

Who Files? Developing Country Participation in GATT/WTO Adjudication

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The potential for international law to reduce power asymmetries depends on weaker countries learning to navigate the legal system. This paper examines the use of courts by developing countries to defend their trade interests. Power relations and low capacity may prevent these countries from fully participating in the international trade system. Yet some developing countries have been among the most active participants in GATT/WTO adjudication. We argue that high startup costs for using trade litigation are a barrier to developing country use of the dispute settlement process. Analysis of dispute initiation from 1975 to 2003 shows that past experience in trade adjudication, as either a complainant or a defendant, increases the likelihood that a developing country will initiate disputes. As weaker countries overcome these initial capacity constraints they will increasingly benefit from the international legal structures they have joined.

An increasing range of policy issues are subject to international rules, and international courts have grown in number and authority. This trend toward the legalization of international politics has attracted substantial attention in research on international relations (e.g. Abbott and Snidal 2000; Goldstein et al. 2000; Simmons 2000). Much of this scholarship focuses on explaining the motivation for states to design institutions with legal commitments and evaluating the effect of these commitments. Less attention has been given to the implications of legalization for the distribution of power. In principle, law should level the playing field to provide all states with equal rights. In practice, some states may lack the ability to enforce their rights. If weak states cannot even bring forward legal claims to challenge violations against their rights, they benefit little from the provisions for legalized dispute settlement. Law may simply reinforce existing power asymmetries. In order to evaluate whether legal enforcement of international agreements helps weak states, we must first investigate under what conditions these countries use international courts.

We address this question by examining initiation of disputes in the World Trade Organization (WTO), which regulates over ten trillion dollars in trade among 153 member states. The international trade

regime provides a promising area to examine theories about international adjudication because it has produced a large record of court cases and has a diverse membership. The dispute settlement system forms the central mechanism to enforce international trade law and embodies a high level of legalization in comparison with other international institutions. It has attracted wide attention from scholars in political science, economics, and law (e.g., Bagwell and Staiger 1999; Bown 2004b; Busch 2000; Guzman and Simmons 2002; Jackson 1997; Maggi 1999; Reinhardt 2001; Rosendorff 2005). While research has found no evidence of any bias in rulings against developing countries (Busch and Reinhardt 2003; Moon 2006), weak enforcement could arise through an earlier selection effect if developing countries do not file complaints to challenge violations. Many question whether developing countries are able to use the dispute settlement system (Delich 2002; Esserman and Howse 2003; Michalopoulos 2001; Smith 2004). Empirical research of the WTO period has shown that poor countries participate less actively in disputes than their richer counterparts (Busch and Reinhardt 2003; Shaffer 2003). Wealthy countries have initiated the majority of cases (239 out of 376 complaints), with the United States and The European Union leading as complainants.¹

¹This figure refers to all WTO cases filed by high income countries (according to World Bank income categories) through June 2008 as reported at <http://www.worldtradelaw.net> (accessed June 9, 2008).

Low filing by developing countries against barriers to their exports could lead to higher noncompliance in the trade areas important to them. While international trade rules represent legal obligation, they are not directly enforceable. The power of multilateral enforcement comes from the dispute mechanism informing third countries of violations so that reputation costs will apply to relations with the wider trading community (Maggi 1999). The Dispute Settlement Procedures (DSP) of the WTO deter future disputes as countries are more cautious about policies where there have been prior rulings and toward countries that have been active complainants (Allee 2003; Blonigen and Bown 2003). Thus filing complaints can potentially influence distributional outcomes. Gowa and Kim (2005) show that most benefits from trade liberalization in the GATT accrued to a small group of industrial states. Some inequality in outcomes reflects the low influence of developing countries in bargaining over the rules, but developing countries may also gain worse distributional outcomes as a consequence of weak enforcement.

Yet much of the literature has overlooked the fact that some developing countries are active participants in GATT/WTO adjudication. Instead, it has emphasized that most developing countries initiate few disputes and many have never initiated any. Surprisingly, a small group of developing countries have overcome their capacity constraints to become repeat filers. Of the 153 current WTO members, only thirty have filed more than one case. Of these 30 states, nine are high-income members and 21 are developing states.² Brazil has filed more WTO complaints (27) than many countries with twice its income. Over the period from 1995 to 2007, India initiated 17 cases, Thailand initiated 12 cases, and even a small state such as the Philippines initiated five cases. As developing country members increase in both number and activity levels, their share of overall adjudication has reached nearly half of all cases filed in recent years. The ability of some developing country members to become leading users of the dispute system suggests that material resources alone do not account for the variation in who files. What explains the division between active users and passive observers?

We argue that fixed costs related to institutional capacity and knowledge result in economies of scale for dispute initiation. Governments and industry must invest considerable resources in learning how to use the dispute process the first time, but this

experience itself can be applied more generally to future cases. We hypothesize that those who gain knowledge through experience become repeat players that will use the system more often because they face lower startup costs for subsequent participation. Since it is possible that an unobserved variable contributes to both initial and subsequent filings by a given country, we evaluate our experience hypothesis by exploiting the fact that countries receive an exogenous shock to their experience when they are targeted as defendants. We also examine the role of the Advisory Centre on WTO Law, which offers legal assistance to developing countries as an external source of experience. High stakes, being a defendant, or the ACWL can lead to initial experience, after which states reap advantages as repeat players for future participation.

We conduct statistical analysis of cross-national time series data for developing country participation in GATT and WTO disputes over the period 1975–2003.³ Although previous studies explain specific disputes with attention to the nature of the particular issue and pair of countries involved, we are instead interested in the *overall propensity of a state to participate in international adjudication*. We ask whether underlying characteristics make some states more likely to adjudicate their trade problems. Therefore we analyze the number of initiations by a country each year using an event-count model. This allows us to examine why some countries never initiate while others initiate occasionally or frequently.

Our statistical analysis shows that prior involvement in trade adjudication is a strong predictor of future dispute initiation for developing countries. Experience gained through participation in the dispute process *as either a complainant or a defendant* increases the probability of filing a complaint. Evidence that experience as a defendant leads to future filings as a complainant against other states—and not just tit-for-tat filings against the same state—suggests that adjudication experience is the underlying mechanism. We uncover a pattern of declining returns from experience after five or six cases that fits the logic of our argument. Once a state passes the threshold to accumulate sufficient experience, additional cases are of less significance. Along with experience, access to legal advice represents a significant factor to increase participation. Our findings for the positive contribution from the ACWL suggest the importance of providing expertise to help developing states manage

²This is calculated based on the list of complaints filed available at <http://www.wto.org> (accessed 9 June 2008).

³In our main analysis, we examine 75 developing countries that fall in the low to upper middle income categories of the World Bank.

the challenges of legalization. We extend the analysis to high-income countries and show that experience does not matter for developed countries where greater resources mean that startup costs are a relatively minor obstacle.

The conclusions in this study paint a mixed picture regarding the ability of weak states to benefit from increased international legalization. The complex nature of international legal bodies makes it difficult for developing countries to initially overcome the costs of navigating the system. In the short-run this suggests that such organizations may offer little recourse for weak states and even reinforce existing power asymmetries. However, the results here show that once the participation hurdle is overcome, developing states can become active participants in the international institutions they have joined.

