

Explaining Concessions in GATT/WTO Trade Disputes: The Role of Institutional Environments

Johannes Karreth
Department of Political Science
University of Colorado Boulder
johannes.karreth@colorado.edu

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Abstract

Why do states sometimes make concessions in trade disputes, while other disputes do not see any concessions made at all? This paper provides an explanation for variation in the outcomes of trade disputes within the dispute settlement system of the General Agreement on Tariffs and Trade/World Trade Organization (GATT/WTO). The answer reflects on a fundamental debate in international relations: do international institutions affect state behavior, and if so, how? I argue that states' environment of trade-specific institutions changes the costs and benefits of the available options for defendants in trade disputes. Specifically, if a defendant is also a member of one or more regional trade agreements (RTAs), these external institutions increase the cost of conflictual behavior for the defendant in GATT/WTO trade disputes: aggressive behavior in GATT/WTO disputes would reveal the defendant as an unreliable partner to other members of the complainant's RTAs. The argument suggests that those defendants that are also members in one or more regional trade institutions should be more likely to make concessions in trade disputes within the GATT/WTO. Empirical tests using a data set of 380 trade disputes from 1980 to 2000 provide consistent support for this hypothesis; the results are robust to a number of follow-up tests, including careful examinations of bias rising from sample selection of dispute initiation and the endogeneity of defendants' participation in RTAs to their dispute behavior. The findings have implications for research on institutional influence on state behavior in general, and for follow-up work on the role of regional trade agreements in WTO trade disputes in particular.

Scholars have been debating for a long time whether intergovernmental organizations (IGOs) have an impact on state behavior. On one side, the institutionalist research program in particular has argued that institutions promote cooperation, extend the shadow of the future, and thus enable states to harness the benefits of cooperation (Keohane 1984). Opposing arguments object that IGOs have no independent effect and that states' interests precede their establishing and joining of institutions (Mearsheimer 1994; Downs, Rocke, and Barsoom 1996; von Stein 2005).

This debate is not yet resolved, yet it is consequential for academic and practical concerns. In the area of international trade, the debate is particularly active (see, e.g., Rose 2004; Goldstein, Rivers, and Tomz 2007; Kono 2007). In this paper, I provide an argument and evidence that shows that states' institutional environments substantially affect the behavior of states in trade disputes within one IGO in particular, the General Agreement on Tariffs and Trade/World Trade Organization (GATT/WTO). Thus, I address two related questions. First, what explains variation in the trajectory of trade disputes within the GATT/WTO dispute settlement system? And second, when and how do international institutions affect state behavior?

In this study, the second question informs the first. I argue that states' environment of multi-lateral trade institutions changes the costs and benefits of the available options for defendants in GATT/WTO trade disputes. Specifically, if a defendant is also a member of one or more regional trade agreements (RTAs), these additional institutions increase the cost for the defendant of conflictual behavior in GATT/WTO trade disputes—via a reputational spillover mechanism. Hypothetically, the less a defendant backs down and cooperates in a dispute, the more it signals to its other institutional partners in RTAs that it could be an unreliable “rogue” actor in those institutions as well. Because the defendant has already made costly investments in those RTAs, and the RTAs have institutional leverage themselves, the cost of such behavior is considerable. Thus, I conclude that in the area of trade policies, a particular type of IGO influence is at play: the institutional environment *outside* the regulatory institution for trade disputes, the WTO, explains when states act more or less cooperatively *within* the WTO. The direction of this influence also has important implications for extant research on the roots and effects of regional trade agreements. In an influential article, Mansfield and Reinhardt (2003) explain the proliferation of preferential trade agreements in general as a consequence of states seeking bargaining leverage in the GATT/WTO system. My argument suggests that the multilateral subset of preferential agreements—regional trade agreements—does in fact not increase leverage, but induce more cooperative behavior in one instance of international bargaining, namely trade disputes within the GATT/WTO.

In the next section, I describe the relevance of trade disputes in the GATT/WTO, with particular attention to their role as an important venue for the influence of (other) international institutions. I then develop the argument that defendant's embeddedness in RTAs influences defendants' propensity to make concessions. The subsequent empirical test examines all trade disputes in the GATT/WTO between 1980 and 2000.

GATT/WTO Dispute Settlement

The legal structure for international trade, formalized in the General Agreement on Tariffs and Trade (GATT) in 1947, provides a multilateral system of rules and, importantly, dispute adjudication and –resolution. When a state believes that it is the victim of another state’s violation of the standing rules on international trade, it may turn to the dispute resolution system under the GATT (prior to 1995) or the dispute settlement mechanism (DSM) under the WTO. These two systems are described in more detail in [Hudec \(1993\)](#) and [Hudec \(1999\)](#). The dispute resolution system is a central example for the role of IGOs in world politics. Like many IGOs, it has no direct enforcement power in the sense that it cannot impose substantial material sanctions on a state by itself. Instead, it outsources punishment to the affected states, in that—if the defendant is found guilty—it sanctions retaliatory measures by the complainant.

Importantly, the evolution of the GATT into the WTO brought increased legalization of the dispute settlement system. Aside from broadening the groups of goods managed by the multilateral trade regime, one of the goals of the Uruguay Round was to build a stronger DSM: stronger in the sense that it would be less sensitive to the economic and political power of participants. This was done in the hope to level the playing field for developing countries. If this goal were achieved, it would be significant evidence in favor of an independent influence of institutions on state behavior. This also illustrates why the debate about an independent effect of IGOs on state behavior also addresses a pressing issue in world politics in practice. Much criticism from scholars and practitioners has been directed at exploitative or hypocritical practices by developed countries toward developing economies. The field of international trade is among the most contested issues in this context. Examining the impact of IGOs, in this case the WTO, on the practice of sovereign states therefore speaks directly to questions of development and political stability in developing countries.

Dispute initiation and filing at the GATT/WTO

On the empirical record, this expectation of increased legalization leveling the playing field has received mixed evaluations. First, in order to be useful for developing countries (and to evaluate the impact of the IGO), the DSM needs to be used by this group of countries. One concern about the GATT was that developing countries anticipated negative outcomes of dispute settlement procedures and thus did not even try to file in the first place. Researchers here have come to diverging findings; [Kim \(2008\)](#) offers a comprehensive summary of this body of work. Representatively for more skeptical findings, Kim concluded that legalization actually benefited developed countries because increased legalization also requires higher capacity to successfully navigate the DSM (also see [Guzman and Simmons 2005](#)). Continuing that thought, [Sattler and Bernauer \(2011\)](#) identified another possibly indirect negative externality of increased legalization: unequal dyads (i.e. pairs of rich and poor litigants) tend to settle trade disputes outside the DSM, where its rules do not apply,

and where developed countries are presumably able to apply more pressure for a better deal.

However, others have found that the more legalized DSM under the WTO has particularly constrained the United States (Zangl 2008), the actor thought to be particularly prone to overriding the (legally) weak GATT system. Davis and Bermeo (2009) also suggest that problems such as capacity issues (Kim 2008) can be overcome as states gain increasing experience with the DSM. Another channel to address the capacity problem is the work of the Advisory Centre on WTO Law, a separate IGO that offers support for developing country litigants in the DSM (Bown and McCulloch 2010).

An important corollary of this research is that filing cases is costly for complainants. First, formally initiating a dispute generates administrative costs that many complainants cannot shoulder easily. Second, initiating a dispute and losing it will have negative ramifications, both at home (signaling bad policy to voters and selectorates) and abroad (possibly weakening the complainant's reputation). As a consequence, it seems justified to assume that complainants file disputes strategically, and decide to initiate complaints only in cases where they consider the evidence in their favor and anticipate an easy path to concessions, either via early settlement or after a formal ruling. This assumption is important for the next step, the defendant's behavior and the resulting dispute outcome.

Dispute outcomes

The conversation between studies such as Kim (2008) and Davis and Bermeo (2009) suggests that there is no conclusion yet on the effect of IGOs and legalization on states' use of the multilateral dispute settlement system. Equally important, however, is the question whether, once used, the institution shapes the trajectory of trade disputes. This is the main question of this paper. Two outcomes are of interest here.

