

# WTO Adjudication as a Tool for Conflict Management

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## **Abstract**

The effect of courts arises through process and precedent. First, the process of selecting cases to escalate in the legal venue reveals information about the preferences of defendant and complainant. A third party arbitrator and multilateral membership adds international obligation and reputation as new leverage for compliance. Second, a formal dispute mechanism may have broader impact if the adjudication of one case leads to other countries reforming policies. This paper examines WTO dispute settlement to assess the role of courts to solve disputes and prevent future incidents. The effectiveness of WTO dispute settlement as a process for resolving specific disputes is tested with statistical analysis of an original dataset of potential trade disputes coded from U.S. government reports on foreign trade barriers. Evidence shows that taking a dispute to legal forum brings policy change and reduces dispute duration in comparison with outcomes achieved in bilateral negotiations. Whether these cases also prevent future disputes is more challenging to evaluate. The paper explores the possibility of precedent effects through analysis of the time trend in frequency of complaints filed by all members from 1995 to 2009.

The growing role of courts in international affairs suggests that states must find them useful. But do we really know? A well functioning court will enforce law through resolving the disputes brought before it and establish consistent expectations sufficient to guide behavior toward compliance with the law. This may represent a lofty ambition that cannot always be achieved by domestic courts let alone by those at the international level. This chapter conducts an empirical investigation of how courts resolve conflict using evidence from WTO dispute settlement.

The WTO offers a useful test case as an international court with a large membership (153 and growing) and active docket of cases (over 400 since 1995). It regulates a broad scope of policies ranging from labeling policies to subsidies and investment rules. The legal process includes right to a hearing by a panel of experts and appeal to a panel of judges with nearly automatic adoption of the rulings. Referred to as the “crown jewel” of the WTO, the dispute settlement procedures are a central element of the trade regime.<sup>1</sup>

The stated goal of the dispute settlement process is to resolve those disputes brought forward by members. The primary contribution of this chapter will be to assess this aspect of conflict management. Section 1 addresses the problem of selection for evaluation of institutional effectiveness. I review the logic for how the cost of adjudication performs as a screening mechanism that provides information helpful to improve bargaining. Obligation provides additional compliance pull. The next two sections enter empirical analysis of the potential disputes data from the U.S. National Trade Estimate Reports. Section 2 presents analysis showing that filing a complaint promotes policy change of the measure in comparison with the alternative of negotiating. Section 3 demonstrates that these outcomes are achieved at no loss of time: filing a complaint shortens the time to resolve the issue relative to negotiation. Then the chapter shifts to explore whether the dispute settlement system is able to achieve the long term reduction of conflict by reducing the incidence of disputes. Section 4 analyzes the trend of declining frequency of disputes looking at data for complaints filed by all members under different legal agreements of the WTO. A discussion of WTO legal scholarship notes the de facto nature of precedent in the WTO system and points to efforts by states to internalize the growing jurisprudence. The empirical analysis of this section remains preliminary as an initial look at the possible role for deterrence and precedent effects as one component in the declining frequency of disputes. A final section concludes.

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<sup>1</sup>WTO, *World Trade Report 2007*, p. 261.

# 1 Evaluating the Effectiveness of Adjudication

The question of evaluating the effectiveness of legal dispute settlement has long been troubled by the lack of evidence for the counter-factual, what if a similar case had not gone to court? Given the likelihood of a selection bias in the process that generates WTO cases, which is supported by the analysis in previous chapters, cases that are raised in the WTO are not the same as other trade disputes. Yet most studies that evaluate WTO dispute outcomes have been limited to the set of filed WTO disputes (Bown, 2004; Busch and Reinhardt, 2002, 2003; Iida, 2004). They have increased our understanding of the conditions within WTO disputes that encourage more liberalization, such as retaliatory capacity and a positive ruling. Overall, adjudication appears to produce positive outcomes. The director of the WTO legal affairs division, Bruce Wilson, acclaims members for high compliance with rulings (Wilson, 2007). Busch and Reinhardt (2003, 725) find GATT/WTO disputes produce substantial concessions in 50 percent of cases, and partial concessions for another 20 percent of cases. But the assessment of outcomes from observed legal disputes alone does not address the broader question of how WTO dispute settlement compares with *alternative strategies*. For this question, one needs data on potential cases for WTO dispute adjudication.<sup>2</sup>

A central critique of research about international institutions contends that the selection of easy issues for cooperation in institutions biases findings about their effectiveness (Mearsheimer, 1994/5; Downs, Rocke and Barsoom, 1996; Simmons, 2010). International adjudication faces the challenge of uncertain enforcement, which could give rise to a scenario in which WTO dispute settlement would only appear effective because states don't file cases where the stakes are high or compliance is unlikely. Such restraint was clearly evident in the U.S. decision not to file a complaint against China for its currency policy. Are all WTO disputes low-hanging fruit? On the contrary, we observe that WTO panels for trade adjudication confront a docket including many of the most difficult trade disputes. Government subsidies for aircraft development and agriculture production, regulations on food safety, and safeguards to limit textile and steel imports are all some of the issues with high economic and political stakes that have been addressed in WTO dispute

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<sup>2</sup>Horn, Mavroidis and Nordstrom (1999) and Bown (2005) are two innovative studies that generate potential disputes in order to examine the choice of whether to initiate, but they do not take the next step to analyze outcomes.

settlement. My argument about domestic pressure suggests this occurs because the selection process filters hard cases into the adjudication forum.<sup>3</sup> This is helpful information for the task of assessing effectiveness. The evidence presented in this chapter that WTO dispute settlement helps to end disputes is not biased by selection of easy cases.

In fact, screening to select sensitive cases that are priorities for the government is an important function of the legal process. Exporters may charge that they face unfair barriers in a foreign market while the trade partner defends that their policy is reasonable. Both sides have incentives to dissemble about their willingness to compromise over a range of possible negotiated outcomes, which makes it harder to reach any agreement. By taking the issue to court, the defendant and complainant signal their resolve. As discussed in chapter two, entering the dispute process raises a moderate cost for both complainant or defendant. While not great, the cost is enough to make the action a credible signal of government resolve. The formal procedures for making the complaint, engaging in consultations, requesting a panel, responding to the ruling all structure the interaction between both parties. As argued by Morrow (1994, p. 389), an institutional forum can “alter the players expectations about one another’s actions by creating the opportunity to exchange meaningful messages.” Such information facilitates more efficient bargaining over settlement.

In addition to providing information about resolve, legal framing of a negotiation changes the stakes by adding obligation and reputation concerns to the existing disagreement over economic interests. When there is a ruling, it attains a status of legitimacy to pull states toward compliance (Franck, 1990). Most states are reluctant to be seen as violating agreed upon rules. As they are engaged in repeat interactions across a range of issues, it becomes worthwhile to play by the rules for any given case. Several different strands of institutional theory offer explanations for why states comply.<sup>4</sup> Socialization within the institution encourages norm-compliant behavior (Johnston, 2001). The public and leaders may hold a preference for compliance with international law (Gaubatz, 1996; Tomz, 2008). Interest in upholding the overall credibility of the rules system leads countries to comply with rulings (Kovenock and Thursby, 1992; Jackson, 1997; Hudec, 2002).

Yet it is important to note the limitations of legal rulings as the determinant of dispute out-

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<sup>3</sup>Guzman and Simmons (2002) reach a similar conclusion in analysis of which cases escalate from complaint to panel stage within the adjudication process.

