Fear of Crowds in WTO Disputes:
Why Don’t More Countries Participate?∗

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Abstract

WTO members that are affected by a trade dispute can join litigation as a third party and gain access to otherwise private negotiations. Participation has a negligible cost. Yet states rarely join cases as third parties, even when they have a material interest at stake. We construct a formal model of strategic third party participation in the WTO, and arrive at two testable implications. First, participants receive higher utility from dispute outcomes than nonparticipants. Second, despite this apparent advantage, the decision to participate raises the total number of third parties, which lowers the likelihood of early settlement. This creates strategic interdependence: as more states become third parties, the marginal benefit of participation decreases and each state becomes less likely to join. We test our theoretical model by examining each country’s decision to participate or not in every WTO dispute since 1995. The findings offer strong support for our model: states shy away from joining when it’s too crowded.

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1 Introduction

“Nobody goes there anymore; it’s too crowded.” — Yogi Berra.

International organizations (IOs) aspire to egalitarian decision-making among sovereign states, yet weak and poor states are often excluded from participation. Some IOs explicitly give powerful states more influence, such as the UN Security Council (Johns 2007). Other IOs have formal rules that offer a voice to small countries, such as consensus decision-making in the International Monetary Fund, but these rules can mask informal norms that allow powerful countries to set the agenda and push for their preferred outcome, especially when the stakes are high (Stone, 2011; Vreeland, 2007). Critics argue that such “organized hypocrisy” reduces the legitimacy of international organizations, and leads to political outcomes that go against the interests of poor states (Steinberg 2002; Heisenberg 2007).

One of the institutions most dogged by these criticisms is the World Trade Organization (WTO). The WTO has been described as a “country club” of wealthy countries that excludes poor countries from decision-making. Under the WTO’s “green room” model, rich countries often arrive at a private consensus amongst themselves and then present their decisions to the remainder of the membership for an up-or-down vote. The WTO’s dispute settlement system is often singled out by critics for its lack of transparency and limited participation by poor countries (Smythe and Smith 2006).

This participation deficit in international organizations could be chalked up to power politics. Few IR scholars would contest the claim that power increases a state’s ability to achieve its goals, both under anarchy and within institutions. Yet there are other possible ways to account

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1 Just recently, in a 2011 WTO meeting, the representatives of Bolivia, Cuba, Ecuador and Nicaragua complained that “In practice, the WTO has become an organization that is not led by its Members, in which decision-making based on facts is not governed by consensus, and negotiation meetings are not open to participation by all Members.” A number of NGOs have formulated similar criticisms: Oxfam International, WWF International, together with eight other NGOs released a 2003 memo claiming that the WTO features “proliferation of ‘informal’, undocumented and exclusive meetings, amounting to lack of transparency and inability of many countries to participate.”
for exclusionary decision-making in IOs. Some argue that the difficulty of decision-making within any group grows in proportion to its size. Others argue that IOs suffer from a broader-deeper trade-off: as an institution grows larger, the depth of attainable cooperation decreases because the institution must satisfy those states that are least willing to cooperate (Downs, Rocke and Barsoom 1998; Gilligan 2004; Gilligan and Johns 2012). Limits on participation may thus be necessary to promote effective decision-making and deep cooperation.

While these arguments are plausible, we argue that an additional factor may be at work: participation does not always benefit poor states. Most political rhetoric trumpets the cost of exclusion for poor states, but we contend that poor states often rationally choose not to participate in IOs because participation can harm their interests. Our argument puts forward two provocative claims: (i) sometimes exclusionary decision-making can benefit those very states that are excluded from participation; and (ii) observed exclusion may reflect rational decisions by poor states not to participate, rather than formal or informal constraints on participation. Exclusionary decision-making may be a better outcome than the frequent mention of illegitimacy would have one believe.

In response to its perceived participatory deficit, the WTO has promoted third party participation in trade disputes. Third parties are countries other than the litigants that are allowed into the room during otherwise private negotiations between complainant and defendant countries. Third party participation is nearly costless. Countries that join a dispute as a third party, by claiming a substantial interest in the matter at issue, can participate actively in both the bargaining and litigation phases of a dispute without bearing any of the considerable cost of filing a case. Such participation delivers far more than a veneer of legitimacy to the proceedings.

WTO disputes can create two types of benefits. First, negotiations can generate private

\[^{2}\text{In the words of Harlan Cleveland, the question is “how do you get everyone into the action and still get action?” (Keohane and Nye 2001). Similarly, Martin (1992) notes that “In a distributive or crisis situation, multilateral decision making will entail higher transaction costs than centralized mechanisms.” See also Johns and Pelc (forthcoming).}^{2}\]
benefits that are received only by those countries that are present in private negotiations. These benefits can include a discriminatory settlement, a transfer through a technical assistance program, or any other targeted benefit that is enjoyed only by those parties that are in the room. Being in the room during pre-litigation negotiations ensures that a country will not be cut out of a private settlement—a “mutually agreeable solution” in WTO parlance—that has a bearing on its trade interests (Elsig and Stucki 2011). Such discriminatory settlements, which exclude nonlitigants, are proscribed by WTO rules. Yet this proscription has proven difficult to enforce, since the content of mutually agreeable solutions is usually private (Bown 2009; Alschner 2012, 54). Accordingly, we find evidence that on average, participants do better than non-participants in terms of trade benefits. Second, litigation can create public benefits that are received by all WTO members. These benefits can be created by changes in the defendant’s behavior that affect all of its trading partners under the Most Favored Nation (MFN) principle. There is also an inherent public benefit when a panel ruling clarifies the law and upholds institutional values (Fiss 1984; Lauterpacht 1958). Since all members receive public benefits, common sense suggests that any country with trade at stake in a dispute should become a third party to gain access to private benefits at little additional cost.

Given the widely extolled benefits and low cost of third party participation, it is striking how few countries ultimately decide to join disputes. The average case in our sample has just four third parties. We estimate that if we account for countries’ material interest in the trade barriers at issue, cases should draw an average of over 17 third party participants. Why would countries not want to join a case that has even a remote bearing on their interests? Participation allows members to observe and affect bargaining solutions that could nullify their benefits and would otherwise remain private, without paying any of the costs borne by the complainant. Legal scholars often concede

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3See Article 3.5 of the Dispute Settlement Understanding (DSU).
4We use trade flows across WTO members in the products at issue in every WTO dispute to generate this expectation. See Section 4.2 below.
their own surprise at this discrepancy. Why don’t more countries participate as third parties?

We argue that while participants will fare better than nonparticipants during WTO disputes, nonlitigants often have incentive to not participate. We construct a formal model in which nonlitigants make strategic decisions about whether to become third parties. Our first key result is that as more states join private negotiations, it becomes more difficult to reach a negotiated settlement. Since third party participants only receive private benefits if there is a settlement, a larger number of third parties reduces the likelihood that the case will generate private benefits. We also argue that when a case goes to trial, third parties shape the perception of panel rulings.

The WTO is fundamentally a diplomatic institution. Panel rulings are legally binding, but the normative and political impact of rulings is shaped by member perceptions. If a case has no third parties, then its panel ruling can be interpreted in a purely legalistic fashion. However, as more countries become third parties, they muddy the waters of dispute settlement. Third parties bring their own opinions, preferences, arguments, and issues to the table. Broad third party participation can thus suggest that a legal issue is ambiguous or subject to competing interpretations. Third parties reduce both the benefit of winning and the cost of losing a panel ruling.

A nonlitigant must carefully balance all of these effects when deciding whether to join a case as a third party. This balancing act creates interdependence in nonlitigant decision-making. In equilibrium, if no other states join as a third party, then disputants are likely to settle. An affected state thus has a strong incentive to join the case and receive a private benefit. However, if many other states join as third parties, then settlement grows improbable, and litigation grows more likely. Under these circumstances, a nonlitigant is unlikely to receive a private benefit from participation because the disputants are unlikely to reach a negotiated settlement. But because trial is likely, participation can have a significant effect on the perception of panel rulings. Holding all else constant, as more states join a case as third parties, each individual state has less incentive

5“So far, third party participation in consultations is less than the author expected” (Horlick, 1998, 690).
to participate. In other words, we expect that WTO members fear crowds in dispute settlement. As more states become third parties, the marginal benefit of participation decreases and each state becomes less likely to join, even if no formal barrier blocks its participation.

We test our model on a dataset consisting of every WTO member’s decision to join, or not, in every dispute since the WTO’s inception in 1995. We first show that participants do indeed fare better than nonparticipants. We then model each country’s decision to participate as conditional on every other country’s decision. To identify our model, we instrument for each country’s propensity to join using its export interest in the dispute, as measured by its share of the defendant’s market for the product at issue. The findings provide strong support for our model. States shy away from joining a case when it’s too crowded.

More generally our model illustrates a broader phenomenon in international politics. Most international disputes begin with private negotiations. If the disputants are not able to reach a settlement, then many disputes are heard by a technocratic IO, such as a court or regulatory institution. Even if those actors who are present in the room do better than those who are excluded, excluded actors may prefer not to participate if their involvement pushes the dispute into a technocratic domain that is costly for the actors. In the following sections, we focus on the role of third parties in WTO dispute settlement. However, after conducting our empirical analysis of WTO participation, we return to our broader argument and provide illustrations of other situations in which: (1) exclusionary decision-making can benefit those very states that are excluded from participation; and (2) observed exclusion reflect rational decisions by actors to not participate.
2 Third Party Participation in WTO Dispute Settlement

2.1 Overview

Dispute settlement at the WTO is decentralized. The institution itself does not enforce violations of its rules, but only provides information about the behavior of its members [Johns and Rosendorff, 2009]. It is up to individual states to challenge perceived violations that may negatively affect their interests. As such, the good functioning of the institution requires WTO members to make repeated decisions about whether to file a dispute, whether to become a third party to a dispute initiated by others, or whether to completely refrain from involvement in a given dispute.

Complainants can launch a dispute by filing a request for consultations in one of two ways. They can do so under either GATT Article XXII:1 or Article XXIII:1. As the WTO itself instructs potential litigants: “the choice between Articles [XXII and XXIII] is a strategic one, depending on whether the complainant wants to make it possible for other Members to participate.” Indeed, the “main difference between these two legal bases relates to the ability of other WTO Members to join as third parties” [WTO, 2011]. Article XXII makes third party participation easy, while Article XXIII is traditionally invoked to conduct consultations in private [Davey and Porges, 1998].