First, what determines the level of concessions by defendants in a case? The immediate answer would be the merit and quality of a complaint. Weak complaints should induce fewer concessions on average. However, there is no immediately objective metric for the quality of a complaint. This is why the previously raised strategic selection of disputes helps explain dispute outcomes. If complainants strategically choose the cases they file, they initiate disputes over the most egregious cases of trade rule violations. Therefore, we should expect that the vast majority of disputes should yield concessions—an expectation corroborated by the fact that when disputes advance so far as to result in a panel ruling, these rulings are more than six times as likely to favor the complainant than the defendant (Busch and Reinhardt 2003). At the same time, in one-third of disputes examined in that study, defendants made no concessions at all. This makes variation in concessions a genuinely interesting outcome to explore: if the cases brought against them are well-founded on average, why do defendants only concede in some disputes?

It is safe to assume that concessions are costly for defendants. Concessions mean a change of trade policy toward a policy that, at least in the short run, reduces the benefits to the defendants' gov-

ernment, industry, and at least part of their population. If the change were not costly, and the initial policy did not yield benefits of some sort, the defendant's government would not have pursued the initial policy in the first place. But concessions are also costly in a second dimension. Concessions indicate to domestic audiences that the government accepts the fact that it violated rules; this is a signal of incompetence. Not only do concessions bring the material costs just described upon the domestic audience, they also suggest that the government could have used its resources more wisely in the first place, had it had a better understanding of world trade rules. This (stylized) scenario is a realistic assumption that has been described elsewhere to the extent that adverse rulings generate significant pressure on leaders from domestic audiences (Johns 2012).

Given the significance of concessions as a policy, concessions mark a valid test of the influence of institutions on state behavior. Institutions that force a state to make concessions following an adverse ruling are a substantial piece of evidence for the influence of institutions on state behavior. In the long run, this may even indicate the potential of international institutions to manage and decrease material inequality between states, even if the distribution of IGOs themselves reflects inequality (Beckfield 2003). Empirical evidence from the WTO, however, does not fully support this conclusion yet. One study reports a gradual strategic adjustment of developing countries to better exploit the more legalistic WTO DSM system (Bown 2004). But just as scholars have found that dispute filing reflects the distribution of wealth, Busch and Reinhardt (2003) show that disparities exist in the degree to which defendants make concessions. In both eras, richer defendants were less likely to make concessions; in the WTO era, richer complainants were even more likely to receive concessions. Both suggest that the WTO has not been able to overcome foundational inequalities in terms of capacity when it comes to the implementation of DSM rulings. Aside from concessions, trade disputes may also be settled early, which generally appears to produce better outcomes for complainants (Busch and Reinhardt 2003, 720). But similarly, only richer countries manage to achieve early settlement (ibid.).

Dispute outcomes as a measure for IGO influence

In all, trade disputes—particularly in the more recent period—offer a useful metric for examining the influence of institutions on state behavior. First, the WTO has one of the larger memberships of all multilaterals, which may dissipate concerns about underlying unobserved factors that align states' interests with the IGO's interest (which would obfuscate inferences about exogenous IGO effects). For instance, Downs, Rocke, and Barsoom (1996) and von Stein (2005) suggested that states join IGOs or sign treaties only once their practice is aligned with the institution's or treaty's prescription. This choice mechanism then leads to false inferences if researchers observe a behavioral change by a state after it joined or ratified, where the true reason for the behavioral change precedes the suggested impact of the institution or treaty. The risk of this inferential problem is much lower in the case of trade disputes within the GATT/WTO, since states arguably join the mul-

tilateral trading regime in order to first receive the benefits of multilateral trade liberalization. It is sufficiently implausible that states would join the GATT/WTO immediately eyeing the use of the DSM to their advantage.

Second, there is evidence that the strongest form of self-selection into institutions—here, a commitment to liberalization or a diffuse trait of trade cooperativeness—does not apply to the WTO (Davis and Wilf 2011). Davis and Wilf find that states indeed continue to seek protectionist policies wherever possible after joining the GATT/WTO. This corroborates the assumption that the outcome of interest, state behavior within the GATT/WTO regime, offers sufficient variation to investigate the causes of varying degrees of cooperative behavior.

Third, disputes are costly because they entail the veritable risk of losing—which itself marks a considerable loss for the defendant, for reasons described above, but also for its standing with third parties (Johns and Pelc 2012). At the same time, trade disputes are also a key arena for resolving tensions that arise from economic inequality between nations. Extant research has mostly arrived at the conclusion that despite the goals of WTO institutionalization, the DSM has not been able to level the playing field, and that wealth and capacity still are the best determinants of complainants' success in trade disputes. Examining the potential of external institutional constraints—here, defendants' RTAs—thus provides an additional important angle to explain the dynamics behind defendants' choices in trade disputes.

Institutional determinants of trade dispute outcomes

Returning to the main question of this paper, trade disputes can illustrate the “when” and “how” question of the impact of IGOs on state behavior. The predominant approach has been to examine variation in the GATT/WTO itself (e.g., Busch and Reinhardt 2003; Kim 2008; Davis and Bermeo 2009). However, the institutionalization of GATT/WTO is not the only important variation in international institutions that affects trade disputes. In this section, I develop the argument that disputants' institutional environment is an important determinant of how trade disputes end. The degree to which defendants are engaged in other IGOs helps explain what complainants can get from, and what defendants are likely to give up in trade disputes.

I develop this argument in three parts. First, I define institutional environment in the present context. Second, I explain the impact of this environment on the trajectory of trade disputes. Finally, I sum up the argument in a hypothesis on the trajectory of trade disputes in the GATT/WTO. Throughout the theoretical argument, I focus on states as primary actors. These states aim to pursue trade policies that maximize the economic welfare of their constituency (i.e., their national economy) within the range of rules provided by the multilateral trade regime. The main contribution of this theory is the introduction of states' institutional environment as an important influence on which strategy maximizes the expected outcome of each of the available policy choices.

RTAs as institutional environment

Most of the work on trade disputes cited above considers only one institution, the GATT/WTO and its DSM, in isolation. But work on other trade-related phenomena has shown that the GATT/WTO interact with a number of other institutions, predominantly regional and preferential trade agreements (RTAs and PTAs). Copelovitch and Ohls (2012) suggest that PTAs and RTAs, among other factors, explain variation in the timing of WTO accession. Conversely, Mansfield and Reinhardt (2003) argue that the GATT/WTO itself prompted the rise of PTAs in general because founding and joining PTAs enhances GATT/WTO members' leverage in multilateral bargaining over trade policies. My argument takes this idea further and reverts it in the specific context of trade disputes. It can certainly be true that states' initial motivation for establishing PTAs and RTAs as credible exit options to generate leverage in the large multilateral GATT/WTO regime. But by establishing these organizations, states—possibly inadvertently—subject themselves to additional constraints. Below, I lay out these constraints and then suggest the observable implication that they result in less, rather than more, confrontational behavior in GATT/WTO trade disputes.

I argue that states' participation in other types of trade institutions is crucial to explain states' incentives and behavior in trade disputes. The “other” institutions that I focus on here are regional trade agreements. Regional trade agreements are sanctioned by Article 24 of the GATT under two conditions: if they reduce barriers to “substantially all the trade” (GATT Article 24-8-a-i), and if they do not lead to higher tariffs toward non-RTA states. RTAs and PTAs have been growing since World War II, but particularly so in the last 20-25 years (Mansfield 1998; Mansfield and Milner 1999; Mansfield and Reinhardt 2003).

The concept of an institutional environment is not new by itself, but it is more frequently applied in studies of interstate conflict. The most prevalent frameworks there are security communities (Deutsch 1957) and shared memberships in international institutions, particularly those with interventionist capabilities (e.g., Boehmer, Gartzke, and Nordstrom 2004; Boehmer and Nordstrom 2008). Under certain conditions, these institutional environments can align states' preferences (Bearce and Bondanella 2007) and prevent inter-state conflict (Bearce and Omori 2005). In this particular case, I suggest that RTAs as institutional environment change states' incentives in trade disputes foremost by establishing specific costs for confrontational behavior.