<sup>4</sup>See Raustiala and Slaughter (2002); Simmons (2010) for review of literature.

comes. First, compliance with a ruling is a second order compliance problem that follows an original decision to implement policies that are inconsistent with the agreement. Second, a majority of WTO complaints are resolved *before* a ruling has been issued. Finally, for those with a ruling there is still considerable leeway for negotiation over the policy change. A ruling determines whether the current policy is in violation but rarely specifies the new policy that should be adopted. Even the adjustment of a policy to achieve technical compliance with the law may not resolve the dispute if the other party remains unsatisfied. The negotiations after a ruling may quickly resolve the issue or involve tough bargaining. In a small number of cases, protracted disagreement over compliance leads to another round of litigation, as seen in the well known dispute over the EU restrictions on the import of bananas. More than the content of the legal interpretation, it is the process of going through adjudication that helps states coordinate on an agreed outcome. The standard for effectiveness is whether the process helps to end a dispute, and this may be achieved with or without a legal ruling.

The dispute process works as a communication tool *between states* and also *within states*. Governments are often driven to make extreme commitments to support a powerful domestic industry. Such public statements may push negotiators into a corner by reducing bargaining range and flexibility even in the face of potential overlap in agreements that both governments would be willing to accept (Leventoglu and Tarar, 2005). With the moderate step to escalate a dispute in the legal venue, leaders respond to demands from domestic audience and gain space to work out a solution in the international negotiation. After filing the legal complaint, in consultations the officials can explore whether a settlement could be reached if they became more flexible without the risk that they appear to have voluntarily offered a concession. Legal adjudication makes it possible to simultaneously send a signal of tough action and open new talks.

Likewise, reputation and obligation offer leverage for domestic bargaining. The third party role of an international court offers political cover for changing position from public commitments in the event that an agreement is reached. The same compromise that would have appeared as a sign of weakness when offered in negotiations to an opponent can now be portrayed as cooperation that will reap future benefits (Simmons, 2002; Allee and Huth, 2006). Research has shown that legal proceedings can shift interest group mobilization against protectionist interests to make compliance possible (Davis, 2003; Goldstein and Steinberg, 2009). Leaders need a justification to

give their domestic regulatory agency and lobby groups before they can change policies that were adopted to protect sensitive sectors.

This argument supports the expectation that disputes brought to adjudication will be more likely to be resolved than those in negotiations. In contrast, to the extent that coercive power drives outcomes there should be little independent effect from adjudication. Within the trade regime, the legal steps of dispute settlement if anything restrain rather than augment retaliation. There are no provisions for collective punishment and authorization of retaliation remains limited to suspending concessions at a level determined to be equivalent to lost trade (Lawrence, 2003). Going to court may facilitate credible retaliation through information about resolve following the logic outlined above, but it does not change the capacity to retaliate. Indeed, this is often noted by developing countries who fear they will be unable to enforce rules. From the perspective of power dynamics, the venue itself will have little constraining effect after conditioning on the capacity of actors and stakes that influence the decision to bring the issue into the legal forum.

## **2 Analysis of Progress to Remove Barrier**

In this section, I evaluate WTO dispute effectiveness using the subset of my U.S. trade barrier data for the 249 trade barriers that were either negotiated or raised in WTO dispute adjudication (see chapter 4 for description of data and key variables). This allows me to compare the effectiveness of dispute settlement relative to the alternative of negotiation in a different forum.

Evaluating the effectiveness of negotiation strategies poses a significant measurement challenge. One way would be to look at the change in trade flows after settlement. Bown (2004) uses this approach in his analysis of the economic outcomes of GATT/WTO disputes. However, as Bown himself notes, the GATT/WTO does not call for an increase of trade flows as the measure of compliance, and “Better measures of economic success would thus include detailed information on the change in the tariff or non-tariff measure under dispute” (p. 814). Along this line, a second way to evaluate outcomes requires direct evaluation of the policy change. Busch and Reinhardt (2003) use this latter approach to classify the outcomes of GATT/WTO disputes on an ordered scale. Bayard and Elliott (1994) also evaluate the outcomes of Section 301 cases in terms of a categorical variable for policy change.

I measure effectiveness by evaluating the progress in resolving the trade complaint recorded

in the National Trade Estimate Reports. The advantage to this approach from a theoretical perspective is that it is closer to the goals of the WTO agreement. It also maintains consistency with the underlying data without introducing measurement error that would come with using a trade flow measure (i.e. product trade flows and period would only loosely correlate with the specific items in dispute and expected period of implementation).<sup>5</sup> The disadvantage is the risk of bias. There are two potential sources of bias. First, the USTR may be overly positive in order to show Congress that it has made progress. The greatest threat to the inference in this study would arise if the USTR tends to be more positive about outcomes for those disputes raised in WTO adjudication. This seems unlikely, however, since industry actors know whether their problem has been solved and will inform Congress. Overly positive reporting would also undermine the role of the reports to inform foreign governments that the United States is concerned about an issue. The USTR has not hesitated to criticize specific dispute rulings or poor compliance by members, which indicates that it is not blindly taking a positive stance towards dispute adjudication. Nevertheless, the analysis below is subject to the assumption that USTR reports on negotiation progress are not biased to report more optimistic outcomes for one negotiation venue over another (uniform bragging about results achieved across venues would not bias my findings). The second source of bias is the possibility of measurement error from coding the contents. The reports do not grade the outcome. Coding involved a judgment about whether the report mentions specific policy improvement. Progress was first coded as a four category ordinal variable, but I use a dichotomous indicator for the main analysis.

The following illustrates a comparison of the coding for three cases that were all WTO disputes. For the the WTO dispute about Canadian restrictions on U.S. periodicals (DS31), the report states “In June 1999, the United States and Canada announced an agreement under which U.S. publications would be allowed gradually improved access to this market.”<sup>6</sup> For the WTO dispute challenging EU export subsidies for processed cheese (DS104 against Belgium), it states that the United States filed a complaint in 1997 and held initial consultations that November, while noting that “The United States is considering next steps.”<sup>7</sup> No further mention of the dispute is made

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<sup>5</sup>Progress is measured as the policy change observed in the years after the filing of a complaint or start of a negotiation without a fixed evaluation period. The next section will analyze the time to removal of the barrier.

<sup>6</sup>NTE 2001, p.31.

<sup>7</sup>NTE 1999, p. 120.



Dispute Outcome	WTO DS	Negotiation	All cases
No Progress (percent)	7 (20.59)	101 (46.98)	108 (43.37)
Progress (percent)	27 (79.41)	114 (53.02)	141 (56.63)
Total cases	34	215	249

Table 1: Measuring Dispute Outcomes *The data represents industry specific trade barrier cases coded from the National Trade Estimate Reports of the USTR from 1995 to 2004. The first column describes progress towards resolving the U.S. complaint for trade barriers that were initiated for WTO dispute settlement, and the second column describes those that were negotiated.*

again in the reports and no settlement was notified to the WTO. A search of the widely used trade briefing report “Inside Trade,” shows that in 1999, U.S. agricultural industry sources complained about EU circumvention of export subsidies while specifically noting the example of “inward processing” for cheese.<sup>8</sup> For the WTO dispute filed against Mexico for anti-dumping duties on high-fructose corn syrup (DS132), the 2000 report notes that Mexico will have to comply with the ruling adopted by the Dispute Settlement Body, but the 2001 report notes that the Mexican corn industry is considering filing a new dumping petition and the 2002 report notes that the Mexican Congress passed a consumption tax on beverages including high fructose corn syrup, which is described as “a major barrier to a settlement of broader sweetener disputes between the United States and Mexico.”<sup>9</sup> The first case on Canadian periodicals was coded as having progress, and the second and third cases about European cheese export subsidies and Mexico’s barriers against high-fructose corn syrup were coded as having no progress.

