

Multinational firms and the impact of trade disputes on investment decisions*

Yoo Sun Jung¹, Erica Owen², and Yohan Park³

¹*University College Dublin*

²*University of Pittsburgh*

³*Trinity College Dublin*

May 1, 2023

Abstract

The rise of global value chains (GVCs) is reshaping the political economy of trade in several ways, including the politics of trade disputes. Trade disputes affect access to markets and suppliers in ways that are likely to influence investment decisions. Indeed, recent work examines how multinationals influence the initiation and duration of disputes. Yet we know little about how multinationals respond to trade frictions in a world of GVCs. We offer a theory of international trade and investment that interrelates trade, FDI, global production, and GVC participation. We argue that trade disputes can actually lead to greater inward FDI in respondent countries because a (resolved) trade dispute signals lower barriers to trade. This hurts domestic producers in the respondent and creates opportunities for multinationals in the complainant country. However, we expect that the effect of trade disputes will depend on how and to what extent the industry integrates into GVCs. In particular, we expect the impact of a dispute to be greater where there are more backward linkages, that is, in industries that rely on imported inputs. We use data on dyad-industry level greenfield FDI from FDI markets between 2003 and 2017 to test our hypotheses.

*For feedback, we thank participants of 2021 IPES, 2022 ISA, and 2022 Penn State-Pitt IR conference, 2022 APSA, and seminar participants at John Hopkins-SAIS. We also thank Steve Weymouth and Boliang Zhu. We are grateful to Krzysztof Pelc for generously sharing data.

1 Introduction

The rise of global value chains (GVCs) is reshaping the political economy of trade (e.g. Baccini, Dür, and Elsig 2018; Jensen, Quinn, and Weymouth 2015). This includes the politics of trade disputes. Indeed, recent work examines how firms, and particularly multinationals influence the initiation and duration of disputes (e.g. Brutger Forthcoming; Kim and Spilker 2019; Ryu and Stone 2018; Yildirim et al. 2018a), as well as compliance with rulings (e.g. Yildirim et al. 2018b). Most work has focused on how MNCs influence trade, including their role in shaping WTO disputes. But relatively little attention has been paid to how trade frictions and disputes affect subsequent MNC investment behavior.

Trade disputes affect access to markets and suppliers in ways that are likely to affect investment decisions. Ongoing trade disputes may generate uncertainty for firms (e.g. Handley and Limão 2022), which could lead to reduced incentives to invest. But the resolution of a dispute is likely to reduce the costs of trade due to the removal of barriers. In a world of global value chains, the relationship between trade and FDI is more complex than in the past as we discuss further in the next section. Yet we do not know how multinationals respond to trade frictions in a world of GVCs.

We offer a theory of international trade and investment that interrelates trade, FDI, global production, and GVC participation. We argue that a resolved dispute will lead to an increase in FDI into the affected industry of the respondent country. We further expect that the effect of trade disputes on FDI will depend on how and to what extent the industry in the respondent host country integrates into global value chains. In particular, we expect that FDI will increase when the industry impacted by the dispute is characterized by greater backward GVC linkages.

As one example of this type of dynamic, consider the WTO disputes filed by the US, the European Communities and Canada in 2006, which challenged China’s imposition of a 25% additional charge on imported automobile parts and raised concerns about the impact on foreign investment.¹ The case, which included seven third-parties, was ultimately resolved through Appellate Body procedures in 2008. The following year, General Motors (GM)—the U.S. automotive

¹DS 339, DS 340, and DS 342 “China — Measures Affecting Imports of Automobile Parts” were brought by the European Communities, US, and Canada against China’s import measures for auto parts, respectively, in March and April of 2006.

manufacturer–declared its plan to construct new production facilities in Changchun city as well as four other facilities, including Research and Development (R&D) centers and headquarters in Shanghai.² GM also declared in July 2009 that it would be shifting its global operations from Detroit to Shanghai (Tang 2009).

If this was traditional tariff-jumping horizontal FDI, we would expect FDI to decrease in the wake of lower barriers. But the removal of barriers is a trade liberalization opportunity that often benefits multinational firms (e.g. Baccini, Pinto, and Weymouth 2017). Indeed, other U.S.-based auto-parts manufacturers also decided to invest in the years following the resolution of the dispute. For example, Tenneco disclosed its plan to set up a manufacturing unit for emission control in Guangzhou, with the aim of supporting its new business ventures with Nissan in 2009.³ In 2011, TRW Automotive, a US-based global automotive supplier, announced investments in several car manufacturing facilities across various Chinese cities. The company’s plan involved setting up new plants such as an occupant safety systems and braking facility in Wuhan, and an aftermarket friction plant in Qingdao. Moreover, TRW intended to expand its electrically powered steering and electronics plant in Anting, its braking joint venture in Nanjing, its occupant safety joint venture in Chengdu, and its fasteners plant in Ningbo.⁴

We use data on directed dyad-industry level greenfield FDI from FDI markets between 2003 and 2017 to test our hypotheses. We examine FDI in to less-developed host countries. Our estimation sample includes 61 home countries, 124 less-developed host countries and 12 industries. We use a measure of country-industry GVC integration from the Eora UNCTAD Global Supply Chain Database. Our findings suggest that WTO trade disputes will lead to more FDI in the affected industries of the respondent host-country. The magnitude of the effects will increase as respondent industries rely more on backward linkages in the global economy. We further investigate the differences between complainant and third parties to the dispute to account for whether there are

²<http://www.fdimarkets.com>.

³Aftermarket News, “Tenneco Expands in China with New Emission Control Joint Venture in Beijing: Company announces first emission control manufacturing presence in Guangzhou,” June 8, 2009. <https://www.aftermarketnews.com/>

⁴JustAuto News, “FRANKFURT SHOW: TRW outlines growth strategy,” September 13, 2011. <https://www.just-auto.com/news/>.

differences between different home countries. We also include a monadic analysis to determine whether there is a general increase in FDI regardless of home-country status vis-a-vis the dispute. While we find some nuances, in general, across a number of specifications, including estimation of static and dynamic PPML models and Panel Match, we continue to find support for our main argument that trade disputes can lead to greater FDI in industries, particularly those with more backward linkages.

The rest of the paper proceeds as follows. In the next section, we review the literature linking multinational firms to the political economy of trade. We then present our theory. The fourth section discusses our data and estimation strategy. We present results for the dyadic analysis (first via PPML and then Panel Match). We then examine additional implications and discuss the robustness of our findings, before concluding.

2 Multinational firms and trade

Trade policy influences how multinational firms engage in global production. The conventional wisdom views vertical FDI as a complement to trade and horizontal FDI as a substitute for trade. Multinationals engage in vertical FDI to access cheaper inputs abroad. As a result, vertical FDI is likely to generate imports back to the home country (final and/or intermediate). In contrast, firms engage in horizontal FDI as means of accessing the host market and avoiding trade barriers. Thus, high trade barriers are associated with more horizontal FDI and lower trade barriers reduce the incentive to engage in this type of investment. Thus vertical FDI is trade-promoting and horizontal is trade-replacing. Thus, conventional wisdom would indicate that horizontal FDI, also known as tariff jumping FDI, (e.g. Milner and Yoffie 1989) decrease when a WTO dispute is resolved favor of the complainant, and vertical FDI would presumably increase This is because lower barriers reduce the costs of market access, and make inputs cheaper, respectively.

Yet the world of global production today is more complicated. Global value chains are the fragmentation of production activities across a number of different borders. Activity can take place within or outside the boundaries of the firm. Stages of production are split across at least two countries. Thus, foreign value added can be contributed by raw materials, intermediate inputs

or tasks (Antràs 2020). Indeed, trade and FDI together are key elements of cross-border production sharing. Thus, GVCs encompass more activity than just vertical FDI, because GVCs include arms-length contracting and value-added in many different countries. Trade and trade policy become increasingly important as production becomes more complex, with inputs crossing multiple borders. For instance, “[f]rom 1995 to 2008, the rapid expansion in GVCs led to surges in both participation rates, with the trade-based rate rising from 35.2% to 46.1% and the production-based rate rising from 9.6% to 14.2%,” with a bounce back to fairly steady levels since 2010 (Global Value Chain Development Report 2021: Beyond Production).⁵ In a world of GVCs, protectionism even more costly because it increases costs of final goods and also intermediate goods (Antràs 2020). We know that large productive firms are important players in this economic activity. Indeed, “[g]lobally, firms that both import and export (an indication of a GVC firm) comprise 15% of all firms, but they capture 80% of total trade” (World Bank 2020).

For these reasons, trade is increasingly viewed as a complement to, rather than substitute for FDI. As a result, it is necessary to consider the political economy of global production, rather than trade or FDI separately (Pandya 2016). Academic research in this area falls into roughly two groups. In the first group, scholars consider how the impact of FDI and multinational firm trade activity has influenced trade policy outcomes. For instance, Jensen, Quinn, and Weymouth (2015) argue that vertical FDI reduces the likelihood of trade disputes—specifically anti-dumping investigations. In the face of lower tariffs and greater imports, the use of temporary trade barriers has declined because of multinational firms engaged in trade: firm level heterogeneity in engagement in global supply chains affects preferences over trade policy. In related work, Baccini, Dür, and Elsig (2018) argue GVCs lead to more liberalization on intermediate goods, while Blanchard, Bown, and Johnson (2017) suggest that tariffs will be lower and TTBs fewer where GVCs are stronger. Zeng, Sebold, and Lu (2020) argue that industries with higher foreign content in exports will be more likely to support trade liberalization: businesses whose supply chains will be disrupted by barriers also support reducing trade barriers.⁶ “In the modern global economy, final goods are in-

⁵https://www.wto.org/english/res_e/booksp_e/00_gvc_dev_report_2021_e.pdf

⁶See also Anderer, Dür, and Lechner (2020) for evidence that greater multinational activity in sectors leads to greater trade liberalization.

creasingly made by combining foreign and domestic inputs via supply networks that traverse both country borders and the traditional boundaries of the firm” (Blanchard, Bown, and Johnson 2017, 2).

Of particular relevance to this paper, several recent works examine the impact of MNCs on disputes. Ryu and Stone (2018) find that large global firms lobby to initiate trade disputes and to keep pushing disputes forward. In a similar vein, Brutger (Forthcoming) finds that in the U.S. private firms play an important role in WTO litigation, through the contribution of information and material resources to offset the costs of litigation. Looking at the role of global value chains explicitly, Yildirim et al. (2018a) consider how GVC integration, measured by trade in intermediates, vertical intra-industry trade and MNC activities, impacts the initiation of disputes at the WTO. Disputes are more likely when GVC integration is higher. Yildirim et al. (2018b) find that when GVC integration is high, respondent states are more likely to liberalize trade in response to a dispute initiation. In contrast, Kim and Spilker (2019) find that US anti-dumping cases are no more likely to lead to WTO disputes if the case involves GVC participation.

A second body of work considers how barriers to trade influence the production decisions of firms. MNCs benefit from trade liberalization. Baccini, Pinto, and Weymouth (2017) find that preferential tariff liberalization leads to greater sales by affiliates of multinational firms. “Barriers to trade restrict producers’ opportunities to exploit country differences in the costs of factors of production, leading firms to lobby for liberalization with countries from which they source” (Baccini, Pinto, and Weymouth 2017, fn 20). Research by Büthe and Milner (2014) suggests that preferential trade agreements can facilitate FDI, through the mechanism is the role of investment protections rather than liberalization itself.

At the same time, the rules governing international trade and FDI have become more legalized. We know that investment disputes affect the decisions of firms (e.g. Abdi 2007; Blake and Moschieri 2017; Jung, Owen, and Shim 2021; Wellhausen 2015). GVCs also influence the initiation of disputes (e.g. Yildirim et al. 2018a) and the resolution of disputes (Yildirim et al. 2018b). But we do not know whether and how trade disputes influence greenfield FDI.