Existing Theories to Explain WTO Adjudication

Studies of WTO dispute adjudication have focused on three factors to explain variation in the pattern of dispute initiation: trade interest, power, and capacity. All emphasize the role of economic variables as the major determinant of adjudication. First, it is a common view that states with larger trade interests adjudicate more. High trade volume increases the stake in liberalization, which justifies investing resources into settling a trade dispute. Horn, Mavroidis, and Nordstrom (1999) have shown that states with more diversified exports more frequently use the adjudication system because they have more potential disputes. Studies of bilateral relationships also highlight the importance of bilateral trade dependence to predict dispute initiation and outcomes (Bown 2004b; Reinhardt 2000; Sattler and Bernauer 2007).

Even when there is domestic demand for a dispute based on strong trade interest, power may restrain dispute initiation. On the one hand, theories about international law and institutions argue that a legalized system of dispute settlement will be rule-oriented and reduce the role of bargaining power (Jackson 1997; Keohane, Moravcsik, and Slaughter 2000). On the other hand, powerful states may also be able to use legal procedures to advance their interests within a judicial process (Abbott and Snidal 2000). Busch and Reinhardt (2003) show that rich countries gain more concessions through their performance in WTO adjudication than poor countries. They argue that developing countries are less able to negotiate concessions in the early stage of the dispute

process because they have limited legal capacity and are unable to threaten retaliation. Bown (2004b, 2005) also finds that states with greater retaliatory power to restrict imports from the defendant in a dispute are more likely to initiate a dispute and gain larger trade liberalization outcomes. Small developing states may feel constrained from initiating a case against their larger trade partners because they do not anticipate that they will be able to gain concessions or because they fear losing aid or preferential trade.

Government capacity in terms of human and financial resources may also act as a restraint on the level of dispute initiation. Among developing countries, "there is a common concern regarding the costs associated with submitting, pursuing, and defending cases and the scarcity of human resources for dealing with increasingly complex issues" (Delich 2002, 75). Michalopoulos (2001, 159) finds that in the year 2000, 70% of developing country members of the WTO did not have the minimum of four staff based in Geneva that is considered necessary for effective representation in WTO meetings across the different areas of WTO policy. Indeed, Guzman and Simmons (2005) argue that capacity constraints are more important than power considerations in the calculation by developing states of whether to initiate a dispute against a particular country. They demonstrate that when countries with low income choose to initiate a dispute, it is *more* likely to be against a wealthy trade partner. This goes against the expectations of power-based arguments that developing countries fear to take on more powerful counterparts.

The wide variation among developing countries, however, suggests that there may be more than economic position to explain the pattern of adjudication. The large number of WTO members that have never participated includes many that have sufficient size and income to support the cost of managing a WTO dispute. Looking only at economic interests, it would be hard to explain why Thailand has become one of the most active developing country participants with 12 WTO complaints to date while neighboring Malaysia has only filed one complaint.

Repeat Players: An Experiential Theory of WTO Adjudication

The costs for dispute initiation include the effort by a government to select a case, evaluate whether it will be worth going forward, and to manage the litigation process. As such, information represents a substantial

component of the litigation costs for initiating a WTO dispute (Hoekman and Mavroidis 2000, 533). Much of the case specific information is provided by the affected domestic industry and legal advisors. On top of the case specific information, however, there are fixed costs that are a function of experience. These include building knowledge of WTO rules and procedures in both government and industry circles and establishing institutional processes to facilitate participation in dispute settlement. Using adjudication as a trade strategy requires mechanisms to coordinate between the public and private sector (Shaffer 2003).

Economies of scale in learning generate positive externalities from litigation experience that lower startup costs for future cases. In the context of domestic litigation, Galanter argues that repeat players (RPs) who frequently use the courts to make or defend claims hold advantages because "RPs, having done it before, have advance intelligence; they are able to structure the next transaction and build a record" (1974, 98). Similar to repeat players in the domestic litigation context, there are economies of scale in learning how to navigate the DSP. States that have initiated or defended cases in the past will have more capacity (Guzman and Simmons 2005, 577). Their bureaucracy will develop a standard operating procedure, regular budget allocation, and organizational capacity for initiation of WTO disputes. Individual officials gain knowledge that can be applied to future cases as they continue to be involved in trade policy.

Similar to governments, industries can become repeat players. Those that have worked with the government to initiate past cases develop specialized expertise. Industry associations that have reached collective decision rules for the payment of fees to support WTO adjudication will find it easier to coordinate the next time around. Additionally, information about one case will increase awareness in the business community and generate demand for additional cases. In the context of European litigation strategies, Alter (2000, 459) shows that groups that had previously shown no interest in litigation began to adopt the strategy after seeing its successful use by other groups. The more often a country engages in adjudication, the broader the spread of knowledge about the system in the business community.⁴

⁴As of 2006, only three developing country initiated WTO cases had resulted in a negative finding by the panel. The lack of developing country losses in court rulings means that there are few negative experience cases that would reduce interest in the WTO. Moreover, the three developing countries that lost cases were undissuaded and went on to file more; indeed, the Philippines lost the panel ruling on its first WTO case in 1995, but has filed four more cases since then.

Our contribution to the literature on WTO dispute settlement is to show that one needs to look beyond economic variables to understand why some states are more active litigators than others. We hypothesize that past experience with adjudication will increase the likelihood of future cases. This suggests a pattern of repeat filers with some countries making adjudication a routine part of their trade agenda.

How Countries Learn by Doing

The advantage to repeat players comes from their knowledge about how the process works and improvements in institutional arrangements for coordination of public and private action to address trade problems. Reference to some examples helps to demonstrate how experience promotes learning and reduces startup costs for subsequent litigation. We will examine Pakistan, Costa Rica, and Botswana as three developing countries with a mixed range in their level of experience.

The experience of Pakistan illustrates how one dispute can have lasting effects on government organization. Pakistan requested consultations with the United States on April 3, 2000 regarding a transitional safeguard measure applied by the United States on combed cotton yarn from Pakistan (DS192).⁵ This was the first case it filed as the sole complainant under the WTO.⁶ In a detailed case study of the dispute, Hussain notes, "At that time there was no effective institutional framework within the Ministry of Commerce which could deal with WTO-related dispute settlement cases" (2005, 462). During the course of the dispute, however, Pakistan established WTO sections in both its permanent mission in Geneva and in its Ministry of Commerce as well as a 13-member high-level WTO Council chaired by the Minister of Commerce (Hussain 2005, 470; Trade Policy Review, Pakistan 2001). These bodies engage in interministerial and interprovincial coordination for WTO matters. To manage the cost of the dispute, the government determined that the affected industry pay half of the legal costs while the other half would be paid by the Export Promotion Board. The government also became an initial member of the ACWL at its establishment in 2001 and frequently sends officials to training sessions on dispute settlement.⁷

⁵The safeguard had been applied starting March 17, 1999.

