

The globalization of production and the politics of dispute initiation at the World Trade Organization

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Abstract

The aim of this paper is to explain World Trade Organization (WTO) members' decision to initiate a dispute at the WTO. Since many potential violations of WTO law remain unchallenged, we explore the conditions under which WTO members complain about only some allegedly WTO-incompatible policies, while leaving a large majority of them unchallenged. While there may be different reasons why governments choose to initiate certain disputes, we are especially interested in the relationship between potential and actual trade disputes on the one hand and the degree of integration into so-called global value chains (GVCs) on the other. We demonstrate that firms and sectors highly integrated into such GVC networks are more willing and able to try and eliminate barriers to cross-border trade than less integrated ones through inter-state litigation. These actors have more incentives to identify and seek to remove barriers that hamper the smooth operation of their global production networks. They react more readily to prevent present harm and therefore they also become active to obtain future potential benefits by initiating WTO disputes. We test our hypothesis by examining data from the US using a Cox proportional hazard model and find that trade barriers are more likely to be filed as WTO disputes in sectors highly integrated into GVCs, while controlling for other factors.

Introduction

Since the World Trade Organization (WTO) was established in 1995, judicial politics has become a key feature of international trade relations. With the creation of the WTO, members of the trade regime decided to strengthen existing mechanisms for enforcement of commonly agreed upon rules, replacing the model of political-diplomatic dispute settlement of the General Agreement on Tariffs and Trade (GATT) with a quasi-judicial model of dispute settlement. Since then, the dispute settlement mechanism (DSM) is widely heralded as the WTO's *jewel in the crown*.

Understandably, the politics of WTO dispute settlement has received much scholarly attention. This body of scholarly work has shed light on a number of important questions, i.e. why disputes escalate (e.g. Guzman and Simmons 2002; Busch 2000), whether dispute resolution increases trade between WTO Members (e.g. Chaudouin et al. 2016), how dispute settlement panelists are appointed and behave (e.g. Busch and Pelc 2010), how dispute settlement affects the balance and relative power of domestic trade-related interests, (e.g. Goldstein and Martin 2000), and under what conditions WTO Members comply with their WTO commitments (e.g. Bown 2004, Poletti and De Bièvre, 2014).

Quite surprisingly, the question how WTO members select their targets in WTO dispute settlement has received relatively little attention. Trade disputes are but the tip of an iceberg of potential disputes and WTO members do not challenge all potentially WTO-incompatible trade barriers. The complaints filed for adjudication in the WTO DSM represent only a small fraction of policies in violation of WTO agreements. Some analyses concur in pointing out that less than 10 per cent of politically relevant trade barriers for producers in the EU and the US end up being litigated in the WTO (Davis 2008, Young 2009). This means that there is a universe of potential disputes much greater than the universe of actual ones. A large number of allegedly WTO-illegal trade barriers simply do not come to the surface because WTO members decide not to challenge them in the WTO DSM. Understanding the political processes that lead WTO members to target certain policy measures, while not acting upon others, is key to assessing the performance of the WTO's jewel in the crown. While in principle, shifting multilateral trade relations away from the realm of pure power-based politics by creating a rule-based system should result in fair and unbiased access to the important public good of credible enforcement of common rules, the existence of a gap between potential and actual disputes suggests that policymakers play a key gatekeeping role and that the dynamics of dispute initiation are highly politically charged.

The existing literature that investigates the politics of dispute initiation in the WTO has so far considered a number of possible explanatory factors, including the legal capacity of potential complainants (Kim 2008; Busch, Reinhardt and Shaffer, 2009), the long-term legal precedent-setting value of cases (Davis and Blodgett Bermeo Pelc, 2013, Mazumder, 2015), how concentrated or diffuse the policy is (Johns and Pelc, 2015), the relative economic size of disputants and the trade volume between them (Guzman and Simmons, 2005, Sattler and Bernauer, 2011) and the domestic political pressure exerted on potential complainant WTO members' policy makers by powerful exporting constituencies (Davis, 2012; Davis and Shirato 2007).

While these contributions have significantly advanced our understanding of the political-economic determinants of dispute initiation in the WTO, to our knowledge no analysis has so far looked into how firm's and sectors' integration in Global Value Chains (GVCs) affects WTO members' choices over targets in dispute settlement. With the increasing fragmentation of production processes across the globe in a great number of economic sectors, integration into value chains has become an important phenomenon, transforming global trade relations, and arguably increasing demands for

lower trade barriers in order for firms to enjoy value added trade (Jensen et al. 2013). Perhaps one of the most striking phenomena has indeed been that numerous firms and sectors use foreign affiliates, subsidiaries, and arm's length suppliers in their production processes, slowly creating a "factory world" (Los et al. 2014).