3 Theory

In order to understand the impact of disputes on the behavior of firms, we must consider the impact of the dispute on costs of trade and market access, and what that means for multinational firms' strategy. In this section, we describe our theory of how trade disputes can affect the investment decisions of multinational firms. Our argument builds on the understanding that WTO disputes are typically resolved in favor of the complainant, and thus will lead to the removal of barriers (e.g. Chaudoin, Kucik, and Pelc 2016; Kucik and Pelc 2016b). This removal of barriers provides an opportunity for MNCs to enter the affected industry in the respondent country. As a consequence, a resolved dispute can lead to an increase in FDI. Yet, as noted above, in GVCs, production activity crosses borders. It is therefore important to consider how the position of an industry in the host can influence multinationals' calculations. We argue that a reduction in trade barriers will have a larger effect in industries that utilize more imported inputs aka backward linkages. Finally, we consider how the incentives of multinational firms may differ depending on whether the MNC is located in the main complainant or in a third party home country.

3.1 Removal of discriminatory measures

We expect that resolved disputes will lead to lower barriers to trade for the following reasons. First, cases initiated at the WTO usually demand liberalization or other termination of measures that harm the complainants' producers in some way (e.g. Guzman and Simmons 2005). Second, disputes are typically resolved in favor of the complainant (Chaudoin, Kucik, and Pelc 2016, 296). Indeed, governments are strategic about which perceived illegal measures they will initiate a case over; they have incentives to initiate cases they are likely to win. Thus, the removal of discriminatory measures is the main outcome of a dispute.

The removal of barriers harms less competitive domestic firms in the respondent country that relied on them. Per Kucik and Pelc (2016b), domestic firms in the respondent benefit from protection that keeps out foreign competition. As such, "adverse rulings require the respondent to remove trade restrictions such as tariffs, quotas, and technical barriers, prompting an increase in imports" (Peritz 2020, p. 221). While there is not 100 percent compliance with WTO dispute rulings (e.g. Yildirim et al. 2018b), Kucik and Pelc (2016a) argue that the market bets on reforms that

are likely to happen in an analysis of financial spillovers. On the other hand, Peritz (2020), finds little evidence of systematic compliance with disputes based on a new estimate of compliance.

How do the above dynamics affect the incentives of multinational firms to invest? In general, the expectation is that a settled dispute should make trade more profitable/increase trade, as suggested by Chaudoin, Kucik, and Pelc (2016). “The dispute settlement understanding is the principal tool that member countries use to open trade partners’ unfairly protected markets. As such, an effective dispute settlement understanding ought to lead to less protection of, and increased access to, respondent markets” (Chaudoin, Kucik, and Pelc 2016, p. 294).⁷ In other words, a dispute will lower barriers to trade in the respondent, which will thus increase imports.⁸

As such, the increase in market access due to lower barriers is likely to generate investment as multinationals take advantage of the new opportunity (Baccini, Pinto, and Weymouth 2017).⁹ Indeed, Jung, Owen, and Shim (2021) argue that multinational firms are strategic actors who, under certain conditions, will invest preemptively to take advantage of new market opportunities they find support for this in the case of investment disputes. We suggest that similar to an investment dispute, a WTO dispute represents a market opportunity to take advantage of lower barriers to trade (which will likely harm competitors who previously benefited from the discriminatory measures). This should be associated with an increase in FDI in the affected sector, from home countries that participate in the dispute.¹⁰

H1: Resolved disputes lead to an increase in FDI in the affected industry of respondent.

We have argued that resolved disputes will lead to greater FDI because of the removal of barriers. A different possibility is that trade disputes could lead to a reduction in FDI. Several mechanisms could contribute to this relationship. A decline in the costs of trade may reduce incentives

⁷Chaudoin, Kucik, and Pelc (2016) look at whether resolved disputes lead to more aggregate.

⁸Note that this describes “standard” disputes over barriers to trade. As we explore further below, some particular types of cases, specifically anti-dumping, affect firms in the home country market more directly.

⁹In the conclusion, we discuss how this argument might apply to trade liberalization more broadly.

¹⁰Later in the section, we discuss whether there may be different investment patterns based on the role of home countries in the case

for horizontal FDI, including tariff-jumping FDI (e.g. Blonigen and Feenstra). Alternatively, trade disputes can also influence investment if they generate risk or uncertainty. For instance, (ongoing) disputes at ICSID can create uncertainty about the extent to which the host government respects FDI (Allee and Peinhardt 2011, 423). If disputes increase risk and/or uncertainty, multinationals may be more hesitant to invest. This is consistent with much of the work on trade wars and on trade policy more generally (Handley and Limão 2022). Yet in a world of global production, easier trade also facilitates FDI. Thus if a dispute leads to a liberalizing change in policy, we should expect to see an overall net positive effect on FDI.¹¹

3.2 GVC position

Yet when we are looking at the effect of disputes on the impact on FDI, we must also consider the role of global production networks. In particular, it is not only the size and share of GVC flows that may matter, but also the positioning of the affected industry within global value chains. GVC activity is characterized by production activity that crosses multiple borders. Of course, trade in raw materials and intermediate goods is not new (Antràs 2020) and GVCs do include trade in goods and services as intermediate inputs. But what is unique about GVCs is the consideration of foreign value-added content.

Scholars have conceptualized GVCs in a few key ways, from a more straightforward GVC measure based on simple imports and exports of intermediate inputs (e.g. Brumm et al. 2019; Timmer et al. 2015) to more intricate GVC measures such as the ratio of value added to gross exports (VAX ratio) (e.g. Johnson and Noguera 2012) and upstreamness (or downstreamness) which measures the relative position of an industry in the global production chain (e.g. Alfaro et al. 2019; Antràs and Chor 2013; Antràs et al. 2012). A growing number of studies in recent years have utilized global input-output tables to trace the Value-added in Global Value Chains across multiple stages of GVC production (e.g. Koopman, et al. 2014; Wang et al. 2013).

We conceptualize and measure GVCs based on the foreign value added used in exports, a.k.a. backward linkages. Backward linkages reflect the usage of foreign intermediates in export pro-

¹¹In the conclusion, we discuss the potential impact on ongoing trade disputes as distinct from the role of resolved disputes.

duction, revealing the extent to which international production networks underpin a country's or sector's export activities. In contrast to backward linkages, forward linkages measure exported value added incorporated in the exports of third countries. For example, if South Korea exports display panels to China, which then uses them to assemble iPhones for export to the US, South Korea's GVC participation is considered forward since it involves the supply of domestically produced inputs to be used in the production of goods for export to a third country.

Backward linkages enable us to trace the primary factor inputs embodied in the final products to its original sources. If a country-sector's exports include value added previously imported from abroad, then the intermediates used in exports are from the previous stage. Thus, its GVC participation is considered backward. In the earlier example, if China exports iPhones to the US that are assembled using imported parts, then its participation in the global value chain is considered backward as it involves the use of foreign intermediates in the production of its exports. Hence a focus on backward linkages tells us the extent to which a country-sector relies on imported inputs. The higher the backward linkage of a country sector is, the more it relies on imported parts and components from other countries. Thus, we argue that the heterogeneous effect of trade disputes on FDI depends on the reliance on imported inputs: where backward linkages are greater, the greater the effect of decrease in barriers on FDI.

Fundamental to our argument is that resolved trade disputes lead to lower barriers on imports. The theoretical element of GVCs that should affect firms' decision-making in this context is the amount of imported inputs. Thus, we argue that the extent to which industry relies on backward linkages is key to understanding heterogeneity of the effect. The greater the reliance on imported inputs, the greater the effect of decrease in barriers. This is because the benefit of a lower priced import will be compounded down the value chain. We thus test the following hypothesis for resolved disputes:

H2: Disputes will lead to more FDI in respondent industries with greater backward linkages.

3.3 Home country considerations

In addition to the timing of disputes and the GVC position of the respondent, there may be differences in how firms in different home countries respond. On balance, the removal of discriminatory

barriers will increase access to all firms in all countries. We examine this implication of our argument using a monadic analysis. However, we might expect that firms headquartered in the complainant country are particularly likely to invest for two reasons. The first is that there are strong economic links between the countries. A dispute does not occur where there is no (potential) trade. Second, we know that large powerful firms influence the onset of disputes because they care about the issue (e.g. Brutger Forthcoming). Thus, we distinguish between complainant and third-party home countries in our dyadic analysis.¹²

H3-A: Trade disputes will lead to more FDI in respondent industries with greater backward linkages in the complainant country.

H3-B: Dispute will lead to more FDI in respondent industries with greater backward linkages in third-party countries.

4 Data and model specification

We construct a dataset in which the unit of observation is either the total number of greenfield FDI projects into the host at the industry level. We primarily test our hypotheses using a dyadic specification and examine the implications at the monadic level in a robustness check. Our analysis covers the period from 2003 to 2017 and FDI projects between 61 home and 124 host countries across 12 industries classified by the two- or three- digit North American Industry Classification System (NAICS) 2017 codes.¹³ To do this, we combine data on trade disputes from Kucik and Pelc (2016b) (2020 update) with data from *fDi Markets*. As noted, we limit our sample to developing and emerging markets, which we define as all countries that are not classified as advanced economies by the IMF. This is important because as shown by Blonigen and Wang (2005) and others, determinants of FDI into those sets of countries may differ.

¹²As noted by Kucik and Pelc (2016b), when there are no third parties, the complainant benefits more in terms of increased trade flows. But when there are third parties, there is less discrimination in the benefit. Future iterations should consider the number of third parties as a robustness check.

¹³See appendix for list of home and host countries and industry classifications.

4.1 Measurement

Dependent variable. Our dependent variable is the number of greenfield FDI projects announced between a home country i and a host country j for a given industry k in a given year t . The greenfield FDI data come from the *fDi Markets* database. The *fDi Markets* collects the project-level data on greenfield investment from various sources such as *Financial Times* news wires, media sources, industry organizations and investment agencies, and market research and publication companies.¹⁴ The FDI data contain various information on each investment project, including the amount of capital flows, the number of jobs that the project will create, regions where a new facility is built, and industrial information on the project. The data cover a total of 307,025 cross-border greenfield investment projects across all sectors and about 180 home and 200 host countries from 2003 to 2020.¹⁵

While the original data cover the investment projects up to 2020, we limit our sample to the period between 2003 and 2017 because the GVC measures, one of our key independent variables, end in 2016. Further, because 61 home countries cover 98 percent of the total number of investment projects, we limit the sample to these 61 countries and exclude other countries for the sake of the efficiency of the estimation.¹⁶ The sample includes all host countries that have ever experienced greenfield investments during the sample period. The project-level data are aggregated to the industry-level, using the two- or three- digit NAICS 2017 codes. We focus on goods-producing industries where most WTO disputes have occurred, including agriculture, mining, construction, and manufacturing. Thus our sample includes 12 industries, meaning that each home-host directed dyad has 12 industries in a given year.

Measuring disputes. Our first independent variable is the presence of a resolved dispute between a home and host countries in a given industry. In our main specification, we generate a dichotomous variable coded 1 if there was any trade dispute settled between the home i and host

¹⁴For more information, see <http://www.fdimarkets.com>.

¹⁵The data also include joint ventures which are involved in a new physical operation, but exclude cross-border mergers and acquisitions (M&As).

¹⁶The number of projects invested by these 61 countries during the sample period (2003 - 2017) is 237,734.