RTAs as institutional environments plays a substantial role in trade disputes within the encompassing institution, the GATT/WTO. When a complainant initiates a dispute and a defendant is targeted, the dispute technically happens within the GATT/WTO. But it also has implications for the trade-related institutional environment of the disputants. Scholars have previously considered RTAs as an alternative forum for dispute settlement (Cassing 2009, 315-316; Busch 2007). But forum shopping primarily helps explain the choice of (if and) where to file a dispute. The multitude of RTAs has another, different implication for dispute *outcomes*. The RTAs to which complainants and defendants belong are involved in these disputes by extension. For instance, while concessions

in a (bilateral) trade dispute are a bilateral matter, they might also affect a state's RTA partner, via diversion of trade, changes in the distribution of economic factors, and other aspects. I elaborate more on this in the following section.

The second important reason for why RTAs play a role for dispute settlement is their institutional structure. Unlike simple bilateral trade agreements, multilateral RTAs by default include at least a minimal institutional framework to address multilateral cooperation issues. This structure formalizes the interdependence of RTA members. For instance, most RTAs have at least some sort of supranational institution to coordinate trade liberalization (see, e.g., [Feng and Genna 2003](#); [Haftel 2007](#); [Vicard 2012](#)). Some (albeit very few) RTAs also have begun to coordinate monetary policy. In general, these structures suggest two things. RTAs embody a degree of sunk costs to states and thus should have a noticeable value to states. RTAs also have at least some capabilities of enforcing pressure on members via their supranational bodies. As a consequence of both, if the supranational body or (more likely) other members perceive a member's behavior (e.g., as a defendant in a GATT/WTO trade dispute) as disruptive or harmful to the RTA, they have small, but noteworthy leverage over that member.

RTAs and the trajectory of trade disputes

Having established that RTAs make up an important environment for complainants and defendants, I now discuss how this environment factors into the development of trade disputes. For this, I return to the example of a complainant (C) having filed a trade complaint at the GATT/WTO against a defendant (D). Both C and D are also members to varying numbers of RTAs (RTA_C and RTA_D). The fundamental choice for D is whether to concede and change its policy, or to continue the policy. Although the dispute settlement process is typically long (on average at least a year according to the WTO itself¹), those stylized choices are realistic. Note in particular that continuing the policy and *not* conceding will lead to WTO sanctions if the ruling panel decides against D; but these sanctions are enforced through retaliation from C. That is, the *primary* cost of losing the dispute for D is no more or less than the value of retaliation from C, typically set by the DSM panels at a comparable level to the initial violation.

This makes the DSM a calculable risk; more importantly, it appears that the risk is isolated to this particular dispute. In that view, losing the dispute yields no cost beyond the case-specific retaliation.² This is where the RTA environment enters the argument. RTAs make for an additional factor in D's cost calculation of conceding vs. policy continuation. If D chooses continuation of the policy that C filed against, it sends a signal not only to C, its opponent, but also to the other

¹See http://www.wto.org/english/tratop_e/dispu_e/disp_settlement_cbt_e/c6s1p1_e.htm.

²Retaliation can extend to any issue area, but its value is limited to the value of the claim. That is, states may retaliate for dumping cars by imposing tariffs on exports of foodstuffs from the defendant; but the retaliatory tariffs are limited in their range by the value of the original dumping violation.

members of RTA_D . Continuation suggests that D is not concerned about possible repercussions from the GATT/WTO DSM. While this may be rooted in D's sincere belief that D is in the right, at least under adverse rulings it indicates a disregard for the DSM's ruling. Since, empirically, adverse rulings (against D) are about 6.5 times more likely than rulings for D (based on data from [Busch and Reinhardt 2003](#)), the latter case is much more likely.

The signal to the other members of RTA_D from the failure of D to move substantially in a DSM process is thus a threatening one. It would suggest that D is not a reliable partner for resolving trade disputes amicably. This would not be an issue for other states that can choose their trade partners freely, since a market-based mechanism might simply divert trade from D over time—leaving D with the freedom to send different signals to other trade partners, and thus compensating for potential losses. However, within an RTA the situation is different. D has tied itself to RTA_D via the costly establishment of an institution. This suggests that D values RTA_D . And RTA_D in turn has an interest in all members of RTA_D being reliable trade partners, rather than violators and defendants in trade disputes. D thus has something to lose in the context of RTA_D if its reputation is damaged through defiant policies in a GATT/WTO dispute. Conversely, playing nice in a GATT/WTO dispute suggests to the rest of RTA_D that D respects the institution and is a reliable partner also within RTA_D . Indeed, such a reputation-based mechanism that is conditional on institutions has long been asserted for contexts where a multitude of institutions governs one particular activity ([Milgrom, North, and Weingast 1990](#)). [Davis \(2009\)](#) also suspected that this might apply to trade policy as the number of overlapping trade institutions grows, but did not pursue this argument in greater detail theoretically or empirically. And [Kono \(2007\)](#) identified a similar mechanism in a study of (single) RTAs and trade liberalization. As a consequence, RTAs have a direct and indirect punishment capacity that distinguishes them from trade partners in bilateral PTAs and trade partners without formal association. States seek to establish RTAs for their own benefit. Noncompliant behavior in another multilateral institution, the GATT/WTO, should lead other states question defendants' commitment to multilateral trade institutions. In other words, refusing to concede can be interpreted as a signal that distinguishes “good” from “bad” potential trading partners. However, this signal is only made credible by the existence of RTA_D . At $RTA_D = 0$, D's costs for confrontational behavior in GATT/WTO disputes extend to all of its potential trading partners; that is, the costs are diffuse. Contrarily, $RTA_D > 0$ establishes multiple costs for confrontational behavior. It will put D at risk of losing privileges within RTA_D , because the other members of RTA_D have to fear being exploited by D in the future. Outside RTA_D , other states interpret D's confrontational behavior as a reliable signal for D's true type of a “bad” trading partner, since D willingly occurs the costs of negative ramifications within RTA_D . Thus, RTA_D exercise a two-pronged constraint on D in GATT/WTO disputes: they establish costs within and outside of RTA_D that make aggressive strategies in disputes more costly.

Because it might be counterintuitive, I briefly elaborate on the proposed dynamic. A counterar-

gument could be that access to RTA_D allows D to play an aggressive, noncompliant strategy within GATT/WTO DSM because D has the outside option of liberalizing trade within RTA_D . If that is true, we would expect that D would be less likely to resolve trade disputes within the overarching multilateral GATT/WTO the more outside options D has (via RTA_D). This argument can be empirically tested, and would suggest a negative association between D's RTA memberships and the probability of concessions. My theory would suggest, though, that it is not likely. The GATT/WTO DSM is, on average, the most advanced and institutionalized DSM, compared to RTAs (although some RTAs have recently developed DSMs that have, in some parts, substantial leverage on its members). Therefore, not backing down within the most costly DSM (i.e, the GATT/WTO DSM) sends a dangerous signal to RTA_D : if D is not willing to move away from continuing its present policy, this bears bad news for the rest of RTA_D should any dispute arise within RTA_D . At the same time, it has been shown that RTAs and PTAs are associated with significantly larger gains in trade than the multilateral GATT/WTO regime (see, e.g., [Rose 2004](#)). This makes RTAs (RTA_D in this case) particularly valuable to D. D's optimal strategy is thus to eat up the comparatively small cost of acquiescing in the GATT/WTO case in order to maintain and increase its reputation as a reliable partner in RTA_D , and consequently harness future gains in RTA_D . Conversely, a state that has no options outside the GATT/WTO has much smaller incentives to make concessions within the DSM process, as these concessions come with little reward aside from the bilateral interaction with C, and possibly reputational benefits within the GATT/WTO. But given the size of the GATT/WTO, these benefits should be small, and D's optimal strategy is likely closer toward fighting this conflict through and avoiding concessions. Another possible counterargument with the same empirical implications (fewer concessions with more RTA memberships) might claim that since international trade can be framed as competitive,³ RTAs actually have an interest in their members *not* backing down in trade disputes with non-RTA members. This argument can also be easily tested in the given setup and would result in the opposite (negative) direction of the affiliation between defendants' RTA environment and concessions.