The literature on the political economy of trade has shown how GVCs have given rise to the political mobilization and empowerment of anti-protectionist societal interests, resulting in decreased demands for protection during economic crises (Milner 1987); reduced political support for the imposition of anti-dumping measures (De Bièvre and Eckhardt 2011; Eckhardt 2013, 2015; Jensen et al. 2013, 2015), and greater support for trade liberalization through Preferential Trade Agreements (PTAs) (Antras and Staiger 2012; Baccini et al. 2014; Baldwin 2011; Chase 2003; Eckhardt and Poletti 2016; Kim 2015; Manger 2009; Orefice and Rocha 2014). Yet, no study has so far looked into how WTO members' integration into GVCs affects their behavior in the WTO in general, and in WTO dispute settlement in particular.

This paper seeks to contribute toward filling this gap by investigating how the growing fragmentation of production affects WTO members' decision to initiate trade disputes at the WTO. We formulate the expectation that highly integrated firms and sectors may have more of an incentive to identify and seek to remove barriers that hamper the smooth operation of their global production networks. If actors react more readily to prevent present harm than they become active to obtain future potential benefits, then firms highly dependent on their global production network relationships should have a higher incentive to get their act together and try and get public policy makers to remove WTO-incompatible measures that harm them. Moreover, once a complaint is indeed launched, they may work with their foreign affiliates and subsidiaries, and seek to obtain early compliance by defendants in such disputes. This would lead us to expect relatively more complaints in highly integrated sectors, as well as a swift resolution of such trade disputes.

In order to test our proposition, we envisage to analyze trade barriers raised against the US and the EU that are challenged as formal WTO disputes. In the scope of this paper, we present the first results of the WTO dispute initiation by the US against trade barriers enacted by the US' trading partners abroad. We examine the effect of GVC integration on the time until dispute initiation, using a Cox proportional hazard model, and controlling for a number of potentially-confounding factors.

The paper proceeds as follows. The first section reviews the literature on dispute initiation at the WTO and global value chains, while introducing alternative explanations for WTO members to challenge trade barriers at the WTO. We then sketch the empirical puzzle of GVCs with regards to trade barriers and dispute initiation. Next, we present our research design and test the hypothesis we present using duration analysis. Finally, we conclude with a summary of our findings.

Global Value Chains and WTO Dispute Initiation

The globalization of production has greatly changed the nature of the political economy of trade. In the past, producers in developed countries bought or produced the bulk of their products and inputs domestically, and then traded finished goods among themselves. Since the 1990s, these producers have redefined their core competencies and turned their attention to innovation and product strategy, marketing, and to the highest value-added segments of manufacturing and services. They have simultaneously outsourced labor-intensive, less value-added operations to lower income countries (Gereffi et al. 2005:79). The latter has been done through the creation of foreign subsidiaries—that is, by vertical foreign direct investment (FDI)—or by relying on independent

foreign suppliers (Lanz and Miroudot, 2011). These altered (production) structures, which have become particularly common in labor-intensive consumer goods industries as well as the food industry, are usually referred to as global value chains (GVCs).¹ From the perspective of the domestic political-economy of trade, the most important implication of the increasing relevance of GVCs in the world economy is that international trade flows are no longer almost exclusively about trade in finished goods, but also largely about trade in intermediate goods. Illustratively, today trade in intermediates accounts for over two thirds of total imports for the majority of OECD countries (Johnson and Noguera 2012) while it is estimated that more than 80 per cent of merchandise exports and imports of pivotal international economic players now takes place within global networks of production and distribution (see Bernard et al. 2009).

As firms internationalize their production, their demand for trade protection decreases (Jensen et al. 2013). Whether sourcing firms operate directly in a foreign country or simply import intermediate inputs from foreign suppliers, firms operating within GVCs can expect to accrue benefits from cheaper imports (Manger, 2012). When a country is highly integrated into GVCs and it has many import-dependent firms, trade liberalization will be welcomed not only because it increases opportunities to access foreign markets, but also because it lowers the costs for imported inputs as well (Lanz and Miroudot 2011). In short, because the internationalization of production makes companies increasingly dependent on imports of intermediate goods for their production process, lowering domestic trade barriers for intermediate goods becomes a valued political objective for them because it can significantly decrease production costs for these companies.