As a first look at the problem, I examine the measure of progress in the aggregate data for the 249 cases coded for trade complaints with the 9 trade partners that were negotiated or raised in WTO dispute settlement (Table 1). Seventy-nine percent of the WTO disputes (27 of 34 cases) recorded progress. This suggests that the WTO dispute system achieves better outcomes than negotiation. Before drawing any *causal* conclusions from such *descriptive* inference, however, one needs to consider the selection mechanism that sends cases to the adjudication forum.

The variables that helped to explain the decision to file complaints in the previous section serve as control variables for the factors that make WTO adjudication cases different from other

<sup>8</sup>Inside U.S. Trade, 21 May 1999. “Agriculture Coalition Sets priorities for WTO, Sidesteps Radical Reform.”

<sup>9</sup>NTE 2002, p. 293.

cases. The key variable of interest is the effect of WTO adjudication on progress reported towards removal of the trade barrier. I use logistic regression model to estimate the effect of the indicator for dispute settlement on the dichotomous outcome measure for progress to resolve the complaint (results are similar when using ordered logit to estimate the four category variable).

One may be concerned that the cases going forward for dispute adjudication differ from those that are only being negotiated. Statistical techniques of matching offer a means to bring the observational data closer to a comparison of cases that are similar in all but the treatment (e.g. Rubin, 1973, 1979). In this study, the treatment group are those barriers raised for WTO dispute settlement and the control group are those barriers that are only negotiated. The pre-processing of data involves removing observations from the sample that lack common support in terms of overlapping covariate distribution for the treatment and control groups. Creating a smaller sample of more similar units by “pruning” outlier observations in this manner allows for less model-dependent and more robust causal inference (Ho, Imai, King and Stuart, 2007).

I conduct three-to-one nearest neighbor matching with exact restrictions on trade partner.<sup>10</sup> The propensity score, which represents a single measure summarizing variables that estimates the probability of a unit receiving treatment (in this case, WTO dispute settlement), is estimated based on logistic regression with all of the covariates from model 1. Exact matching on trade partner means that for each dispute case filed against a specific trade partner, the matching procedure will select control cases from within the group of negotiation cases with that same trade partner (the four developing countries are grouped together). I find that this improves the balance on other covariates. The choice to exact match on partner also addresses the concern that bilateral relations are shaped by an economic and political structure specific to the trading pair.

Figure 1 shows the imbalance between the control group and treatment group before and after matching. The horizontal axis represents the standardized mean difference (i.e., mean differences measured in terms of standard deviation units) between the treatment and control groups for a variable before matching, and the vertical axis represents the remaining imbalance after matching. The 45 degree line indicates where values would lie if there is no change, and variables with improvement of balance fall underneath the line. The figure shows that the remaining imbalance after matching is smaller than the imbalance before matching for all control variables. Table 2

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<sup>10</sup>I implement matching procedures using the MatchIt software available at <http://gking.harvard.edu/matchit>.

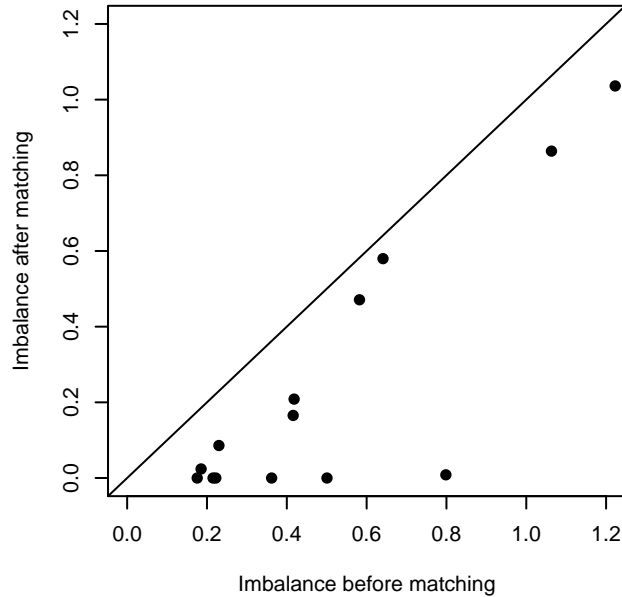


Figure 1: Imbalance Before and After Matching: Each circle represents a variable, and its coordinates indicate the level of imbalance before and after matching. The level of imbalance is measured in terms of standardized mean difference. See table 2 for description of the results summarized here in the figure.

describes the percent balance improvement for each covariate through a comparison of the mean difference and quantile breakdown. The exact restrictions on trade partners are reflected by improvements of 100. The table shows that matching substantially improves balance across all variables in terms of various balance measures.

After using matching to improve the balance, I use logistic regression to estimate the effect of dispute settlement on progress using the smaller sample of matched data. Ho, Imai, King and Stuart (2007) show that preprocessing the data via matching reduces the sensitivity to modeling assumptions and thus yields more robust results. The propensity score is included as an additional variable. The results in table 3 show dispute settlement is effective to increase the likelihood of progress towards removal of the trade barrier. Dispute settlement increases the predicted probability of progress resolving the complaint by 33 percentage points.<sup>11</sup> The model correctly predicts progress 70 percent of the time.<sup>12</sup> In sum, WTO adjudication makes a substantively

<sup>11</sup>The first difference of 0.33 (95 percent confidence interval from 0.15 to 0.47) is calculated from 5,000 simulations using the estimates of table 3.

<sup>12</sup>This calculation follows a cutoff rule to compare predictions with .50 or higher probability of progress to those

	Mean Diff.	eQQ Med	eQQ Mean	eQQ Max
Contributions	98.9	61.4	74.2	88.5
Section 301	9.6	0.0	8.3	0.0
Production (log)	87.0	57.5	81.1	86.6
Exports (log)	50.1	62.5	41.5	8.8
MPEN (partner)	62.6	77.5	20.5	22.0
Import policy	60.2	0.0	62.5	0.0
Distortion	18.7	0.0	17.6	0.0
EU	100.0	0.0	100.0	100.0
Japan	100.0	0.0	100.0	100.0
Korea	100.0	0.0	100.0	100.0
Mexico	100.0	0.0	100.0	100.0
Non-OECD	100.0	0.0	100.0	100.0
Duration	19.1	0.0	13.2	20.0
Propensity score	15.3	8.7	13.5	9.0

Table 2: Percent Improvement in Covariate Balance due to Matching: Each column shows percent improvement in covariate balance in terms of mean difference, the median, mean, and maximum values of differences in empirical quantile functions. The table shows that matching substantially improves covariate balance across all variables.

important contribution towards policy reform of trade barriers, and this is not because states are only sending *easy* issues to the forum. On the contrary, when controlling for the process that sends cases with strong interests on both sides into the dispute settlement mechanism, WTO adjudication is effective relative to negotiation.

### 3 Analysis of Trade Dispute Duration

Another measure of the effectiveness of adjudication as a conflict resolution mechanism is the speed with which the process ends a dispute about a trade barrier. The delays of the GATT dispute process were long blamed as a flaw in the institutional design such that a major goal of reforms establishing the WTO dispute settlement system was to streamline the process. Nonetheless, even with the automated adjudication of the WTO, foot-dragging is possible and many criticize the process as being too slow. The Boeing-Airbus dispute discussed in Chapter 4 has lasted six years and still not reached its conclusion. The average duration when looking across all cases, however, appears better. Cases settled during consultations often end within one year, and the median time in the data that actually report progress.