⁶Pakistan had filed two cases under the GATT and joined a WTO case (DS58) with multiple complainants prior to initiating this case.

⁷The ACWL was established in July 2001 after Pakistan conducted panel proceedings in the case discussed here, but ACWL services were available to assist Pakistan in the Appellate Body proceedings.

In past practice, the Ambassador in Geneva appointed by Pakistan's Ministry of Foreign Affairs addressed all issues regarding international organizations, which often resulted in priority going to diplomatic issues other than trade. In 2002, Dr. Manzoor Ahmad became Pakistan's first Ambassador to the WTO assigned from the Department of Commerce and dedicated exclusively to serve its interests in the WTO. The country's mission to the WTO in Geneva now has six staff officials including a legal affairs officer with expertise in trade law. These organizational and personnel changes facilitate participation in ongoing WTO negotiations and dispute cases. Pakistan filed a case against Egypt regarding anti-dumping duties on matches in 2005, which was successfully resolved. It has participated as a third party in several cases and has a few cases currently under consideration as potential complaints.⁸ When asked in an interview how the experience of past cases affected future strategies, Ambassador Ahmad stated, "It is encouraging when we get positive results so we are more likely to see dispute settlement as an effective strategy. We know about the selection of lawyers and how to enter consultations. If it were the first time we would be completely lost but if we have experience it helps. Now with our problem with the EU preference regime [the EU generalized system of preferences offers preferential terms to the imports of some export competitors on what Pakistan considers to be arbitrary terms] all of the groundwork is ready—we know what to do and have the nuts and bolts in place so we are ready to go."

It was not only government capacity that gained from participation in a WTO dispute. Prior to the start of this case, Hussain argues that there was "a paucity of information within the private sector about the workings and objectives of the WTO . . ." (2005, 461). There was also no institutionalized way for industry and government to share the costs of WTO litigation, which held up proceedings for months while these issues were hammered out.⁹ After this case, the All Pakistan Textile Mills Association (APTMA) established a WTO section for coordinating with the Ministry of Commerce and monitoring international activity for actions against its interests. Key players in industry are pushing for the institutionalization of a

cost sharing mechanism to avoid delaying WTO proceedings in the future (471).

Costa Rica provides another example of how one case can lower obstacles to filing. Costa Rica filed an early WTO complaint (DS24) when it challenged the U.S. use of transitional safeguard provisions for cotton underwear. Breckenridge (2005) describes that foreign affairs officials were reluctant to file the complaint from fear of harming relations with the United States. Trade ministry officials argued the case was necessary to show resolve in maintaining the benefits of open trade under the WTO for domestic industries. According to Anabel Gonzalez, who served on the legal team of the Costa Rica trade ministry for the case, the industry stakes were large and the legal case was straightforward. These were both critical factors in the decision to go forward with a politically controversial case against the United States.¹⁰ The government used its own experts and won the panel ruling. Breckenridge writes that as a consequence of the Costa Rican victory "the country gained significant experience and expanded its capacity with regard to international trade and legal issues, while the legal team within the Ministry of Trade further enhanced its reputation for credibility within the Costa Rican Government" (2005, 186). The United States complied with the ruling, and there were none of the anticipated negative diplomatic repercussions. Roberto Enchandi, who also worked on the legal team for the case as a young trade ministry official and now serves as the Costa Rican ambassador to the EU, said that "if we were to bring the case today it would be much easier because we no longer perceive adjudication as political conflict."¹¹

The victory in the cotton case opened the door for future use of dispute adjudication by Costa Rica. Gonzalez commented that "Once we had learned to use the system we felt that we might as well go ahead and use it." The trade ministry had gained political clout and now felt confident to file a complaint even when the trade stakes were not as large. Since the conclusion of this case in 1997, Costa Rica has filed additional WTO disputes (DS185 and 187 against Trinidad and Tobago and DS333 against the Dominican Republic); it has also participated as a third party in nine cases.

It is interesting to contrast these examples with Botswana, which has higher income and receives

⁸Dr. Manzoor Ahmad, Ambassador and Permanent Representative to the WTO, Permanent Mission of Pakistan. Interview by author, Geneva, 30 June 2008.

⁹The US refused to comply with the ruling of the Textile Monitoring Board in June 1999, but Pakistan did not make the initial WTO request until April 2000.

¹⁰Telephone interview by author, 11 August 2008.

¹¹Telephone interview by author, 11 August 2008.

higher scores than these countries on the World Bank's indicator of government effectiveness.¹² In Botswana exports were 55% of GDP in 2006, comparable to Costa Rica where exports were 50% of GDP and much higher than in Pakistan where they were about 15% of GDP.¹³ Yet Botswana has never filed a WTO case; its trade ministry remains weak and it is hampered by lack of intragovernmental coordination for WTO policy (Mbekeani 2005). While these problems affect the ability of Botswana to file a WTO case, the experiences of Pakistan and Costa Rica suggest that participation in a first WTO case can help strengthen the trade ministry and intragovernmental coordination. The initial WTO case can require significant investment by the government and affected industry. However, this investment provides positive externalities for subsequent cases, lowering the informational and institutional barriers to filing in the future.

Different Pathways to Experience

Experience lowers information costs, but how does a state gain experience to start with? For some countries, a potential dispute may come along with such large trade consequences that high information costs will not prevent filing a WTO complaint. These costs will be low relative to the costs imposed by the trade barrier. The importance of the textile sector, which accounted for 8.5% of Pakistan's GDP, 38% of employment, and 60% of the total export earnings, provided strong justification for government action in the above mentioned case against the United States regarding cotton yarn (DS192) (Hussain 2005, 460). The Costa Rican government felt that it had to respond to the U.S. textile safeguard measures that threatened \$100 million worth of trade.¹⁴ Ecuador's losses from the EU banana regime, which were more than \$500,000 a day, provide an additional example. Indeed, as the world's largest banana exporter (bananas account for 30% of its exports), Ecuador rushed its accession to the WTO so that it could file a complaint against the EU on this issue (Smith 2006).

¹²Income data are from the World Bank's World Development Indicators, "GDP per capita, PPP (constant 2005 international \$)"; the measure of government effectiveness referred to comes from the World Bank's Governance Matters project. Both are available online at www.worldbank.org (accessed June 19, 2008).

¹³World Bank, World Development Indicators, "exports of goods and services (% of GDP)", online at www.worldbank.org (accessed June 19, 2008).

¹⁴Anabel Gonzalez, telephone interview by author, 11 August 2008.

Countries may increase experience by joining a complaint that another state has already initiated. Doing so can lower the start up costs because other countries with more experience in WTO adjudication have evaluated the legal issues to select a good case. Furthermore, there is potential for free-riding on the legal arguments and settlement bargaining given the practice to combine panels hearing a single issue with multiple country complainants. China joined the WTO in 2001, and in the following year initiated its first WTO dispute by joining eight other countries including the EU, Japan, and several developing nations in the case against U.S. safeguards on steel imports (DS252). China filed its complaint three weeks after the EU had already filed a complaint on the issue. Peru followed Canada's lead in 1995 to challenge an EU-labeling policy and received help from the Canadian government team to pursue the case (DS12). Peru later filed alone in a case that raised the same legal issues about labeling standards (DS231). Even in high-stakes cases, developing countries may benefit by joining existing complaints. When Ecuador became a WTO member in 1996, it was able to join a dispute previously filed by others, including the United States, regarding the EU banana regime.