What are the implications of the globalization of production for the politics of dispute initiation? In our view, WTO members are more likely to respond positively to domestic requests to initiate formal WTO disputes when these demands stem from firms and sectors highly integrated into GVCs. The reasons why this expectation is plausible are manifold, largely connected with policymakers' expectations in the complainant WTO member about the likelihood of compliance by potential defendants. The existence of trade-distorting, potentially WTO-incompatible, trade barriers in the defendant is telling of the domestic political clout of firms benefiting from the existence of barriers to imports of foreign products. The existence of such trade barriers thus suggests that the firms suffering from the trade-restrictive measures find themselves in a marginal domestic political position. The complainant however can expect that the initiation of a trade dispute will change this domestic constellation of political conflict, incentivizing greater political mobilization by previously marginalized trade-related interests suffering from trade distorting measures, as well as by exporters seeking to avoid decreased market access opportunities in the complainant's market as a result of the possible imposition of retaliatory measures in cases on non-compliance. These dynamics are likely to be more important in cases in which firms operating in the complainant and the defendant are highly integrated into GVCs. Indeed, as GVCs integration means high levels of import-dependence by complainants, their retaliatory capacity also increases, making the incentives described above more compelling. Eckhardt and De Bièvre (2015) even find that in some instances the anticipation of these political dynamics may incentivize transnational lobbying, that is lobbying by firms operating in defendant WTO members toward foreign governments to convince them to target their own government in WTO dispute settlement. More generally, a large amount of firms operating in import-dependent sectors are vertically integrated multinational corporations that have invested in

¹ See, in particular, Gereffi (1999) and Burch and Lawrence (2005) for the expansion of such global linkages in the food industry.

foreign countries to outsource part of their production process there. In addition to investments flows, vertically integrated MNCs generally engage in two-way trade flows. This means that the political even in the complainant WTO member the domestic political coalition favoring targeting the defendant through WTO litigation can be expected be stronger. Altogether, these factors suggest that high levels of GVC integration should make policymakers more willing to initiate formal WTO disputes.

Research Design

In order to test the expectation we outlined above, we rely on an expanded dataset of trade barriers enacted against the US originally compiled by Christina Davis (2012). We extended this dataset by including the range of the reported trade barriers until 2012 and by adding data on trade in intermediates between the US and its trade partners. Our dataset thus includes all of the (reported) trade barriers raised against the US by Canada, Mexico, the European Union, Brazil, India, Japan, Korea, Malaysia, and Singapore between 1995 and 2012.

Although we recognize that recently raised trade barriers may bring additional variation to our analysis, we have reliable data only through 2012. Of course, our analysis would greatly benefit from including barriers enacted by other WTO members – e.g. China – against the US. However, given the extremely time consuming nature of such data collection, we limit our analysis at this stage for the aforementioned trade partners of the US. As a result, our dataset has 941 observations after excluding cases with missing values. We use these data to examine the effect of GVC integration on dispute initiation at the WTO dispute settlement mechanism. In addition to our variable of interest, we control for a number of relevant factors, drawn from the literature, which we outline below.

Data

Our dependent variable, *time until WTO dispute initiation*, indicates how long it took the US to challenge trade barriers at the WTO. We tracked each and every reported trade barrier in our dataset and marked the time the US decided to lodge a case at the WTO to challenge them.

Our main independent variable of interest is affected *sectors' GVC integration*. We operationalize it by measuring the total trade in intermediates between the US and its trade partner for all the affected sectors. We examine sectors' level of integration by looking at trade in intermediates for a number of reasons. Firstly, we are interested in the effects of GVCs on the domestic politics of trade, *in casu* on how different levels of integration in GVCs affect the politics of dispute initiation. Our approach is in line with a large body of literature, which also considers trade in intermediate goods both as the single most important GVC-related factor influencing the domestic politics of trade, as well as the most straightforward measure of internationalization of production (Baccini et al. 2015; Eckhardt and Poletti 2016; Amador and Cabral 2014, 19). Secondly, our operationalization allows us to make effective use of the most comprehensive and reliable data source on GVCs compiled so far: the OECD-WTO Joint Trade in Value Added Database (TiVA) (OECD-WTO 2015).² The drawback to

² For the TiVA dataset, see http://stats.oecd.org/Index.aspx?DataSetCode=TIVA2015_C1#.

this data set is that the data are available in five-year blocs, reducing the temporal coverage of the data. We circumvent this issue by using linear interpolation for the years between observations.³

We thus rely on TiVA to measure our independent variable. First, we cross-reference each reported trade barrier's corresponding sector with the International Standard Industrial Classification (ISIC) and European Union Classification of Economic Activities (NACE). We then calculate bilateral trade in GVCs as the sum of affected sectors' imports and exports in intermediates between the US and its trade partner.

