing countries like Thailand have sought to deepen their integration into the international production networks of multinational firms to foster industrial development and enhance local technological capabilities. Nevertheless, the growth of intra-industry trade between developing countries and the increasing number and power of developing country lead firms within many production networks are transforming the geography of trade as well as the organization and governance of many production networks toward more polycentric forms (Horner and Navdi, 2017). At the same time, South-South FTAs and pan-regional FTAs including developing countries have been on the rise. Noteworthy, compared to most North-South FTAs, South-South and pan-regional FTAs are more limited in the scope, depth, and pace of liberalization, circumstances that will only increase the possibility to generate the types of asymmetric impacts among lead firms explored in this study.<sup>45</sup>

## 5. References

Abbott, J.P. (2004). *Developmentalism and Dependency in Southeast Asia: The Case of the Automotive Industry*. London, England: Routledge Curzon.

Anson, J., Cadot, O., Estevadeordal, A., Melo, J.D., Suwa-Eisenmann, A., & Tumurchudur, B. (2005) 'Rules of origin in North-South preferential trading arrangements with an application to NAFTA'. *Review of International Economics*. 13(3), 501-517.

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<sup>43</sup> Mexican exports of road vehicles to the United States under NAFTA preferential tariffs were calculated by the author using data from <http://www.usitc.gov>. The figures for Brazil and Spain were calculated by the author using data from Trade Map (<http://www.trademap.org>) and are the share that the value of exports of automotive products (see the codes of automotive goods on page S3 of the Online Appendix) from Brazil or Spain to other members of their respective trading area represents in the value of total exports from either country to other members of the bloc.

<sup>44</sup> See below in footnote 45.

<sup>45</sup> For example, in the pan-Asia-Pacific Regional Comprehensive Economic Partnership (RCEP), automotive liberalization was both a driver of the agreement and an issue of contention. Among all manufactured products, motor vehicles have the second highest number of liberalized tariff lines (8.5%) in the RCEP, but also the highest number of unchanged tariff lines (17%), which could generate asymmetric benefits for some automakers relative to others.

- Arndt, S.W. (2001) Offshore sourcing and production sharing in preference areas. In S.W. Arndt and H. Kierzkowski (eds.). *Fragmentation: New Production Patterns in the World Economy*. Oxford, England: Oxford University Press.
- Baccini, L., Pinto, P. M., & Weymouth, S. (2017). The distributional consequences of preferential trade liberalization: Firm-level evidence. *International Organization*, 71(2), 373-395.
- Baccini, L., Dür, A., & Elsig, M. (2018). Intra-industry trade, global value chains, and preferential tariff liberalization. *International Studies Quarterly*, 62(2), 329-340.
- Baldwin, R. (1997). 'The Causes of Regionalism' *The World Economy*, 20(7), 865-88.
- Baldwin, R., & Lopez-Gonzalez, J. (2015). Supply-chain trade: A portrait of global patterns and several testable hypotheses. *The World Economy*, 38(11), 1682-1721.
- Bernard, A. B., Jensen, J. B., Redding, S. J., & Schott, P. K. (2012). The empirics of firm heterogeneity and international trade. *Annual Review of Economics*, 4(1), 283-313.
- Bombardini, M., & Trebbi, F. (2012). Competition and political organization: Together or alone in lobbying for trade policy? *Journal of International Economics*, 87(1), 18-26.
- Carrillo, J., Lung, Y., & van Tulder, R. (eds.). (2004). *Cars, Carriers of Regionalism?* New York, NY: Palgrave MacMillan.
- Chase, K.A. (2005). *Trading Blocs: States, Firms, and Regions in the World Economy*. Ann Arbor, MI: University of Michigan Press.
- Chase, K.A. (2008). 'Protecting Free Trade: The Political Economy of Rules of Origin.' *International Organization*, 62(3), 507-530.
- Coe, N.M., & Yeung, H.W-C. (2019) Global production networks: mapping recent conceptual developments. *Journal of Economic Geography*. 19(4), 775-801.
- Covarrubias, A. (2020) The Boom of the Mexican Automotive Industry: From NAFTA to USMCA. In A Covarrubias-V, S.M. Ramírez-Perez (eds). *New Frontiers of the Automobile Industry* (pp. 323-348). Cham, Switzerland: Palgrave Macmillan.
- Curran, L., Nadvi, K., & Campling, L. (2019) 'The influence of tariff regimes on global production networks (GPNs).' *Journal of Economic Geography*. 19(4), 873-895.
- Dallas, M.P., Ponte, S., & Sturgeon, T.J. (2019). 'Power in global value chains.' *Review of International Political Economy*, 26(4), 666-694.
- Doner, R.F. (1991). *Driving a bargain: automobile industrialization and Japanese Firms in Southeast Asia* (Berkeley, CA: University of California Press).
- Doner, R.F. (2009). *The Politics of Uneven Development: Thailand's Economic Growth in Comparative Perspective* (Cambridge, England: Cambridge University Press).
- Doner, R.F., Noble, G.W., & Ravenhill, J. (2021) *The Political Economy of Automotive Industrialization in East Asia*. New York, NY: Oxford University Press.
- Estevadeordal, A., & Suominen, K. (2005) Mapping and measuring rules of origin around the world. In O. Cadot, A. Estevadeordal, A. Suwa-Eisenmann, AS Eisenmann, T Verdier T (eds). *The origin of goods: Rules of origin in regional trade agreements*. Oxford, England: Oxford University Press.