Experience as a defendant in a WTO case also increases a country's information about how the WTO process works. When a country receives a request for consultations from another government, it gains an unsolicited lesson in the dispute settlement process. This experience can be applied later for initiating a case. The example of Indonesia is illustrative. Indonesia was targeted as a defendant by the EU, United States, and Japan in a dispute about its automobile policy in 1996, and two years later initiated its first WTO case against Argentina about safeguard measures on footwear. In 48 years of membership in the GATT/WTO, Indonesia had never filed a case, but after this first case it went on to initiate two more, for a total of three in nine years. If such unplanned experience leads to greater initiation activity, we can be confident that experience is important, and not simply a proxy for an underlying propensity to initiate.¹⁵

In recent years, developing country WTO members have the option of using the Advisory Centre on WTO Law (ACWL) as an external source of experience. This intergovernmental organization was established in 2001 with donations from several developed

¹⁵One concern with using defendant experience to predict initiations is the possibility that such initiations are simply the result of a tit-for-tat dynamic. We address this below.

country WTO members specifically to address the participation problems of developing countries. The organization offers multiple services to its members who pay a small membership fee (there are no other conditions for membership). The center has a team of lawyers highly trained in WTO law who offer subsidized legal counsel including advice on the decision of whether to bring a case and full representation in the dispute settlement process. Legal opinions are offered free of charge about either the WTO consistency of a member's own policies or about measures by another state that adversely affect the interests of the member. Legal fees for representation in dispute settlement are scaled according to income level. In its first four years, the Center has offered 120 legal opinions to its members and supported 15 countries in their dispute settlement proceedings.¹⁶

The ACWL offers a venue to gain experience that goes beyond the legal representation of a private law firm. Not only does the center provide access to low-cost legal opinions, but when litigating a case ACWL staff work closely with officials from the home government in a conscious effort to create a learning process. In addition, the Center holds six-month training courses for delegates in Geneva, hosts internships for lawyers from member states, and sponsors seminars on WTO dispute settlement. More generally, the center represents a collective body to pool the experience of developing countries as a group in WTO adjudication. While few individual developing countries will ever participate in more than a handful of WTO disputes, the Center is quickly building experience as a repeat player to rival that of the U.S. or EU trade ministries. In its first four years, the ACWL has represented its members in 20 disputes (either as defendant or complainant). It has participated in over 20% of all WTO dispute settlement cases each year since its establishment.¹⁷ This experience creates a reservoir of knowledge that can be tapped by developing countries who seek advice on whether and how to deal with their specific trade problems.

Any one or a combination of these factors may help a government to file a complaint even when it lacks experience. The next time around when facing a foreign trade barrier, that experience will make the government more likely to consider filing a complaint.

¹⁶Advisory Centre on WTO Law, "The ACWL After Four Years: A Progress Report by the Management Board," (Geneva, 5 October 2005)."

¹⁷Advisory Centre on WTO Law.

Alternative Explanations

Experience is but one of several factors that influence the propensity of a state to engage in trade adjudication. As highlighted in the review of existing theories about WTO adjudication, economic factors are clearly important. All else equal, one would expect states with more wealth and exports to file more cases both from a perspective of capacity and interests.

An important point related to the role of income to increase WTO adjudication is its effect on the ability of a state to hire private legal services. It has become common practice to have outside counsel prepare submissions and even to represent the government in the dispute settlement process.¹⁸ Legal fees for a typical WTO case range from \$300,000 to \$1 million dollars, and often the affected industry will pay for part or all of the legal fees to hire outside counsel. While expensive, most developing countries could afford this cost given sufficient trade interests.

Yet even for governments that can afford to hire a private law firm, inexperience may inhibit taking this step. First, before hiring a law firm, the government must identify the dispute and calculate whether anticipated benefits will justify the costs involved in adjudication. In domestic civil litigation the possibility of large monetary awards for compensatory damages creates a market for third-party lawyers to identify potential cases and for injured parties to bear costs to take legal action. For international trade disputes no such market exists, because states found to be in violation of WTO law do not pay monetary damages.¹⁹ Second, the government cannot delegate all tasks to the law firm. Everything from negotiating the contract with a law firm to decisions about whether to accept an early settlement requires intensive deliberation by government officials. Managing the coordination with a law firm itself represents one component of the fixed costs for adjudication that becomes easier with experience.

Political characteristics also belong in any explanation of WTO adjudication because of their ability to influence how states represent their interests. There is a high correlation between democracy and

¹⁸See Smith (2004) for discussion of the Appellate Body decision to allow private counsel during the panel about the EU banana import regime. The decision responded to the request of a developing country and came over objections from the United States and EU.

¹⁹A victorious plaintiff can only expect to receive either a change in the offending policy or *compensation* in the form of authorization to raise tariffs on other goods for an amount equivalent to the prospective harm from noncompliance after the ruling (Lawrence 2003, 37–38).

patterns of participation in WTO adjudication (Busch 2000; Guzman and Simmons 2005; Reinhardt 2000). To the extent that democratic institutions create pressures to demonstrate accountability to domestic interest groups, they increase the overall demand for WTO adjudication. This heightened demand could lead democratic states to be more likely to gain experience, but would not change the importance of experience to facilitate additional participation. As shown by our discussion of the example of Pakistan, even states that are not democratic can learn from experience.²⁰

Our argument here is not in contradiction of these points. Rather we contend that in addition to the variation explained by standard economic and political variables, direct experience with the adjudication system is an important factor to explain who files and who does not. Lack of knowledge about how to use the DSP raises the costs of initiating a dispute. Only the highest economic stakes would motivate a poor country to undertake litigation. In contrast, repeat players will face lower start up costs as they apply the lessons and routines established from past participation.

Empirical Analysis

We initially examine data for 75 developing countries that were members of the WTO by the end of 2003. Our goal is to explain the variation among the countries that have sufficient income to make it conceivable for them to file a complaint but where capacity constraints may limit their use of this option. We exclude high-income WTO members from our main analysis.²¹ However, for comparison we later conduct regression analysis for these high-income countries as well. The differences between filing patterns for developed and developing countries may operate at several levels that would not be captured accurately by adding a developing country variable or income measure to an analysis of the full membership. We also exclude 31 “least developed countries” (LDC).²² As beneficiaries of preferential market

access offered to least developed countries, they have less need to invoke WTO rights. They are also less likely to be targeted as a defendant. Special provisions in the WTO agreement for this group of members allow them exceptions to commitments. Article 24 of the Dispute Settlement Understanding calls on members to “exercise due restraint” in filing complaints against LDCs.²³

Data

Our data cover the period from 1975 to 2003 and the unit of analysis is a country year. We focus on explaining the *propensity of each country to file disputes rather than the choice to file a particular dispute*. Hence our variables are general to the country characteristics rather than specific to any given trade dispute. The choice of time period was driven by data limitations; we include the longest time period for which reliable data on most indicators are available. A list of countries and years included is given in Table 1. We only include a country for the years after its accession to the GATT or WTO.