The argument laid out above yields the main hypothesis. Recall from the initial discussion that the trajectory of GATT/WTO disputes has two important elements, per [Busch and Reinhardt \(2003\)](#): early settlement, and concessions by D. Busch and Reinhardt argue that early settlement tends to yield better outcomes for C. Hence it might be reasonable to consider it an outcome similar to concessions. My primary focus, however, is on concessions, because they indicate a clear cooperative strategy by D. Furthermore, the signaling aspect (with regard to RTA_D) that is central to my theory is likely more appropriate with the clear choice of concessions. Busch and Reinhardt suggest empirically that settlements yield better outcomes for C, but I find it unclear whether this is always evident to the broader audience of third-party countries, particularly in RTA_D . My hypothesis thus expresses the argument that the presence of an RTA environment for D (RTA_D) should

³This is, however, a minority view at most.

induce a more cooperative strategy by D in a GATT/WTO dispute, expressed in concessions. RTA_D is expressed as the embeddedness of D in regional trade agreements. The hypothesis is then:

Defendants in GATT/WTO disputes are more likely to make concessions when they are embedded in one or more RTAs.

Research design

To test this hypothesis, I examine the provision of concessions in 380 trade disputes under the GATT and WTO regimes in the years from 1980 to 2000, with the dispute as the unit of analysis. For the analysis, I use data on trade disputes from [Busch and Reinhardt \(2003\)](#). Busch and Reinhardt provide a more extensive discussion of these data; importantly, the data set contains all complaints that were filed invoking formal GATT/WTO proceedings. I use these data to maximize the comparability of my findings to the conventional wisdom about the determinants of GATT/WTO trade dispute outcomes.

Dispute outcome. The variable of interest for this study is the outcome of each individual trade dispute. Did the defendant change its policy on the disputed issue? Busch and Reinhardt coded this as an ordinal variable, from no concessions (continued status quo policy), partial concessions, to substantial or full concessions. I first use the same ordinal outcome variable (Model 1), but after diagnosing violations of the parallel regression assumption, I then use a dichotomized outcome variable, separating dispute outcomes into no and partial versus substantial concessions. This binary classification is substantively interesting. The real outcome of interest for my argument is the degree to which defendants behave cooperatively. As partial concessions are comprised of delays and incomplete acquiescence ([Busch and Reinhardt 2003, 725](#)), substantial concessions capture this cooperative outcome much better. To be on the safe side, however, I also present results using the appropriate multinomial logit setup for the original coding of the variable in [Table A2](#) in the appendix. And to ensure comparability of my results, I also re-estimated the Busch-Reinhardt model, but use the binary outcome, in [Table A1](#), with no appreciable differences compared to the authors' original inferences. Overall, 189 cases ended in substantial concessions, 74 in partial concessions, and in 117 cases defendants did not budge and made no concessions.

RTA environment. The degree to which defendants are embedded in other trade institutions is measured by the count of the defendant's memberships in regional trade agreements. I use regional trade agreements and exclude other forms of bilateral or multilateral, but less institutionalized trade agreements to accurately reflect the part of my argument that relies on the ability of RTAs to impose costs on and withdraw benefits from members. To calculate RTA memberships, I use a dataset of regional integration agreements across the globe coded by Genna and first presented (as a partial

version) in [Feng and Genna \(2003\)](#).⁴ A complete list of RTAs is in the appendix in [Table A4](#). In [Figure 1a](#), black bars indicate the distribution of RTA memberships for defendants. About 50% of defendants have no RTA memberships, about 46% are members in one or two RTAs, and the rest has three or more memberships.

Control variables. The remainder of the empirical model is composed of the control variables used in the original study from [Busch and Reinhardt \(2003\)](#), except for one variable: complainant’s RTA memberships. I control for this variable to account for the possibility that RTA memberships might give complainants an advantage due to extended bargaining power. Multicollinearity of complainants’ and defendants’ RTA memberships is not a concern at a correlation coefficient of 0.22 for the two variables ([Table A3](#)). To capture economic power and market size, I use defendants’ and complainants’ gross domestic product, both raw and scaled by population. Because the extant literature has been debating the effect of the WTO’s move toward more legalization, I include a dummy for cases that were filed and concluded under WTO rules. Following [Busch and Reinhardt \(2003\)](#), I also interact this dummy with the complainant’s GDP per capita, to control for the possibility that the WTO-legalization helped poorer countries navigate the DSM mores successfully. Finally, I follow [Busch and Reinhardt \(2003\)](#) in controlling for a series of dispute-specific factors: whether a ruling body or panel was established (as opposed to early settlement); the direction of the panel’s decision; and four qualities of the case: whether the case was concerned with trade of agricultural products; whether it was a politically sensitive case (meaning that the case involved arguments about biosafety, environmental protection, cultural preservation, or national security); whether it was a multilateral case (i.e., filed by or against more than one state); and whether the policies under jeopardy involved discrimination among trade partners. Like all other variables except the RTA variables, these controls are taken directly from [Busch and Reinhardt’s \(2003\)](#) replication data. The appendix contains a correlation matrix of all variables ([Table A3](#)).

Estimation. To assure comparability with [Busch and Reinhardt’s \(2003\)](#) findings, I first estimate an ordered logit model ([Table 1](#), column 1). A Brant test, however, indicates that the parallel regression assumption is violated; this means that the relationship between the predictors and the outcome differs across the three outcome types ([Brant 1990](#)). After examining these differing relationships in a multinomial logit model ([Table A2](#), Model 9), and based on my earlier discussion of the interesting variation between substantial and partial/no concessions, I use the dichotomous coding of the dispute outcome as the appropriate response variable. The main empirical models therefore estimate the following generalized linear equation:

$$\Pr(\text{Concessions} = 1)_i = \beta_0 + \beta_1 \text{Defendant's RTAs}_i + \beta \mathbf{X}_i + \varepsilon$$

⁴These data also offer codings of the institutionalization of the agreements on economic and political dimensions, but for this test, I treat all RTAs as equally important and influential for their members.

In this equation, the link function is provided by the logit function. Concessions is the binary outcome variable described above; defendant's RTAs is a count of the defendant state's memberships in regional integration agreements; and β is a vector of coefficients on the matrix of control variables \mathbf{X}_i . The main hypothesis specifies a positive coefficient on β_1 . In all estimations, I correct the standard errors and cluster them by dyads to account for the possibility that disputes between the same dyads are not independent.

Findings and discussion

In a simple t-test, states that made substantial concessions have about twice as many RTA memberships than states that did not make substantial concessions ($p < 0.001$). Table 1 presents the main results from multiple regression models, first in the ordered logit setup, followed by two logit models. Each model shows that defendants are significantly more likely to make concessions if they are members of more regional trade agreements. This evidence supports the hypothesis, and lends credence to the argument that international institutions in the form of RTAs make cooperative outcomes in trade disputes more likely. Control variables perform essentially identical to the results from [Busch and Reinhardt \(2003\)](#).

This finding is not contingent on the inclusion of the complainants' RTA memberships (Model 3); if that control variable is excluded, β_1 remains virtually unchanged. To see whether the effect might seem higher than it is due to the fact that only few countries were members of more than one or two RTAs, I also replaced the RTA variable with a binary coding of no vs. one or more RTA memberships. Model 4 shows that the association persists in that setup as well.

For a more appropriate and useful interpretation of the association between RTA memberships and the probability of concessions, given the nonlinear nature of the estimator used, I calculated predicted probabilities for substantial concessions at all values of defendants' RTA memberships. The left plot in Figure 1b, based on Model 2, shows how the probability of concessions increases with the number of defendants' RTA memberships. A defendant that is in no RTA will only make substantial concessions with a probability of 40%; one RTA membership raises that probability over 50%, two RTA memberships to over 60%, and with even more RTA memberships (which are rare in the data), the probability increases further. The confidence intervals indicate that the differences between the probabilities at different levels of RTA memberships are statistically significant. The same conclusion can be drawn if one codes RTA memberships as binary (see the plot on the right); defendants with no RTAs are less than 40% likely to make substantial concessions, whereas one or more RTA memberships increases this probability to about 65%. It is also noteworthy that the inclusion of RTAs improves the model fit slightly, rather than adding statistical noise; comparing the re-analysis of the original model in Table A1 to my main Model 2 in Table 1, the proportional error is reduced further, and the latter model predicts more cases at their true value.