(respondent) j in the sector k in the last five years (from $t - 5$ to $t - 1$) and 0 otherwise. The data on products involved in each WTO dispute come from Kucik and Pelc (2016b). They identify the affected products directly listed in WTO dispute at various levels of Harmonized System Codes.¹⁷ We matched all Harmonized System products with the four-digit NAICS industry of a given disputed product to link a given disputed product to the four-digit NAICS sectors that produce the goods (HS 2-, 4-, 6-digit codes). The concordance between HS and NAICS¹⁸ allows us to capture the affected industry at the level comparable across firms with different levels of engagement in FDI. Then we aggregate the affected product to the two- or three- digit NAICS industries.

For our empirical analysis, we exclude dispute cases abandoned to test the impact of trade disputes on FDI flows. Approximately one-third of WTO disputes are abandoned by complainants, remained “in consultations” for years, never to be settled or proceed to a panel.¹⁹ Thus, we include cases which end up with a mutually agreed solution (MAS), ruling (a.k.a. panel report), or withdrawal.

As an alternative measure of resolved disputes, we consider the average pro-complainant ruling ratio in the last five years’ disputes between a home country i and a host country j in a given industry k . Using the data on panel rulings updated by Pauwelyn and Pelc (2022), we generate a continuous variable that captures the average proportion of panel rulings that favored complainants in all trade disputes for the last five years between a home and host country in a given sector.²⁰

¹⁷For example, the data use either 2- (e.g. DS348 on textile and footwear products), 4- (e.g. DS464 on residential washers), or 6-digit (e.g. DS480 on biodiesel) HS codes.

¹⁸We use the open-source software `concordance: Product Concordance` to find concordances between HS codes and NAICS codes.<https://CRAN.R-project.org/package=concordance>.

¹⁹For example, the Philippines requested consultations with the U.S. regarding import prohibition of certain shrimp and shrimp products imposed by the U.S. (DS61) on October 25th, 1996. On May 27th, 1998, India requested consultations with the E.C. with respect to the restrictions on certain import duties on rice (DS134). These cases have remained with the status “in consultations” since then.

²⁰First, we create a dispute-level measure of how the ruling was in favor of the complainant by dividing the number of panels complainants won by the number of panels in which claims were ruled on in each dispute. We then aggregate the dispute-level measure into the dyad-industry level

In further specifications, we account for other factors that may influence the effect of disputes on FDI. In particular, we separate out disputes between the host and complainant or host and third party (H3A and H3B). For example, we control for the presence of a dispute where a home country participated as a third party, rather than a complainant, against a host respondent country in the last five years. We generate two dichotomous variables coded 1 if a home country i is participated in a resolved dispute as a third party against a host country j in a given sector k in the last five years. In contrast to these static measures, we also estimate models that all the effect of the dispute to vary based on time since resolution (from $t - 5$ to $t - 1$).

Measuring Backward GVC participation. In addition to the dispute variables, another key independent variable is the degree to which a country-sector relies on imported inputs. Our measure of GVC participation is the backward linkage measured as the share of foreign value-added content in a country j 's exports for sector k and year t . Take, for example, American engines in Chinese car exports to Japan; this would contribute to the backward GVC participation of China's automotive industry. As the Chinese automotive industry relies more on imported intermediate auto parts, the stronger the backward linkages in its automotive sector, suggesting a higher likelihood of active engagement in downstream production within GVCs. To develop the backward GVC measure, we utilize Input-Output data from UNCTAD-Eora Global Value Chain (GVC) Database (Lenzen et al. 2012, 2013).²¹

We include a number of control variables that affect multinationals' FDI decisions. Our models control for home-host dyadic features, such as a binary variable for bilateral investment treaties (BITs) and for the presence of preferential trade agreements (PTAs) with investment provisions, respectively.²² We also account for home- and host-specific macroeconomic factors such as GDP per capita (logged), GDP growth rate, and population (logged). These data are retrieved from the World Bank's World Development Indicators (WDI) database. Additionally, we control

by taking an average value.

²¹Available at <https://worldmrio.com/unctadgvc/>.

²²The data on BITs come from the United Nations Conference on Trade and Development (UNCTAD) Investment Policy Hub (available at <https://investmentpolicyhub.unctad.org/IIA/>) and the data on PTAs come from the Design of Trade Agreements (DESTA) database (available at <https://www.designoftradeagreements.org>).

for the regime type of a host country. Democracies may provide greater protection to foreign assets through political constraints on arbitrary policy changes, thereby restraining government opportunism (e.g. Henisz 2000a,b; Jensen 2003; Li, Owen, and Mitchell 2018; Li and Resnick 2003). We use the polity2 scores from the Polity IV project. All of these control variables are lagged one year to reduce concerns about reverse causality.

Finally, we control for the effect of the issues over which disputes arise. Our models include several binary variables for four highly controversial legal issue areas of the WTO: antidumping, agriculture, subsidies and countervailing duties, and safeguards. It is important to account for this because the effects could be different. For instance, anti-dumping cases focus on the direct impact of respondent country firms on the home market (rather than access to the foreign market of the respondent). Safeguard disputes may be very narrow in scope. In robustness checks, we examine whether there is variation in the types of disputes on the amount of greenfield FDI.

4.2 Specification

We primarily test our argument in the dyadic context. First, we consider Hypotheses 1 and 2, as laid out in Equation 1, where $WTO\ dispute_{ijk,t-1}$ is equal to one for any home country i involved in a dispute with the host (i.e. either as the complainant or third party). In this specification, the dependent variable is the number of projects from home (i) to host (j). X is a set of home and host controls; α_{ij} are dyad-fixed effects and γ_t are year-fixed effects. In robustness specifications, we look at the pro-complainant ruling ratio as an alternative measure of disputes.

In a non-interactive model, we expect β_1 to be positive, as suggested by Hypothesis 1. Looking at equation 1, we expect the coefficient β_3 to be positive as suggested by Hypothesis 2: the marginal effect of a dispute on FDI is increasing in the level of backward linkages.

$$FDI_{ijkt} = \exp(\beta_0 + \beta_1 WTOdispute_{ijk,t-1} + \beta_2 Position_{jk,t-1} + \beta_3 WTOdispute_{ijk,t-1} * Position_{jk,t-1} + \beta X + \alpha_{ij} + \gamma_t) \quad (1)$$

In Equation 2, we lay out the specification for testing Hypotheses 3A and 3B, which consider the role of FDI from complainant and third-party home countries separately. We expect the coeffi-

cients β_3 and β_5 to be positive.

$$\begin{aligned}
FDI_{ijkt} = & \exp(\beta_0 + \beta_1 WTO\ dispute\ main_{ijk,t-1} + \beta_2 Position_{jk,t-1} \\
& + \beta_3 WTO\ dispute\ main_{ijk,t-1} * Position_{jk,t-1} \\
& + \beta_4 WTO\ dispute\ third_{ijk,t-1} + \\
& + \beta_5 WTO\ dispute\ third_{ijk,t-1} * Position_{jk,t-1} + \beta \mathbf{X} + \alpha_{ij} + \gamma_t)
\end{aligned}$$

As our main estimation, we employ the Poisson Pseudo-Maximum Likelihood (PPML) estimator because our dependent variable is the number of FDI projects. Because the PPML estimator is robust to overdispersion, heteroskedastic variance of errors, and the challenges of dealing with a dependent variable with many zero values, we can expect more consistent estimates compared to other estimators, such as log-linear models (Silva and Tenreyro 2006, 2011). All models include country dyad-fixed effects and year-fixed effects, with standard errors clustered at the dyad-industry level.

However, using regression analysis with fixed effects may not appropriately address the possibility of causal feedback between the treatment and time-varying covariates, and it may not account for carryover effects, potentially leading to biased estimates (Blackwell and Glynn 2018; Imai and Kim 2019). It is especially crucial to consider the possibility that past treatments affect future outcomes in our study because past disputes may be closely related to current disputes and foreign investment decisions. To address these concerns, we utilize a matching method for time-series cross-sectional (TSCS) data developed by Imai, Kim, and Wang (2021). This technique adjusts for treatment and covariate histories over a specified time span before the treatment, resulting in more reliable inferences about short-term and long-term treatment effects.

5 Dyadic Results

In this section, we first we show the results of the PPML regression, and then we present the results of matching analysis for TSCS data (i.e. Panel Match).

5.1 PPML regression

Table 1 reports the results of the dyadic level regression of the number of FDI projects on resolved disputes. Model 1 examines the unconditional effect of resolved disputes on the number of FDI projects. In Model 1, disputes are coded as one according to the coding scheme above if the home country i was involved in a dispute with host j in industry k in any capacity (either as complainant or third party). The coefficient on a (resolved) dispute is positive and statistically different from zero, suggesting support for Hypothesis 1.

To examine whether the effect of resolved disputes is dependent on the industry-specific GVC backward linkages, we estimate an interaction effect between resolved disputes and the level of GVC backward linkages in Model 3. The coefficient on the interaction term is positive and statistically significant. This finding indicates that the impact of resolved disputes increases as the affected industry's exports rely more on intermediate imports from foreign countries, consistent with Hypothesis 2.

The left panel of Figure 1 plots the average marginal effect (AME) of a resolved dispute as a function of GVC backward linkages. At low levels of backward linkages, the effect of a resolved dispute is positive but statistically insignificant. As backward linkages increase, however, the effect becomes more significant and increases in magnitude. Substantively, the AME of a resolved dispute on FDI is negligible and statistically insignificant in industries such as forestry, fishing, and mining in some countries that have low levels of backward linkages. A resolved dispute results in increased FDI in most industries across several countries. Moreover, the magnitude of the effect becomes more positive as the level of backwardness increases.

To examine Hypotheses 3A and 3B, we turn to Models 2 and 4 of Table 1. In these specifications, we distinguish between complainants and third-party countries. In Model 2, the effect of resolved disputes holds when the home countries are the main complainants in the disputes. Resolved disputes are also positively associated with FDI flows for the dyads in which the home countries are the third-party countries. However, this association is not statistically significant at the conventional level.

In Model 4, the coefficient on the interaction terms are positive and statistically significant as hypothesized, regardless of whether the home country is a (1) primary complainant or (2) third-

Table 1: Effect of Resolved Dispute (PPML regression)

	Dependent Variable: Number of Greenfield FDI Projects			
	(1) All	(2) Main vs. 3rd party	(3) All	(4) Main vs. 3rd party
Dispute (all)	0.275*** (0.069)		-0.000 (0.094)	
Dispute (main)		0.370*** (0.070)		0.158 (0.101)
Dispute (3rd)		0.069 (0.081)		-0.159 (0.134)
Backward index	0.109*** (0.028)	0.109*** (0.029)	0.105*** (0.027)	0.105*** (0.027)
Dispute (all) × Backward index			1.227*** (0.309)	
Dispute (main) × Backward index				1.079*** (0.401)
Dispute (3rd) × Backward index				0.986*** (0.332)
Antidumping dispute	-0.291 (0.215)	-0.387* (0.215)	-0.253 (0.212)	-0.368* (0.203)
Agriculture dispute	-0.396 (0.285)	-0.482* (0.273)	-0.270 (0.282)	-0.370 (0.271)
Subsidies dispute	0.109 (0.153)	0.019 (0.152)	0.083 (0.152)	-0.055 (0.153)
Safeguards dispute	0.097 (0.544)	0.018 (0.546)	0.069 (0.539)	-0.021 (0.539)
Bilateral trade (total)	0.139*** (0.034)	0.137*** (0.033)	0.140*** (0.034)	0.138*** (0.033)
Bilateral trade (sector)	0.432*** (0.018)	0.432*** (0.018)	0.429*** (0.018)	0.430*** (0.018)
BIT in force	0.110* (0.062)	0.112* (0.061)	0.109* (0.062)	0.109* (0.061)
Investment PTA	0.027 (0.051)	0.017 (0.050)	0.031 (0.051)	0.020 (0.051)
Liberal democracy	-0.170 (0.171)	-0.151 (0.170)	-0.179 (0.171)	-0.161 (0.170)
GDPpc (host, logged)	-0.924*** (0.161)	-0.906*** (0.147)	-0.879*** (0.160)	-0.859*** (0.146)
Growth (host, annual %)	0.014*** (0.002)	0.014*** (0.002)	0.014*** (0.002)	0.014*** (0.002)
Population (host, logged)	3.028*** (0.232)	3.026*** (0.231)	3.054*** (0.231)	3.058*** (0.230)
GDPpc (home, logged)	0.134 (0.121)	0.142 (0.120)	0.137 (0.120)	0.143 (0.120)
Growth (home, annual %)	0.006 (0.004)	0.006 (0.004)	0.006 (0.004)	0.006 (0.004)
Constant	-54.152*** (4.617)	-54.352*** (4.576)	-55.028*** (4.598)	-55.334*** (4.562)
Observations	470676	470676	470676	470676
Log-likelihood	-107971.473	-107950.392	-107916.893	-107893.484
AIC	215976.946	215936.784	215869.786	215826.967

Note. All models include country dyad fixed effect and year fixed effect. Standard errors clustered at the dyad-sector level in parentheses. Dispute (all) = Resolved dispute for all complainants (either main or third party) Dispute (all) = Resolved dispute for main complainant only; Dispute (3rd) = Resolved dispute for third party complainant only; AIC = Akaike's information criterion. * $p < .1$. ** $p < .05$. *** $p < .01$.