Our dependent variable is a count of the number of cases a country initiated in a given year. In counting cases, we follow convention and count multiple filings for the same case as a single initiation. For example, we count three WTO complaints about Europe’s banana import regime (DS16, 27, and 158) as one complaint for each of the developing countries that filed.

Of the 75 developing countries in our analysis, 32 have initiated cases, with 10 of these initiating for the first time under the WTO. Some of the more active developing countries have filed multiple cases in the same year; Brazil filed seven cases in the year 2000, and both India and Argentina have filed four cases in a single year. However, many countries file at most a single case in a given year, and many have yet to file their first case.²⁴ There were a total of 193 cases initiated by developing countries in our dataset between 1975 and 2003, with 116 of these occurring during the WTO period.

Experience. We hypothesize that past experience with the adjudication process makes a country more likely to initiate a case. We separately evaluate experience a country receives from filing complaints

²⁰The institutional changes to facilitate WTO policy were undertaken by the Pakistan government in 2001–2002, well after the 1999 military coup that ended democratic rule in Pakistan.

²¹The definition of high income countries was based on the list of high income countries (2004 per capita income above \$10,066) published on the World Bank web site, accessed on January 17, 2006.

²²Based on list of LDCs on the United Nations web site June 22, 2004.

²³Excluding these countries will not bias our findings about experience because to date only one least developed country (Bangladesh filed a complaint against India in 2004) has ever filed a dispute. No LDC has served as a defendant in a WTO case. In other words, adding these extra cases would if anything strengthen our claim about the importance of experience.

²⁴The mean of initiations is 0.15, standard deviation 0.53.

TABLE 1 Country List for Developing Country Dataset

Country	Accession Year	Initiations		Country	Accession Year	Initiations	
		GATT	WTO			GATT	WTO
Albania	2000		0	Kenya	1964	0	0
Antigua, Barbuda	1987	0	1	Kyrgyz Republic	1998		0
Argentina	1967	11	9	Latvia	1999		0
Armenia	2003		0	Lithuania	2001		0
Barbados	1967	0	0	Macedonia (FYROM)	2003		0
Belize	1983	0	0	Malaysia	1957	0	1
Bolivia	1990	0	0	Mauritius	1970	0	0
Botswana	1987	0	0	Mexico	1986	5	10
Brazil	1948	17	21	Moldova	2001		0
Bulgaria	1996		0	Mongolia	1997		0
Cameroon	1963	0	0	Morocco	1987	0	0
Chile	1949	10	9	Namibia	1992	0	0
China	2001		1	Nicaragua	1950	4	1
Colombia	1981	4	3	Nigeria	1960	0	0
Congo, Republic of	1963	0	0	Oman	2000		0
Costa Rica	1990	1	2	Pakistan	1948	1	2
Cote d'Ivoire	1963	1	0	Panama	1997		1
Croatia	2000		0	Papua New Guinea	1994	0	0
Czech Republic	1993	1	1	Paraguay	1994	0	0
Dominica	1993	0	0	Peru	1951	2	2
Dominican Republic	1950	1	0	Philippines	1979	3	4
Ecuador	1996		2	Poland	1967	1	3
Egypt	1970	0	0	Romania	1971	0	0
El Salvador	1991	1	0	St Kitts, Nevis	1994	0	0
Estonia	1999		0	Saint Lucia	1993	0	0
Fiji	1993	0	0	St Vincent, Grenadines	1993	0	0
Gabon	1963	0	0	Slovak Republic	1993	0	0
Georgia	2000		0	South Africa	1948	1	0
Ghana	1957	0	0	Sri Lanka	1948	0	1
Grenada	1994	0	0	Swaziland	1993	0	0
Guatemala	1991	2	3	Thailand	1982	3	10
Guyana	1966	0	0	Trinidad and Tobago	1962	0	0
Honduras	1994	0	3	Tunisia	1990	0	0
Hungary	1973	0	5	Turkey	1951	0	2
India	1948	4	15	Uruguay	1953	2	1
Indonesia	1950	0	2	Venezuela	1990	1	1
Jamaica	1963	0	0	Zimbabwe	1948	1	0
Jordan	2000		0				

Note: The initiations are the total count of GATT and WTO dispute case initiations during the period between 1975 to 2003. The accession year indicates when a country first joined the system. Countries in bold were members of the ACWL by the end of 2003. Note that LDCs are not included in the data. There are a handful of countries that had a short period between the end of GATT and their accession to the WTO. We list their earlier accession date and only omit the observation for the years in which these countries were not members. Czechoslovakia, Cuba, Macao (China), Qatar, and Suriname are omitted due to lack of data.

and experience it obtains through serving as a defendant. In Model 1, we measure previous experience as a complainant by using a moving wall count of initiations in the previous ten years.²⁵ For example, this variable for a country in 1999 would be a count

²⁵Our analysis produces smaller but significant results using a cumulative count variable.

of all initiations by that country from 1989 to 1998.²⁶ In Model 2, we measure previous experience as a

²⁶As with the dependent variable, we count multiple filings of the same case as a single initiation. Our dataset begins in 1975, so we include activity starting in 1965 in the coding of the experience variables. Countries enter the dataset upon GATT/WTO accession with zero experience. The mean of prior initiations is 0.90 with standard deviation 2.29.

defendant by using a count of cases in which a country was a defendant in the previous ten years.

Legal assistance. The Advisory Centre on WTO Law, established in 2001, provides subsidized legal assistance for WTO dispute adjudication to developing country members who pay a small membership fee. We code an indicator variable for membership in the Centre.²⁷ The center represents an institutional solution to the constraints on developing country participation, and we expect ACWL members with access to low-cost information about the dispute process and legal representation will be more likely to file complaints than nonmembers. The selection effect in which states that plan to file WTO disputes are more likely to become ACWL members makes it difficult to assess the independent causal effect of ACWL services to members on their subsequent participation. Nevertheless, it is indicative that the services are valuable because states choose to pay a membership fee. Developing states that had already accumulated substantial experience such as Argentina, Brazil, and Chile chose not to join the center. Countries that were members of the ACWL by the end of 2003 are listed in bold in Table 1.

Democracy. Democratic institutions encourage the government to represent domestic interests and may favor particular forms of dispute settlement such as adjudication. We use the Freedom House measure of civil liberties to measure democracy. Freedom House provides separate measures for civil liberties and political rights each measured on a 7-point scale (although Freedom House reports the score with high values representing less democracy, we have flipped the index so that 7 represents the most democratic states).²⁸ By using the civil liberties score we focus on the legal dimension of democracy since four of the 15 questions comprising the civil liberties rating deal directly with the functioning of the domestic judicial system and the rule of law. We also examine a country's average Freedom House score on civil liberties and political rights and the Polity 2 score from the Polity IV database.