After a case is filed, nonlitigants must decide how to respond. Most WTO cases involve more than two parties. A nonlitigant can file a parallel case, become a co-complainant to the dispute, and share in the costs of litigation. However, it is far more common for a nonlitigant to join as a third party by invoking a substantial trade interest in the dispute.

Footnotes:
6 For a general model of endogenous courts, see Johns [2012].
7 Cases filed under all other covered agreements similarly require the complainant to invoke one of these two articles through their corresponding consultation provisions: Agreement on Agriculture, Article 19; Agreement on the Application of Sanitary and Phytosanitary Measures, paragraph 1 of Article 11; Agreement on Textiles and Clothing, paragraph 4 of Article 8; Agreement on Technical Barriers to Trade, paragraph 1 of Article 14; Agreement on Trade-Related Investment Measures, Article 8, etc.
8 We control for this distinction in our empirical analysis.
9 There are only 33 cases in our sample where disputes feature multiple complainants, while there are 138 distinct disputes (counting cases with multiple complainants as a single dispute) with third parties present during consultations.
has existed in one form or another since the early days of the GATT, when dispute settlement panels allowed nonlitigant countries to observe and comment on dispute proceedings on an *ad hoc* basis. Yet third party status was not codified until 1979.\footnote{The relevant passage, which echoes the current provisions in the DSU over third parties, reads “any contracting party having a substantial interest in the matter before a panel [...] shall have an opportunity to be heard by the panel and to make written submissions to the panel.” See GATT document MTN.GNG/NG13/W/28.} The WTO’s current treatment of third parties is articulated in Article 10 of the Dispute Settlement Understanding (DSU), which reads that “[a]ny Member having a substantial interest in a matter before a panel [...] shall have an opportunity to be heard by the panel and to make written submissions to the panel.”\footnote{Importantly, third parties can only be member governments—private interests are never allowed in, and this is unlikely to change. Private parties do have the option of submitting *amicus curiae* briefs, yet these have limited impact, are often disregarded by panels, and do not allow private parties to observe bargaining or litigation.} However, very few countries wait this late in the process to join because one of the key benefits of third party participation is the ability to be present during otherwise private pre-litigation negotiations. We can point to only five instances where a country joined as a third party at the panel stage without already having done so at the start of consultations.\footnote{See Busch and Reinhardt (2006) for a brief discussion of four of these cases.} Strictly speaking, third parties can be pro-complainant, pro-defendant, or mixed in their policy preferences. We focus on the behavior of pro-complainant third parties for two reasons. First, the vast majority of third parties in WTO disputes are pro-complainant—over 70% of third parties in our sample. Second, the existing literature about third party participation has also focused exclusively on pro-complainant third parties.

A defendant can block third party participation in WTO proceedings. However, in practice they almost never do so, with only a handful of blocks by the defendant in the first years of the WTO\footnote{This risk is explicitly stated in DSU Article 4.11: “If the request to be joined in the consultations is not accepted, the applicant Member shall be free to request consultations.”} Davey and Porges 1998]. This is easily explained. If a defendant blocks a potential third party, then this state has an incentive to file its own parallel case against the defendant. This would be far costlier for the defendant than having that country present as a third party.\footnote{See Busch and Reinhardt (2006) for a brief discussion of four of these cases.} Additionally,
even if a defendant blocks participation by a country that lacks the resources to file its own case, this country could still gain third party status at the panel stage under Article 10 of the DSU.

After filing and participation decisions are made, consultations begin. These are private negotiations among the complainant, defendant, and third parties with the goal of reaching a “mutually agreeable solution.” The WTO explicitly encourages such settlement as its preferred alternative to litigation\textsuperscript{[4]} Private settlements benefit the litigants because the defendant can avoid the normative impact of an adverse ruling, and the litigants can reach an agreement away from domestic interest group pressure. As a result, 63\% of the disputes in our sample never make it to a panel ruling. If the states are unable to reach a settlement during consultations, the complainant can request the formation of a panel and litigation begins.

2.2 Private versus Public Benefits

By negotiating in private, states can reach deals that provide \textit{private benefits} to the litigants, leaving out other Members. The WTO requires that all mutually agreeable solutions “shall be consistent with [WTO] agreements and shall not nullify or impair benefits accruing to any Member under those agreements, nor impede the attainment of any objective of those agreements.”\textsuperscript{[15]} Yet it is difficult to enforce WTO rules when states negotiate agreements in private, as in the case of consultations. As a result of imperfect enforcement of discriminatory settlements, third parties thus effectively perform an enforcement function for which there is no clear substitute (Kucik and Pelc, 2013). The WTO itself touts this as one of the main benefits provided by third parties\textsuperscript{[16]}

It is difficult to assess how pervasive private benefits are during consultations precisely because they are kept private. Yet it is a telling sign of their likely pervasiveness that we can

\textsuperscript{[4]}As per Article 3.7 of the DSU: “the first objective . . . is to secure the withdrawal of the measures concerned if these are found to be inconsistent” with covered agreements. Further, in Article 22.1: “neither compensation nor the suspension of concessions or obligations is preferred to full implementation of a recommendation.”\textsuperscript{[15]}

\textsuperscript{[16]}http://www.wto.org/english/tratop_e/dispu_e/dispsettlement_cbt_e/c6s2p2_e.htm
observe discriminatory settlements being reached even in publicly-notified solutions. Consider the recent deal reached in a much-publicized dispute, *U.S.—Cotton*, that was initiated by Brazil against American cotton subsidies. The US did not remove the offending measures, but instead established the Brazilian Cotton Institute, a fund for “technical assistance” to foreign farmers, and provided the Institute with $147.3 million a year.\(^{17}\) In exchange, Brazil dropped its case against the US. There was little disagreement on either side of the dispute as to what this deal amounted to. As U.S. Congressman Jeff Flake of Arizona summed up the result: “Because our subsidies violate WTO rules, we’re now paying millions to subsidize Brazilian agriculture.”\(^{18}\) U.S. Congressman Barney Frank of Massachusetts described the deal as “the single stupidest thing the Federal Government could do.”\(^{19}\) The *U.S.—Cotton* case shows that litigants are sometimes able to skirt rules that explicitly prohibit discriminatory settlements, even in well-publicized settlements, and provide private benefits to the countries in the room.

In the *U.S.—Cotton* case, the disputants were two large economies and the third parties were poor African and South American cotton producers. Yet despite their small size, the third parties in the case appear to have benefited from the private settlement. Brazil announced in late 2012 that funds from the Brazilian Cotton Institute would be used to provide assistance to developing countries\(^{20}\) Brazil had previously funded cotton programs in Benin and Chad, which were both third parties in the dispute. The first new recipient of Institute aid is expected to be Paraguay, another third party in the case.\(^{21}\) Being privy to negotiations means that countries are not left out of an eventual deal. By joining as third parties, even poor nonlitigants have a chance at capturing private benefits, which are not extended to the membership as a whole, but only to

\(^{17}\)This organization is often referred to as the IBA because the name of the Institute in Portuguese is the “Instituto Brasileiro del Algodón.”  
\(^{18}\)Congressional Record, April 21, 2010, p. H2702.  
\(^{19}\)Congressional Record, February 18, 2011, p. H1222.  
\(^{21}\)http://infosurhoy.com/coocoon/saii/xhtml/en_GB/features/saii/features/main/2013/02/18/feature-02
the countries in the room. This suggests that nonlitigants should participate as third parties so that they can gain access to private benefits.

In contrast, all WTO members benefit if the defendant makes concessions that create a public benefit. For example, suppose that a defendant loses a panel ruling and agrees to reduce its tariff on steel. Under the Most Favored Nation principle, all WTO members that export steel should benefit from the defendant’s concession, since they now face the same reduced tariff. A panel ruling followed by an MFN concession can thus ensure that every exporter of the product at issue benefits from the complainant’s victory, regardless of whether it participated as a third party.

A panel ruling can lead to additional public benefits, independent of its effect on the defendant’s behavior. While litigation is costly for those involved in a dispute, the information that is revealed during litigation can benefit nonlitigants. The WTO is widely seen as operating under a system of de facto precedent (Bhala, 1998-1999). Rulings on the content of the law can be extended to disputes between other countries about other goods and services. One key role of international courts and tribunals is to develop law via jurisprudence (Lauterpacht, 1958). By clarifying the content of legal obligations, a court can facilitate the settlement of future disputes (Johns, 2013). Additionally, a panel ruling can benefit all WTO members if it upholds the values of the WTO as a whole, or promotes secondary objectives, such as economic efficiency (Fiss, 1984; Benvenisti, 2004). Disputants have incentive to avoid trial so that they can minimize litigation costs, but litigation can provide public benefits to all states affected by a judicial ruling.\footnote{We thank Jeffrey Dunoff for conversations on this topic.}

For example, in 2002, the United States challenged Japanese regulations that limited apple imports to prevent the spread of fire blight, a fruit disease. Both the panel and the Appellate Body found that Japan lacked “sufficient scientific evidence” that fire blight could be transmitted by mature apples. Across-the-board bans citing concerns over fire blight were therefore more restrictive than necessary to assure food safety. The ruling created a strong, clear precedent that
helped all countries that wished to export apples to Japan. New Zealand, an apple exporter, rejoiced at the US victory. As a New Zealand apple producer declared: “[t]he Americans will now sit down to negotiate a protocol with the Japanese and we will hope to piggy-back on that.”

Their hopes were proven right. The New Zealand media soon announced that “following a World Trade Organisation case which ruled that commercially-traded apples did not transmit [fire blight . . .] it appeared possible to negotiate new and more favourable access conditions for New Zealand apples.” New Zealand’s benefit from the US victory was huge. In 2005, when the US dispute against Japan was finally concluded, New Zealand shipped no apples to Japan, because of the latter’s quarantine rules and regulatory restrictions. By 2008, they were shipping 21,865 kg. That number more than doubled two years later, and then tripled again the following year.

The United States’ successful case against Japan benefited the broader membership by opening the Japanese market to exports from other countries.

The precedent set in the case also helped to open the markets of other countries with similar fire blight regulations. The WTO finding provided a strong bargaining tool for New Zealand against Australia, which had banned New Zealand apples for 85 years. New Zealand’s Trade and Agriculture Minister, Jim Sutton, appeared certain of the precedential effect of the ruling, stating that “there was no need to take a dispute case against Australia […] at the moment, as the WTO had already ruled comprehensively on the issue in a case between Japan and the United States.”