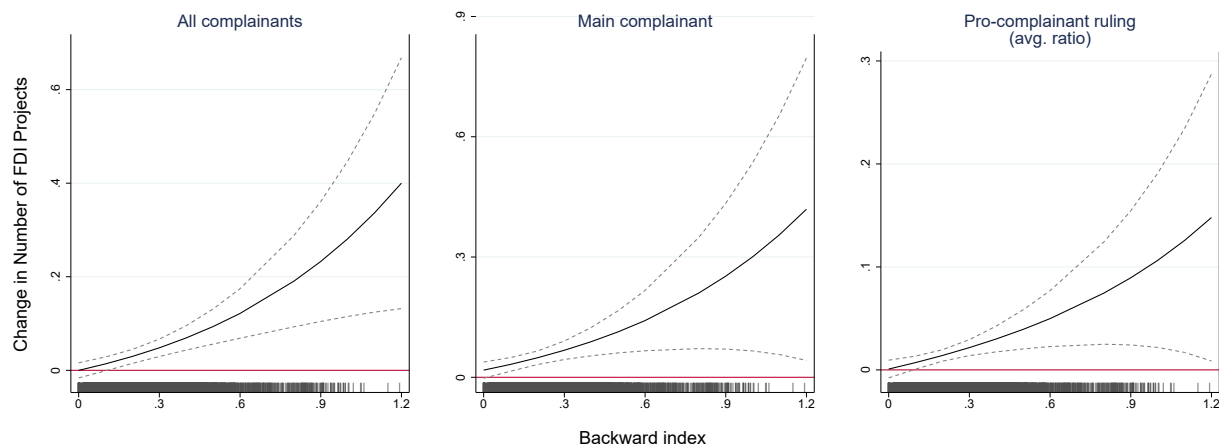


Figure 1: **Average marginal effect of resolved disputes by GVC backward index.** Using the estimates from the models 3, 4, and 6 in tables 1 and 2, we compute the change in the number of FDI projects associated with a meaningful unit increase in each predictor. The left panel shows the effect of resolved disputes for all complainants (main and third party complainants) - respondents dyads; the middle panel presents the effect of resolved disputes for main complainants - respondents dyads, and the right panel displays the effect of pro-complainant rulings. The solid lines indicate point estimates, while the dashed lines represent the 90% confidence intervals for those estimates.

party country. For space purposes, we present only the corresponding the average marginal effect (AME) of a resolved dispute for the main complainant as a function of GVC backward linkages in the middle panel of Figure 1. We note that the marginal effect of the dispute appears to be increasing as backward linkages increase, though it is not as precisely estimated as in Model 3. These findings suggest that the impact of resolved disputes increases as the affected industry's exports rely more on intermediate imports from foreign countries for both the main complainant and third-party countries, consistent with H3A and H3B.

5.2 Matching Estimates (Panel Match)

While we use fixed effects to account for unobservable heterogeneity across country-dyads and time, this approach may not account for carryover effects adequately, which makes it challenging to estimate causal effects accurately (Blackwell and Glynn 2018; Imai and Kim 2019). To address these concerns, we employ a matching technique developed by Imai, Kim, and Wang (2021),

known as `PanelMatch`.²³

We begin by selecting a set of control observations from other country dyad-sector units that share the same time period and have an identical treatment history for a three-year period before the treatment.²⁴ Next, we use propensity score weighting methods to refine this matched set, ensuring that the matched control observations are similar to the treated observation in terms of covariate histories. We then apply a difference-in-differences estimator that adjusts for a possible time trend. This proposed method allows us to estimate both the short-term and long-term average effects of trade disputes for the treated (ATTs).

Figure 2 presents the estimated ATTs based on the matching method. The plots in the left panel show the matching estimates of the effects of resolved disputes on the number of FDI projects for all respondent country-sectors (i.e., without separation between low vs. high GVC sectors) from the year of treatment t to year $t + 5$. These estimates allow us to examine the first hypothesis that resolved disputes increase FDI in the affected industry of respondent regardless of its country-sector's GVC backwardness.

The top-left panel shows that resolved disputes lead to an increase in FDI flows from all complainants, including the main complainants and third-countries, to respondents in the affected industry for short-term as well as long-term periods. More specifically, resolved disputes lead to an approximately 0.4 to 0.9 increase in the number of FDI projects depending on the period. The estimated effects are substantively large, considering that the mean and one standard deviation of the outcome variable are 0.05 and 0.67, respectively. The results remain consistent when looking into the effects of resolved disputes on FDI flows between primary complainants and respondents. The middle-left panel displays patterns similar to those observed in the top-left panel, though some of the estimated effects are statistically insignificant at certain periods, particularly in the fourth year following dispute resolution.

The plots in the right panel show the conditional effects of resolved disputes. Because the `PanelMatch` program can only use variables with a limited number of discrete values as moder-

²³We used the `PanelMatch` package in R.

²⁴For robustness checks, we also consider different time periods for treatment history, including 5- or 7-year. The results hold.

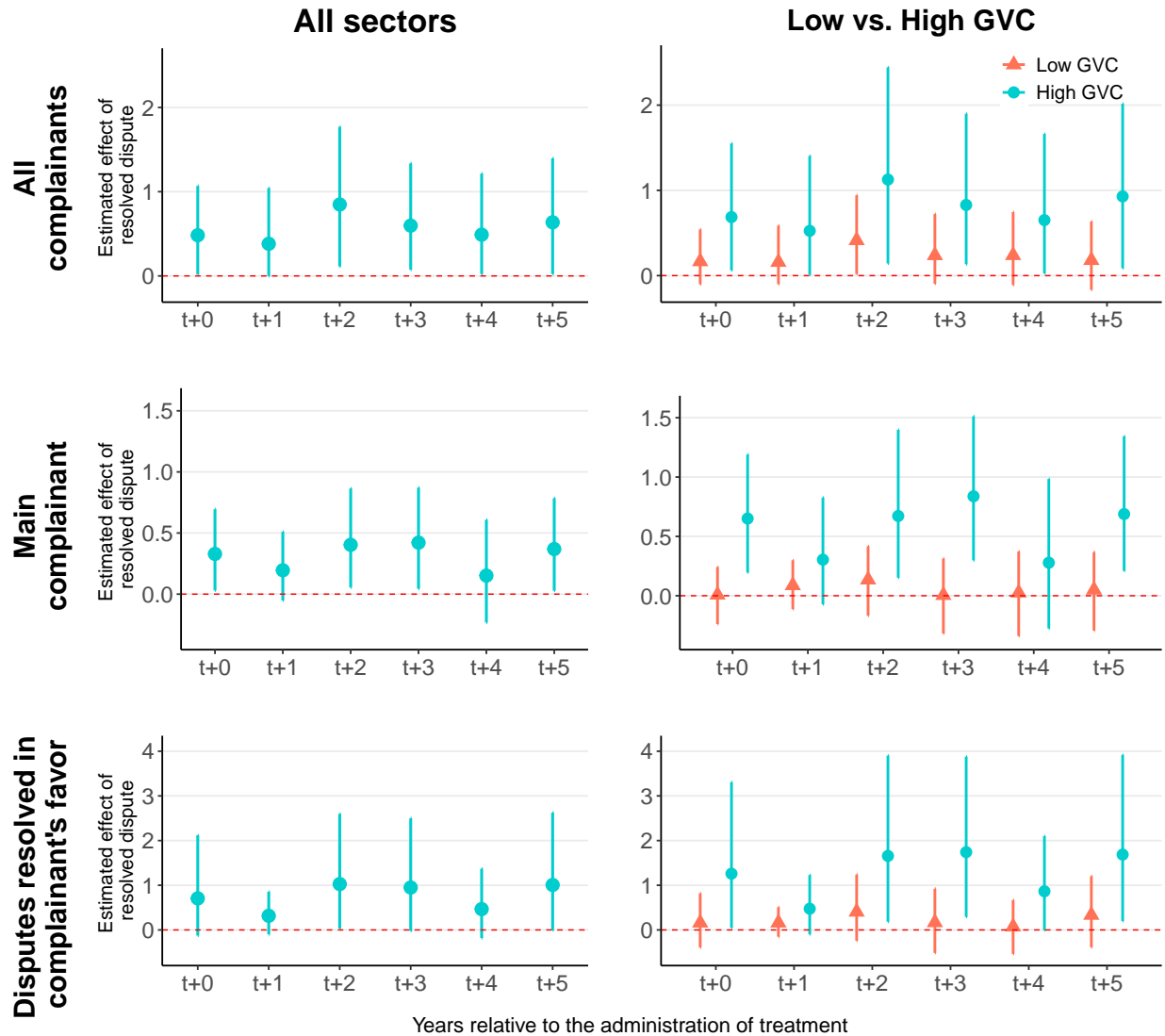


Figure 2: **Estimated Average Effects of Resolved Disputes on the Number of FDI Projects.** The estimates rely on a matching method that accounts for treatment and covariate histories over a three-year period leading up to the treatment. The average effects of resolved disputes are presented for the current period and for the five-year period following the resolution of the dispute, along with 90% confidence intervals obtained through a block bootstrapping procedure (indicated by vertical bars). The left panel displays the impact of resolved disputes across all host country-sectors, while the right panel illustrates the effects of resolved disputes for host country-sectors with low and high GVC backward indexes, respectively. The plots in the top row panel present the impact of resolved disputes for all complainants (main and third party complainants) - respondents dyads. Those in the middle panel focus on the effects of resolved disputes for main complainants - respondents dyads, and those in the bottom panel demonstrate the impact of resolved disputes with a pro-complainant ruling.

ators, we employ a binary variable to indicate respondent country-sectors with high GVC backward index. This variable is coded as 1 if the original GVC value is equal to or greater than its median value (approximately 0.201), and 0 otherwise.

The results in the top right panel of Figure 2 provide supportive evidence for our arguments about the conditional effect of resolved disputes. Specifically, the estimated effects for respondent country-sectors with a high level of GVC backward linkages are positive and statistically significant across all panels during most of the time periods presented in the plots. In contrast, resolved disputes have little effect on FDI flows in respondent country-sectors with a low level of GVC backward index, as the estimated effects are mostly close to zero over the entire time period in the plots. These results, combined with those presented in the left panel, suggest that resolved disputes primarily affect respondent country-sectors with a high level of GVC backward linkages.