Wealth and market size. Market size (GDP in constant 2000 dollars in purchasing power parity terms) will likely be strongly related to number of initiations. A larger market generates more economic interest in potential trade disputes, provides greater

resources to cover the cost of initiating a case, and increases the capacity to enforce compliance with rulings through retaliation. In order to control for average wealth, we include population in our analysis. We expect that population will have a negative relationship with initiations; holding GDP constant, a higher population means lower average wealth.²⁹ Both variables are from the World Bank's World Development Indicators, and we take the natural log of each.

Exporter trade interests. From a demand-side perspective, one would expect that industries with high-trade stakes are more likely to ask their government to seek remedy through the WTO, so that countries with a larger number of industries engaged in trade would initiate more disputes. In their study of WTO dispute initiation, Horn, Mavroidis, and Nordstrom (1999) contend that export value must attain a minimum threshold necessary to justify a potential WTO case. Following their approach, we create a variable, "trade interest," that counts the number of industries in a given year where exports to a bilateral trading partner exceed \$10 million.³⁰ Because the distribution across country years is highly skewed, we take the natural logarithm of the count. We do not include this measure in our base model because of its high correlation with the log of GDP (corr = .90) and because of limitations on data availability for this indicator (it is only available through 2000 and is missing for some countries). Instead, in Model 5 we estimate a separate model that includes the trade variable and omits GDP. In order to control for the importance of exports to a country's economy, we also include the exports of goods and services as a percent of GDP.³¹

We include three variables related to the composition of a state's trade: share of exports to high income economies, share of agricultural goods in total exports, and concentration of trade. Guzman and Simmons (2005) argue that poorer countries are more likely to target wealthy countries since there are more market gains from a victory if it increases access to a high value market. Others might expect that power concerns would lead states engaged in

²⁷Membership roster listed at http://www.acwl.ch/e/members/members_e.aspx.

²⁸The mean civil liberty score is 4.44 with standard deviation 1.43. Source: Freedom House Country Ratings, 1972–2003, available at www.freedomhouse.org.

²⁹Note that including GDP and population is the same as including GDP and per capita GDP, with the only difference being that the latter approach requires jointly interpreting the two coefficients.

³⁰We also ran the models for a lower threshold of \$5 million and find similar results. Industries are coded at the level of four-digit SITC code. Data are from Robert Feenstra and Robert Lipsey, NBER-United Nations Trade Data, 1962–2000 available online at <http://cid.econ.ucdavis.edu/> (accessed July 2005).

³¹World Bank's World Development Indicators online database (accessed July 2005).

asymmetric trade to be more restrained in dispute initiation because they lack the retaliatory capacity to bring compliance (Bown 2004a). Agricultural issues encounter highly mobilized interest group pressure on both sides and form the largest share of disputes, so countries with more agricultural exports are likely to be more active participants.³² Finally, states with concentrated exports may be more likely to file if one of these items is treated in a manner inconsistent with WTO rules. At the same time, their narrow trade profile means that they are likely to encounter fewer potential disputes. We include a variable to measure concentration that calculates the percent of total exports made up by the top three export industries.³³

Government effectiveness. As a control variable for general government capacity, we used the World Bank's measure of government effectiveness.³⁴ This indicator draws on rankings by country experts and surveys that evaluate the quality of policy formulation and implementation, the civil service and public service delivery. Values range from -2.5 for the least effective governments to 2.5 for the most effective governments. Because data are available biannually starting in 1996, we use this indicator only in Model 3 and Model 6, and we interpolate values for the missing years assuming a linear relationship.

Other control variables. We include an indicator variable for the English language, which takes on the value of 1 if the CIA World Factbook listed English as "widely spoken" in a given country. Greater knowledge of English might facilitate WTO participation. Although not officially required, English language has become the de facto language for conduct of WTO business including dispute settlement.

The change in the rules of the dispute settlement system after establishment of the WTO in 1995 could influence developing country participation. We include an indicator variable for the WTO period.

Results

We use a negative binomial regression to model the count of GATT/WTO cases a country filed in a

given year.³⁵ We compute heteroskedasticity-consistent robust standard errors by clustering on country to account for any potential remaining correlation among repeated observations for the same country after controlling for the key observable economic and political variables.³⁶

The regression results reported in Table 2 strongly confirm our hypothesis about repeat players. For developing countries, prior experience as a complainant (Model 1) or as a defendant (Model 2) significantly increases the probability of initiation. Access to subsidized legal advice and training about WTO dispute settlement further increases participation. For 2001–03, the years in our sample when the ACWL was available, the members of the ACWL were significantly more likely to initiate cases (Model 3). Nevertheless, even controlling for legal assistance, direct experience in adjudication remains important (although not shown here, defendant experience is also positive and significant when controlling for legal assistance).

Alternatively, using an experience measure that adds prior experience as a complainant and defendant in the past 10 years also has a positive, significant effect on the likelihood of initiating (coefficient on the combined experience measure is 0.074; $p < 0.01$). As another robustness check, we conducted the analysis including both the variable for previous experience as a complainant and previous experience as a defendant in the same regression. This yields positive coefficients on both variables which are jointly significant (χ^2 is 24.89 for a p -value of less than 0.001), although the defendant experience does not reach standard significance levels due to high multicollinearity ($\text{corr} = 0.79$). Since our argument suggests defendant experience is one pathway that leads to filing complaints, however, the separate test of complainant and defendant experience in Table 2 is more informative than either the additive or simultaneous measures mentioned here. For reasons of space we do not show these latter models.

Table 3 presents the estimated effect of the experience variable in terms of predicted probability of initiating one or more cases in a given year when

³²About half of all GATT disputes and 45% of all WTO disputes are about agricultural issues (WTO 2007, 272).

³³The trade concentration variable is measured at four digit SITC code level using the Feenstra and Lipsey data. We also considered the potential for fuel exporting states to have special characteristics and ran model 4 including a variable for the percent of fuel resources (SITC 3). While the variable does have a negative effect as expected, we choose not to include it here because of the high correlation with trade concentration; including it has no significant impact on the variables of interest.

³⁴Available at www.worldbank.org/wbi/governance/govdata/

³⁵A likelihood ratio test confirms the presence of overdispersion in the data which makes the negative binomial more appropriate than the Poisson model (see King 1989). For our base model presented below, the test of whether the overdispersion parameter is zero yields a χ^2 statistic of 19.01 with a p -value less than 0.001, leading us to reject the assumption of Poisson models that there is no overdispersion.

³⁶We also found that the results were consistent when using a generalized estimation equation (with robust standard errors) to estimate the negative binomial regression allowing for correlations among repeated observations for each country.

TABLE 2 Regression Models for Developing Country Trade Dispute Initiation.