Sutton also announced that “We will also be looking for better access to other markets, such as South Korea, which also restricts access because of fire blight.” The dispute brought by the US

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25 Data from Comtrade, collected by the United Nations Conference on Trade and Development (UNCTAD), accessed through the World Integrated Trade Solution (WITS), which is hosted by the World Bank. Data of New Zealand apple exports to Japan show 20 kg for 2005; 21,865 kg for 2008; 45,168 kg for 2010, and 155,116 kg for 2011. Data for intermittent years not available.


27 Ibid.
against Japan not only opened up Japanese markets to non-US exporters, but also challenged similar regulations in countries like South Korea, and opened the door to resolving an 85-year old quarrel between New Zealand and neighboring Australia.

Private benefits are most likely to be the product of pre-litigation negotiations. When WTO disputants reach a mutually agreeable solution, they need only notify the membership that they have reached a deal in order to end the dispute settlement process. They most often do not disclose the exact terms of this solution. Add to this the fact that in any dispute, there will be a limit to how much a defendant can concede. If this concession comes in the form of a public benefit, then the concession is likely to be shallow, since it needs to be spread out across the entire membership. For example, suppose that a defendant agrees to lower its tariffs on beef imports from all WTO members. Keeping political pressure from domestic import-competing beef producers constant, the defendant is likely to reduce the barrier to a smaller extent than if it could concentrate its concessions on a single country. If the defendant targets its concessions by opening its market only to imports from those states that are involved in negotiations, then the defendant can make deeper concessions. The Most Favored Nation principle prohibits such a settlement, yet states can avoid MFN challenges by redefining product categories, and offering concessions on a single category, such as grass-fed “hotel-grade” beef, rather than all kinds of beef.

Kucik and Pelc (2013) show that complainants gain significantly more than the membership when they settle with the defendant prior to a ruling being reached. Once a ruling is reached, this advantage disappears entirely. In other words, while concessions gained after a ruling are extended to the remainder of the membership, solutions reached in early settlement tend to be tailored specifically to the needs of the complainant, and result in little positive spillovers.

Even such notifications are imperfect. The very first dispute filed at the WTO, brought by Singapore against Malaysia, was criticized for leading to an undisclosed settlement. Singapore appeared to simply have dropped the case. Yet it later grew apparent that the parties had reached a compromise solution. The DSB was critical: “[The Chairman] recalled that in July 1995, following Singapore’s withdrawal of its request for consultations with Malaysia, the Chairman of the DSB had stated that: ‘it was important that at this stage when DSB practices were being established that Members considered the need to register formally not only the initiation of disputes but also the settlement and resolution thereof’. This precedent had not been followed.” Dispute Settlement Body, Minutes of Meeting Held in the Centre William Rappard on 24 April 1996. WTO Doc WT/DSB/M/15.

To illustrate, some disclosures of settlements contain a single sentence: “On behalf of our authorities we would like to inform you that Hungary and Croatia did find a mutually satisfactory solution to this case in 2003.” (WTO Document WT/DS297/2.)
Additionally, since the terms of a settlement are private, other WTO members that are excluded from negotiations will find it difficult to challenge the settlement precisely because they do not know the exact terms of the deal. When negotiations are closed, the complainant thus has an incentive to demand deep concessions that benefit only those states in the room, rather than to push for shallower public benefits.

This incentive to pursue private benefits in private negotiations means that public benefits are more likely to emerge following litigation. If a case proceeds to litigation, then facts of the case are publicized, blame is formally assigned, and the expectations for compliance are made clearer. The publicity that surrounds panel rulings means that litigants will find it more difficult to reach discriminatory settlements. It is thus more likely that the defendant will adjust its policy in an MFN-compliant fashion, benefiting all affected states, rather than just those states in the room during negotiations.

In the model below, we assume that disputants create private benefits during pre-litigation negotiations, and public benefits after litigation. While the world rarely operates so cleanly, our assumption is a reasonable place to begin in theory-building because it matches the concerns of the WTO and its members. One of the main reasons that the WTO has pushed for third party participation is precisely because it believes that affected states may be harmed if they are not present in private negotiations. The implication is that the institution and its members are concerned that private negotiations create private, rather than public, benefits. Legal observers have long warned that the option of settling behind closed doors “works in favor of ‘private peace’ and in opposition to ‘public justice’" (Menkel-Meadow 1994). Conversely, when a case proceeds to

31 “[A]s the content of the mutually satisfactory solution is not disclosed, there is a small chance for an interested third Member to detect it and take action against it under the WTO DSM” (Nakagawa 2007, 858).

32 This is reflected in the length of the notifications of mutually agreed solutions. The average length of a mutually agreed solution is 9 pages when reached prior to a ruling, and 28 pages when reached after a ruling. This difference is highly statistically significant. Yet these documents have the same legal status, and are constrained by the same legal requirements for openness (data collected by the authors).

33 See Rubinstein (1991) for a discussion of games as representations of player beliefs.
litigation, it shifts from the private to the public realm. This publicity makes it more difficult for states to distribute private benefits. Therefore post-litigation outcomes are most likely to result in public, rather than private, benefits.\footnote{The model below adopts this assumption. After presenting the results from this model, we discuss the results of a more complicated model in which private settlements can include public benefits, and panel rulings can create private benefits.}

The combination of private and public benefits suggests that states should join any case that affects their trade interests. After all, if the case goes to litigation, third parties receive public benefits just like all other WTO members, but if the case settles, third parties receive private benefits. Participation thus opens the door to discriminatory settlements without imposing litigation costs on third parties.

### 2.3 Why Not Participate?

Many scholars argue that countries do not legally pursue all suspected violations at the WTO.\footnote{Bown (2009, 2005); Busch and Reinhardt (2003); Davis and Bermoe (2009); Fang (2010).} Countries make strategic decisions about which cases to initiate. Controlling for the legal merit of a case, states are more likely to initiate cases (i) the greater their past experience with dispute settlement; (ii) the greater the size of their economy; (iii) the greater the value of trade at issue; and (iv) the more significant their retaliatory capacity against the defendant. Conversely, states are less likely to initiate cases if they are economically dependent on the defendant or have a preferential trade agreement with the defendant.\footnote{Davis and Bermoe (2009); Busch, Reinhardt and Shaliter (2009).}

Previous explanations of third party participation have largely emerged out of these earlier arguments about who initiates disputes as a complainant. Just as potential claimants are less likely to file a dispute if they are vulnerable to retaliation by the defendant, it is often argued that countries will be less likely to join as third parties if they are wary of angering the defendant.\footnote{Elsig and Stucki (2011) Bown (2005).} Concerns about reprisals by defendants are highly plausible.
However, we focus on an alternative explanation for two major reasons. First, these models of third party participation ignore the key distinguishing feature of third parties. Namely, third parties are allowed to be present during otherwise private bargaining without bearing the costs of litigation. Second, if third party nonparticipation is motivated primarily by fears of retaliation, then we would expect to see cascade effects, rather than overcrowding, in participation. Suppose that the fear of angering the defendant is the main factor driving third party nonparticipation. As with other alliances—both in the security and economic realms—the cost of standing up to a powerful actor in WTO dispute settlement should go down as the number of parties with whom to share the burden of doing so goes up. The defendant cannot exact retribution costlessly. If fear of such retribution is the main impediment to participation as a third party, then we would expect there to be “strength in numbers.” If many countries join as third parties, then the cost of also doing so—in terms of angering the defendant—is smaller than if a country were the only third party in the room. This would lead us to expect a cascade effect, where one country’s likelihood of joining is increasing in the number of other countries that join. This goes against the hypothesis of our theoretical model, allowing us to evaluate these expectations against one another in our empirical analysis.

In contrast, our model highlights an alternative mechanism. By joining as a third party, a nonlitigant changes the bargaining dynamics between the complainant and the defendant. As more countries participate, it becomes more difficult for the states to negotiate private benefits, and more likely that the case proceeds to litigation. When litigation occurs, all nonlitigants receive access to public benefits, but participation changes the nature of these public benefits since third parties change the perception of panel rulings (Johns and Pelc Forthcoming).
2.4 The Impact of Third Parties

Suppose that the disputants reach an early settlement. If third parties are excluded, then the defendant is susceptible to subsequent challenges by affected countries not present during negotiations. This is why defendants almost never block third party participation despite having the legal ability to do so. A defendant would rather allow a third party in the room than have that third party file a complaint of its own. From the defendant’s point of view, an extra third party can never increase the odds of future litigation on the underlying issue, and may decrease them. All things equal, if early settlement occurs, then the defendant can only benefit from third party participation.

However, third party participation is costly for the complainant if an early settlement is reached. Having an additional third party in the negotiations can only reduce the complainant’s share of private benefits and never increase it. There will always be an upper limit on the willingness of a defendant to change its behavior in order to avoid litigation. Having more states involved in negotiations means that, all things equal, more states must share the spoils of any settlement. So the complainant is harmed by third party participation if there is an early settlement.

If a case proceeds to litigation, then states no longer fight over the distribution of concessions under a settlement, but rather focus on the longer lasting impact of the panel report, which is immediately made public and adds to WTO jurisprudence [Weiler 2003]. Despite its elaborate dispute settlement procedures, the WTO remains a fundamentally diplomatic institution. As such, members’ perceptions about a disputant’s behavior today affect the way it will be treated by other states in the future. Panel reports often establish the extent of a violation, and whether the violation was a willful breach or one hinging on a technicality. This is why countries often fight to limit the number of unfavorable findings by the panel, even when these findings do not influence the ruling’s overall direction [Busch and Pelc 2010]. A panel ruling also affects how similar legal issues
are likely to be resolved in the future. There is a growing consensus among legal scholars that the
WTO operates under *de facto stare decisis*, insofar as rulings generate “legitimate expectations”
among WTO members over the future treatment of similar issues subsequently \([\text{Bhala, 1998-1999; Palmeter and Mavroidis, 2004; Lanye, 2003; Pelc, 2010}].\) As a result, the panel report
either strengthens or weakens the legal merit of future cases, and the subsequent understanding of
countries’ obligations under the rules.