Variable	Coefficient	(Std. Err.)
WTO DS	1.399*	(0.568)
Contributions	-0.249	(0.214)
Section 301	3.770*	(0.987)
Production (log)	0.009	(0.089)
Exports (log)	-0.137*	(0.057)
MPEN (partner)	0.005	(0.007)
Import policy	0.720	(0.445)
Distortion	1.107*	(0.465)
EU	-0.090	(0.680)
Japan	-0.553	(0.560)
Mexico	-0.184	(0.450)
Korea	0.427	(0.658)
Non-OECD	0.503	(0.755)
Duration	0.292*	(0.124)
Propensity score	-5.987*	(1.896)
Intercept	5.269	(3.792)
Pseudo R-squared	0.119	
N	160	

Table 3: Matched Sample Logistic Regression Model of WTO DSU Effectiveness. The coefficients estimate the likelihood that the NTE reports describe progress towards trade barrier removal. Robust standard errors (clustered on industry) are in parentheses. Canada is the omitted comparison group for the trade partner indicator variables, and Non-OECD is an indicator for barriers of Brazil, India, Malaysia, and Singapore. \*Significant at the 5 percent level.

for disputes filed prior to 2002 that went through the formal panel process was 34 months (Davey, 2005). The delays of WTO adjudication have made it less attractive for dynamic industries that face rapidly changing market conditions (Davis and Shirato, 2007). Yet from the perspective of evaluating the effectiveness of WTO adjudication, it is necessary to compare dispute duration with cases that were not raised for WTO adjudication. The goal of this section is to use my trade barrier dataset to evaluate whether WTO adjudication ends disputes more quickly than other strategies.

The outcome of interest here is the duration of the trade dispute. I measure a dispute by whether the National Trade Estimate reports continue to include the trade barrier as a problem for U.S. exports (note this is distinct from the duration of the dispute in the WTO process). There may be some cases in which the exporting industry loses interest and the complaint is removed from the NTE reports even though the barrier was not fully removed. For example, in the Kodak complaint about Japanese market closure the barrier is reported from 1996 to 2001. After the US

lost the ruling in the WTO dispute in 1998 and Japan made some partial changes to deregulate distribution policies, the USTR and Kodak no longer pushed the issue even though Japan had not changed many of the structural policies that were central to the complaint. This would be recorded as the end of a dispute even if not the complete liberalization of the concerned measures. While conceivably a barrier could be removed from the NTE reports and later reappear, in the dataset there are no such cases. My research into the final outcome of the cases suggests that most often removal of the complaint from the NTE reports corresponds with the removal of the trade barrier.

I use the Cox proportional hazards regression to model the “risk” that a dispute will end in a given year. The data is a cross-section of the trade barriers listing the start and end dates for its inclusion in the NTE reports. The key variable of interest, WTO dispute settlement, is measured as a time-varying covariate with one observation for the years prior to filing a complaint and a second observation for years after filing a complaint. All other control variables are measured at the year the trade barrier is first listed in the reports. I estimate robust standard errors clustered on industry to take into account possible correlation across barriers within the same industry. In order to avoid the problem of left censoring, I only include the cases that are first reported after 1995 (I lack the necessary duration information for barriers listed in 1995 because my dataset does not include earlier years). The right censoring is handled in the usual manner within the Cox proportional hazards model. The event status is coded one for the end of the dispute when the barrier is no longer included in the report. The covariates are the same as those in the previous section with the exception that I no longer control for the duration of the barrier since this is explicitly modeled.

The results of table 4 show the positive effect of filing a WTO complaint to reduce dispute duration. The exponential coefficients shown in the third column of the table are the clearest for interpretation and represent the multiplicative change in risk. The exponential coefficient of dispute settlement indicates that filing a WTO complaint is associated with a 1.5-fold increase in the risk that the trade dispute will end compared with other disputes where a complaint has not been filed. The ninety-five percent confidence interval ranges from 0.95 to 2.27 and the variable is weakly significant ( $p$ -value $<0.087$ ). Given the widely held view that adjudication is a lengthy process, the positive effect to shorten duration of a dispute is itself an important finding.

	Coefficient	Std. Err.	Exp(Coef)	Lower .95	Upper .95
WTO DS	0.38*	0.22	1.47	0.95	2.27
Contributions	-0.24 * *	0.12	0.79	0.62	0.99
Section 301	0.13	0.29	1.14	0.65	2.02
Production (log)	0.29	0.23	1.34	0.85	2.10
Exports (log)	-0.04	0.08	0.97	0.83	1.12
MPEN (partner)	0.00	0.00	1.00	0.99	1.01
Import Policy	0.49 * *	0.19	1.64	1.12	2.39
Distortion	-0.32 * *	0.12	0.73	0.57	0.93
EU	0.13	0.43	1.13	0.49	2.64
Japan	-0.74	0.58	0.47	0.15	1.47
Mexico	0.35	0.36	1.42	0.70	2.90
Korea	-0.03	0.37	0.97	0.47	1.98
Non-OECD	-0.83*	0.50	0.44	0.16	1.15
Likelihood ratio test	32.2				
p=0.002					
N	261				

Table 4: Cox Proportional Hazards Regression for Duration of Dispute. Robust standard errors (clustered on industry) are in parentheses. Canada is the omitted comparison group for the trade partner indicator variables, and Non-OECD is an indicator for barriers of Brazil, India, Malaysia, and Singapore. \*\*Significant at the 5 percent level.\*Significant at the 10 percent level.

This result highlights that while adjudication is slow, it may nonetheless be the fastest way to end disputes when controlling for the factors that influence selection of cases. Disputes that involve industries with large political contributions and highly distortionary trade barriers are at risk for longer duration, and yet these were also variables important in the decision to file a WTO complaint. For dynamic industries or heavily trade dependent small countries the adjudication process may take too long, but it still is likely to be more effective than alternatives.

## 4 Conflict Prevention? Exploring Dispute Frequency

The evidence above suggests the international trade system is relatively effective in its enforcement role as a legal system to resolve specific disputes over compliance. The effectiveness of a legal system, however, lies not only in settling the observed disputes but also through prevention of future disputes. How well does the WTO perform this task?

A legal system may encourage compliance through precedents that clarify legal interpretation of the rules. The violation ruling against one party provides information for others that may

have similar policies. A legal *precedent effect* could lead states to reform their policies based on the new information about potential inconsistency with rules. This perspective highlights the role of dispute settlement to *complete* the incomplete contract formed in the trade agreement by clarifying interpretation or filling gaps (Maggi and Staiger, forthcoming).

A brief example from one dispute may help clarify how precedent could operate in practice. The victory of Brazil's challenge against U.S. agricultural subsidy policies held significance for both political importance and as a major ruling on subsidies.<sup>13</sup> The U.S. has prolonged its compliance in this case and only reached a settlement under threat of retaliation by Brazil that would have included both tariffs on U.S. products and suspension of intellectual property rights. In many ways the ruling was tailored to the specific U.S. cotton program that compensated domestic users for the high prices they paid to purchase domestic cotton and to the counter-cyclical payments given to U.S. cotton producers. Yet a minor aspect of the ruling that clarified how policies should be classified within the terms of the Agriculture agreement has been closely followed in countries that were not parties to the case or exporters of cotton. The ruling found that U.S. cotton subsidies could not be classified in the unrestricted green box that is reserved for policies decoupled from production incentives because the U.S. subsidy program included a condition about non-production of vegetables.<sup>14</sup> A senior Japanese agriculture ministry official acknowledged that he carefully examined the ruling because Japan was in the process of introducing new direct payments to wheat, soybeans and other crops, and he was interested in the implication of the case.<sup>15</sup> If Japan's new agricultural subsidy program as well as those of other members eliminate the frequent use of clauses that restrict subsidies to a subset of commodities, this movement would represent a precedent effect from the ruling against U.S. cotton subsidies.