Control variables

Drawing on the existing literature, we also include a number of control variables. We start by accounting for the possibility that patterns of dispute initiation are affected by power asymmetries between trade partners: out-of-court settlement of an issue may increase with larger power asymmetries. The logic of this argument is that if the potential complainant is much more powerful than the potential defendant, it is more likely to get what it wants, i.e. the removal of trade barriers, through bilateral interactions preceding the initiation of a dispute because it can impose greater costs on the target with limited harm to its own economy. We operationalize power asymmetries as *power preponderance* and measure it as economic size in relative terms. Relative power here is intended the difference between the log GDP of the potential complainant and log GDP of potential defendant.

Second, following Sattler and Bernauer (2011) we take into account the probability of an increase in dispute initiation when trade partners have large economic size and trade volumes. The argument holds that large economies attract a disproportionate amount of disputes because greater economic diversification increases the range of imported goods thus the probability that trade partners will be negatively affected by trade restrictive measures, and because large market size increases the potential gains of a favorable WTO DS ruling for trading partners. We operationalize this variable as the log of bilateral trade of the potential complainant (the US) and potential defendants. The data is collected from UNCOMTRADE.

Third, we consider the potential impact of alternative fora for dispute settlement on dispute initiation at the WTO. The probability of dispute initiation decreases when the potential target is a partner in Preferential Trade Agreement with a highly legalized dispute settlement mechanism. We operationalize this as common membership of the potential complainant, i.e. the US, and potential defendants to bilateral of regional PTAs.

Fourth, we also control for the possibility that the level of political mobilization engendered in the potential complainant might affect dispute initiation. Following Olson (1965), we should be able to use measures that allow us to grasp both whether a potential dispute touches upon an economically important economic sector and whether the potential for political mobilization in such sector is high. The Herfindahl-Hirschman Index (HHI), which measures the size of firms in relation to the industry size and indicates the level of competition among them, would nicely capture the logic that underlies this hypothesis.⁴ Unfortunately, data to construct this measure across all reported trade barriers is

³ Given two coordinates, (x_0, y_0) and (x_1, y_1) , we compute any (x, y) between them as $y = y_0 + (y_1 - y_0) \frac{x - x_0}{x_1 - x_0}$.

⁴ See OECD (1993), for an overview on HHI index and sector concentration.

not available. We instead identify the level of concentration of the barrier by its number of ISIC classification digits – i.e. more specialized products having higher digits.

GVC integration and trade barriers reported to the US authorities

We begin our investigation by examining the data on all reported trade barriers against the US by its selected trade partners between 1995 and 2012. Figure 1 shows the frequency with which each sector is affected via trade barriers. We note that the most frequently affected sectors include Production of Food and Beverages, Agricultural Products, Copyrighted Materials, Pharmaceutical Products, and Horizontal measures. This overview immediately provides us with first clear evidence about our hypothesis. Clearly, trade barriers do get enacted in economic sectors characterized by a high degree of integration into global value chains. Therefore, an important part of the universe of potential WTO disputes consists of cases about sectors that are highly GVC integrated. This refutes the expectation that by their very nature, firms active in these integrated sectors would internalize the elimination of trade barriers. Rather, it seems that only once they are enacted, sectors feeling the harm from them alert their domestic government, in casu the US, about their existence, together with an appeal to try and remove them.

Figure 1: Foreign trade barriers reported to the USTR by sector (in %)