In the middle row of Figure 1, we present corresponding results for the main complainants. The results are similar to the overall analysis of resolved disputes.

Both the PPML and panel matching results suggest support for our hypotheses, despite quite different specifications. The advantage of the **Panel Match** procedure is that it allows us to examine the dynamic effects of disputes, starting with a dispute in the previous year up to five years ago, controlling for the pre-dispute period. The PPML model presents results for a more aggregate or static impact - any time in the last five years. In the appendix (Table 5), we estimate a dynamic PPML model for both all complainants, and separated into main complainants and third parties. We find similar results to the panel matching estimation, even though the results in Table 5 allow for a continuous conditioning variable

6 Additional implications and robustness

In this section, we examine several additional implications of our theory and discuss the robustness of our findings.

6.1 Pro-complainant ruling

First, we look at the extent to which rulings favor the complainant. Although most disputes are resolved in favor of the complainant overall, we can also measure the extent to which the dispute was resolved in favor of the complainant. We would expect that the ruling that is more favorable to the complainant would lead to more greater reduction in barriers to trade. Table 2 presents the results of PPML regression of FDI on the average pro-complainant ruling ratio in the disputes between a home and host country in a given industry. As expected, in Model 5 of Table 2, the pro-complainant ruling ratio is positively associated with FDI flows. In Model 6 of Table 2, we estimate the interaction effect between the degree of a pro-complainant ruling and GVC backward linkages. The coefficient on the interaction term is positive and statistically significant, suggesting that a dispute resolved in the complainant's favor is likely to attract more FDI in the respondent's industries with greater backward linkages.

In the right panel of Figure 1, we plot the AME of one standard deviation increase in the pro-complainant ruling ratio by the level of backward linkages. Similar to the other panels, the impact of pro-complainant ruling is positive and increases as the level of backward linkages rises. This is consistent with the theoretical expectation that a resolved dispute with a ruling in favor of the complainant will lead to a greater reduction of barriers as foreign value-added intermediates play more significant roles in the affected respondent industry's exports.

We also examine the effects of resolved disputes with pro-complainant rulings using the matching method. As the `PanelMatch` program does not allow for a continuous treatment variable, we use a dichotomous variable for pro-complainant rulings, coded 1 if the average ratio of panel rulings that favored complainants is equal to or greater than 0.5 in a given year, and 0 otherwise. The estimated effects, presented in the bottom-left panel of Figure 2, show trends similar to those mentioned above. Specifically, the magnitudes of the effects are larger than those seen previously, indicating an increase of up to one FDI project. Although the uncertainties of the effects also increase, the 90% confidence intervals of the point estimates barely include 0 across all periods. This suggests that disputes settled in favor of complainants may not have negligible effects (Rainey 2014).

In bottom-right panel of Figure 2, we find resolved disputes with pro-complainant rulings, for

example, result in an increase of about 1.7 FDI projects in the third year following the resolution of the dispute. We note that a dynamic PPML model for pro-complainant rulings is presented in the appendix (Table 6.).

Table 2: Effect of Pro-complainant Ruling (PPML regression)

	Dependent Variable:	
	Number of Greenfield FDI Projects	
	(5)	(6)
Pro-complainant ruling (ratio)	0.369*** (0.080)	0.024 (0.146)
Backward index	0.110*** (0.029)	0.108*** (0.028)
Pro-complainant ruling (ratio) × Backward index		1.667*** (0.620)
Antidumping dispute	-0.309 (0.221)	-0.279 (0.217)
Agriculture dispute	-0.493* (0.282)	-0.385 (0.273)
Subsidies dispute	0.063 (0.155)	0.042 (0.157)
Safeguards dispute	0.073 (0.556)	0.036 (0.552)
Bilateral trade (total)	0.134*** (0.033)	0.135*** (0.033)
Bilateral trade (sector)	0.435*** (0.018)	0.433*** (0.018)
BIT in force	0.111* (0.061)	0.111* (0.061)
Investment PTA	0.008 (0.051)	0.013 (0.051)
Liberal democracy	-0.145 (0.170)	-0.128 (0.170)
GDPpc (host, logged)	-0.885*** (0.149)	-0.856*** (0.149)
Growth (host, annual %)	0.014*** (0.002)	0.014*** (0.002)
Population (host, logged)	2.991*** (0.230)	3.016*** (0.229)
GDPpc (home, logged)	0.141 (0.120)	0.144 (0.120)
Growth (home, annual %)	0.005 (0.004)	0.005 (0.004)
Constant	-53.831*** (4.560)	-54.593*** (4.547)
Observations	470676	470676
Log-likelihood	-107994.038	-107960.370
AIC	216022.076	215956.741

Note. All models include country dyad fixed effect and year fixed effect. Standard errors clustered at the dyad-sector level in parentheses. Pro-complainant ruling (ratio) = Average ratio of pro-complainant ruling in a resolved dispute; AIC = Akaike's information criterion. * $p < .1$. ** $p < .05$. *** $p < .01$.

6.2 Dispute type

Next, we consider whether the effects of disputes might differ by type. In particular, one could imagine that the effect of an anti-dumping dispute could be different than others because anti-

dumping focuses on the home-country market rather than market access in the host. Thus in Table 7 (appendix), we estimate the unconditional and conditional results for different types of disputes. Specifically, we distinguish between agricultural, subsidies, and countervailing duties, safeguards, and anti-dumping disputes and other disputes, of which GATT disputes are the most common.²⁵ We find that it is “Other” trade disputes (primarily GATT) and disputes around subsidies that are associated with an increase in FDI. This the case for the unconditional and conditional models.

As a final robustness check, we estimate the main PPML dyadic specification without China, because China has been a primary target of disputes among less-developed country respondents. Our results are robust to this specification (Table 8 appendix).

6.3 Monadic

We examine the implications of Hypothesis 1 and 2 at the monadic level, given that two of our main independent variables are at the host-industry level. An additional benefit of the monadic approach is that it allows for the possibility that multinationals from all home countries, regardless of a connection to the case or not, increase their FDI in the wake of a resolved dispute. In this analysis, the unit of analysis is the host-industry-year. In Appendix Table 9, we present the results of the PPML analysis. We find similar patterns to the dyadic analysis for both resolved disputes and pro-complainant rulings, although there is some sensitivity to specification.²⁶

We also report the results of the monadic panel match analysis in Figure 3. What we find in the monadic analysis is that the unconditional effect is not statistically significant, regardless of whether we use a dummy variable indicator for resolved disputes or those dispute resolved in the complainants favor. There is limited evidence that among high backward linkage industries, a resolved dispute or favorable ruling is associated with a positive effect on FDI, though it is not very precisely estimated.

This finding suggests that the benefits of a resolved dispute (i.e. removal of barriers) accrue

²⁵For instance, it might be the case that the removal of tariffs has a bigger effect. presumably the safeguards etc are more targeted and thus more influential bilaterally.

²⁶In particular, we find that effects are statistically insignificant in the expected direction when we control for total trade and sector level exports, and statistically significant if we exclude those potential post-treatment variables.

primarily to home countries involved in the dispute and that they may not be shared more broadly.

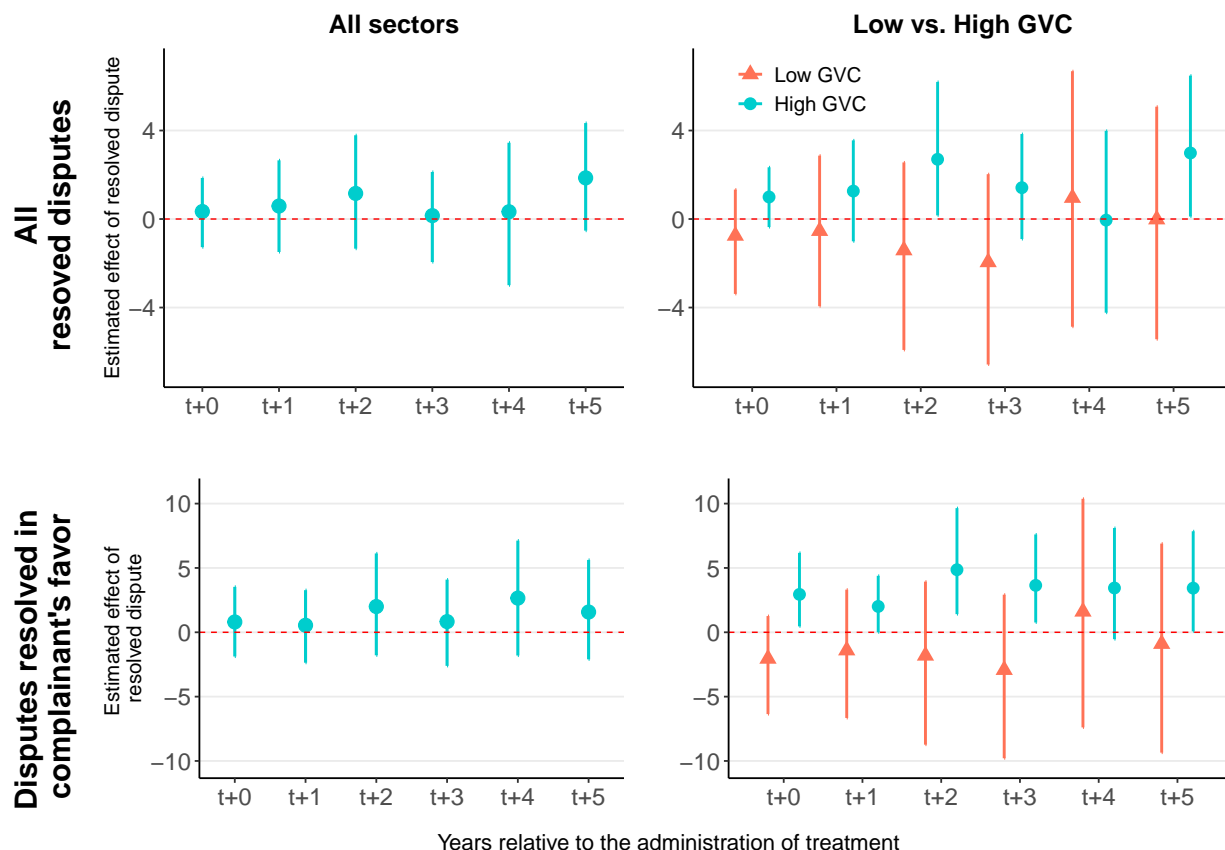


Figure 3: **Estimated Average Effects of Resolved Disputes on the Number of FDI Projects (Monadic-level Analysis)**. The estimates are generated based on a matching method that adjusts for treatment and covariate histories during a three-year period prior to the treatment. The average effects of resolved disputes are presented for the current period and for the five-year period following the resolution of the dispute, along with 90% confidence intervals obtained through a block bootstrapping procedure (indicated by vertical bars). The left panel displays the impact of resolved disputes across all host country-sectors, while the right panel illustrates the effects of resolved disputes for host country-sectors with low and high GVC backward indexes, respectively. The plots in the upper panel present the impact of all resolved disputes, whereas those in the lower panel demonstrate the impact of resolved disputes with a pro-complainant ruling.

7 Conclusion

In this paper, we examine the impact of trade disputes on inward foreign direct investment in respondent countries. We argue that because trade disputes lead to a reduction in barriers to trade, multinational firms may increase their investment in the respondent after the resolution of the

dispute. This effect should be greater when there are greater backward linkages. We use dyad-industry data on greenfield investment to examine support for our hypotheses. We find support for our argument that resolved disputes are correlated with greater FDI, and that this effect is greater where the host-industry is characterized by more backward linkages.