Litigation also promotes compliance through deterrence as the dispute system increases the credibility of the threat to punish future violations. States that observe active use of the adjudica-

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<sup>13</sup> "United States - Subsidies on Upland Cotton" (DS 267), complaint filed September 2004.

<sup>14</sup> Appellate Body Report (WT/DS267/AB/R) adopted March 21, 2005 states: "we ... uphold the Panel's finding ... that production flexibility contract payments and direct payments are not 'decoupled income support' within the meaning of paragraph 6, are not green box measures exempt from the reduction commitments by virtue of Annex 2 of the Agreement on Agriculture, and are not, therefore, sheltered from challenge by virtue of paragraph (a) of Article 13 of the Agreement on Agriculture."

<sup>15</sup> Hidenori Murakami, advisor to the Minister for International Affairs of the Ministry of Agriculture, Forestry, and Fisheries (former Vice Minister for International Affairs), Interview by author, Tokyo, July 5 2010.



tion system may recognize the high probability that other states will file complaints against their violations. The *deterrent effect* would lead states to refrain from policies in order to avoid being challenged in court. The economics and law literature examines how decisions to take precautionary measures that avoid violation, settle before trial, or wait for trial outcome all are contingent on the cost and expectation for trial outcomes.<sup>16</sup> Evidence has shown that states frequently filing GATT/WTO complaints are less likely to be targeted in U.S. anti-dumping decisions (Blonigen and Bown, 2003). Mansfield and Reinhardt (2008, p. 627) contend that restraint of arbitrary protection in a rules-based system explains why the regime reduces volatility in trade flows among its members.

In contrast, the political dynamic underlying dispute initiation may overwhelm precedent and deterrent effects. This book has argued that many disputes arise less from uncertainty over the law or retaliation capacity than about the resolve of both parties to defend their industry in a specific dispute. Compliance will be encouraged by information about legal commitments and credibility for likelihood of enforcement actions, but only for cases with less attention from the legislature. When a politically influential industry is at stake, governments knowingly impose violations in defiance of legal advice. Earlier precedents on the issue only serve to lower the cost for other governments deciding to challenge the measure because they can see an easy win that will tally points at home. Repeat litigation on similar issues reflects the intervention of political pressure. The build-up of complaints demonstrates resolve in a way that could deter some future disputes, but the most politically sensitive cases will continue unrestrained by mounting plaintiff activity.

An illustrative example would be the litigation on zeroing policies for calculation of anti-dumping duties. This specific practice within the methodology of anti-dumping duties has been the target of multiple rulings by WTO panels and the Appellate Body. A ruling against zeroing in the EC bed linen dispute (DS 141) resolved the one case as the EC ended the practice. It held no precedent or deterrent value for the United States, however, which continued the practice. Several members have since challenged the U.S. policies with greater confidence in their probable legal victory based on the earlier precedent.<sup>17</sup> These cases have also led to rulings against the practice,

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<sup>16</sup>For example, (Cooter and Rubinfeld, 1989, p. 1085) contend incentives for precaution to avoid being taken to court increase as such litigation is seen to be costly.

<sup>17</sup>The following cases have directly addressed issues related to zeroing (other disputes may have touched on the point more indirectly): U.S. - Mexican Stainless Steel AD Measures (DS 344 complaint by Mexico), U.S. -

and prolonged compliance disputes as the U.S. Congress resists changing the policy.

#### 4.1 No legal authority for binding precedent

There has been considerable discussion among legal scholars on the role of precedent. *Stare decisis*, the principle that a judicial body should follow its own previous decisions, opens up the possibility for judicial activism such as observed in common law systems because the court can itself become a source of law through setting precedents that fill gaps and shift interpretation of law. At the international level, states have been unwilling to delegate such authority to judicial bodies, and tribunals including the International Court of Justice explicitly reject a binding role for precedent (Brownlie, 1990, p. 21). Nevertheless, the goal of judicial consistency leads courts in practice to cite previous decisions. Jackson (2000, p. 127) describes GATT panels as following this more general practice to eschew the notion of binding precedent while often citing prior panel reports so that “there clearly is a *de facto* precedential effect operating, albeit not strictly.” The Marrakesh Agreement establishing the WTO rules out any rule-making authority for WTO judicial decisions in Article IX:2, which declares that the Ministerial Conference and General Council “shall have the exclusive authority to adopt interpretations of this agreement and of the Multilateral Trade Agreements.” And yet WTO panels have continued GATT practice to cite prior reports on related legal points as evidence supporting decisions.

Several WTO rulings have explicitly discussed the nature of precedent effect. The 1996 Appellate Body report in the “Japan-Alcoholic Beverages II” case declared that a previous decision by a GATT panel should be considered as a definitive interpretation but did not represent a controlling decision that necessarily had to be followed (Palmer and Mavroidis, 2004, p. 53-54). The Appellate Body 2008 ruling in the case “United States-final anti-dumping measures on stainless steel from Mexico,” which was one of the cases finding against the U.S. practice of zeroing for the calculation of anti-dumping measures, overturned a panel report that had countered previous precedent rulings by the Appellate Body on a similar matter.<sup>18</sup> The ruling is worth quoting at length here as the most comprehensive statement on the meaning of precedence within the WTO:

It is well settled that Appellate Body reports are not binding, except with respect

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Continued Zeroing (DS 350 complaint by EU), U.S. - Zeroing (DS 322 complaint by Japan), U.S. - Zeroing of Dumping Margins (DS 294 complaint by EU).

<sup>18</sup>WT/DS344/AB/R pp. 66-67

to resolving the particular dispute between the parties. This, however, does not mean that subsequent panels are free to disregard the interpretations and the *ratio decidendi* contained in previous Appellate Body reports that have been adopted by the DSB. . . .

Dispute settlement practice demonstrates that WTO Members attach significance to reasoning provided in previous panel and Appellate Body reports. Adopted panel and Appellate Body reports are often cited by parties in support of legal arguments in dispute settlement proceedings, and are relied upon by panels and the Appellate Body in subsequent disputes. In addition, when enacting or modifying laws and national regulations pertaining to international trade matters, WTO Members take into account the legal interpretation of the covered agreements developed in adopted panel and Appellate Body reports. Thus, the legal interpretation embodied in adopted panel and Appellate Body reports becomes part and parcel of the *acquis* of the WTO dispute settlement system. Ensuring “security and predictability” in the dispute settlement system, as contemplated in Article 3.2 of the DSU, implies that, absent cogent reasons, an adjudicatory body will resolve the same legal question in the same way in a subsequent case.<sup>19</sup>

This view of precedent leaves states with the leeway to adopt a strict interpretation that panel rulings against another member do not impose any obligation for them even if their own policies would be implicated by the decision. On the other hand, each panel ruling creates new expectations for the likely outcome of future rulings on related matters.

While it is clear that in practice the WTO follows precedent, do members adjust their policies as claimed in this ruling by the Appellate Body? This would open the possibility that the effect of one dispute settlement case will be broader than the simple change of policies by the targeted state. The previous analysis could underestimate the effect of disputes by failing to consider these spill-over effects of precedent on other members.