Table 1: GATT/WTO trade disputes: Determinants of concessions by defendants.

Estimator Outcome	(1)	(2)	(3)
	Ord. Logit Concessions	Logit Substantial concessions	
Defendant's RTAs	0.342* (0.145)	0.428* (0.172)	0.452* (0.169)
Complainant's RTAs	0.125 (0.108)	0.167 (0.113)	
Defendant's GDPpc (log)	-0.294 (0.162)	-0.401* (0.171)	-0.385* (0.168)
Defendant's GDP (log)	0.110 (0.095)	0.122 (0.097)	0.101 (0.094)
WTO-era dispute	-1.479 (1.410)	-2.368 (1.573)	-1.951 (1.570)
WTO-era disp. × Complainant's GDPpc (log)	0.234 (0.152)	0.328* (0.165)	0.296 (0.166)
Complainant's GDPpc (log)	0.002 (0.158)	-0.028 (0.148)	0.011 (0.147)
Complainant's GDP (log)	0.101 (0.072)	0.108 (0.079)	0.083 (0.075)
Panel established	1.777* (0.476)	1.846* (0.520)	1.790* (0.496)
Ruling for Complainant	-0.759 (0.465)	-0.830 (0.484)	-0.859 (0.481)
Ruling mixed	-1.800* (0.473)	-2.636* (0.655)	-2.626* (0.652)
Ruling for Defendant	-3.558* (0.636)	-2.879* (0.589)	-2.840* (0.575)
Agriculture Case	0.144 (0.223)	0.034 (0.237)	0.067 (0.232)
Politically sensitive case	-0.805* (0.350)	-0.406 (0.374)	-0.399 (0.376)
Multilateral Case	-0.150 (0.239)	-0.316 (0.301)	-0.276 (0.297)
Discriminatory measures	-0.119 (0.249)	-0.201 (0.236)	-0.192 (0.234)
Constant		-3.165 (2.624)	-2.281 (2.426)
Log-likelihood	-338.97	-212.29	-213.51
χ^2	119.08*	108.99*	110.49*
N (Disputes)	380	380	380
Correctly predicted	60%	71%	72%
Proportional reduction of error	20%	42%	44%

* $p < 0.05$. Standard errors (clustered on dyads) in parentheses.

Additional tests

Shared RTA memberships. Given my theory about the influence of RTA environments, it is possible that defendants who share one or more regional trade agreements with complainants will be more likely to make concessions. On the other hand, it is plausible to assume that states that find themselves in one or more RTAs have access to a variety of dispute settlement mechanisms before going to the last resort of the GATT/WTO DSM. In the sample based on Busch and Reinhardt's data, only 11% of dispute dyads share one RTA; 4% share two, and in one single dyad (Singapore's 1995 complaint about Malaysia's banning of imports of Polyethylene and Polypropylene) the two states shared four RTA memberships. In Model 5, I find that shared RTA memberships do not predict a higher probability of substantial concessions.

Democracy. To account for possible effects of domestic institutions—such as the propensity of democracies to cooperate more—I also estimated a model controlling for democratic regimes in the complainant and/or defendant countries (Model 5). In that model, I use the combined Polity score to measure democracy (Marshall and Jaggers 2009). The coefficient on defendants' RTAs remains

Table 2: Robustness checks: Binary RTA coding, shared RTAs, and democracy.

Outcome	(4)	(5)	(6)	(7)
		Substantial conc.		
Defendant's RTAs		0.544* (0.219)	0.430* (0.176)	0.433* (0.172)
Defendant in 1+ RTAs	1.143* (0.276)			
Complainant's RTAs		0.233 (0.122)	0.166 (0.113)	0.161 (0.113)
Complainant in 1+ RTAs	-0.042 (0.316)			
Shared RTAs		-0.457 (0.366)		
Defendant's Polity			0.011 (0.056)	
Complainant's Polity			0.035 (0.037)	
Joint democracy				0.334 (0.318)
Defendant's GDPpc (log)	-0.530* (0.183)	-0.404* (0.178)	-0.416* (0.189)	-0.426* (0.182)
Defendant's GDP (log)	0.190 (0.098)	0.131 (0.099)	0.119 (0.096)	0.115 (0.097)
WTO-era dispute	-2.228 (1.574)	-2.496 (1.557)	-2.688* (1.612)	-2.669* (1.578)
WTO-era disp. × Compl't GDPpc (log)	0.318 (0.164)	0.336* (0.164)	0.361* (0.170)	0.361* (0.166)
Complainant's GDPpc (log)	0.047 (0.156)	-0.007 (0.154)	-0.077 (0.146)	-0.059 (0.143)
Complainant's GDP (log)	0.058 (0.077)	0.104 (0.079)	0.095 (0.080)	0.095 (0.079)
Panel established	1.931* (0.513)	1.918* (0.519)	1.811* (0.508)	1.795* (0.515)
Ruling for Complainant	-0.946* (0.474)	-0.846* (0.487)	-0.812* (0.477)	-0.775 (0.482)
Ruling mixed	-2.579* (0.594)	-2.672* (0.654)	-2.615* (0.639)	-2.546* (0.652)
Ruling for Defendant	-3.002* (0.571)	-2.977* (0.600)	-2.864* (0.580)	-2.853* (0.585)
Agriculture Case	0.082 (0.227)	0.062 (0.242)	0.019 (0.239)	0.030 (0.235)
Politically sensitive case	-0.398 (0.376)	-0.414 (0.359)	-0.379 (0.383)	-0.374 (0.372)
Multilateral Case	-0.296 (0.312)	-0.384 (0.308)	-0.304 (0.301)	-0.308 (0.297)
Discriminatory measures	-0.249 (0.234)	-0.177 (0.228)	-0.210 (0.237)	-0.214 (0.234)
Constant	-3.173 (2.493)	-3.550 (2.631)	-2.488 (2.713)	-2.342 (2.748)
Log-likelihood	-211.26	-211.2	-211.94	-211.85
χ^2	121.70*	112.28*	109.14*	109.34*
N (Disputes)	380	380	380	380
Correctly predicted	73%	73%	72%	72%
Proportional reduction of error	45%	47%	43%	44%

* $p < 0.05$. Standard errors (clustered on dyads) in parentheses.

unchanged using either democracy variable; democratic regimes do not appear to be more likely to make or receive concessions in GATT/WTO trade disputes. Alternatively, I classify as democracies countries with a combined Polity score above 6 (Marshall and Jaggers 2009). 17% of complainants and 6% of defendants are non-democracies by this standard. The results are the same as when I use the integer Polity score, and they are robust using the higher cutoff of 7 as well.

I also examined whether democratic pairs are more likely to see concessions by the defendant; this was not the case (Model 7). These findings diverge from those in a manuscript by Reinhardt (1999); I speculate that the different time period under consideration (1948-1998 in Reinhardt's study; 1980-2000 in mine) might account for that.⁵

⁵In an additional robustness check not presented in this paper, I also controlled for trade dependence to capture that motivation for concessions. I measured trade dependence for each complainant and defendant as the ratio of bilateral trade to complainant's and defendant's GDP, respectively. Each variable is not correlated with either country's RTA memberships. Including the two trade dependence variables in the equation does not return significant coefficients, and the association between defendants' RTAs and a higher probability of concessions remains.

Sample selection. A possible concern might be that the previous findings are biased through a process of sample selection, whereby a hitherto unobserved factor explains the choice of complainants to file a complaint in the first place. In that case, the sample of disputes is non-random with regard to that unobserved factor, and my inferences would be biased. While there are many possible unobserved factors that might explain non-random selection, I focus on a subset of most likely mechanisms. Here, it is important to note that the filing of disputes is likely caused by a combination of opportunity (i.e., unfair practices) and willingness (i.e., the complainant’s utility calculation about the cost and utility of a dispute). Hence, the selection process is a complex one; I thus describe a number of possible factors that might account for both opportunity and willingness in order to cover the most serious potential problem, and leave a more detailed investigation to future work. Note that this selection process is different from the assumption that complainants only choose to file cases that are presumably strong; without more refined data, the quality of the case is unobservable. Here, I am more concerned with characteristics of complainant-disputant dyads that may impact the complainant’s choice to file.