In the complete absence of third parties, panel rulings are interpreted in a purely legalistic
fashion, benefiting the winner and harming the loser. When a third party joins a case, it usually
brings its own set of opinions and preferences to the economic and legal questions at stake. Even
if a third party is staunchly pro-complainant, it may differ in its justifications for opposing the
defendant’s policies. This diversity of views and voices moves purely legalistic and narrow panel
rulings into the diplomatic, political realm. Broad third party participation—registered as oral and
written submissions in the panel report—often suggests that a legal issue is ambiguous or subject
to competing interpretations. The overall effect is that third parties can soften losses and render
wins more ambiguous. To be sure, WTO disputants always prefer winning to losing, regardless of
the level of third party participation. However, more third parties can discount both the benefits of
winning and the costs of losing—lowering the winner’s payoff and raising the loser’s payoff—when
compared against a case in which no third party views are expressed. Third party participation
thus changes the nature of public benefits.

This effect of third parties on the interpretation of panel rulings is what sometimes motivates
a WTO member to not participate, even if it is affected by the legal dispute. Any legal dispute
can result in two possible outcomes: a settlement with private benefits, or litigation with public
benefits. If a nonlitigant believes that a case will go to trial and the complainant will win, then
it has incentive to refrain from participation so that it does not dilute the force of a complainant
victory. In such circumstances, a nonlitigant will sacrifice the small likelihood of a private benefit in order to increase the size of the likely public benefit.

3 Theory

3.1 Model

We assume that two states, a complainant and a defendant, are involved in a trade dispute. The defendant has previously taken some action that has caused harm to the complainant. The defendant’s action has also affected other states that we refer to as “nonlitigants.” For example, US cotton subsidies harmed Brazil, the complainant in *U.S.—Cotton*, as well as other cotton-producing countries. We refer to these cotton-producing states as nonlitigants because they were affected by the outcome of the dispute but did not become co-complainants. Some of these nonlitigants joined the case as third parties; others did not. We refer to the former group as “participants” and to the latter group as “nonparticipants.”

As shown in Figure 1, the game begins when Nature chooses the strength of the complainant’s case, $\pi$. This variable is the probability that the complainant wins the panel ruling if the litigants cannot reach an early settlement. This probability is revealed to the complainant and the nonlitigants. The defendant is uncertain about the strength of the complainant’s case. Each nonlitigant then chooses whether to participate by becoming a third party. We denote the number of nonlitigants that join the case by the endogenous parameter $n$. After participation decisions are made, the complainant demands a private benefit, which we denote by $b$. We make no assumption about the form of the private benefit; we only assume that it is beneficial to the plaintiff and costly to the defendant. For the reasons discussed above, we do not allow the complainant to demand

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37 Note that we implicitly ignore those states that are WTO members but are not affected by the outcome of the dispute. We consider them to be outside of the realm of relevant actors.

38 Details about the distribution of $\pi$ are included in the Appendix.
public concessions. If the defendant accepts the demand, then there is early settlement of the dispute. If the defendant rejects the demand, then the panel hears the case and issues a ruling. The complainant wins the panel ruling with probability $\pi$, and the defendant wins with probability $1 - \pi$.

We begin by examining the payoffs of the complainant and the defendant, which are shown in Table 1. The value of the dispute is denoted by parameter $V > 0$. Larger private benefits, $b$, increase the payoff of the complainant and decrease the payoff of the defendant. The number of third parties, $n$, also affects disputant payoffs. Having more third parties helps the complainant if she loses the panel ruling, but harms her if there is early settlement or if she wins the ruling. Third parties have the opposite effect on the defendant’s payoffs. A larger number of third parties helps the defendant if there is early settlement or if the complainant wins the ruling, but harms the defendant if he wins the ruling. Both players must pay a litigation cost, $k > 0$, if the case is heard by the panel.

The nonlitigants and the complainant have closely aligned preferences, but their payoffs differ slightly. Suppose a nonlitigant decides to participate. If the disputants reach an early settlement, then each participant receives a reward, which we denote by parameter $r > 0$. We assume that nonlitigants pay no cost of litigation, regardless of whether they participate as third parties. We restrict attention to the fully separating weak perfect Bayesian equilibrium.

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39If $r = 1$, then there is a simple unit transfer of utility from the complainant to each of the participants. We allow $r$ to be any positive value since the participant’s reward may be greater than the complainant’s cost because third parties are often developing states. The specific value of $r$ doesn’t affect any of our results.

40This sets the highest possible bar for our model because it ensures that decisions to participate are driven by strategic concerns rather than legal capacity. After presenting our main results, we discuss the robustness of our results to the inclusion of participation and/or litigation costs.

41As discussed in the Appendix, we assume that off-the-equilibrium-path beliefs satisfy the refinement of universal
3.2 Bargaining and Settlement Behavior

We first examine the behavior of the complainant and defendant after nonlitigants have made their participation decisions. At this point in the game, both the complainant and the defendant know how many states have joined as third parties.

**Proposition 1. In equilibrium:**

(a) The complainant’s demand for private benefits is increasing in the strength of her case and the number of third parties.

(b) Larger demands are less likely to be accepted by the defendant.

In equilibrium, the complainant’s demand is always strictly increasing in the strength of her case. The more likely she is to prevail in panel proceedings, the more she demands in pre-litigation negotiations. The defendant can always infer the strength of the complainant’s case based upon the size of her demand. That is, after hearing the complainant’s demand, the defendant is no longer uncertain about the probability that the complainant will prevail in the panel ruling.

The complainant’s demand is also increasing in the number of third parties. Recall that litigation is stochastic: even if the defendant knows the strength of the complainant’s case, neither player knows for certain which player will win panel ruling. A larger number of third parties increases the defendant’s utility from early settlement. However, third parties have an ambiguous effect on his expected utility from trial: third parties help if he loses and harm if he wins. The overall impact of an increase in the number of third parties is to increase the desirability of early settlement relative to a trial. This means that the complainant can demand more.

Intuition might suggest that the defendant should be more likely to accept larger demands because he knows they are being chosen by stronger types. However, the opposite effect must hold divinity (Banks and Sobel [1987]). When the litigation cost, \( k \), is small relative to the value of the dispute, then the fully separating equilibrium is the unique weak perfect Bayesian equilibrium that satisfies the universal divinity refinement. This assumption of a small \( k \) is used throughout the analysis.

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in order for an equilibrium to exist: larger demands must be accepted with a lower probability (Gilligan, Johns and Rosendorff, 2010; Johns and Pelc, Forthcoming). To understand why this must be true, suppose that large demands are more likely to be accepted. Then a complainant who has a weak case has incentive to bluff by making larger demands. By asking for more, she would be more likely to receive this large settlement and less likely to go through litigation, which she believes she will lose. All players would have incentive to pretend as though they are stronger than they really are. Separation would not be possible since all types would want to make larger and larger demands. In contrast, if larger demands are less likely to be accepted, then the implicit threat of litigation disciplines the complainant’s demands in pre-litigation negotiations. Weak types do not have incentive to mimic the demands of stronger types because they know that this behavior is more likely to result in panel proceedings, which weak types want to avoid. In equilibrium, larger demands are less likely to be accepted by the defendant.

Overall, Proposition 1 provides two intermediate results that are consistent with state behavior in the WTO.

**Corollary 1.** In equilibrium:

(a) Stronger cases are more likely to go to trial.

(b) Cases with more third parties are more likely to go to trial.

First, stronger cases are more likely to go to trial, so trial outcomes should be biased in favor of the complainant. Abundant empirical evidence supports this claim. There is a well-documented “pro-trade bias” in the WTO because complainants—who sue the defendant for market access—win almost all cases (Johns and Pelc, Forthcoming). In this model, judges rule purely based on the legal merits of the case (π) and their rulings are not biased either for or against trade liberalization. However, selection effects create biased trial outcomes even if judges are not making biased rulings. That is, we rarely observe a complainant lose its case because the complainant settles weak cases.
Second, cases with more third parties are more likely to go to trial. This pattern is well known to both practitioners and scholars of the WTO, and appears in empirical studies even after controlling for case and disputant attributes \cite{BuschReinhardt2006,JohnsPelcForthcoming,DaveyPorges1998}. These two findings aren’t tests of our larger theory, yet they demonstrate that our argument yields intermediate results that are consistent with previous empirical work. This suggests that our basic assumptions about disputant payoffs and bargaining interactions are plausible.

### 3.3 Participation Behavior

We can now consider the incentives of nonlitigants. We begin with a claim that is implicit in the payoff structure of our model.

**Claim 1.** *Controlling for the number of third parties, participants receive a higher expected utility than nonparticipants.*

Recall that in our model, nonlitigants can only receive private benefits if they participate as a third party. Nonparticipants do not receive a private benefit because they are excluded from pre-litigation negotiations. This means that if we hold the number of third parties constant—and hence hold constant equilibrium demands, the probability of settlement, and trial payoffs—then participants always receive a higher expected utility than nonparticipants. At first glance, this suggests that all nonlitigants should want to join as third parties because participation allows a state to receive private benefits in expectation at no additional cost. However, this logic ignores the strategic impact of participation on bargaining and trial outcomes.

When an individual nonlitigant contemplates whether to join a case as a third party, he recognizes that his decision will change the total number of third parties. This will in turn change both bargaining and trial outcomes. If we want to think systematically about the incentives of a
nonlitigant to join a case, then we cannot hold the number of third parties constant. We must compare the expected utility of participation and nonparticipation given that the individual’s decision will change the number of third parties.

It is not immediately clear how we should model these participation decisions. In the real world, these decisions are not always made simultaneously. States can sometimes observe the choices of others when deciding whether to participate. However, there is no institutional structure in the WTO that determines the order in which states make participation decisions. Rather than imposing an arbitrary extensive game form, we adopt a general perspective by examining the best response functions of nonlitigants. That is, we examine how the incentives of a nonlitigant change as a function of the expected behavior of other states. This modeling choice comes with a cost: we cannot make predictions about which states will join a case. However, the benefit of this modeling choice is that it allows us to reach very general results about the likelihood that an individual state will become a third party. These results hold regardless of the procedures by which states join cases. Researchers who wish to examine which states join as third parties can impose additional assumptions on the selection process but our more general results will continue to hold.

To understand strategic participation decisions, we must first understand the impact of case strength on the marginal benefit of joining a case. By Corollary 1(a), strong cases are more likely to go to trial than weak cases. Suppose that the complainant has a very weak case. If the disputants reach an early settlement, which is very likely, then third parties receive a private benefit, but nonparticipants do not. If the case goes to trial, which is unlikely, then both third parties and nonparticipants receive the same payoff. Since the complainant is likely to lose a weak case, third parties increase the expected utility of trial for all states that have been harmed by the defendant’s policy. Thus when the complainant has a weak case, an affected state has incentive to join as a third party so that it can gain access to private benefits and improve trial outcomes.
In contrast, suppose that the complainant has a very strong case. Disputants are unlikely to reach an early settlement, so it is unlikely that a third party will receive a private benefit. The expected benefit of participation is thus relatively small. If the case goes to litigation, the complainant will probably win. Third parties will weaken the force of this victory, which lowers the expected utility of trial for all states that have been harmed by the defendant’s policy. When the complainant has a strong case, an affected state has incentive to *not* participate because third parties are unlikely to receive private benefits and they can harm trial outcomes.