## 4.2 Internalizing the law

For rulings to have a precedent effect, governments must be able to update their interpretation of commitments based on emerging jurisprudence and be willing to reform policies on the basis of this information. Much has been written on the capacity limitations for developing countries that can inhibit their participation in WTO dispute settlement (e.g. Guzman and Simmons, 2005; Davis and Bermeo, 2009; Busch, Reinhardt and Shaffer, 2009). These states may also have less capacity to learn from jurisprudence. Busch, Reinhardt and Shaffer (2009) conducted surveys of officials

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<sup>19</sup>During the Dispute Settlement Body meeting that adopted this ruling, the United States criticized the ruling as an attempt to establish rulings as binding precedent, but other members agreed the body of jurisprudence should be followed. *Inside U.S. Trade*, 23 May 2008.

from 52 country delegation offices and found that many developing countries lack a specialized WTO dispute settlement division and on average the developing countries have smaller numbers of professional staff, high personnel turnover, and attend WTO related meetings infrequently. Yet among repeat users of WTO dispute settlement, which includes some developing countries as well as most advanced industrial states, their own participation and large staff facilitates learning about emerging cases. Attending the dispute settlement body meetings and participation in disputes as third party provides information beyond cases with direct involvement. There may be additional measures taken at the domestic level in these states that have established a policy community with expertise on dispute settlement. For example, in Japan officials and scholars meet regularly in a study group to review panel rulings and write reports on their legal significance. The WTO has increased the transparency about the process with on-line posting of all official documents related to the complaints that have been filed and any rulings issued by panels in a website that is readily accessed. Professional sources of legal commentaries on WTO rulings and academic studies are also abundant. In short, for governments that have sufficient capacity in terms of personnel to process the large amount of technical legal rulings, information about filing activity and the emerging jurisprudence is widely available.

More problematic is the notion that a government would change its policy without having been directly targeted in a dispute. Given the lack of binding precedent in the terms of the WTO, rulings do not impose new obligations on members. Existing policies benefit from the vested interests that will come to their defense making it hard to change them. While being dragged to court imposes the cost of litigation and any reputation cost associated with being found in violation, the process also buys time for industry adjustment and allows states to clear their reputation once they announce compliance with the ruling. For a measure with low significance in terms of economic stakes or political salience, officials could decide to change a regulation to avoid potential future litigation. But for many cases the marginal shift in probability of victory in the legal ruling is unlikely to motivate removal of the protection barrier. At best one could expect that future moments of policy reform would reflect the latest jurisprudence and avoid conflict of commitments.

The empirical investigation of how one complaint influences the incidence of future disputes presents even greater data challenges than the earlier assessment of how the dispute process

influences dispute outcome and duration. Precedent effect in the narrow sense calls for examining the influence of specific legal findings. Ideally, one would want to reexamine the potential disputes data while controlling for the underlying legal similarity between disputes in order to estimate whether a ruling on a given legal principle in one case contributed to the withdrawal of another trade barrier that was likely to be found in violation on the same legal principle. Unfortunately the description of the trade barriers in the government reports is cursory about legal status for those that are not raised in dispute settlement. Comprehensive legal analysis of the data goes beyond the scope of this chapter. Nevertheless, looking at descriptive trends in the frequency of disputes can offer insights about possible role of more generalized precedent and deterrent effects.

### 4.3 Analysis of WTO disputes

The beginning of this section explained why deterrent and precedent effects would suggest declining frequency of disputes. As more complaints are filed, the enforcement mechanism gains credibility so that it should hold more deterrent value over time. States observe others taking action against inconsistent policies and recognize that there is accountability within the system. If disputes perform a substantial gap-filling role that clarifies the terms of the agreement, one would expect declining trend in the frequency of disputes. The growing body of jurisprudence will function to “complete” the contract.<sup>20</sup> As time passes, states can internalize the lessons from earlier cases. The fall in number of annual WTO complaints is readily apparent. The first five years of the WTO from 1995 to 2000 saw an average of forty-one disputes initiated per year compared to only twenty-one per year on average for the 2001 to 2008 period Bown (2009, p. 65-66). But many factors could account for the decline of cases. Bown attributes this pattern to high demand in early years that reflected both issues left over from Uruguay Round and governments wanting to test the strengthened dispute system, and the shift of macroeconomic conditions in latter period that reduced demand for disputes as exports were growing. Yet it could also represent evidence

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<sup>20</sup>Maggi and Staiger (forthcoming) show formally that precedent effects may induce an increase of litigation in period 1 by raising the stakes of litigation. The inefficiency of excess litigation in period 1 may under some conditions be offset by reducing future litigation in period 2. Their model explores the role of accuracy by the dispute body rulings and discount factors of governments to determine when precedent-setting authority for WTO panels would be optimal. More generally on the efficiency of precedent in common law legal systems and on the influence of precedent on settlement rates, see (Priest, 1977; Che and Yi, 1993).

confirming the effect of dispute activity from early years. A senior U.S. trade official for the Bush administration defended the decline of cases under their watch with the explanation that “The surge of cases in early Clinton years reflects that there was overhang from the GATT years of cases. Many were filed and resolved. These precedents are out there so there is no need to file. This leaves the cases that are either blatant violations or those that are probing the law.”<sup>21</sup>

Disaggregating complaints by agreement will provide additional information. Both the nature of the contract and incentives of states will vary considerably over the different types of disputes that arise under each agreement. One would expect the contract filling role of precedent to be the greatest for more technical agreements related to standards (customs valuation, licensing, Technical Barriers to Trade, and Sanitary and Phytosanitary Measures). Priest (1977, p. 81) argues that litigation in areas of law where characteristic disputes remain consistent over time will evolve toward more efficient rules, and by implication lower rates of litigation. For example, a ruling that labeling should follow international standards would be readily applied for another labeling case such that the parties could more easily settle out of court.

In contrast, trade remedy measures (e.g. safeguards, subsidies, anti-dumping) would be the least susceptible to precedent effects. Many of the decisions for these kinds of disputes are determined by detailed evidence on prices and imports and the practice of government as applied to the specific case.<sup>22</sup> This makes disputes related to trade remedy agreements prone to case-by-case dynamic rather than consistent characteristics. Moreover, these measures are invoked by governments as a response to economic hard times and lobbying pressures. Such factors could lead governments to implement barriers even knowing that they are inconsistent with agreements.<sup>23</sup> The United States decision to invoke steel safeguards in 2002 represented a political response by officials aware that a violation ruling would be issued.

The new agreements that broadened the scope of the trade regime to explicitly incorporate intellectual property rights, investment, and services were likely to give rise to the highest amount

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<sup>21</sup>Interview by author, 10 April 2010.

<sup>22</sup>Governments find it more difficult to win the ruling and compliance for claims *as such* against the law, although these cases hold much more general implications as potential precedent.

<sup>23</sup>Maggi and Staiger (forthcoming) propose that a high discount factor by governments will make precedent-setting authority less optimal. One could explore variation in the optimality of precedent authority by issues. Governments would have a high discount factor for trade remedy cases responding to pressing demands by domestic industry relative to low discount factor for standards.

of uncertainty. In these areas, negotiators in the Uruguay Round had to write an entirely new contract as opposed to strengthen provisions in existing agreements such as occurred for trade remedy measures. There were deep divisions among members regarding the willingness to include these issues and depth of liberalization. Both conditions would have contributed to the tendency to write an incomplete contract with gaps and vague statements. There was no record of prior GATT panel rulings. Members would have had reason to be uncertain about the nature of their commitments and whether those commitments were going to be strictly enforced by other members. I will give less attention to the Agriculture Agreement, which crosses between a new and old agreement and includes aspects that are technical and others that are extremely sensitive to economic conditions and political demand.

I examine the pattern of filing complaints disaggregated by agreement for the period 1995 to 2009. Each complaint filed to the WTO states the legal claims challenging the barrier as inconsistent with specific agreements. Some complaints will be filed under only one agreement, while others will be filed under multiple agreements. The data represent the number of complaints filed under the specified agreement.<sup>24</sup> The total number of complaints filed across the agreements would exceed total disputes because a single dispute could be counted as three complaints if it refers to three different agreements in the legal claims. For example, the case by Brazil against U.S. cotton subsidies (DS 267) makes claims under the GATT agreement, SCM agreement, and the Agriculture Agreement. Other cases would only cite one agreement, such as the U.S. complaint against Japanese tax policy for alcoholic beverages filed under GATT (DS 11) or the complaint by Antigua and Barbuda against U.S. restrictions on internet gambling that was filed under GATS (DS 285).