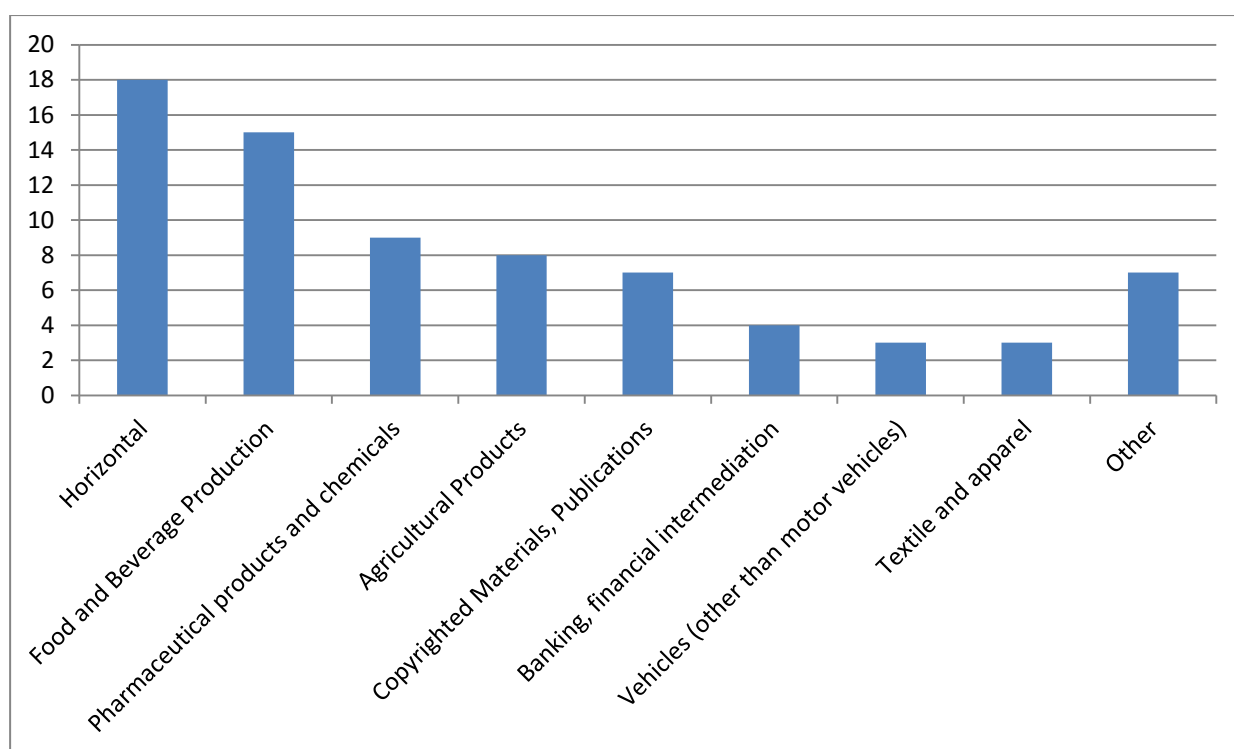
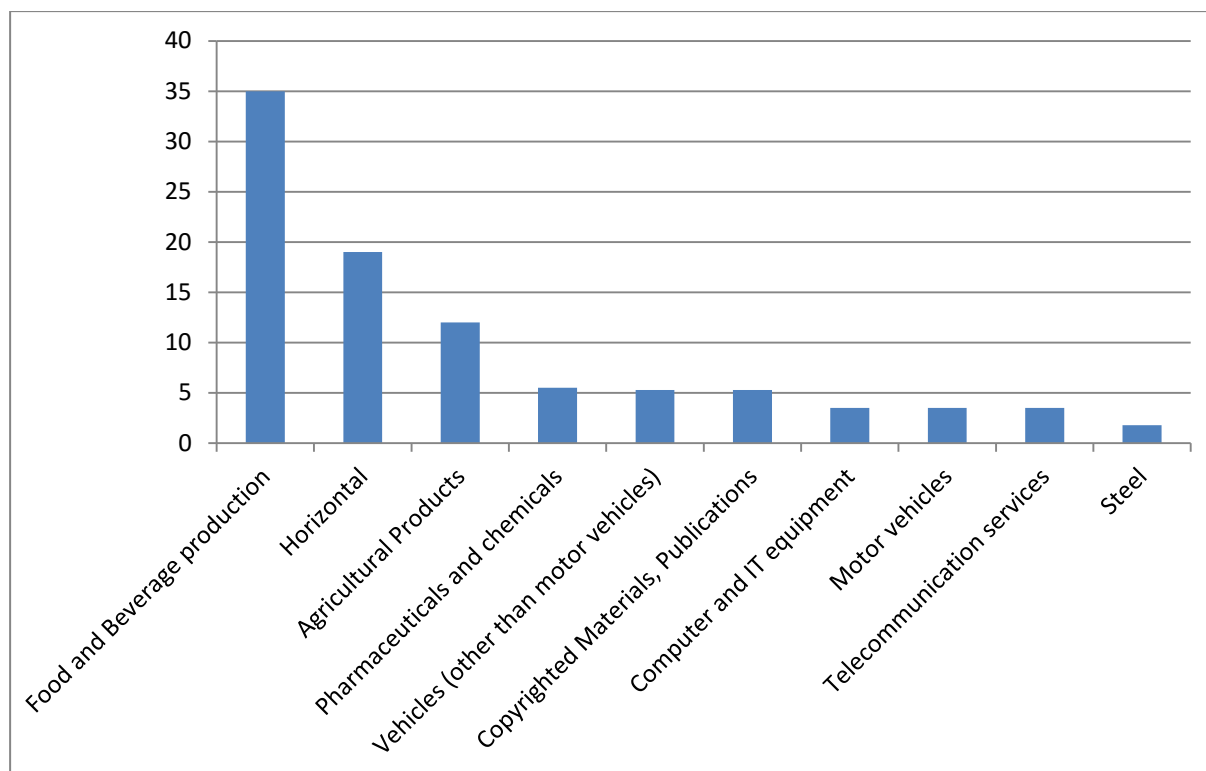