First, it is possible that complainants’ export dependence on defendants’ prohibits (or encourages) complainants to file; similarly, the degree to which the defendant is dependent on the complainant might affect the complainants’ calculus to file a trade dispute. Second, it is possible that democratic governments are more likely to file disputes in order to appease voters; and democratic governments might be more likely to be targets of disputes because complainants see higher chances for success against democracies (Chaudoin 2012). Third, complainants with higher bureaucratic capacity might have higher competence to navigate the DSM successfully, and might thus be more likely to file; conversely, defendants with higher bureaucratic capacity might be more likely to engage in unfair practices knowing that capacity is usually a good determinant of success in a potential dispute (Kim 2008).⁶ With these six variables—three for each complainant and defendant—I identify a Heckman selection equation (Heckman 1979) to check for the influence of possible sample selection bias on my inferences. For the remainder of the selection equation, I use a number of variables that are also in my outcome equation: RTA memberships, GDP, and GDP per capita, for each complainant and defendant. The six identifying variables are taken from Kim’s (2008) study, and missing or unavailable data (e.g., for the EC/EU) reduce the outcome sample (trade disputes) to 262. In Table 3, I present my main model as a probit equation (Model 8) for comparison, and the outcome and selection equations in Model 9. First, it is noteworthy that the estimates for the outcome equation are almost unchanged compared to the stand-alone probit model, in particular with regard to my variable of interest, defendant’s RTA memberships. Second, I find that ρ , the correlation between the error terms of outcome and selection equation, is small and statistically insignificant, suggesting that there is no sample selection bias under the present specification. The positive as-

⁶I hasten to note that this is only a small subset of possible unobserved factors that lead to disputes in the first place, but given the state of the literature, this subset is also the most likely one to explain the filing of disputes.

Table 3: Accounting for sample selection into disputes.

Outcome	(8)	(9)
	Substantial concessions	
Defendant's RTAs	0.282* (0.081)	0.280* (0.080)
Complainant's RTAs	0.017 (0.079)	0.016 (0.079)
Defendant's GDPpc (log)	-0.367* (0.116)	0.053 (0.158)
Defendant's GDP (log)	0.135* (0.064)	0.161 (0.190)
WTO-era	-1.713 (1.509)	-1.674 (1.542)
WTO-era × Complainant's GDPpc (log)	0.235 (0.155)	0.230 (0.161)
Complainant's GDPpc (log)	-0.073 (0.128)	-0.068 (0.130)
Complainant's GDP (log)	0.033 (0.058)	-0.368* (0.113)
Ruling body established	0.890* (0.361)	0.896* (0.366)
Ruling for Complainant	-0.608 (0.391)	-0.611 (0.390)
Ruling mixed	-1.595* (0.428)	-1.601* (0.427)
Ruling for Defendant	-1.999* (0.449)	-2.006* (0.447)
Agriculture Case	0.214 (0.191)	0.209 (0.194)
Politically sensitive case	-0.378 (0.256)	-0.373 (0.243)
Multilateral Case	-0.033 (0.206)	-0.034 (0.206)
Discriminatory measures	-0.153 (0.221)	-0.155 (0.220)
Constant	-0.948 (2.036)	-2.433 (10.492)
N (Disputes)	262	262
Selection	Dispute	
Defendant's RTAs		-0.119* (0.034)
Defendant's GDPpc (log)		-0.182* (0.043)
Defendant's GDP (log)		0.396* (0.049)
Defendant's export dependence		-0.223 (0.506)
Defendant's Democracy		0.003 (0.038)
Defendant's Bureaucratic Quality		0.281* (0.093)
Complainant's RTAs		-0.015 (0.034)
Complainant's GDPpc (log)		-0.016 (0.054)
Complainant's GDP (log)		0.347* (0.041)
Complainant's export dependence		0.774 (0.574)
Complainant's Democracy		0.015 (0.034)
Complainant's Bureaucratic Quality		0.091 (0.097)
Constant		-21.501* (1.865)
ρ		0.081 (0.555)
χ^2 for $\rho \neq 0$		0.02
Log-likelihood	-143.2	-997.9
N (Dyads)		15243

* $p < 0.05$. Standard errors (clustered on dyads) in parentheses.

Table 4: Instrumenting Defendants' RTA memberships.

Estimator Outcome	(10) IV Probit Substantial concessions	
Defendant's RTAs (instrumented)	0.446*	(0.109)
Complainant's RTAs	0.079	(0.071)
Defendant's GDPpc (log)	-0.223*	(0.096)
Defendant's GDP (log)	0.078	(0.055)
WTO-era dispute	-1.080	(0.947)
WTO-era disp. × Complainant's GDPpc (log)	0.146	(0.100)
Complainant's GDPpc (log)	-0.016	(0.088)
Complainant's GDP (log)	0.058	(0.045)
Panel established	1.046*	(0.290)
Ruling for Complainant	-0.512	(0.269)
Ruling mixed	-1.658*	(0.351)
Ruling for Defendant	-1.642*	(0.337)
Agriculture Case	0.082	(0.137)
Politically sensitive case	-0.264	(0.223)
Multilateral Case	-0.214	(0.184)
Discriminatory measures	-0.166	(0.138)
Constant	-2.090	(1.478)
Wald test for exogeneity	4.12*	
Log-likelihood	-656.09	
χ^2	118.27*	
N (Disputes)	380	
Correctly predicted	72%	
Proportional reduction of error	43%	

* $p < 0.05$. Standard errors (clustered on dyads) in parentheses.

sociation between defendants' involvement in RTAs and their probability to make concessions is robust to possible sample selection bias.

Joint causes of defendants' RTA memberships and dispute behavior. A separate source of bias for my inferences could arise from an unobserved variable that causes both states' activity in RTAs and their behavior on WTO disputes. For lack of a better term, the existence of such "trade cooperativeness" might render my finding about an association between RTA memberships and concessions much less interesting.

To explore this possibility, I turn toward using an instrumental variable approach for binary outcomes, using the implementation of [Newey \(1987\)](#). The results in Model 10 show that the positive association between defendants' participation in RTAs and the likelihood of substantial concessions is also present when defendants' RTAs are instrumented. Accounting for potential endogeneity bias still produces support for the argument about the influence of RTA environments on GATT/WTO dispute behavior.

The IV approach requires an instrument that predicts the endogenous variable (defendants' RTA

memberships) but is not associated with the outcome of interest (substantial concessions) other than through the endogenous variable. I choose three instruments that satisfy these conditions. First, I use a count of the defendant's neighbors, separated by land/river borders and less than 12 miles of sea. Second, I use the natural log of the defendant's population. Empirically, both requirements for using these instruments are met. I leave a more thorough exploration of better suited instruments or sensitivity analyses to future research.

Finally, I estimated a version of Model 2 with varying intercepts for both defendants and complainants to investigate whether there was substantial residual variance between states. Such variance could indicate that my model omits a country-level variable that might be explain states' dispute behavior. Figure 2 shows that no such significant variance remains after accounting for the variables in the model. This is further evidence that my model performs reasonably well.