There are several additional considerations that should be taken into account in future research or iterations of the paper. First, we do not address compliance with the ruling. But there is a possibility that a respondent may not fully comply with the ruling. If the respondent does not comply with the ruling (i.e. remove illegal barriers), then the anticipated reduction of barriers will not be realized. This means that the mechanism posited above will not be as strong. One challenge to examining the impact of compliance is that compliance may be endogenous to GVC position. Indeed, Yildirim et al. (2018a) find that when there is more integration (measured as import dependence), the time to compliance by the respondent (removal of illegal barrier) decreases.²⁷

A second important factor may be the role of selection into disputes. As discussed above, we know that firms influence the initiation of disputes. Thus, we may need to consider how selection into disputes shapes how we understand the impact of disputes on future FDI.

Finally, in our analysis, we examine the impact of resolved disputes on FDI. But there is the potential for ongoing disputes to also affect investment behavior. Ongoing disputes could plausibly either (1) increase FDI as firms seek to enter the respondent market strategically as a first mover or (2) decrease FDI due to increased uncertainty. On the one hand, could also lead major companies to jump in despite the uncertainty if they want to be strategic. They are likely big enough to take the risk in anticipation of a future reduction of barriers.

A final consideration for future research is the extent to which this argument generalizes to trade liberalization in general. There is nothing specific about the role of disputes, per se, in our argument.

²⁷Peritz (2020) estimates a measure of compliance using synthetic control techniques and examines how domestic political conditions shape compliance.

Appendix

Countries in the samples

Host: Afghanistan, Albania, Algeria, Angola, Argentina, Armenia, Azerbaijan, Bangladesh, Belarus, Benin, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Cape Verde, Central African Republic, Chad, Chile, China, Colombia, Congo, Costa Rica, Croatia, Cuba, Democratic Republic of the Congo, Dominican Republic, Ecuador, Egypt, El Salvador, Eritrea, Estonia, Ethiopia, Fiji, Gabon, Gambia, Georgia, Ghana, Guatemala, Guinea, Guyana, Haiti, Honduras, Hungary, India, Indonesia, Iran, Iraq, Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Libya, Lithuania, Macedonia, Madagascar, Malawi, Malaysia, Maldives, Mali, Mauritania, Mauritius, Mexico, Moldova, Mongolia, Montenegro, Morocco, Mozambique, Myanmar, Namibia, Nepal, Nicaragua, Niger, Nigeria, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Romania, Russia, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Slovakia, South Africa, South Sudan, Sri Lanka, Sudan, Suriname, Tajikistan, Tanzania, Thailand, Togo, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Uganda, Ukraine, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Yugoslavia, Zambia, Zimbabwe.

Home: Argentina, Australia, Austria, Azerbaijan, Bahrain, Belgium, Brazil, Canada, Chile, China, Colombia, Cyprus, Czech Republic, Denmark, Egypt, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, India, Indonesia, Iran, Ireland, Israel, Italy, Japan, Kuwait, Lithuania, Luxembourg, Malaysia, Mauritius, Mexico, Morocco, Netherlands, New Zealand, Nigeria, Norway, Philippines, Poland, Portugal, Qatar, Russia, Saudi Arabia, Singapore, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Thailand, Turkey, Ukraine, United Arab Emirates, United Kingdom, United States of America, Venezuela, Vietnam.

Descriptive Statistics

Industry Classification

Robustness Test: Different Model Specifications

Table 5: Effect of Resolved Dispute

	Dependent Variable: Number of Greenfield FDI Projects			
	(1)	(2)	(3)	(4)
Dispute (all, t-1)	0.157*** (0.058)		-0.148* (0.089)	
Dispute (all, t-2)	0.126* (0.073)		-0.191* (0.101)	
Dispute (all, t-3)	0.141** (0.071)		0.009 (0.102)	
Dispute (all, t-4)	0.195*** (0.063)		0.237*** (0.091)	
Dispute (all, t-5)	0.176*** (0.055)		0.034 (0.086)	

Dispute (main, t-1)		0.145**		-0.106
		(0.067)		(0.110)
Dispute (main, t-2)		0.204**		-0.109
		(0.081)		(0.124)
Dispute (main, t-3)		0.217***		0.040
		(0.073)		(0.127)
Dispute (main, t-4)		0.295***		0.141
		(0.070)		(0.113)
Dispute (main, t-5)		0.296***		0.081
		(0.070)		(0.111)
Dispute (3rd, t-1)		0.154*		-0.163
		(0.092)		(0.150)
Dispute (3rd, t-2)		-0.044		-0.436***
		(0.096)		(0.153)
Dispute (3rd, t-3)		-0.034		-0.191
		(0.094)		(0.155)
Dispute (3rd, t-4)		0.036		0.291*
		(0.089)		(0.161)
Dispute (3rd, t-5)		-0.054		-0.168
		(0.086)		(0.139)
Backward index	0.110***	0.110***	0.106***	0.105***
	(0.029)	(0.029)	(0.027)	(0.027)
Dispute (all, t-1) × Backward			1.379***	
			(0.267)	
Dispute (all, t-2) × Backward			1.504***	
			(0.333)	
Dispute (all, t-3) × Backward			0.616*	
			(0.352)	
Dispute (all, t-4) × Backward			-0.109	
			(0.294)	
Dispute (all, t-5) × Backward			0.639**	
			(0.277)	
Dispute (main, t-1) × Backward				1.294***
				(0.397)
Dispute (main, t-2) × Backward				1.714***
				(0.509)
Dispute (main, t-3) × Backward				0.977*
				(0.500)
Dispute (main, t-4) × Backward				0.778*
				(0.414)
Dispute (main, t-5) × Backward				1.023***
				(0.319)
Dispute (3rd, t-1) × Backward				1.474***
				(0.387)
Dispute (3rd, t-2) × Backward				1.825***
				(0.410)
Dispute (3rd, t-3) × Backward				0.802*

				(0.428)
Dispute (3rd, t-4) × Backward				-0.884*
				(0.514)
Dispute (3rd, t-5) × Backward				0.537
				(0.386)
Antidumping dispute	-0.286	-0.361	-0.247	-0.315
	(0.242)	(0.243)	(0.227)	(0.223)
Agriculture dispute	-0.389	-0.413	-0.299	-0.312
	(0.270)	(0.277)	(0.271)	(0.271)
Subsidies dispute	0.192	0.135	0.147	0.055
	(0.151)	(0.151)	(0.153)	(0.154)
Safeguards dispute	0.129	0.012	0.083	-0.070
	(0.552)	(0.559)	(0.546)	(0.556)
Bilateral trade (total)	0.135***	0.133***	0.137***	0.136***
	(0.034)	(0.033)	(0.034)	(0.033)
Bilateral trade (sector)	0.433***	0.434***	0.431***	0.430***
	(0.018)	(0.018)	(0.018)	(0.017)
BIT in force	0.111*	0.115*	0.110*	0.112*
	(0.062)	(0.061)	(0.062)	(0.061)
Investment PTA	0.021	0.016	0.023	0.019
	(0.051)	(0.050)	(0.051)	(0.051)
Liberal democracy	-0.161	-0.140	-0.170	-0.143
	(0.171)	(0.170)	(0.171)	(0.170)
GDPpc (host, logged)	-0.918***	-0.907***	-0.883***	-0.866***
	(0.159)	(0.148)	(0.160)	(0.149)
Growth (host, annual %)	0.014***	0.014***	0.014***	0.014***
	(0.002)	(0.002)	(0.002)	(0.002)
Population (host, logged)	2.950***	2.939***	2.947***	2.967***
	(0.232)	(0.231)	(0.232)	(0.230)
GDPpc (home, logged)	0.147	0.154	0.153	0.159
	(0.121)	(0.120)	(0.121)	(0.119)
Growth (home, annual %)	0.005	0.005	0.006	0.006
	(0.004)	(0.004)	(0.004)	(0.004)
Constant	-52.855***	-52.825***	-53.143***	-53.748***
	(4.614)	(4.569)	(4.603)	(4.563)
Observations	469752	469752	469752	469752
Log-likelihood	-107979.075	-107945.576	-107912.021	-107851.614
AIC	216000.150	215943.152	215876.043	215775.228

Note. Clustered standard errors (at dyad-sector level) in parentheses. Country dyad fixed effect and year fixed effect included. Dispute (all) = Resolved dispute for all complainants (main or third party); Dispute (main) = Resolved dispute for main complainant only; Dispute (3rd) = Resolved dispute for third party complainant only; GDPpc = gross domestic product per capita; AIC = Akaike's information criterion. * $p < .1$. ** $p < .05$. *** $p < .01$.

Table 3: Summary Statistics

	Mean	S.D.	Min	Median	Max
Number of FDI projects	0.0346	0.5719	0.0000	0.0000	120.0000
Dispute (all)	0.0016	0.0396	0.0000	0.0000	1.0000
Dispute (main)	0.0006	0.0239	0.0000	0.0000	1.0000
Dispute (3rd-party)	0.0011	0.0326	0.0000	0.0000	1.0000
Dispute (all, 5 year window)	0.0060	0.0771	0.0000	0.0000	1.0000
Dispute (main, 5 year window)	0.0026	0.0514	0.0000	0.0000	1.0000
Dispute (3rd-party, 5 year window)	0.0038	0.0612	0.0000	0.0000	1.0000
GVC backward index	0.2978	1.0283	0.0000	0.2012	39.1001
Antidumping-related dispute	0.0002	0.0157	0.0000	0.0000	1.0000
Agriculture-related dispute	0.0003	0.0163	0.0000	0.0000	1.0000
Subsidies-related dispute	0.0005	0.0218	0.0000	0.0000	1.0000
Safeguards-related dispute	0.0001	0.0098	0.0000	0.0000	1.0000
Investment PTA	0.1311	0.3376	0.0000	0.0000	1.0000
BIT in force	0.2323	0.4223	0.0000	0.0000	1.0000
Bilateral trade (total, logged)	3.3951	2.6439	0.0000	3.1184	13.3132
Bilateral trade (sector-level, logged)	-0.6090	2.7660	-10.6973	-1.3713	12.4812
GDPpc (home, logged)	9.7665	1.1222	6.7998	10.0018	11.6260
Growth (home, annual %)	2.1684	3.9953	-15.1513	2.0997	32.9971
Liberal democracy index (host)	0.5703	0.2473	0.0070	0.6200	0.9650
GDPpc (host, logged)	7.9105	1.0900	5.2775	8.0514	9.9298
Population (host, logged)	15.8001	1.9261	11.1577	15.9960	21.0500
Growth (host, annual %)	2.8903	5.7467	-62.3781	3.0411	121.7795
<i>N</i>			1545636		

Table 4: 12 Industry Classification

Industry (NAICS)	Number of projects	FDI volume (millions of USD)
Agriculture (111, except for 114)	350	34841.59
Fishing, Hunting and Trapping (114)	11	314.3367
Mining and Quarrying (21)	2562	911888.4
Construction (23)	2726	584863.5
Food, Beverages and Tobacco (311-12)	4026	180371
Textiles, apparel, and leather products (313-16)	1963	43954.9
Wood and Paper (321-23)	1150	113716
Petroleum, Chemical and Non-Metallic Mineral Products (324-27)	11345	1023763
Metal Products (331-32)	3288	379003.2
Electrical and Machinery (333-35)	14360	570817.1
Transportation equipment (336)	8310	700096.6
Other Manufacturing (337-39)	3444	107866.8

Table 6: Effect of Pro-complainant Ruling (PPML regression)