Figure 2 further shows which sectors are affected by the barriers that the US challenged in WTO disputes. We note that trade barriers that involve sectors highly integrated into GVCs tend to be challenged. For instance, the Food and Beverages Production sector, which is a relatively integrated sector, appears as the sector with the largest amount of barriers that are tabled as disputes at the WTO. Moreover, Pharmaceuticals, Motor Vehicles, and Computer and Information Technology (IT) Equipment are three sectors highly integrated into GVCs. Given the amount of trade barriers (Figure 1) involving those sectors, there are actually a considerably high number of initiated WTO disputes.

Figure 2: US-initiated WTO disputes against foreign trade barriers by sectors



Analysis

Having thus already examined the nature of the data, we now turn to our further analysis. As our variable of interest is represented by the time until the US lodges a trade dispute at the WTO, we analyze the data using a semiparametric Cox proportional regression model. The Cox model is advantageous in that it does not require specification of the baseline hazard function and that estimation of the partial likelihood function with random right censoring of observations remains efficient (Efron 1977). It is also useful in that it can incorporate predictable time-varying covariates.

Table 1: Cox proportional hazards model

	Baseline	GVC included	GVC and Time included
Power preponderance	,169*** (0,69)	,188** (0,68)	,489 (0,62)
Gravitation	,317 (0,79)	,364 (0,78)	1,44 (0,78)
Level of mobilization	1,007 (0,06)	1,039 (0,05)	1,070 (0,06)
PTA	6,963*** (0,73)	6,599** (0,73)	2,08 (0,70)
Sector GVC integration		,993*** (0,03)	,992*** (0,03)
Numb of observations	941	941	941

***p < 0.01, **p < 0.05, *p < 0.1

Standard errors in parentheses; all tests are two-tailed tests

Table 1 presents the results of our Cox regression across three different models. Columns 1-3 represent different model specifications for the TiVA data. Examination of the Schoenfeld residuals across all three models suggests that the proportional hazards assumption is satisfied in each case (Box-Steffensmeier et al. 2003). We can interpret the results with relative ease: positive values in each cell indicate that the variable is related to a higher probability of a dispute being lodged. Therefore, variables with positive coefficients are associated with a shorter time until a dispute is tabled at the WTO.

The results suggest that time until dispute is driven by power preponderance and the presence of PTA, both of which are positively related to time until a dispute appears. The model in column 2 incorporates GVC integration of affected sectors. When we include this measure, we find that it also significantly reduces time until dispute initiation. Additionally, we find significant effects ($p < .05$) for power preponderance and PTA, both of which make disputes more likely to appear. However, both of these effects vanish in the third model, when we include dummies for the year in which the barrier was enacted. Accounting for time allows us to control for changes in the international system, such as global increase in the fragmentation of production, which might affect willingness to initiate disputes. The inclusion of time dummies increases the magnitude of sectors' GVC integration, which remains statistically meaningful, and decreases the statistical significance of other variables. Besides affected sectors' GVC integration, the remaining control variables fail to attain statistical significance at conventional levels.

Our analysis thus suggests that GVC integration of sectors involving trade barriers plays an important role in US' decision to challenge certain barriers at the WTO. Firms and sectors highly integrated into such GVC networks seem to be more willing and able to try and eliminate barriers to cross-border trade than less integrated ones through inter-state litigation. A potential explanation to this empirical observation is that firms and sectors mobilize in favour of launching a WTO dispute because they might have a better chance of success in disputes where targeted measures in defendants also involve economic actors highly integrated into GVCs.

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