Of course, most cases will lie between these two extremes. Affected states will need to carefully weigh the complex costs and benefits of third party participation, and condition their decision on the expected behavior of other states. However, if we hold the behavior of other states constant, the marginal benefit of participation decreases as the complainant’s case grows stronger.

**Proposition 2.** *As the complainant’s case grows stronger, the marginal benefit from participation decreases.*

Figure 2 shows this effect. The strength of the complainant’s case is represented by the horizontal axis, while a nonlitigant’s marginal benefit of participation is shown on the vertical axis. A nonlitigant will only join a case if the marginal benefit from participation is positive. If the marginal benefit is negative, then the nonlitigant will not join as a third party. This marginal benefit is always decreasing in the case strength, regardless of how many other nonlitigants decide to become third parties.

[Insert Figure 2 here.]

Figure 2 also shows our main theoretical finding: regardless of the strength of the complainant’s case, the marginal benefit of participation decreases as the number of other states that join as third parties increases. To understand the intuition behind this results, recall Corollary
(b): cases with more third parties are more likely to go to trial. Consider the incentives of a nonlitigant. If no other states join as third parties, then the litigants are likely to settle their case. So if an individual state joins as a third party, it is likely to receive private benefits. In contrast, if many other states join as third parties, then the litigants are unlikely to settle the case. So if an individual state joins as a third party, it is unlikely to receive private benefits. A state’s decision about whether to participate will also impact payoffs if the case goes to trial, but the magnitude of this impact is not affected by the number of other states that join as third parties. So if we hold the strength of the case constant, then the marginal benefit of participation is decreasing in the number of other states that decide to become third parties.

**Proposition 3.** *As the number of other states that join as third parties increases, a nonlitigant’s marginal benefit from participation decreases.*

The strategic logic we outline is not unique to the WTO context. We start our article with Yogi Berra’s well-known quip about Ruggeri’s restaurant, in his native St. Louis, being so crowded that “no one goes there anymore.” The phrase is a riff on the common idea that trendy venues such as restaurants lose their appeal if they become too well-known, and thus too crowded. Suppose the owner of the restaurant, Ruggeri himself, is both aware of this dynamic, and enjoys eating at his own restaurant, where the food is exactly as he likes it. His position is analogous to that of a nonlitigant deciding whether to join a dispute. All things equal, Ruggeri prefers eating at his restaurant to eating elsewhere. Yet his dining there increases the number of patrons, adding to the crowd, slowing down service, and further hurting the restaurant’s reputation as an overcrowded venue. If this bad reputation endures, the restaurant will lose its trendy image and all its regular customers, hurting business in the long run. On an already busy night, Ruggeri may thus strategically choose to stay out, and forgo a good meal, for fear of adding to the crowd. His concern for the restaurant’s profitability will trump his desire for a good meal. In much the same
way, countries with something at stake in the dispute may decide not to join if they foresee that it will reduce the size of the public benefit, even though they know that those inside are better off, on average, than those outside.

### 3.4 Robustness

As in any formal model, the results above rely upon assumptions that help us to identify and understand a causal mechanism. To be confident in the explanatory value of the model, we should consider whether the findings are robust to alternative assumptions. One key assumption is that participation is costless for a nonlitigant. We use this assumption in our main model because it sets the highest possible bar for the theory. There would be little theoretical value to arguing that nonlitigants don’t participate because it is too costly. Nevertheless, all of our results continue to hold if we assume that there are small entry costs to becoming a third party. Additionally, as we mentioned at the beginning of the paper, complainants have some control over how difficult it is for nonlitigants to become third parties. If the complainant files under GATT Article XXII, then it is relatively easy for affected states to become third parties. However, if the complainant files under Article XXIII, it is more difficult for states to join. We can alter our basic model so that the entry cost is higher for an Article XXIII case than for an Article XXII case. As would be expected, states are less likely to join when the entry cost is higher. We control for this legal distinction in our empirical analysis. All model results are also robust to the possibility that third parties must pay a small litigation cost.

An additional assumption of our model is that private benefits are only available in pre-litigation bargaining, while public benefits are only possible after litigation. To check the robustness of our model, we first build a model in which public benefits can occur during settlement. If the pre-litigation public benefit is less than the complainant’s expected utility of trial, then the incentives

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42 All model robustness checks are available from the authors on request.
of all players are unchanged and all of our model results hold. Similarly, we construct a model in which private benefits can be distributed after litigation. All of our model results continue to hold if the participant’s private benefit is larger in pre-litigation settlements than in post-trial outcomes. We choose to present the simpler model above because we believe that it more accurately reflects the strategic concerns of WTO members, and more clearly shows the causal logic of our argument.

4 Empirics

4.1 Data Description

What drives a nonlitigant’s decision to participate as a third party in a WTO dispute? Why do so few countries decide to do so? To answer these questions empirically, we collect data on countries’ decision to join or not as third parties in all disputes initiated since the WTO’s inception in 1995.\footnote{The most recent dispute in our data is DS423.}

We need a reliable external predictor of each country’s propensity to join a dispute. For this, we use each country’s stake in the dispute, in terms of trade flows of the product at issue. Most WTO disputes concern trade in specific products, which allows us to measure the extent to which a given country’s economic interests are likely to be influenced by the outcome of a given case.

We use the Horn and Mavroidis dataset (hosted by the World Bank) to identify the products at issue in each dispute.\footnote{We update this dataset to the present day using WTO requests for consultations posted by complainants, which usually contain a mention of the precise product(s) at issue.} These products vary in their level of disaggregation, from two-digit HS products (for disputes challenging a broad barrier) to 10-digit HS products (for disputes challenging a narrower barrier).

For each dispute, we then collect the amount of bilateral trade at stake, which we measure as the level of exports for the product at issue, from each nonlitigant country to the defendant’s
market. We gather these data using the COMTRADE database accessed through the World Integrated Trade Solution (WITS) hosted by the World Bank. We then use nonlitigant exports to construct the “Trade Stake” variable, which we define as the absolute logged amount of exports at stake at $t-1$, the year prior to the dispute’s initiation.

In relying on trade data for the identification of our main model, we set aside all “non-merchandise” disputes, which are cases that do not challenge a barrier over a specific product, but rather a piece of domestic legislation or regulation, such as intellectual property laws. These cases correspond to about a fifth of the WTO caseload. We remove these observations since it is unfeasible to assess a country’s ex ante stake in a nonmerchandise dispute, in the way that we can when dispute are fought over barriers on identifiable products. We are left with 321 WTO disputes for which we have trade data on disputed products.

*Article XXII vs. Article XXIII*

We control for a number of dispute characteristics. Our main control variable is whether the complainant filed under Article XXII (which promotes third parties) or under Article XXII (which prevents third parties). As a WTO training module puts it, “the choice between Articles XXII:1 and XXIII:1 of GATT 1994 is a strategic one, depending on whether the complainant wants to make it possible for other Members to participate.”\(^\text{45}\) This variable is coded as 1 if the complainant promoted third parties, and 0 otherwise. We expect it to be positively related to the odds of participation.

*Discrimination Type*

We also add a variable to reflect the extent to which the dispute at hand is likely to be of interest to all WTO members, beyond the bilateral trade volume at stake, by looking at the type of alleged discrimination. The simplest way to do this is to distinguish bilateral from multilateral disputes. We draw on [Bown (2004)](Bown2004) to construct this variable, which roughly reflects National Treatment

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\(^{45}\)WTO Dispute Settlement System Training Module: Chapter 6.2.
discrimination vs. Most Favored Nation discrimination. The latter, where one country claims to receive less favorable treatment than another exporter, is coded as bilateral. All national treatment cases, on the other hand, are coded as multilateral, since if domestic producers are favored over exporters, this is likely to affect all exporters. Moreover, all antidumping (AD) cases, save for those that allege an improper application of the AD code, are coded as bilateral, since antidumping is a targeted policy. Safeguards cases, on the other hand, unless they regard the application of safeguards in a way that would have systemic implications, are coded as multilateral, since they are applied in an MFN fashion. This single variable is better-suited for our purpose than the alternative means of coding the issue raised, which is to include dummies for all agreements (e.g. Antidumping, Procurement, Agriculture, etc), since these can entail quite different concerns: as an example, disputes invoking the Agreement on Subsidies and Countervailing Measures Agreement (SCM) are bilateral issues if the complainant challenges a countervailing duty, but multilateral if the complainant alleges a subsidy that flouts the SCM code, since this would negatively affect all competitors. Though non-merchandise cases do not enter our sample, the supermajority of these, which concern domestic legislation and intellectual property rights, would fall under the multilateral category. In sum, there is little ambiguity in this dichotomous coding, and in the few cases where there is, we code a dispute as 1 for both variables. As a result, the variables are not perfectly negatively correlated.

Legal Capacity

Next, we account for what may be the most salient explanation for participation in the literature, legal capacity. Scholars have claimed that beyond income and material concerns such as the fear of retaliation, countries do not participate because they lack the requisite know-how. Indeed, we have been assuming that third

46Some subsidy cases, however, are inherently bilateral: the two cases involving large civil aircraft, for instance, are treated as bilateral, since they concern a duopoly.
party participation is costless: third parties need not make any statements, they technically require only a single representative in the room, and they have no further obligations within litigation. Yet it may be that assessing the benefit of joining is, itself, a function of legal capacity. As per the literature, the best proxy for such capacity is simply prior experience. We code two variables to capture such experience: Complainant History, which is the number of disputes a country has filed as a complainant prior to the dispute’s initiation; and Third Party History, which corresponds to the number of times the country under observation has participated as a third party, before the dispute at hand.

The advantage of including both variables at once is that it allows us to see whether the effect of experience is specific to the institutional role played. Moreover, controlling for complainant history, the number of times a nonlitigant has been a third party also taps the notion that some countries may emerge as focal third party players, whom others expect to participate often. We would expect such countries to participate disproportionately more than their income or past experience as litigants would lead one to believe.