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Previous Initiations	0.122* (0.041)		0.141* (0.044)	0.174* (0.049)	0.103* (0.036)	
Previous Defendant		0.135* (0.048)				0.130* (0.051)
Legal aid			0.783* (0.287)			
Democracy	0.213* (0.078)	0.252* (0.077)	0.277 (0.146)	0.156 (0.090)	0.249* (0.085)	0.226* (0.114)
Log GDP	0.840* (0.210)	0.924* (0.218)	1.204* (0.514)	0.824* (0.176)		0.519 (0.405)
Log Population	-0.270 (0.155)	-0.301 (0.166)	-0.762 (0.444)	-0.296 (0.163)	0.041 (0.110)	0.065 (0.339)
Trade Interest					0.854* (0.186)	
Export%GDP					-0.016 (0.009)	
Trade Concentration					0.182 (0.898)	
Agriculture Export share					1.703* (0.756)	
HighIncome Export share					1.316 (0.944)	
English	-0.240 (0.306)	-0.160 (0.348)	-0.570 (0.454)	-0.350 (0.228)	-0.278 (0.290)	-0.250 (0.412)
WTOperiod	0.019 (0.235)	-0.026 (0.262)		0.136 (0.224)	0.257 (0.327)	
Government Effectiveness			-0.095 (0.504)			0.297 (0.395)
Defendant in prior year						-0.085 (0.195)
Constant	-19.842* (3.417)	-21.543* (3.353)	-21.466* (6.645)	-18.789* (2.477)	-9.272* (2.084)	-17.344* (5.063)
Dispersion Parameter	0.762 (0.187)	0.698 (0.194)	0.421 (0.223)		0.842 (0.268)	0.512 (0.233)
N	1314	1314	219	1314	1047	557

Note: Models 1–3, and 5–6 use a Negative Binomial Regression specification; Model 4 is based on a Rare Events Logit specification. Models 1, 2 and 4 are for the full period 1975 to 2003. Model 3 is for 2001–03 when the Advisory Centre on WTO Law was available to provide legal aid. Due to limited data on industry level bilateral trade flows, model 5 covers the period from 1975 to 2000. Model 6 is for the WTO period, 1995–2003.

*Significant at the 5 percent level.

holding other variables constant at their mean values.³⁷ Using Model 1, when the number of previous initiations is zero, the probability that a country initiates

³⁷We first simulate model parameters from their sampling distributions and compute the Monte Carlo estimates of predicted probability of one or more GATT/WTO dispute initiations. We repeat this by changing the value of a variable of interest while holding all other variables constant at their means and then calculate the first difference between the two estimates. We used the software Clarify. See Tomz, Wittenberg, and King (2003). CLARIFY: Software for Interpreting and Presenting Statistical Results. Version 2.1. Stanford University, University of Wisconsin, and Harvard University. January 5. Available at <http://gking.harvard.edu/>

at least one case is 0.05. Changing the count of initiations over the previous 10 years from 0 to 1 increases the probability of one or more initiations by 0.006. This represents a 13% increase in the probability that a country will initiate one or more disputes in a given year. Changing the number of prior initiations from 0 to 3 increases the probability of initiating by 0.022, or 44% (the negative binomial model assumes that all coefficients have a multiplicative effect, but we will relax this assumption in the next section). Using Model 2, we see that increasing the count of previous appearances as a defendant from 0

TABLE 3 Predicted Probability of Dispute Initiation for Developing Countries, 1975–2003

Variable	Shift of value	Baseline probability	Change in probability	Percent change
Prior Initiations	From 0 to 1	0.050	0.006 (0.003)	13
Prior Initiations	From 0 to 3	0.050	0.022 (0.011)	44
Prior Defendant	From 0 to 1	0.053	0.008 (0.004)	15
Prior Defendant	From 0 to 3	0.053	0.027 (0.013)	52
ACWL Member	From 0 to 1	0.052	0.058 (0.028)	111

Note: The table shows the predicted probability of initiating one or more disputes in a year when changing the variable indicated in the first column by the level specified in the second column while holding all other variables constant at their mean. Results are based on 1,000 simulations using the parameter estimates from Table 2. The predictions for prior initiations are based on Model 1; the predictions for prior defendant are based on Model 2; the predictions for ACWL membership are based on Model 3. Standard errors are given in parentheses. All predicted changes reported here have a 95 percent confidence interval that does not include zero.

to 1 leads to a 15% increase in the likelihood of filing, while increasing the number of appearances as a defendant from 0 to 3 increases the probability of initiating by 52%. ACWL membership more than doubles the probability of filing.

While the percent increases shown in Table 3 are large, the baseline probability for filing a case remains low. This is because a vast majority of countries in most years do not initiate a dispute. Indeed, 90% of the observations have zero complaints (132 of 1,314 country years have one or more complaint filed). As in studies of war initiation, we are explaining the variation in events that are rare in the observed data. This type of data leads to a tendency to *underestimate* causal effects, which can be addressed through use of rare events logit to correct for the underestimation of event probabilities (King and Zeng 2001).³⁸ Returning to Table 2, in Model 4 we collapse our count variable into a dichotomous dependent variable for whether there were any initiations by a country in a given year and use the rare events logistic regression model. Previous experience remains an important determinant of initiation behavior. This is also true using previous defendant experience in the rare events logit framework (coefficient on previous defendant is 0.231; p -value < 0.01). Another option is to use a zero-inflated count model that specifies a separate process to generate estimates for countries that have no probability of filing (zero initiation).³⁹ One might expect that income constraints would

come in this form as countries at lower income levels lack the resources to consider filing international adjudication. Although we already built this expectation into our analysis by not including the least developed states, we also find an income constraint operates within our sample of non-LDC developing countries. Using a zero-inflated negative binomial regression model with income (log per capita income) as the variable predicting zero initiation shows that income is highly significant to account for nonfiling. The effect of the experience variable in the main count process equation is almost unchanged by the different specification.

Our results show that states with larger economies are more likely to initiate. As expected, the measure of trade interest in Model 5 has a similar positive effect. States with a higher proportion of agricultural goods in their total exports tend to file more complaints. Other economic control variables have weak effects that do not reach standard levels of significance.

It may seem surprising that the increase of legalization in the WTO dispute settlement process indicated by the WTO period variable does not influence the filing behavior of developing countries relative to the GATT period. Nevertheless, this finding is consistent with the literature. Busch and Reinhardt (2003) show that developing country complainants have been no more or less likely to gain positive outcomes from the WTO than under the GATT. Looking at PTA dispute settlement, Kono (2007) finds that PTAs with dispute mechanisms work better to promote liberalization, but that the level of legal formality in the dispute mechanism does not matter.

Our analysis indicates that democracy increases the likelihood for a state to use adjudication. Government effectiveness, however, does not affect the number of cases filed. We find similar results using

³⁸Note that our data is on the borderline of being characterized as “rare events.” Dyadic datasets on the full population of states can produce frequencies with less than 1% of the data having nonzero observations. King and Zeng suggest that having under 5% of the observations as ones would constitute “rare events.”

³⁹See Zorn (1998) for a discussion of the modeling choice and see Sattler and Bernauer (2007) for an application of the zero-inflated count model to WTO dispute analysis.

a measure of bureaucratic quality drawn from the *International Country Risk Guide*. The specialized process of WTO adjudication requires additional skills distinct from those associated with overall good governance. Nor do we find that English language speaking countries hold any advantage.