Conclusion

This study aims to answer two related questions: first, why are some states that are accused of unfair trade practices more likely than others to make concessions in GATT/WTO trade disputes? And second, how do international institutions affect defendants' behavior in such trade disputes? Evidence from 380 trade disputes under the GATT/WTO dispute settlement mechanisms suggests that the answers to these two questions are linked. I find that while moving to the more legalized WTO system might not have changed the distribution of power in trade disputes, defendants' participation in *external* trade institutions, namely regional trade agreements, has had a notable impact on the outcome of trade disputes. Specifically, defendants' participation in one or more regional trade agreements was associated with a substantively higher probability of the defendant making concessions in trade disputes. This observation suggests that states' institutional environment outside of the GATT/WTO exercises a notable influence on state behavior in trade disputes. More specifically, states' participation in other trade institutions pushes states toward more cooperative behavior in the WTO. This finding speaks to the major debate about IGO influence on state behavior. It offers a new perspective on the perceived inability of the GATT, and especially WTO, to have a discernible impact on the power politics of international trade disputes. Extant research has found that poorer states with lower capacity are more likely to lose out in trade disputes; scholars have interpreted this finding as grounds for skepticism about the ability of international institutions to exercise an independent effect on state behavior. But the results of this analysis suggests that the common understanding of institutional influence should be expanded to take into account institutional environments. The GATT/WTO has been the primary institutional location for trade disputes; but it is not the only institution that has an impact on the outcome of these disputes. Rather, disputants are often also members of additional trade-related institutions; in these institutions, they are subject to constraints, and their reputation is at stake. These constraints influence their behavior within

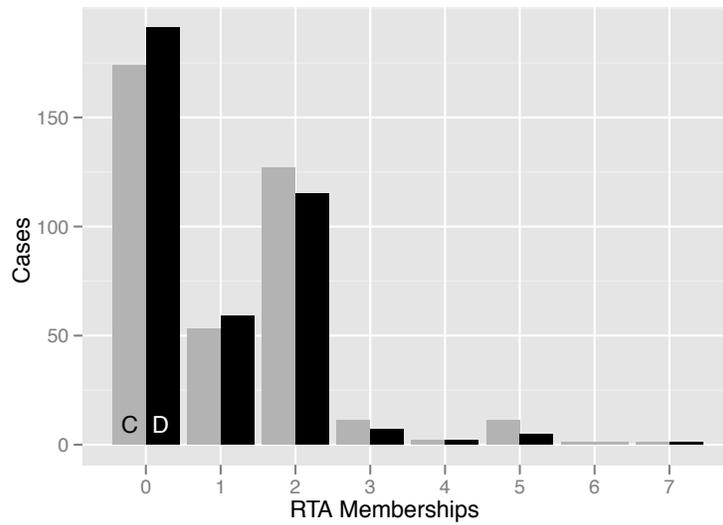
the GATT/WTO as well. Considering the growth of regionalism, this pattern is bound to become more important. States' membership in trade institutions outside the GATT/WTO has continually grown; the share of disputants with complainants in at least one RTA () and defendants in at least one RTA () has increased over the 20 years in the sample used in this analysis.⁷ This growth pattern suggests that the indirect influence observed in this paper might become more prevalent as well. On the other hand, with this proliferation of regional integration also comes the wider availability of institutions for the resolution of trade disputes. This potentially allows for forum shopping in trade disputes (Busch 2007) and might generate new dynamics for institutional influences on dispute resolution.

The results of this paper suggest several opportunities for further research after uncovering the indirect channel of influence of “external” institutions on state behavior in trade disputes. First, while the implications of the institutional argument received empirical support, more specific case evidence on defendants' motivation to make concessions in GATT/WTO trade disputes would help bolster (or refute) the causal mechanism put forth in this paper. One would need to look for internal documents of negotiators and decision-makers that indicate concern about the defendants' reputation in, and fear of repercussions from, the regional trade agreement(s) in which it also participates.

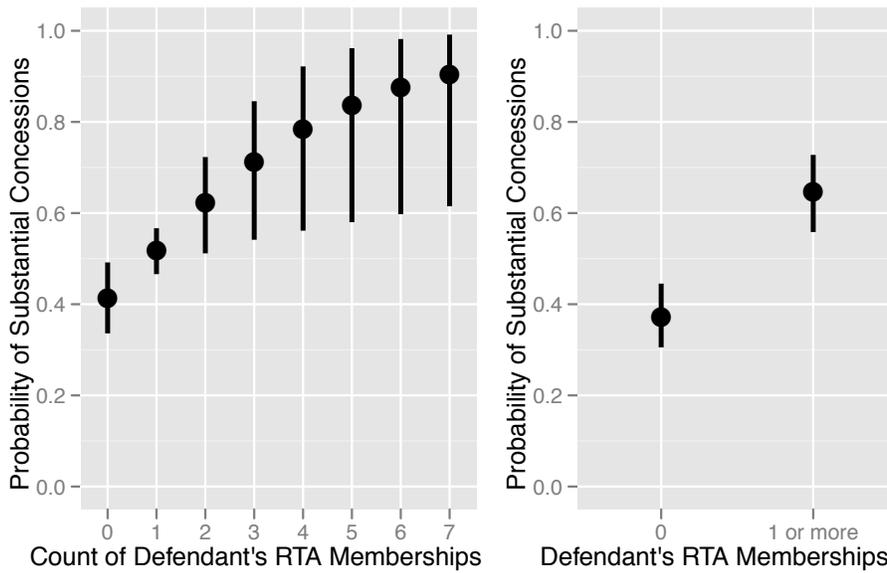
Second, the sample used in this analysis is restricted to a very short time period of disputes under WTO rules. Since these data were collected by Busch and Reinhardt (2003), more WTO disputes have been negotiated, and many more cases for analysis are available. A wider range of disputes under the more legalized WTO system would allow more inferences about the role of WTO institutionalization itself. Third, since 2000, the network of regional trade agreements has grown substantially. The increased number of external institutional links for trade disputants over a longer time should offer additional insights from a larger sample. An additional opportunity for inquiry would be to investigate whether the same dynamics identified in this study also apply to trade disputes within trade institutions other than the WTO.

Fourth, the argument in this paper hinged on the ability of RTAs to impose costs and withhold benefits. A follow-up test could use data on the institutional features of RTAs to distinguish whether the relationship between membership in RTAs and concessions in trade disputes varies with different degrees of institutionalization of RTAs. Fifth, this paper is restricted to concessions as dispute outcomes; however, early settlement also offers an interesting alternative outcome of trade disputes. Subsequent work could investigate whether the influence of external trade institution memberships is equivalent when the outcome under consideration is early settlement, or if other dynamics apply to that context.

⁷The height of the bars indicates the fraction of complainants/defendants with one or more RTA membership over those with no RTA membership; each bar marks one year in the 1980-2000 period.



(a): RTA memberships for complainants (C, gray bars) and defendants (D, black bars).



(b): Predicted probabilities of substantial concessions by defendants, across the range of defendants' RTA memberships (left: count; right: binary). The lines indicate the 95% confidence intervals. Estimates based on Table 1, Model 2 (left) and Table 2, Model 4 (right).

Figure 1: RTA memberships and concessions in trade disputes.

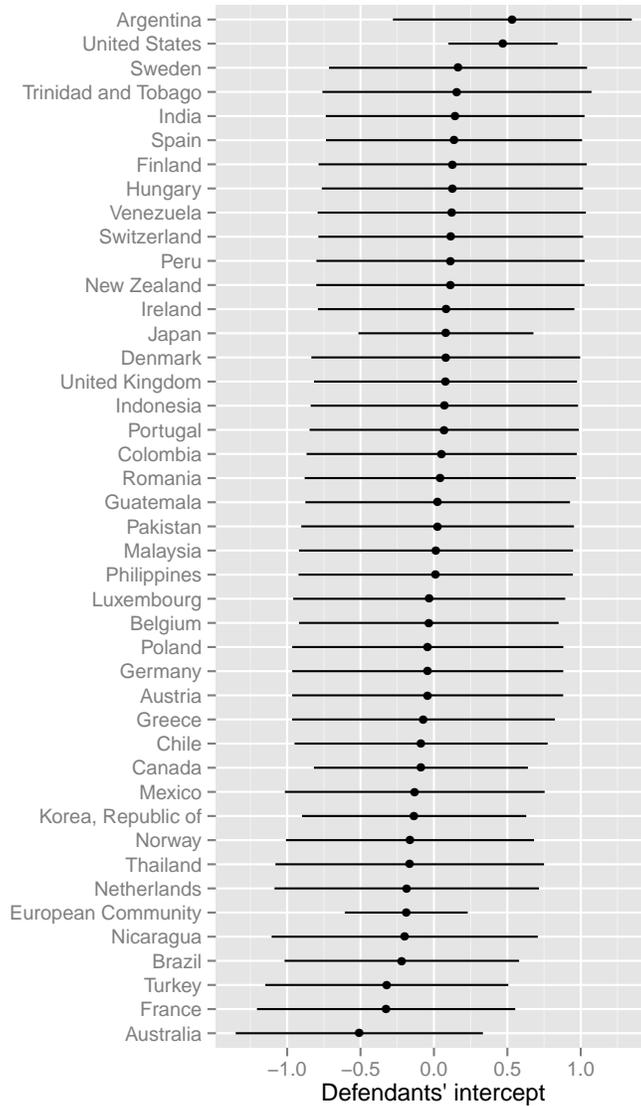


Figure 2: Individual intercepts for defendants, based on Model 2 estimated with varying intercepts for defendants and complainants. Note the narrower confidence intervals around the intercepts for the United States and the European Community/Union; these two are the defendants in by far the largest number of disputes (31% and 24% respectively), leading to lower uncertainty for these estimates.