Alternative Explanations

Finally, to test the beliefs of Elsig and Stucki (2011) we code the log of total aid in constant dollars from the defendant to the nonlitigant country as Aid Dependence. If countries fear losing aid support by joining cases against donor countries, this variable should exhibit a negative effect.

4.2 Participation Has Its Benefits

We begin by assessing a primary assumption of our model. Our theory implicitly assumes that third parties on average fare better than nonparticipants. We argue that all interested nonlitigants can receive public concessions, but only participants can receive additional private benefits. Nonlitigants do not stay out because they think that in so doing they will fare better than third parties.
Rather, they decide not to join because they think that their participation will change bargaining outcomes such that even as a third party, they would emerge at a net loss.

To assess this initial premise, we examine the trade flows of the products at issue in the dispute after its conclusion. These trade flows should capture both the public concession and the private benefit flowing from dispute settlement. We then examine the change in these exports for third party countries in comparison to all nonparticipating members, controlling for trade flows prior to the dispute’s initiation. We effectively ask, how much does participating as a third party increase your access to the defendant’s market (relative to nonparticipation)?

Our unit of observation is the country-product-year. Our sample consists of the trade flows of all countries other than the complainant and defendant in a given dispute for all available years after the end of that dispute. The last year of a dispute corresponds to the last formal WTO stage. If a settlement is reached short of a panel report, then the dispute ends at the formal announcement of the mutually agreeable solution.

Our dependent variable in the first set of estimations is the logged level of exports into the defendant’s market for the products at issue. We are interested in the sign of the coefficient for the third party dummy, which is coded as 1 if a given country participated as a third party, and 0 otherwise. If third parties gain more access than nonparticipants, controlling for trade flows prior to the dispute, we expect this coefficient to be positive. We begin by running a panel regression with dispute fixed effects and robust standard errors clustered on the dispute.

The results are shown in Table 2. In the first two columns, the dependent variable is the logged level of exports to the defendant. The first estimation (Column 1) shows a sparse model that controls only for “Trade Stake”, corresponding to the level of exports at t-1, and which

47This would be, for instance, the release of the panel report in a case where no litigant filed an appeal, and the complainant did not request an Article 21.5 compliance panel challenging the defendant’s implementation of the panel’s recommendations. In other cases, it could be the release of the Appellate Body report, or that of a compliance report.
thus acts as a lagged dependent variable; and the defendant’s logged GDP, since compliance with settlements and rulings may vary in accordance with the defendant’s market power. The second estimation (Column 2) substitutes the dispute fixed effects for defendant fixed effects as a means of accounting for unmeasured features of the defendant that may affect compliance. We also add: the log of the complainant’s market size; a dummy indicating whether the dispute reached a ruling; and a count of the number of pro-complainant third parties in the dispute. In both the first and second estimations, third parties see higher levels of trade following a dispute, controlling for the level of trade prior to the dispute.

[Insert Table 2 here.]

In our third estimation (Column 3), we shift our focus to the growth of exports, rather than their levels. We calculate growth in trade flows as the percent difference between and the year under examination, for all years following the end of the dispute. We keep the right hand side of this third estimation as the first estimation (Column 1), and additionally include the log of the complainant’s GDP. We once again run a panel regression with dispute fixed effects and robust standard errors clustered on the dispute. Third parties appear to fare better than nonparticipants even when looking at export growth, rather than levels.

These tests remain willfully simplistic. Indeed, they ignore this paper’s main argument, which is that third party participation is the result of strategic calculations. Third party participation is treated as exogenous in the models in Table 2. Yet these tests are useful in showing that third parties fare better on average than nonparticipants with regard to post-dispute trade flows.

4.3 Testing the Fear of Crowds Effect

We now move on to our main question: why don’t more countries join WTO dispute settlement as third parties? Our argument is based on strategic interdependence. This poses an empirical
challenge because every country’s decision hinges on that of all others. We expect that the total number of third parties will affect each country’s decision, which will, in turn, affect the total number of third parties.

To address this problem, we employ an instrumental variable approach. We instrument for the total number of third parties by looking to the world’s combined stake in the dispute at issue, excluding the country under examination. Specifically, we code our instrument, which we call rest-of-world (ROW) stake, by summing the exports from all nonlitigants to the defendant, leaving out the state under examination, in the year prior to the start of the dispute. Our instrumental variable is a powerful predictor of our endogenized variable; that is, the number of nonlitigants that eventually join as third parties. In our analysis, we also run a series of Kleibergen-Paap tests for weak identification, to further increase our confidence that the model is identified. Most importantly, theory offers support for the exogeneity of the instrument for our purposes. There is no viable rationale for thinking that a given country’s participation as a third party would be directly affected by the stake of the rest of the world in the trade at issue. Indeed, when we regress our instrument on the other exogenous variables, the partial residuals are uncorrelated with the decision to join as a third party, offering support for the exogeneity of our instrument. And while there is reason to believe that “all trade is correlated” in the contemporary globalized economy, since we are looking at specific product categories, the stake of one country in a particular industry is unlikely to be systematically correlated with that of another country.

Our results are shown in Table 3. In our the first column, we begin by showing a highly parsimonious estimation. We include only the Trade Stake of the country under observation in the dispute on the right-hand-side. In the second column, we add a number of controls: Article XXII, indicating whether the complainant promoted third party participation by filing the case under Article XXII; the Log Income of the country under observation, its history of third party and
complainant participation, and whether the legal issue at hand is one that deals with *Multilateral* discrimination. In the third column, we add a variable that tests the argument in Elsig and Stucki (2011) about aid dependence, as the bilateral aid the nonlitigant receives from the respondent.

Finally, while our theory treats all third parties as favoring the complainant, our empirical analysis considers all third parties irrespective of their partisanship. This is first a supermajority of third parties are pro-complainant, and secondly because of a fundamental data availability problem: because we can only observe third parties partisanship if they submit written or oral statements that are recorded in the panel report, we cannot say anything about those countries that do not make submissions, or about all the disputes that do not result in a ruling. We nonetheless collect the available data on third party partisanship by coding all available submissions. Pro-complainant third parties make up 78% of all third parties. We rerun our main estimation using the odds of being a pro-complainant third party as our dependent variable. We show this result in the last column of Table 3.

[Insert Table 3 here.]

The findings provide strong support for the overcrowding hypothesis. Across all model specifications, the greater the number of other countries that join as third parties, the lower the likelihood that the under observation WTO member will join. This effect is substantively strong. In the first specification, if we hold all control variables at their mean (with dummy variables at their mode), then increasing the number of third parties from its sample mean by one standard deviation reduces the probability that a nonlitigant will join a dispute by almost two-thirds, from 18.7% down to 6.8%.

As expected, if the complainant promotes third parties by filing under Article XXII, this considerably increases the likelihood of a given country joining as a third party. The average impact of Article XXII is about 19% across our three specifications. Aid dependence is negatively
signed, but falls short of statistical or substantive significance. While it is likely that it plays a real role in specific cases, the point is that on average it does not seem to be a big driver of the decision to participate across all WTO disputes. Wealthier countries somewhat appear less likely to join, suggesting that third party status may be of special value to poor countries. This negative relationship remains, but decreases, when we remove the two legal experience variables.

The latter variables provide an interesting result. While a past history of dispute initiation has strictly no effect on the odds of joining the dispute, a past history of third party participation has a strong, positive effect, controlling for a country’s wealth. The reason could be that the legal capacity called on for third party participation is developed only by having played this role in the past. A more likely explanation is that some countries emerge as focal third party participants, and countries expect them to join most disputes. These countries participate disproportionately more than their interest in the dispute or their wealth would lead us to expect. Overall, these results offer strong support for the overcrowding hypothesis.

Finally, the results only gain in strength in our last estimation, in Column 4. This is what we would expect, since here we are looking only at a subset of participants that we know our theory applies to best. The cost is borne in terms of the reduced sample, now limited to those disputes that produced a panel ruling, which nonetheless does not affect the significance of our findings.

We run a series of robustness checks to ensure that our findings are not sensitive to estimation decisions. First, we include a variable for disputes where either the US or the EU is the respondent. While one may think that this would lead countries to be more wary of joining as third parties, the variable actually shows a weak positive effect. More importantly, our main finding is unaffected. Similarly, we control for another proxy of the stake in the dispute, coded as the change in bilateral trade between each non-litigant and the defendant in the three years prior to the dispute. This is demanding of our data, and the sample is reduced somewhat as a result. The
variable is negatively signed and positive, meaning that the more a nonlitigant has lost trade in the three years prior to the dispute, the more likely it is to join. The main results remain unchanged in strength. We also add a China dummy, given the literature on how China especially uses third party status as a means of learning. The dummy is only weakly positive at the 10 percent level, and does not affect our results.

4.4 Timing: Do we See a Rush to Join?

Our analysis has shown that on average, countries have an incentive to avoid overcrowding in negotiations. If they have reason to believe that many other countries will be in the room, they may strategically choose to stay out. Yet we have also shown that all things equal, being in the room is better than not being in the room. The corollary of those two claims taken together is an incentive to joining early, leaving to others the risk of overcrowding. Generalizing the question beyond the WTO, we may wonder whether the knowledge that everyone’s presence in the room may work out to everyone’s disadvantage also means that there is competition over who gets in, and who does not. Do the data bear this out? Is there a rush to join?

To find out, we observe the exact date at which each third party joined the consultations in every dispute in our sample. These dates are available in the WTO documents through which countries request to participate. Third parties nearly always stay on during litigation if the case proceeds to a panel. A visual representation of these data is presented in Figure 5. Every country’s decision to participate appears as a circle. To offer a reference in time, we indicate the conclusion of consultations with an x. The average period between the start of a dispute and the end of consultations in our sample is 146 days.

Cursory observation does support the notion of a rush to get in the room. The first third party joins an average of 14 days after the intitiation of a dispute, likely reflecting the required
bureaucratic process in the home country. But then the average period between two consecutive third parties joining is less than 2 days.