- Esteveordal, A., Harris, J., & Suominen, K. (2008). Harmonizing preferential rules of origin regimes around the world. In: R. Baldwin and P. Low (eds.) *Multilateralizing regionalism. Challenges for the global trading system*. p. 262-363. Cambridge, UK: Cambridge University Press.
- Freund, C., & Ornelas, E. (2010) 'Regional trade agreements.' *Annual Review of Economics*. 2(1), 139-166.
- Frieden, J.A. (1999). Actors and preferences in international relations. In: D.A. Lake and R. Powell (eds.) *Strategic Choice and International Relations*, pp. 39-76. Princeton, NJ: Princeton University Press.
- Gereffi, G. (2014) Global value chains in a post-Washington Consensus world. *Review of International Political Economy*. 21(1), 9-37.
- Greenaway, D., & Kneller, R. (2007). Firm heterogeneity, exporting, and foreign direct investment. *The Economic Journal*, 117(517), F134-F161.
- Hiscox, M.J., (2001). Class versus Industry Cleavages: inter-industry Factor Mobility and the Politics of Trade. *International Organization*, 55(1), 1-46.
- Horner, R., & Nadvi, K. (2018) Global value chains and the rise of the Global South: unpacking twenty-first-century polycentric trade. *Global Networks*. 18(2), 207-237.
- Kim, I. S. (2017). Political cleavages within industry: Firm-level lobbying for trade liberalization. *American Political Science Review*, 111(1), 1-20.
- Kim, I. S., Milner, H. V., Bernauer, T., Osgood, I., Spilker, G., & Tingley, D. (2019). Firms and global value chains: Identifying firms' multidimensional trade preferences. *International Studies Quarterly*. 63(1), 153-67.
- Kim, I.S., & Osgood, I. (2019). Firms in trade and trade politics. *Annual Review of Political Science*, 22, 399-417.
- Kimura, F. (2006) The development of fragmentation in East Asia and its implications for FTAs. In: D. Hiratsuka (ed.). *East Asia's De Facto Economic Integration*. Basingstoke, England: Palgrave Macmillan.
- Madeira, M.A. (2016) 'New trade, new politics: intra-industry trade and domestic political coalitions.' *Review of International Political Economy*. 23(4), 677-711.
- Manger, M.S. (2005). 'Competition and Bilateralism in Trade Policy: the Case of Japan's Free Trade Agreements.' *Review of International Political Economy*, 12(4), 804-828.
- Manger, M.S. (2009). *Investing in protection: The Politics of Preferential Trade Agreements between North and South*. Cambridge, England: Cambridge University Press.
- Manger, M.S. (2012). 'Vertical Trade Specialization and the Formation of North-South PTAs.' *World Politics*, 64(4), 622-658.
- Melitz, M.J. (2003) The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity. *Econometrica* 71 (6), 1695-1725.
- Milner, H.V. (1999). 'The political economy of international trade.' *Annual Review of Political Science*. 2(1), 91-114.
- Nag, B., (2009). 'Auto-component Industry in Asia: Structure, Trade Patterns and Potential for Further Upgrading.' *International Journal of Technological Learning, Innovation and Development*, 2(1-2), 119-137.