The focus on complaints allows me to assess deterrent effect on the broader membership from plaintiff activity. This research design is less appropriate for the assessment of legal precedent completing the contract because not all complaints lead to rulings, and the legal ruling will follow in stages years after the complaint. But I argue that a precedent in the more general sense of the term will be set by any dispute that enters the dispute settlement process when a formal complaint is filed. By this, I mean precedent in the sense of an experience prior in time that shapes beliefs of future defendants and complainants rather than a legal precedent that will be referenced in

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<sup>24</sup>Source: <http://www.worldtradelaw.net/dsc/database/agreementcount.asp> accessed 19 August 2010.

subsequent judicial decision-making by panelists and judges.<sup>25</sup>

In the area of trade disputes, one can see many cases of complaints that are resolved without a ruling but nonetheless offer a precedent for other members to learn from. For example, Japan's challenge of U.S. unilateral sanctions against its auto exports (DS6) filed in 1995 was resolved before the establishment of a panel through a mutually agreed solution in which the United States withdrew its sanctions in exchange for a face-saving agreement from Japan for concessions on the request for improved market access. All members could observe the 'precedent' that it would be difficult to justify unilateral sanctions in a legal setting so that even the United States had to back down in the face of certain defeat if it went forward to legal ruling. This experience had an important influence to restrain the United States from engaging in future threats of unilateral retaliation (see discussion of Kodak Fuji case in chapter four for a good example of this restraint). Similarly, the EU agreed to change its labeling policy for scallops after seeing the interim panel report in order to avoid the "precedent" of a ruling that would hold implications for other policies (DS 7). The panel report never became public and so this appears in the data as a complaint but would not be listed as a ruling. Other members, however, were aware of the case and its implication that labeling policies would have to be revised to conform with international standards. In order to incorporate the influence of such cases, I conceive of precedent broadly as the growing record of litigation related to particular matters rather than narrowly as the specific rulings on legal points.

Table 5 shows the complaints listed separately by each agreement. For the purpose of comparison, figure 2 displays four groups of complaints in a scatterplot with a dot for each complaint. The linear regression line for the correlation between year and complaints is significant for the GATT agreement, new agreements, and standards. Complaints filed under the trade remedy agreements do not show any kind of linear pattern. The downward trend exhibited for complaints filed under GATT is less informative for our purposes here since so many complaints will cite the GATT agreement in addition to another agreement directly implicated by the measure (e.g. a case about a technical barrier will often cite both GATT and TBT, and a case about an anti-dumping measure would also cite both GATT and the AD agreement). More important is the pronounced

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<sup>25</sup>For example, the legal definition of precedent is "a prior reported opinion of an appeals court which establishes the legal rule (authority) in the future on the same legal question decided in the prior judgment." (<http://dictionary.law.com>). The common definition is "an earlier occurrence of something similar" (<http://www.merriam-webster.com>).



Cited agreement	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
GATT	24	25	33	24	19	23	19	34	23	16	12	20	9	15	14	310
AD	1	3	3	6	8	11	6	7	6	8	4	8	1	5	3	80
SCM		7	10	11	3	7	4	7	6	6	2	9	5	5	1	83
Agriculture	4	5	13	5	6	5	2	7	6	2	1	1	2	2	5	66
TBT	8	5	4	5		2	3	2	4				1	3	3	40
SPS	5	3	3	5		2	1	5	6				1	2	3	36
Safeguards			2	2	5	3	7	11	1		2	2			1	36
Licensing	2	1	13	5	4	1	2	4	1	1	1					35
TRIPS		6	5	4	5	3	1		1				1			26
TRIMS		6	5	3	1	1	1	2		1	1	3	2			25
GATS	1	3	2	3	1	2	1		1	1			1	3		19
Customs	3	1		1	1	3	1		1			1	1	2		15
ROO			2	1			1					1		2		7
GPA			3		1											4
Total	48	65	98	75	54	63	48	80	56	34	23	45	24	39	30	782

Table 5: WTO Complaints by Agreement: The rows show complaints filed under the specified WTO agreement. Many complaints involve more than one agreement such that the total number of complaints under each agreement is greater than the number of complaints that have been assigned a dispute number by the WTO as a distinct case. Complaints filed under the Agreement on Textiles and Clothing are not included because the agreement expired in 2005.

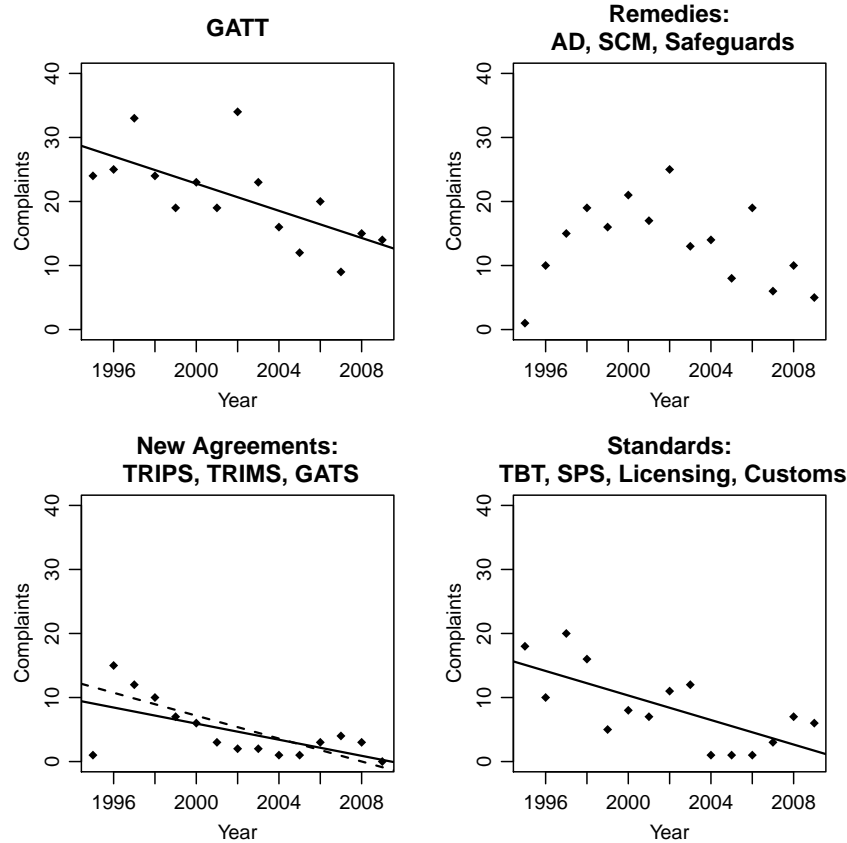


Figure 2: Time Trend for Complaint Frequency: *Each dot represents a complaint filed under one of the specified agreements. The line represents the linear regression line for GATT, New agreements, and Standards. A dashed line represents the regression for complaints filed under new agreements when removing the first year that could be an influential point.*

decline in the frequency of complaints over standards relative to the nonlinear distribution of complaints about trade remedies. Indeed, after observing routine complaints filed during the first decade of the WTO under the agreement on licensing that regulates the processing of import licenses, no complaints have been filed under the agreement in the past four years. The major new additions to the trade regime, regulation of intellectual property rights (TRIPS), services (GATS), and investment (TRIMS), also fit the pattern of declining frequency. There were no direct GATT precedents to reduce uncertainty for these rules and one could also expect more gaps in the treaties in new areas of law. The frequent complaints under these agreements in the early years may have helped to clarify these aspects of the agreements and demonstrated that members would be held accountable in these new areas.