Whereas this clustering in time seems to suggest some recognition of an early-mover advantage among members, it is unclear what we should be comparing it to. Beyond descriptives, then, we run a simple estimation to see whether the clustering in time varies in a way we would expect. If the theory is correct, then what would lead countries to join early would be the expectation that others are also likely to do so. To assess this, we regress the average time between consecutive third parties’ decision to join on the total stake of all members in the dispute, measured as total exports to the defendant of the product at issue in the year prior to the dispute. We also add our Multilateral indicator on the right-hand side, which is coded as 1 for disputes that are likely to concern more than the complainant. We then replace it with our Bilateral indicator, which as described above, is not the exact obverse of Multilateral. Throughout, we include a necessary control variable, which is the total number of third parties in the dispute: indeed, we are wary that clustering in time could simply be a result of more third parties joining within a finite period. We rely on a standard OLS estimation, and cluster all robust standard errors on the dispute. The results, shown in Table 4, support our expectations. The more there is reason to believe that a dispute will have broad appeal, either because of the type of discrimination at issue or the exports at stake, the more nonlitigants rush to join the dispute, and the more clustering in time results.

5 Conclusion

Third parties are widely celebrated as a key aspect of dispute settlement at the WTO. They are said to increase transparency, allow developing countries to acquire legal capacity, and play a crucial enforcement role by decreasing the likelihood that litigants strike discriminatory settlements at the

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48 The request to join is a formal move, resulting in a WTO document that is assigned a formal document number.
expense of the remainder of the membership. For the third parties themselves, participation appears equally beneficial: third parties can defend their interests during otherwise private negotiations without paying the high costs of litigation that are shouldered by the complainant. And indeed, we find that third parties fare much better on average than non-participants, judging from the market access they gain as a result of disputes, as measured through subsequent exports. We are thus left with a puzzle: given these extolled benefits, why does the average merchandise dispute count only four third parties, when our own conservative estimate suggests that this number should be closer to 17? Why don’t more countries participate when they have an observable stake in the matter at hand?

We have argued that participation decisions are strategically interdependent. The decision to participate raises the total number of third parties, which lowers the likelihood of early settlement. This creates an overcrowding effect: as more states become third parties, the marginal benefit of participation decreases and each state becomes less likely to join. We test our theoretical model by examining each country’s decision to participate or not in every WTO dispute since 1995.

Alternative explanations, centering on the costs of angering the defendant, obtain comparatively less support. While there are undoubtedly cases where dependence on aid from the defendant acted as a deterrent to seeking third party status, these concerns seem to have little impact in the average dispute. By comparison, we do find support for the idea that retaliatory capacity, even when controlling for market size and wealth, increases the odds of third party participation. The most persistent factor of (non)participation, however, appears to be a concern over who else is in the room. The greater the number of other countries that join, the less likely a given country is to join. The empirical findings thus support our theoretical model’s expectations: states fear crowds in WTO dispute settlement.

One implication of our findings is that if states themselves are choosing to stay out of the
room for fear of crowds, then second-best participation solutions—such as the WTO green room and other designs based on the legislative committee model or the less formal club model—may enjoy greater tacit acceptance than is commonly believed. We know this because when given the chance to participate, rational actors may decide not to enter. All things equal, every country would prefer to be in the room; yet if it means that many others will be there too, then countries may strategically exercise restraint and stay out. If this is the case, then part of the criticism aimed at international institutions, especially on the part of small and poor states vying for greater inclusiveness, could be political theater directed primarily at domestic audiences.

A second implication of our findings relates to the impact of third parties on the probability of early settlement. Many observers have expressed concern that the presence of third parties can increase the likelihood of pre-litigation bargaining failure (Porges 2003; Busch and Reinhardt 2006). The concern has been sufficiently great as to warrant a re-examination of the existence of third parties in the first place. Our analysis shows that these fears may have been overstated. Nonlitigants internalize the impact of their participation on the likelihood of bargaining failure when they choose whether to join as third parties. Countries have an incentive to avoid crowds, even though participants do better, on average, than nonparticipants.
Appendix

There is a complainant (C), a defendant (D), and N nonlitigants. Let \( b(\pi, n) \) denote the benefit that is demanded by type \( \pi \) given the number of third parties \( n \). Let \( s(b) \) denote the probability that the defendant settles by accepting the benefit demand \( b \). We assume that \( \pi \) is distributed with full support on the interval \([\pi_L, \pi_H]\) where \( 0 < \pi_L < \frac{1}{2} < \pi_H < 1 \) according to distribution function \( F \). We also assume that \( V > 2N \) and cost \( k > 0 \) is small. This ensures that the each player always prefers winning the panel ruling to losing, and the complainant’s demand is an interior solution. We derive the fully separating equilibrium and assume that off-the-equilibrium-path beliefs satisfy the refinement of universal divinity (Banks and Sobel, 1987).

**Proof of Proposition 1.** Suppose the complainant adopts a fully separating strategy. Then conditional on observing a benefit demand, \( b \), the defendant can correctly infer the type of complainant, \( \pi \). The defendant will accept the demand if and only if:

\[
V - b + n \geq (1 - \pi)V - n(1 - 2\pi) - k \iff b \leq \pi V + 2n(1 - \pi) + k
\]

So the optimal demand is:

\[
b^*(\pi, n) = \pi V + 2n(1 - \pi) + k \tag{1}
\]

Note that \( b^*(\pi, n) > 0 \) always and \( b^*(\pi, n) \leq V \iff k \leq (1 - \pi)(V - 2n) \). Let \( T_C(\pi, n) \) denote the complainant’s expected utility from trial. Then the complainant’s expected utility from benefit demand \( b \) is:

\[
\begin{align*}
EU_C(b|\pi, n) &= s(b)(b - n) + [1 - s(b)] T_C(\pi, n) \\
\frac{\partial EU_C(b|\pi, n)}{\partial b} &= s(b) + s'(b)(b - n) - s'(b) T_C(\pi, n) = 0 \\
&\iff b = \pi V + 2n(1 - \pi) - k - \frac{s(b)}{s'(b)} \tag{2}
\end{align*}
\]

Combining conditions (1) and (2) ensures that:

\[
2k s'(b) = -s(b)
\]

This differential equation has a class of solutions of the form \( s(b) = \exp\left(\theta - \frac{b}{2k}\right) \) where \( \theta \) is a constant. It is thus always true that \( s(b) > 0 \). To ensure that \( s(b) \) is always a well-defined probability (i.e. \( s(b) \leq 1 \)), we must assume that:

\[
\theta \leq \frac{\min\{b^*(\pi, n)\}}{2k} = \frac{\pi_L V + k}{2k}
\]

Values of \( \theta \) can be selected to satisfy normative criteria. For example, the most efficient fully separating equilibrium of the game holds when \( \theta = \frac{\pi_L V + k}{2k} \). For ease of exposition, we set \( \theta = 0 \) and note that our results hold for other values of \( \theta \), including \( \theta = \frac{\pi_L V + k}{2k} \). Universal divinity ensures that if the defendant observes an off-the-equilibrium path benefit demand \( b > \max\{b^*(\pi, n)\} \), then she rejects the demand. Similarly, if she observes an off-the-equilibrium path benefit demand
\[ b < \min \{ b^*(\pi, n) \}, \text{ then she accepts. So we have the following equilibrium behavior:} \]

\[
b^*(\pi, n) = \pi V + 2n(1 - \pi) + k
\]

\[
s^*(b) = \begin{cases} 
1 & \text{if } b < \min \{ b^*(\pi, n) \} \\
\exp \left(\frac{-b}{2k}\right) & \text{if } b \in [\min \{ b^*(\pi, n) \}, \max \{ b^*(\pi, n) \}] \\
0 & \text{if } b > \max \{ b^*(\pi, n) \}
\end{cases}
\]

It is easy to see that:

\[
\frac{\partial b^*(\pi, n)}{\partial \pi} = V - 2n > 0 \\
\frac{\partial s^*(b)}{\partial b} = -\exp \left(\frac{-b}{2k}\right) \left(\frac{1}{2k}\right) < 0
\]

and: \[ b^*(\pi, n') - b^*(\pi, n) = 2(n' - n)(1 - \pi) > 0 \] if and only if \( n' > n \).

**Proof of Corollary**

\[
s^*(b^*(\pi, n)) = \exp \left(\frac{-[\pi V + 2n(1 - \pi) + k]}{2k}\right)
\]

\[
\frac{\partial s^*(b^*(\pi, n))}{\partial \pi} = -\exp \left(\frac{-[\pi V + 2n(1 - \pi) + k]}{2k}\right) \left(\frac{V - 2n}{2k}\right) < 0
\]

And \[ s^*(b^*(\pi, n')) - s^*(b^*(\pi, n)) = \exp \left(\frac{-[\pi V + 2n'(1 - \pi) + k]}{2k}\right) - \exp \left(\frac{-[\pi V + 2n(1 - \pi) + k]}{2k}\right) < 0 \] if and only if \( n < n' \).

**Proof of Remark**

Note that a participant and a nonparticipant have the same payoffs from trial outcomes. Let \( T_P(\pi, n) \) denote a nonlitigant’s expected utility from trial. The expected utility for a nonlitigant from participation is:

\[
EU_P(\pi, n) = s^*(b^*(\pi, n)) r + [1 - s^*(b^*(\pi, n))] T_P(\pi, n)
\]

The expected utility for a nonlitigant from nonparticipation is:

\[
EU_{-P}(\pi, n) = [1 - s^*(b^*(\pi, n))] T_P(\pi, n)
\]

If we hold the number of third parties constant, then participants always receive a higher expected utility than nonparticipants: \( EU_{-P}(\pi, n) < EU_P(\pi, n) \).