	Dependent Variable: Number of Greenfield FDI Projects	
	(5)	(6)
Dispute (pro-complainant) _{t-1}	0.130 (0.092)	-0.304* (0.164)
Dispute (pro-complainant) _{t-2}	0.226** (0.097)	-0.214 (0.164)
Dispute (pro-complainant) _{t-3}	0.213** (0.087)	-0.081 (0.180)
Dispute (pro-complainant) _{t-4}	0.360*** (0.076)	0.164 (0.164)
Dispute (pro-complainant) _{t-5}	0.333*** (0.078)	0.015 (0.155)
Backward index	0.110*** (0.029)	0.108*** (0.028)
Dispute (pro-complainant) _{t-1} × Backward		2.241*** (0.576)
Dispute (pro-complainant) _{t-2} × Backward		2.361*** (0.750)
Dispute (pro-complainant) _{t-3} × Backward		1.510** (0.745)
Dispute (pro-complainant) _{t-4} × Backward		0.952 (0.707)
Dispute (pro-complainant) _{t-5} × Backward		1.578*** (0.608)
Antidumping dispute	-0.300 (0.241)	-0.266 (0.231)
Agriculture dispute	-0.429 (0.282)	-0.332 (0.272)
Subsidies dispute	0.147 (0.152)	0.107 (0.155)
Safeguards dispute	-0.003 (0.572)	-0.095 (0.574)
Bilateral trade (total)	0.131*** (0.033)	0.134*** (0.033)
Bilateral trade (sector)	0.435*** (0.018)	0.433*** (0.018)
BIT in force	0.113* (0.061)	0.112* (0.061)
Investment PTA	0.011 (0.051)	0.014 (0.051)
Liberal democracy	-0.146 (0.170)	-0.126 (0.170)
GDPpc (host, logged)	-0.888*** (0.150)	-0.857*** (0.151)
Growth (host, annual Population (host, logged)	2.939***	2.965***

	(0.230)	(0.229)
GDPpc (home, logged)	0.150	0.152
	(0.120)	(0.120)
Growth (home, annual	(0.004)	(0.004)
Constant	-52.904***	-53.703***
	(4.550)	(4.548)
Observations	469752	469752
Log-likelihood	-107977.146	-107930.467
AIC	215996.292	215912.934

Note. Clustered standard errors (at dyad-sector level) in parentheses. Country dyad fixed effect and year fixed effect included. Dispute (pro-complainant) = Average ratio of pro-complainant ruling in a resolved dispute; GDPpc = gross domestic product per capita; AIC = Akaike's information criterion. * $p < .1$. ** $p < .05$. *** $p < .01$.

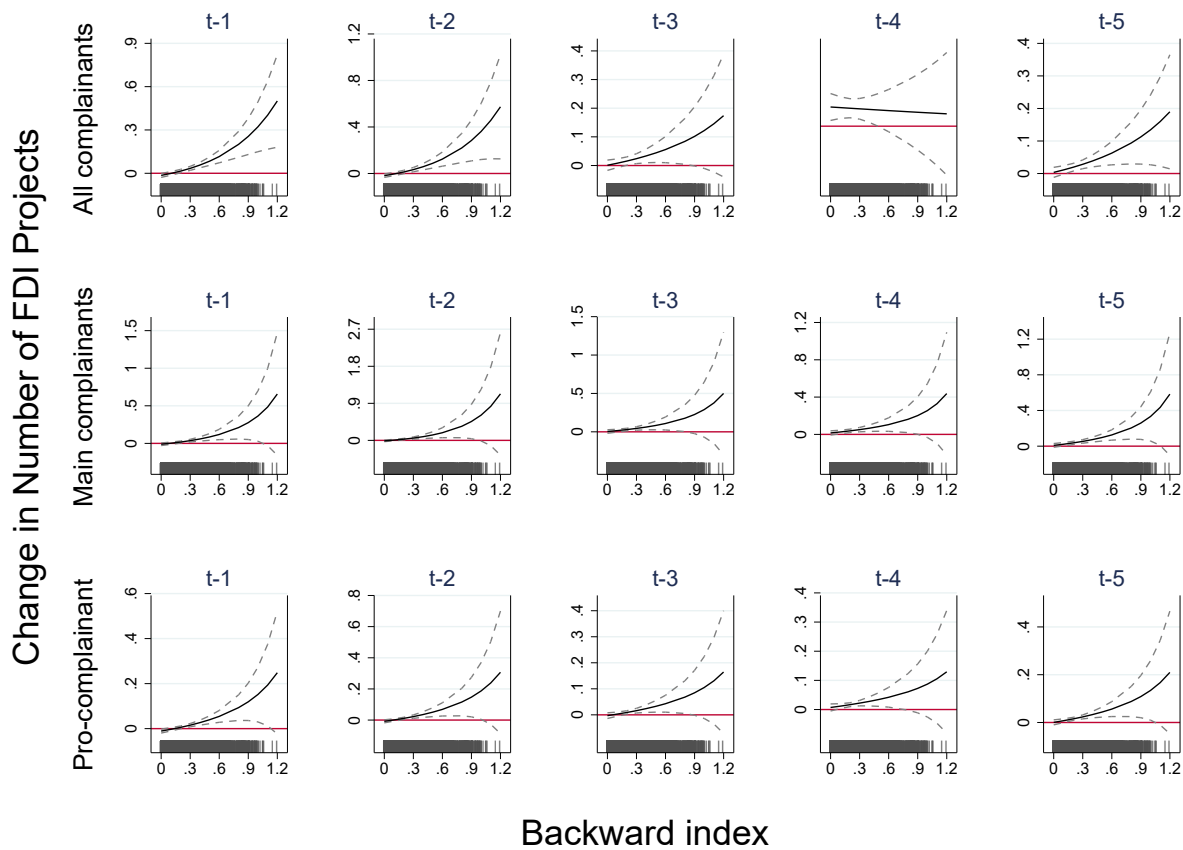


Figure 4: Average marginal effect of resolved disputes by GVC backward index. Using the estimates from the models 3, 4, and 6 in tables 5 and 6, we compute the change in the number of FDI projects associated with a meaningful unit increase in each predictor. Top-row panel shows the effect of resolved disputes for “all complainants”, the middle-row panel presents the effect of resolved disputes for “main complainants” only, and the bottom-row panel displays the effect of pro-complainant ruling. The solid lines show point estimates and dashed lines represent 90% confidence intervals of those point estimates.

Table 7: Effect by Dispute Type, (PPML Regression)

	Dependent Variable:	
	Number of Greenfield FDI Projects	
	(5)	(6)
Other dispute (all)	0.262*** (0.070)	-0.009 (0.100)
AD Dispute (all)	-0.074 (0.221)	-0.408 (0.303)
Subsidies Dispute (all)	0.359** (0.145)	0.060 (0.241)
Agriculture Dispute (all)	-0.260 (0.305)	-0.803 (0.570)
Safeguards Dispute (all)	0.350 (0.539)	-1.795 (1.829)
Backward index	0.109*** (0.029)	0.105*** (0.027)
Other Dispute (all) × Backward index		1.217*** (0.330)
AD Dispute (all) × Backward index		1.881 (1.178)
Subsidies Dispute (all) × Backward index		1.275** (0.501)
Agriculture Dispute (all) × Backward index		3.970 (2.574)
Safeguards Dispute (all) × Backward index		8.279 (5.324)
Bilateral trade (total)	0.138*** (0.034)	0.140*** (0.034)
Bilateral trade (sector)	0.432*** (0.018)	0.429*** (0.018)
BIT in force	0.109* (0.062)	0.107* (0.062)
Investment PTA	0.025 (0.051)	0.031 (0.051)
Liberal democracy	-0.169 (0.171)	-0.176 (0.171)
GDPpc (host, logged)	-0.916*** (0.160)	-0.872*** (0.159)
Growth (host, annual %)	0.014*** (0.002)	0.014*** (0.002)
Population (host, logged)	3.012*** (0.232)	3.045*** (0.231)
GDPpc (home, logged)	0.135 (0.121)	0.138 (0.121)
Growth (home, annual %)	0.005 (0.004)	0.006 (0.004)
Constant	-53.925*** (4.615)	-54.929*** (4.597)
Observations	470508	470508
Log likelihood	-107024	-107024
AIC	2159827	2158660

Note. All models include country dyad fixed effect and year fixed effect. Standard errors clustered at the dyad-sector level in parentheses. Dispute (all) = Resolved dispute for all complainants (either main or third party); AIC = Akaike's information criterion. * $p < .1$. ** $p < .05$. *** $p < .01$.

Table 8: Effect of Resolved Dispute, Excluding China (PPML Regression)

	Dependent Variable:	
	Number of Greenfield FDI Projects	
	(5)	(6)
Dispute (all)	0.234*** (0.064)	-0.053 (0.087)
Backward index	0.097*** (0.023)	0.093*** (0.022)
Dispute (all) × Backward index		1.187*** (0.292)
Antidumping dispute	-0.964*** (0.322)	-0.900*** (0.319)
Agriculture dispute	-0.483 (0.305)	-0.256 (0.285)
Subsidies dispute	0.303** (0.133)	0.096 (0.142)
Safeguards dispute	0.228 (0.542)	0.201 (0.536)
Bilateral trade (total)	0.079*** (0.028)	0.083*** (0.028)
Bilateral trade (sector)	0.392*** (0.016)	0.390*** (0.016)
BIT in force	0.119* (0.064)	0.121* (0.064)
Investment PTA	-0.042 (0.052)	-0.035 (0.053)
Liberal democracy	-0.236 (0.168)	-0.237 (0.168)
GDPpc (host, logged)	-0.109 (0.162)	-0.118 (0.161)
Growth (host, annual %)	0.013*** (0.002)	0.013*** (0.002)
Population (host, logged)	2.851*** (0.227)	2.869*** (0.226)
GDPpc (home, logged)	0.202* (0.118)	0.209* (0.118)
Growth (home, annual %)	0.005 (0.004)	0.005 (0.004)
Constant	-55.951*** (4.374)	-56.288*** (4.359)
Observations	460452	460452
Log-likelihood	-97660.551	-97618.893
AIC	195355.102	195273.786

Note. All models include country dyad fixed effect and year fixed effect. Standard errors clustered at the dyad-sector level in parentheses. Dispute (all) = Resolved dispute for all complainants (either main or third party); AIC = Akaike's information criterion. * $p < .1$. ** $p < .05$. *** $p < .01$.