In contrast, trade remedies surged during the middle years of the period. This is most apparent for the complaints filed under the safeguards agreement. The 11 complaints under the safeguards

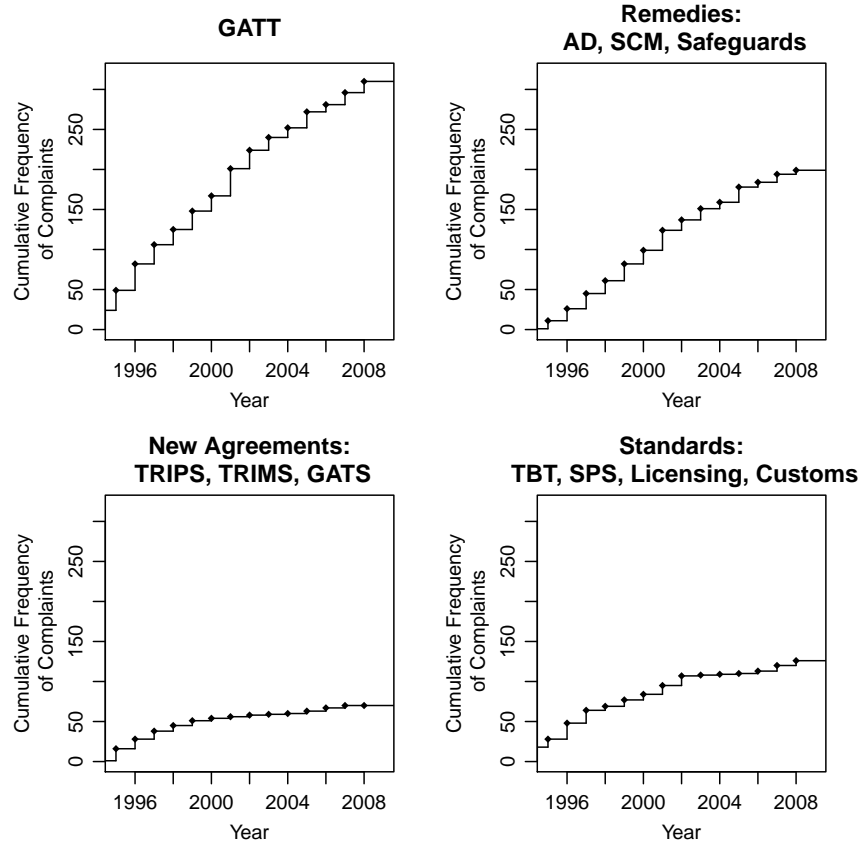


Figure 3: Cumulative Complaints By Agreement: *The figures show the cumulative total complaints under the specified agreement.*

agreement in 2002 partly reflects the U.S. steel safeguard initiation, which triggered individual complaints by nine countries against the measure. Moreover, the year 2002 brought the highest number of safeguard initiations by members to date. The anti-dumping (AD) and subsidies (SCM) agreements also show a nonlinear distribution of complaints over time. The agriculture agreement, which is not displayed in the graph but can be seen listed in the table, has been subject of complaints with decreasing frequency. The rate of decline and significance of the linear time trend is smaller than either the new agreements or the standards agreements.<sup>26</sup>

Figure 3 shows the data as a cumulative count for complaints filed to date under each group of agreements. Here the expectation would be that the buildup of litigation would eventually produce a leveling off effect as deterrence and precedent effects begin to reduce demand for additional cases. The rate of increase in cases each year for complaints filed under GATT has slowed as each step

<sup>26</sup>The coefficient for the agriculture complaints is -0.35 (p-value: 0.05), compared to -1.06 (p-value: 0.006) for GATT, -0.96 (p-value: 0.004) for the standards agreements, and -0.63 (p-value: 0.01) for the new agreements.

becomes smaller. There is the beginning of a leveling off trend for the remedies agreements, but it is the new agreements and standards that exhibit a more pronounced flattening out.

The data here remains too aggregate to make conclusive inferences. One cannot distinguish whether the variation in complaint pattern results from exogenous changes that would influence underlying protection and bargaining dynamics between trading partners. What we can learn is that the system-wide trend toward less frequent complaints has been more pronounced in some areas of law than others. Over time, members have found reduced need to seek third party involvement for disputes over technical agreements and new agreements, while the demand for adjudication remains strong in the areas that are more responsive to macroeconomic trends and lobbying pressure. The growing record of adjudication has provided information for members that inconsistent policies will be challenged. Where possible, states are learning to avoid inconsistent policies and work out disputes without formal action. Nevertheless, political needs over-ride in some cases. Even after another decade of adjudication working to fill gaps of understanding about the legal agreements and raising the certainty about enforcement, the system will probably still encounter disputes driven by political necessity.

## 5 Conclusion

This chapter has shown evidence supporting the role of international institutions as a conflict resolution mechanism. Earlier chapters demonstrated that the use of a formal dispute settlement mechanism helps governments to signal commitment to powerful domestic interest groups short of the more confrontational steps of unilateral retaliation. Filing a complaint challenging a trade barrier in WTO dispute settlement serves both to maintain the support of exporters and provides information to trade partners about the intensity of preferences.

The evidence from chapter four that trade disputes with high political stakes on both sides are most likely to be selected for WTO adjudication counters the concern that only issues “ripe for cooperation” are being raised in institutional venues. Nonetheless, I demonstrate in this chapter that WTO dispute settlement is effective to bring progress to change the trade barrier and shorten the duration of the dispute. Given that politicized cases are channeled into the WTO forum, it is remarkable that the dispute system has been relatively successful to resolve trade disputes.

There may also be additional mechanisms by which dispute adjudication plays a role to main-

tain an open trade system. In particular, any legal system has as the fundamental goal the promotion of compliance such that disputes would become increasingly rare. The potential for deterrent and precedent effects mean that any one WTO adjudication case may have ramifications beyond the change of the single barrier by one country that is in contention. Although rulings do not formally represent legal precedent, there has been a de facto evolution of jurisprudence building on earlier cases. Jackson (2001, 209) credits the high quality jurisprudence from WTO panels as one standard of institutional effectiveness. Each ruling clarifies ambiguities in the agreement, and in response, other states may decide not to adopt similar barriers. Even the complaints that do not produce legal precedent through a ruling will set a precedent in terms of lessons learned about how states enforce the contract. The record of strong enforcement may lead more generally to higher compliance. In this sense, each dispute has a broader influence that cannot readily be measured. The deterrent effect of a WTO complaint is cited by industry representatives as a reason they seek WTO adjudication (Davis and Shirato, 2007). Busch (2007) argues that the desire for multilateral precedent vis a vis other states not party to a dispute accounts for why NAFTA parties often use WTO adjudication with each other even when NAFTA provides an equivalent dispute mechanism. In an analysis of preferential trade agreements, Kono (2007) shows that having a dispute settlement mechanism increases trade liberalization by promoting compliance.

The broader deterrence effects of adjudication to improve compliance across members and over time would be on top of the directly observed effects for specific disputes analyzed in the first two sections of this chapter. The second half of this chapter explored possible explanations for the declining frequency of complaints over time. I argue this empirical pattern is consistent with expectations that deterrence and precedent effects from early cases would reduce subsequent disputes. The trend was strongest for disputes over agreements related to standards and new areas of regulation for the trade regime. The trade remedy measures that respond more to immediate economic and political pressures show little evidence of any time trend. Future research should examine this puzzle with better measurement of legal precedent and factors that influence demand for both protection and enforcement.

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