**Proof of Proposition**

Choose an arbitrary nonlitigant \( i \). Let \( \hat{n} \in \{0, 1, 2, \ldots, N - 1\} \) denote the number of third parties besides \( i \). The marginal benefit from participating and increasing the
number of third parties to \( \hat{n} + 1 \) is:

\[
\Lambda (\pi, \hat{n}) \equiv EU_P(\pi, \hat{n} + 1) - EU_{-P}(\pi, \hat{n}) \\
= s^* (b^* (\pi, \hat{n} + 1)) r + [1 - s^* (b^* (\pi, \hat{n} + 1))] T_P (\pi, \hat{n} + 1) \\
- [1 - s^* (b^* (\pi, \hat{n} + 1))] T_P (\pi, \hat{n}) \\
= 1 - 2\pi + s^* (b^* (\pi, \hat{n} + 1)) [r - T_P (\pi, \hat{n} + 1)] \\
+ s^* (b^* (\pi, \hat{n} + 1)) T_P (\pi, \hat{n})
\]

Player \( i \) has incentive to participate if and only if \( \Lambda (\pi, \hat{n}) \geq 0 \). Note that function \( \Lambda (\pi, \hat{n}) \) is continuous in \( k \) and:

\[
\lim_{k \to 0} \Lambda (\pi, \hat{n}) = 1 - 2\pi \geq 0 \quad \iff \quad \pi \leq \frac{1}{2}
\]

So there exists a value \( \tilde{k} \) such that \( \Lambda (\pi_L, \hat{n}) > 0 \) and \( \Lambda (\pi_H, \hat{n}) < 0 \) for all \( k \leq \tilde{k} \) and for all \( \hat{n} \in \{0, 1, 2, \ldots, N - 1\} \). We restrict attention to such small values of \( k \). Note that \( \Lambda (\pi, \hat{n}) \) is also continuous in \( \pi \) and:

\[
\frac{\partial}{\partial \pi} \left[ \lim_{k \to 0} \Lambda (\pi, \hat{n}) \right] = -2 < 0
\]

So \( \Lambda \) is strictly decreasing in \( \pi \).

\[\square\]

**Proof of Proposition 3.** By Proposition 2 and the intermediate value theorem, for each \( \hat{n} \in \{0, 1, 2, \ldots, N - 1\} \), there exists a unique point \( \hat{\pi} (\hat{n}) \in [\pi_L, \pi_H] \) such that \( \Lambda (\hat{\pi} (\hat{n}), \hat{n}) = 0 \). Because this point is unique:

\[
\Pr (i \text{ joins} | \hat{n}) = \Pr (\Lambda (\pi, \hat{n}) \geq 0) = \Pr (\pi \leq \hat{\pi} (\hat{n})) = F (\hat{\pi} (\hat{n}))
\]

This means that \( \Pr (i \text{ joins} | \hat{n} + 1) < \Pr (i \text{ joins} | \hat{n}) \) if and only if \( \hat{\pi} (\hat{n} + 1) < \hat{\pi} (\hat{n}) \). Define:

\[
\Psi \equiv \Lambda (\pi, \hat{n}) - \Lambda (\pi, \hat{n} + 1) \\
= s^* (b^* (\pi, \hat{n} + 1)) [r - T_P (\pi, \hat{n} + 1)] + s^* (b^* (\pi, \hat{n} + 1)) T_P (\pi, \hat{n}) \\
- s^* (b^* (\pi, \hat{n} + 2)) [r - T_P (\pi, \hat{n} + 2)] - s^* (b^* (\pi, \hat{n} + 1)) T_P (\pi, \hat{n} + 1)
\]

Note that:

\[
s^* (b^* (\pi, \hat{n} + 1)) = \exp \left( \frac{-b^* (\pi, \hat{n} + 1)}{2k} \right) = s^* (b^* (\pi, \hat{n})) \exp \left( \frac{- (1 - \pi)}{k} \right)
\]

\[
s^* (b^* (\pi, \hat{n} + 2)) = \exp \left( \frac{-b^* (\pi, \hat{n} + 2)}{2k} \right) = s^* (b^* (\pi, \hat{n})) \exp \left( \frac{-2 (1 - \pi)}{k} \right)
\]

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So:
\[
\Psi = s^* (b^* (\pi, \hat{n})) \left\{ T_P (\pi, \hat{n}) + \exp \left( \frac{-(1 - \pi)}{k} \right) [r - 2T_P (\pi, \hat{n} + 1)] 
- \exp \left( \frac{-2(1 - \pi)}{k} \right) [r - T_P (\pi, \hat{n} + 2)] \right\} > 0
\]
\[
\iff \Psi' = T_P (\pi, \hat{n}) + \exp \left( \frac{-(1 - \pi)}{k} \right) [r - 2T_P (\pi, \hat{n} + 1)] 
- \exp \left( \frac{-2(1 - \pi)}{k} \right) [r - T_P (\pi, \hat{n} + 2)] > 0
\]
and:
\[
\lim_{k \to 0} \Psi' = T_P (\pi, \hat{n}) > 0
\]
So:
\[
\Lambda (\hat{\pi} (\hat{n} + 1), \hat{n} + 1) = 0 = \Lambda (\hat{\pi} (\hat{n}), \hat{n}) > \Lambda (\hat{\pi} (\hat{n}), \hat{n} + 1)
\]
Since \( \Lambda \) is strictly decreasing in \( \pi \), it must be true that: \( \hat{\pi} (\hat{n} + 1) < \hat{\pi} (\hat{n}) \).
References

Alschner, W. 2012. “Amicable Settlements of WTO Disputes: Recent Trends, New Concerns and Old Problems.” Available at SSRN.


Figure 1: Structure of the Model

- Strength of case ($\pi$) chosen
- Participation decisions result in number of third parties ($n$)
- Benefit demand ($b$) chosen

Early settlement

C wins $\pi$

D wins $1 - \pi$

C wins panel ruling

D wins panel ruling
Figure 2: Overcrowding in Third Party Participation
Figure 3: Timing of Participation Decision

![Graph showing the timing of participation decision with the x-axis representing the number of days from start and the y-axis representing disputes.](image-url)
Table 1: Model Payoffs

<table>
<thead>
<tr>
<th></th>
<th>Early settlement</th>
<th>C wins panel ruling</th>
<th>D wins panel ruling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complainant</td>
<td>$b - n$</td>
<td>$V - n - k$</td>
<td>$n - k$</td>
</tr>
<tr>
<td>Defendant</td>
<td>$V - b + n$</td>
<td>$n - k$</td>
<td>$V - n - k$</td>
</tr>
<tr>
<td>Participant</td>
<td>$r$</td>
<td>$V - n$</td>
<td>$n$</td>
</tr>
<tr>
<td>Nonparticipant</td>
<td>0</td>
<td>$V - n$</td>
<td>$n$</td>
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Table 2: Measuring the Benefit of Third Party Participation on Exports

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient (Std. Err.)</th>
<th>Coefficient (Std. Err.)</th>
<th>Coefficient (Std. Err.)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Exports logged (1)</td>
<td>Exports logged (2)</td>
<td>Exports Growth (3)</td>
</tr>
<tr>
<td>Third Party</td>
<td>0.41** (0.14)</td>
<td>0.32* (0.15)</td>
<td>0.43** (0.15)</td>
</tr>
<tr>
<td>Trade Stake</td>
<td>0.87** (0.02)</td>
<td>0.89** (0.01)</td>
<td>-0.13** (0.02)</td>
</tr>
<tr>
<td>Log Defendant GDP</td>
<td>1.86** (0.29)</td>
<td>1.44** (0.29)</td>
<td>2.01** (0.29)</td>
</tr>
<tr>
<td>Log Complainant GDP</td>
<td></td>
<td>0.03 (0.04)</td>
<td>-0.18 (0.15)</td>
</tr>
<tr>
<td>Panel Ruling</td>
<td>0.03 (0.18)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third Parties Count</td>
<td></td>
<td>-0.06† (0.03)</td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-51.81** (8.34)</td>
<td>-40.74** (8.55)</td>
<td>-50.79** (8.80)</td>
</tr>
</tbody>
</table>

N 23847 23646 23646
R² 0.78 0.76 0.16
F 1037.36 908.30 18.37

Significance levels: † : 10%  * : 5%  ** : 1%

Table 2: Fixed effects on dispute estimation of export levels, with robust standard errors clustered on dispute in column 1. Fixed effects on defendant estimation of export levels, with robust standard errors clustered on dispute in column 2. Fixed effects on dispute estimation of export growth, with robust standard errors clustered on dispute in column 3.
Table 3: Overcrowding Effects In WTO Third Parties: IV Model of Participation

<table>
<thead>
<tr>
<th></th>
<th>Coefficient (1)</th>
<th>Coefficient (2)</th>
<th>Coefficient (3)</th>
<th>Coefficient (4)</th>
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<td>-0.21***</td>
<td>-0.21***</td>
<td>-0.29***</td>
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<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.04)</td>
</tr>
<tr>
<td>Number of Pro-C Third Parties</td>
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<td></td>
<td></td>
<td>-0.29***</td>
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<td></td>
<td></td>
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<td></td>
<td>(0.04)</td>
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<td>Log Trade Stake</td>
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<td>0.02***</td>
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<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
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<td>0.59***</td>
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</tr>
<tr>
<td></td>
<td>(0.04)</td>
<td>(0.04)</td>
<td>(0.12)</td>
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<td>-0.03*</td>
<td>-0.03</td>
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<tr>
<td></td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.04)</td>
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<tr>
<td>Log Third Party Experience</td>
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<td>0.21***</td>
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<td>(0.04)</td>
<td>(0.08)</td>
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<tr>
<td>Log Complainant Experience</td>
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<td>-0.12</td>
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<td></td>
<td>(0.04)</td>
<td>(0.04)</td>
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<td></td>
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<td>(0.04)</td>
<td>(0.09)</td>
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<tr>
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<td>Constant</td>
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<td></td>
<td>(0.08)</td>
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<td>2462</td>
<td>2462</td>
<td>1197</td>
</tr>
</tbody>
</table>

* p < 0.05, ** p < 0.01, *** p < 0.001

Table 3: Total Number of Third Parties is instrumented in a first-stage equation, using rest-of-world trade stake as instrument. Robust standard errors in parentheses.
Table 4: Timing in Decision to Join

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient (Std. Err.) (1)</th>
<th>Coefficient (Std. Err.) (2)</th>
<th>Coefficient (Std. Err.) (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Membership Exports of Disputed Product</td>
<td>-0.21* (0.087)</td>
<td>-0.21* (0.088)</td>
<td>-0.20* (0.088)</td>
</tr>
<tr>
<td>Number of Third Parties</td>
<td>-0.09 (0.045)</td>
<td>-0.08 (0.043)</td>
<td>-0.09* (0.045)</td>
</tr>
<tr>
<td>Bilateral</td>
<td></td>
<td>-1.20 (0.624)</td>
<td>1.49* (0.659)</td>
</tr>
<tr>
<td>Multilateral</td>
<td></td>
<td></td>
<td>7.41*** (2.160)</td>
</tr>
<tr>
<td>Constant</td>
<td></td>
<td></td>
<td>7.66*** (2.220)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6.13** (2.173)</td>
</tr>
<tr>
<td>N</td>
<td>2391</td>
<td>2391</td>
<td>2391</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.04</td>
<td>0.06</td>
<td>0.06</td>
</tr>
<tr>
<td>RMSE</td>
<td>3.769</td>
<td>3.737</td>
<td>3.725</td>
</tr>
</tbody>
</table>

*p < 0.05, ** p < 0.01, *** p < 0.001