- Natsuda, K., Thoburn, J. (2014) How much policy space still exists under the WTO? A comparative study of the automotive industry in Thailand and Malaysia. *Review of International Political Economy*. 21(6), 1346-1377.
- Natsuda, K., & Thoburn, J. (2021) *Automotive Industrialisation: Industrial Policy and Development in Southeast Asia*. Abingdon, England: Routledge.
- Ornelas, E. (2005) 'Rent destruction and the political viability of free trade agreements.' *The Quarterly Journal of Economics*. 120(4), 1475-1506.
- Osgood, I. (2017). 'Industrial fragmentation over trade: the role of variation in global engagement.' *International Studies Quarterly*, 61(3), 642-659.
- Osgood, I. (2018). Globalizing the supply chain: Firm and industrial support for US trade agreements. *International Organization*, 72(2), 455-484.
- Ponte, S., & Sturgeon, T., (2014). Explaining Governance in Global Value Chains: A Modular Theory-Building Effort. *Review of International Political Economy*, 21(1), 195-223.
- Plouffe, M. (2017) Firm heterogeneity and trade-policy stances evidence from a survey of Japanese producers. *Business and Politics*. 19(1), 1-40.
- Postigo, A. (2014). Liberalisation and Protection under Overlapping Free Trade Agreements: Dynamic Interplay between Free Trade Agreements and Investment. *The World Economy*, 37(11), 1612-1633.
- Postigo, A. (2016). 'Institutional Spillovers from the Negotiation and Formulation of East Asian Free Trade Agreements.' *Review of International Political Economy*, 23(3), 379-417.
- Postigo, A. (2022). Utilization of GSP schemes as a political and economic determinant of the utilization of North-South FTAs. *Review of International Political Economy*, 29(5), 1420-1447.
- Ravenhill, J. (2008) Fighting irrelevance: an economic community 'with ASEAN characteristics. *The Pacific Review*, 21(4), 469-488.
- Rogowski, R. (1987). Political Cleavages and Changing Exposure to Trade. *American Political Science Review*. 81(4), 1121-1137.
- Staples, A. (2008) *Responses to Regionalism in East Asia: Japanese Production Networks in the Automotive Sector*. New York, NY: Palgrave MacMillan.
- Sturgeon, T., van Biesebroeck, J., & Gereffi, G. (2008) 'Value chains, networks and clusters. Reframing the global automotive industry.' *Journal of Economic Geography*. 8(3), 297-321.
- Sturgeon, T., Memedović, O., van Biesebroeck, J., & Gereffi, G. (2009) 'Globalisation of the automotive industry: main features and trends.' *International Journal of Technological Learning, Innovation and Development*. 2:7-24.
- Sturgeon, T.J., & Memedović, O., (2011). *Mapping global value chains: Intermediate goods trade and structural change in the world economy*. Geneva: Switzerland. United Nations Industrial Development Organization.
- United Nations Conference on Trade and Development (UNCTAD) (2013). *World investment report 2013: Global value chains: Investment and trade for development*. Geneva, Switzerland: United Nations, UNCTAD.
- Yeung, H. W. C. (2001) 'Organising regional production networks in Southeast Asia: implications for production fragmentation, trade, and rules of origin.' *Journal of Economic Geography*. 1(3), 299-321.
- Yoshimatsu, H. (1999) 'The state, MNCs, and the car industry in ASEAN.' *Journal of Contemporary Asia*. 29(4), 495-515.

Yoshimitsu, H., (2002). Preferences, Interests and Regional Integration: the Development of the ASEAN Industrial Cooperation Arrangement. *Review of International Political Economy*, (9), 123-49.

Zeng, K., Sebold, K., & Lu, Y. (2020). Global value chains and corporate lobbying for trade liberalization. *The Review of International Organizations*, 15(2), 409-443.