Table 9: Monadic analysis (PPML Regression)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dispute	0.225** (0.091)	0.138 (0.127)	0.621*** (0.184)	0.406** (0.201)				
Backward index	0.104** (0.046)	0.101** (0.044)	0.413 (0.292)	0.366 (0.292)	0.105** (0.047)	0.101** (0.044)	0.433 (0.299)	0.393 (0.296)
Dispute × Backward index		0.367 (0.453)		0.960* (0.559)				
Dispute (pro-complainant)					0.155 (0.096)	-0.054 (0.204)	0.447*** (0.148)	0.014 (0.254)
Dispute (pro-complainant) × Backward index						0.875 (0.693)		1.819** (0.784)
Antidumping dispute	-0.117 (0.201)	-0.113 (0.199)	-0.144 (0.269)	-0.124 (0.263)	-0.019 (0.223)	-0.005 (0.224)	0.066 (0.345)	0.102 (0.345)
Agriculture dispute	-0.626*** (0.161)	-0.579*** (0.177)	-1.036*** (0.191)	-0.912*** (0.203)	-0.615*** (0.173)	-0.554*** (0.185)	-1.047*** (0.205)	-0.917*** (0.213)
Subsidies dispute	0.097 (0.216)	0.071 (0.232)	0.243 (0.252)	0.176 (0.250)	0.171 (0.213)	0.160 (0.212)	0.454* (0.258)	0.450* (0.250)
Safeguards dispute	-0.671** (0.267)	-0.663** (0.264)	-1.473*** (0.448)	-1.439*** (0.435)	-0.654** (0.294)	-0.640** (0.287)	-1.434*** (0.474)	-1.422*** (0.468)
Bilateral trade (total)	0.103 (0.100)	0.095 (0.101)			0.093 (0.104)	0.082 (0.105)		
Bilateral trade (sector)	0.552*** (0.055)	0.551*** (0.055)			0.559*** (0.056)	0.556*** (0.056)		
BIT in force	0.015* (0.008)	0.015* (0.008)	0.035*** (0.011)	0.036*** (0.011)	0.013 (0.008)	0.013 (0.009)	0.031*** (0.010)	0.031*** (0.010)
Investment PTA	-0.003 (0.005)	-0.004 (0.005)	-0.006 (0.005)	-0.009* (0.005)	-0.003 (0.004)	-0.003 (0.005)	-0.005 (0.005)	-0.007 (0.005)
Liberal democracy	0.047 (0.312)	0.054 (0.311)	0.114 (0.328)	0.109 (0.327)	0.063 (0.312)	0.083 (0.315)	0.152 (0.325)	0.180 (0.330)
GDPpc (host, logged)	-1.094*** (0.264)	-1.043*** (0.270)	-0.990*** (0.340)	-0.870*** (0.318)	-1.100*** (0.276)	-1.034*** (0.281)	-1.001*** (0.334)	-0.880*** (0.316)
Growth (host, annual %)	0.015*** (0.003)	0.015*** (0.003)	0.014*** (0.003)	0.014*** (0.003)	0.015*** (0.003)	0.015*** (0.003)	0.014*** (0.003)	0.014*** (0.003)
Population (host, logged)	2.867*** (0.438)	2.896*** (0.442)	3.286*** (0.524)	3.404*** (0.547)	2.789*** (0.430)	2.851*** (0.430)	3.000*** (0.444)	3.130*** (0.456)
Constant	-48.810*** (8.053)	-49.671*** (8.216)	-51.911*** (8.923)	-55.126*** (9.367)	-47.193*** (7.895)	-48.736*** (7.890)	-46.382*** (7.894)	-49.821*** (7.995)
Observations	22236	22236	22236	22236	22236	22236	22236	22236
Log likelihood	-37771.721	-37759.763	-48890.688	-48794.433	-37835.962	-37808.043	-49364.824	-49225.259
AIC	75573.442	75551.526	97807.375	97616.866	75701.924	75648.085	98755.649	98478.518

Note. All models include country fixed effects and year fixed effects. Standard errors clustered at the country-industry parentheses. AIC = Akaike's information criterion. * $p < .1$. ** $p < .05$. *** $p < .01$.

References

- Abdi, Hervé (2007). The Eigen-Decomposition: Eigenvalues and Eigenvectors. In: *Encyclopedia of Measurement and Statistics*. Thousand Oaks, CA: Sage:304–308.
- Alfaro, Laura, Davin Chor, Pol Antras, and Paola Conconi (2019). Internalizing global value chains: A firm-level analysis. *Journal of Political Economy* 127(2):508–559.
- Allee, Todd and Clint Peinhardt (2011). Contingent Credibility: The Impact of Investment Treaty Violations on Foreign Direct Investment. *International Organization* 65(3):401–432.
- Anderer, Christina, Andreas Dür, and Lisa Lechner (2020). Trade policy in a “GVC World”: Multi-national corporations and trade liberalization. *Business and Politics* 22(4):639–666.
- Antràs, Pol (2020). Conceptual aspects of global value chains. *The World Bank Economic Review* 34(3):551–574.
- Antràs, Pol and Davin Chor (2013). Organizing the global value chain. *Econometrica* 81(6):2127–2204.
- Antràs, Pol, Davin Chor, Thibault Fally, and Russell Hillberry (2012). Measuring the upstreamness of production and trade flows. *American Economic Review* 102(3):412–16.
- Baccini, Leonardo, Andreas Dür, and Manfred Elsig (2018). Intra-industry trade, global value chains, and preferential tariff liberalization. *International Studies Quarterly* 62(2):329–340.
- Baccini, Leonardo, Pablo Pinto, and Stephen Weymouth (2017). The Distributional Consequences of Preferential Trade Liberalization: Firm-level Evidence. *International Organization* 71(2):373–395.
- Blackwell, Matthew and Adam N Glynn (2018). How to make causal inferences with time-series cross-sectional data under selection on observables. *American Political Science Review* 112(4):1067–1082.
- Blake, Daniel J and Caterina Moschieri (2017). Policy Risk, Strategic Decisions and Contagion Effects: Firm-Specific Considerations. *Strategic Management Journal* 38(3):732–750.
- Blanchard, Emily J, Chad P Bown, and Robert C Johnson (2017). Global value chains and trade policy. *Dartmouth College and Peterson Institute for International Economics* 2.

- Blonigen, Bruce and Miao Wang (2005). Inappropriate Pooling of Wealthy and Poor Countries in Empirical FDI Studies. In: *Does Foreign Direct Investment Promote Development?* Ed. by Theodore Moran, Edward Graham, and Magnus Blomstrom. Institute for International Economics.
- Brumm, Johannes, Georgios Georgiadis, Johannes Gräß, and Fabian Trottner (2019). Global value chain participation and current account imbalances. *Journal of International Money and Finance* 97:111–124.
- Brutger, Ryan (Forthcoming). Litigation for sale: private firms and WTO dispute escalation. *American Political Science Review*.
- Büthe, Tim and Helen V. Milner (2014). Foreign Direct Investment and Institutional Diversity in Trade Agreements: Credibility, Commitment, and Economic Flows in the Developing World, 1971–2007. *World Politics* 66(1):88–122.
- Chaudoin, Stephen, Jeffrey Kucik, and Krzysztof Pelc (2016). Do WTO disputes actually increase trade? *International Studies Quarterly* 60(2):294–306.
- Guzman, Andrew T and Beth A Simmons (2005). Power plays and capacity constraints: The selection of defendants in world trade organization disputes. *The Journal of Legal Studies* 34(2):557–598.
- Handley, Kyle and Nuno Limão (2022). Trade policy uncertainty. *Annual Review of Economics* 14:363–395.
- Henisz, Witold J. (2000a). The Institutional Environment for Economic Growth. *Economics & Politics* 12(1):1–31.
- (2000b). The Institutional Environment for Multinational Investment. *Journal of Law, Economics, and Organization* 16(2):334–364.
- Imai, Kosuke and In Song Kim (2019). When should we use unit fixed effects regression models for causal inference with longitudinal data? *American Journal of Political Science* 63(2):467–490.

- Imai, Kosuke, In Song Kim, and Erik H Wang (2021). Matching methods for causal inference with time-series cross-sectional data. *American Journal of Political Science*.
- Jensen, J. Bradford, Dennis P. Quinn, and Stephen Weymouth (Sept. 2015). The Influence of Firm Global Supply Chains and Foreign Currency Undervaluations on US Trade Disputes. *International Organization* 69 (04):913–947.
- Jensen, Nathan M (2003). Democratic Governance and Multinational Corporations: Political Regimes and Inflows of Foreign Direct Investment. *International Organization* 57(3):587–616.
- Johnson, Robert C. and Guillermo Noguera (2012). Accounting for intermediates: Production sharing and trade in value added. *Journal of International Economics* 86(2):224–236.
- Jung, Yoo Sun, Erica Owen, and Gyu Sang Shim (2021). Heterogeneity in How Investors Respond to Disputes: Greenfield Foreign Direct Investment and Coindustrial Disputes. *The Journal of Politics* 83(4):1260–1274.
- Kim, Soo Yeon and Gabriele Spilker (2019). Global value chains and the political economy of WTO disputes. *The Review of International Organizations* 14(2):239–260.
- Kucik, Jeffrey and Krzysztof J Pelc (2016a). Do international rulings have spillover effects?: The view from financial markets. *World Politics* 68(4):713–751.
- Kucik, Jeffrey and Krzysztof J. Pelc (2016b). Measuring the Cost of Privacy: A Look at the Distributional Effects of Private Bargaining. *British Journal of Political Science* 46(4):861–889.
- Lenzen, Manfred, Daniel Moran, Keiichiro Kanemoto, and Arne Geschke (2012). Mapping the structure of the world economy. *Environmental Science Technology* 46(15):8374–8381.
- (2013). Building Eora: A Global Multi-regional Input-Output Database at High Country and Sector Resolution. *Economic Systems Research* 25(1):20–49.
- Li, Quan, Erica Owen, and Austin Mitchell (2018). Why Do Democracies Attract More or Less Foreign Direct Investment? A Meta-Regression Analysis. *International Studies Quarterly* 3(1):494–504.
- Li, Quan and Adam Resnick (2003). Reversal of Fortunes: Democratic Institutions and Foreign Direct Inflows to Developing Countries. *International Organization* 57(1):175–211.

- Milner, Helen and David Yoffie (1989). Between Free Trade and Protectionism: Strategic Trade Policy and a Theory of Corporate Trade Demands. *International Organization* 43(2):239–272.
- Pandya, Sonal (2016). Political Economy of Foreign Direct Investment. *Annual Review of Political Science* 19:455–75.
- Pauwelyn, Joost and Krzysztof J. Pelc (2022). Can Judicial Norms Protect Against Political Pressure? Evidence from 25 years of WTO Rulings. *Working Paper*.
- Peritz, Lauren (Jan. 2020). When are International Institutions Effective? The Impact of Domestic Veto Players on Compliance with WTO Rulings. *International Studies Quarterly* 64(1):220–234. eprint: <https://academic.oup.com/isq/article-pdf/64/1/220/32682254/sqz094.pdf>.
- Rainey, Carlisle (2014). Arguing for a Negligible Effect. *American Journal of Political Science* 58(4):1083–1091.
- Ryu, Jeheung and Randall W Stone (2018). Plaintiffs by proxy: A firm-level approach to WTO dispute resolution. *The Review of International Organizations* 13(2):273–308.
- Silva, Santos and Silvana Tenreyro (2006). The Log of Gravity. *The Review of Economics and Statistics* 88(4):641–658.
- (2011). Further simulation evidence on the performance of the Poisson pseudo-maximum likelihood estimator. *Economics Letters* 112:220–222.
- Tang, Rachel (2009). The rise of China’s auto industry and its impact on the US motor vehicle industry. *Congressional Research Service*.
- Timmer, Marcel P., Erik Dietzenbacher, Bart Los, Robert Stehrer, and Gaaitzen J. de Vries (2015). An Illustrated User Guide to the World Input–Output Database: the Case of Global Automotive Production. *Review of International Economics* 23(3):575–605. eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/roie.12178>.
- Wellhausen, Rachel L (2015). Investor-State Disputes When Can Governments Break Contracts? *Journal of Conflict Resolution* 59(2):239–261.

Yildirim, Aydin B, Arlo Poletti, J Tyson Chatagnier, and Dirk De Bièvre (2018a). The globalization of production and the politics of dispute initiation at the World Trade Organization. *Global Policy* 9:38–48.

Yildirim, Aydin B, J Tyson Chatagnier, Arlo Poletti, and Dirk De Bièvre (2018b). The internationalization of production and the politics of compliance in WTO disputes. *The Review of International Organizations* 13(1):49–75.

Zeng, Ka, Karen Sebold, and Yue Lu (2020). Global value chains and corporate lobbying for trade liberalization. *The Review of International Organizations* 15(2):409–443.