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Appendix

Table A1: Re-analysis of [Busch and Reinhardt \(2003, Table 3, Model 1\)](#), with concessions recoded as binary.

Outcome	Substantial conc.	
Defendant's GDPpc (log)	-0.348*	(0.154)
Defendant's GDP (log)	0.075	(0.098)
WTO-era	-2.410	(1.657)
WTO-era × Complainant's GDPpc (log)	0.382*	(0.171)
Complainant's GDPpc (log)	0.019	(0.150)
Complainant's GDP (log)	0.083	(0.076)
Ruling body established	1.686*	(0.448)
Ruling for Complainant	-0.663	(0.447)
Ruling mixed	-2.257*	(0.590)
Ruling for Defendant	-2.826*	(0.547)
Agriculture Case	0.016	(0.224)
Politically sensitive case	-0.361	(0.336)
Multilateral Case	-0.190	(0.271)
Discriminatory measures	-0.120	(0.237)
Constant	-1.832	(2.717)
Log-likelihood	-219.39	
χ^2	116.03*	
N (Disputes)	380	
Correctly predicted	69%	
Proportional reduction of error	37%	

* $p < 0.05$. Standard errors (clustered on dyads) in parentheses.

Gray variables were significant in Busch and Reinhardt's ordered probit analysis.

Table A2: GATT/WTO trade disputes: Multinomial logit model of concessions.

Outcome	(9)	
	No concessions	Subst. conc.
Defendant's RTAs	0.265 (0.248)	0.589* (0.239)
Complainant's RTAs	0.014 (0.115)	0.167 (0.117)
Defendant's GDPpc (log)	-0.573 (0.314)	-0.799 (0.314)
Defendant's GDP (log)	0.030 (0.106)	0.147 (0.109)
WTO-era	-3.410 (2.846)	-4.258 (2.327)
WTO-era × Complainant's GDPpc (log)	0.339 (0.302)	0.519* (0.246)
Complainant's GDPpc (log)	-0.112 (0.268)	-0.083 (0.193)
Complainant's GDP (log)	-0.062 (0.108)	0.067 (0.083)
Ruling body established	-0.545 (0.850)	1.533 (0.805)
Ruling for Complainant	-0.138 (0.800)	-0.927 (0.726)
Ruling mixed	-0.952 (1.074)	-3.133* (0.951)
Ruling for Defendant	15.613* (0.864)	12.008* (0.912)
Agriculture Case	-0.719* (0.342)	-0.402 (0.274)
Politically sensitive case	1.547* (0.576)	0.645 (0.632)
Multilateral Case	-0.130 (0.402)	-0.355 (0.457)
Discriminatory measures	-0.513 (0.406)	-0.515 (0.285)
Constant	8.620* (3.061)	3.054 (3.049)
Log-likelihood	-317.01	
χ^2	4078.97*	
N (Disputes)	380	

* $p < 0.05$. Standard errors (clustered on dyads) in parentheses.

Base category: Some concessions.

Table A3: Correlation matrix

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
1 Concessions (ord.)	1.000																			
2 Some Concessions	0.904	1.000																		
3 Substantial concessions	0.919	0.663	1.000																	
4 Complainant's RTAs	0.108	0.073	0.122	1.000																
5 Defendant's RTAs	0.235	0.158	0.266	0.218	1.000															
6 WTO-era	0.249	0.179	0.272	0.344	0.427	1.000														
7 WTO-era x Compl. GDPpc	0.266	0.186	0.296	0.329	0.443	0.986	1.000													
8 Complainant's GDPpc (log)	0.134	0.081	0.159	0.007	0.146	0.070	0.181	1.000												
9 Complainant's GDP (log)	0.141	0.085	0.169	-0.086	0.166	0.162	0.238	0.744	1.000											
10 Defendant's GDPpc (log)	-0.144	-0.078	-0.182	-0.128	-0.167	-0.288	-0.280	-0.017	-0.042	1.000										
11 Defendant's GDP (log)	-0.078	-0.016	-0.122	-0.199	-0.165	-0.272	-0.270	-0.136	-0.193	0.652	1.000									
12 Ruling body established	0.179	0.169	0.158	-0.101	0.100	0.071	0.057	-0.045	-0.027	-0.016	0.079	1.000								
13 Ruling for Complainant	0.168	0.158	0.149	-0.141	0.098	-0.038	-0.038	-0.060	-0.061	0.029	0.109	0.631	1.000							
14 Ruling mixed	-0.035	0.045	-0.103	0.029	0.151	0.074	0.054	-0.034	-0.004	-0.014	0.029	0.270	-0.172	1.000						
15 Ruling for Defendant	-0.177	-0.214	-0.113	0.004	-0.031	0.055	0.057	0.040	0.056	0.047	0.047	0.215	-0.137	-0.059	1.000					
16 Agriculture Case	0.005	0.062	-0.048	0.067	-0.151	-0.150	-0.167	-0.213	-0.327	-0.018	0.146	0.037	-0.007	-0.052	-0.052	1.000				
17 Politically sensitive case	-0.127	-0.159	-0.077	0.018	0.031	-0.011	-0.024	-0.028	0.002	0.094	-0.010	0.034	0.008	0.052	-0.025	0.002	1.000			
18 Multilateral Case	0.039	0.055	0.018	0.154	0.194	0.247	0.230	-0.139	-0.133	-0.073	0.025	0.243	0.196	0.147	0.038	0.176	0.105	1.000		
19 Discriminatory measures	-0.045	-0.011	-0.068	0.090	0.074	0.072	0.034	-0.244	-0.239	-0.023	0.021	-0.016	0.004	-0.005	-0.008	0.005	0.066	0.129	1.000	

Table A4: Regional Trade Agreements, based on data from [Feng and Genna \(2003\)](#).

Acronym	RTA
AFTA	ASEAN Free Trade Agreement
ANCOM	Andean Common Market
ANZCERTA	Australia-New Zealand Closer Economic Relations Trade Agreement
APEC	Forum for Asia-Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
CACM	Central American Common Market
SICA	Central American Integration System
CARICOM	Caribbean Community
COMESA	Common Market for Eastern and Southern Africa
EAEC	East Asian Economic Caucus
ECOWAS	Economic Community of West African States
EFTA	European Free Trade Association
EU	European Union
GCC	Gulf Cooperation Council
MERCOSUR	Southern Cone Common Market
NAFTA	North America Free Trade Association
UDEAC	Central African Customs and Economic Union
CEMAC	Economic and Monetary Community of Central Africa
AMU	Arab Maghreb Union
CEN-SAD	Community of Sahelo-Saharan States
ECCAS	Economic Community of Central African States
CEPGL	Economic Community of the Great Lakes Countries
UEMOA	West African Economic and Monetary Union
EAC	East African Community
IGAD	Intergovernmental Authority on Development
SADC	Southern African Development Community
BIMSTEC	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (2004)
SAARC	South Asian Association for Regional Cooperation
CIS	Commonwealth of Independent States
EURASEC	Eurasian Economic Community
CACO	Central Asian Cooperation Organization
GUAM	Georgia-Ukraine-(Uzbekistan)-Azerbaijani-Moldova
ECO	Economic Cooperation Organization
IOR-ARC	The Indian Ocean Rim Association for Regional Cooperation
Arab League	League of Arab States
PIF	Pacific Islands Forum
AU	African Union
SCO	Shanghai Cooperation Organization