Tit-for-tat filing? One concern is whether the defendant experience measures a tit-for-tat dynamic in the initiation of WTO disputes. Busch and Reinhardt (2002) suggest there is a pattern of *countersuits*. Tit-for-tat behavior is most likely for frequent users of the dispute system like the United States and EU who can afford to consider initiating an “extra” case as a countersuit, but seems less relevant for the broader membership and developing countries in particular.⁴⁰ Of the WTO disputes initiated through the end of July 2007, the share of each state’s total disputes that could be considered as retaliation against a previous dispute (cases initiated by state A against state B within two years after state B initiated a case against state A) is on average 15% for the full sample of WTO members and only 9% for developing country WTO members. A broader definition of retaliation to include any case filed five years after a dispute would increase the figures to 22% for all members and 16% for developing country members.

We further investigate the possibility of a tit-for-tat dynamic in Model 6 of Table 2, where we recode the dependent variable to exclude those complaints that could be considered country-specific retaliatory litigation (defined as a complaint by country A against country B filed within two years after country B filed against country A). We add an indicator for whether the country was a defendant in any WTO complaint during the previous year, which could instigate a general retaliatory response. The results show that defendant experience increases the likelihood for a state to file a complaint by a mechanism that does not simply reflect counter-suit mentality. It would appear that tit-for-tat disputes are a small factor in developing country engagement with WTO adjudication.

Diminishing returns. Given our hypothesis that experience matters because of a learning effect that reduces start up information costs, we would expect that there are diminishing returns to experience with the DSP, and that the additional value of experience declines with the number of cases filed. Therefore, the parametric assumption imposed by the standard

negative binomial model that all coefficients have a multiplicative effect (or, equivalently, linear in the log of expected values) may not be appropriate. To further examine this question, we relax the parametric assumption and fit the negative binomial Generalized Additive Model (GAM) with log link using the specification of Model 1 in Table 2 except that the effect of previous experience is modeled as an *unknown* smooth function (Hastie and Tibshirani 1990).⁴¹ The main advantage of this semi-parametric specification is that we let the data tell us the exact functional relationship between our key variable of interest and the outcome.

Figure 1 presents the predicted number of events (solid line) based on this model where all the variables except the previous experience variable are held constant at their averages. The dotted lines represent the 95% confidence intervals based on 5,000 bootstrap replications. The figure confirms the expectation that experience has diminishing returns. While the first few initiations have a significant positive effect, after a country has initiated five or six cases within the past decade, the marginal effect becomes quite small for any additional case. As there are few observations with such high numbers of previous initiations, the confidence interval becomes wide to reflect the greater uncertainty of estimation.

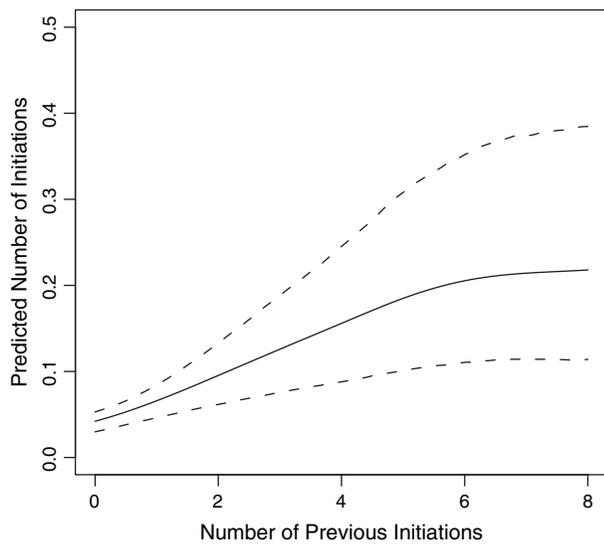
High-income countries. While our focus has been on developing country participation, our argument can also be tested on high income economies. Since wealthier countries have fewer resource constraints, information costs are a smaller barrier. We expect their ability to file to be less reliant on experience than is the case for developing countries. Table 4 shows the same two base models from Table 2 for the 24 high income WTO members for which data on covariates were available (counting the EU as one member).⁴² Prior experience, either through initiation or as a defendant, does not appear to have any significant effect on the likelihood of initiating. Indeed, the coefficients on the experience variables are negative. Overcoming start up information costs is important for developing countries but not for high income countries. This finding is further evidence that our measure of previous complainants is not simply capturing missing variables that influence propensity for initiating cases. Such missing variables

⁴⁰Guzman and Simmons (2005) find no support that retaliatory disputes have a significant effect on defendant selection in WTO disputes.

⁴¹For implementation we use the GAM package in R by Tibshirani.

⁴²There are 543 observations for the period 1975 to 2003. The mean initiations are 0.31, with 1.17 standard deviation.

FIGURE 1 Estimated Marginal Effect of Previous Experience on Number of Initiations:



Notes: The figure is based on the Generalized Additive Model using the specification of Model 1 in Table 2 except that the effect of previous experience is modeled as an unknown smooth function. The solid line represents the point estimates, while the dotted lines indicate the 95 percent confidence interval based on 5,000 bootstrap replications. All the other variables are held at their averages.

would presumably operate across both developing and developed countries.

Conclusion

The multilateral trade system offers the potential to replace power politics with rule of law, but only for those states that know how to enforce their rights. The contrast between a majority of developing countries that seem marginalized in the system and a handful that actively participate led us to examine the conditions that support developing country use of WTO adjudication. We argue that high start up costs make initial use of the system difficult, but these costs decrease with experience. Once a country has made the initial investment it can reap the benefits of lower costs in subsequent cases because there are economies of scale in learning how to effectively use the DSP. Our results strongly support this hypothesis. We have shown that previous experience with trade adjudication, either as a complainant or defendant, is an important predictor of how often a developing country initiates a dispute. Our finding of diminishing re-

TABLE 4 Regression Models for High-Income Country Trade Dispute Initiation

Variables	Model 1	Model 2
Previous Initiations	-0.010 (0.007)	
Previous Defendant		-0.002 (0.006)
Democracy	0.508* (0.199)	0.504* (0.195)
LogGDP	1.429* (0.521)	1.100* (0.436)
Logpopulation	-0.769 (0.513)	-0.479 (0.434)
English	1.315* (0.278)	1.181* (0.235)
WTOperiod	0.550* (0.164)	0.515* (0.144)
Constant	-30.409* (5.052)	-26.439* (4.022)
Dispersion Parameter	0.333 (0.073)	0.357 (0.070)
N	543	543

Note: Negative binomial regression analysis of WTO dispute filing by the 24 high income economies during the period 1975 to 2003. *Significant at the 5 percent level.

turns fits the logic that states face high learning costs at first that are reduced once sufficient investment has been made in early cases. In interviews government officials cite experience as a factor in their decision to file additional cases. Legal assistance from the ACWL plays a complementary role as an external source of experience that increases the use of dispute settlement by its members.

These findings have more general theoretical implications. The pattern of repeat players in WTO adjudication shows that inexperience may be an important capacity constraint on developing country participation in international legal bodies, even when controlling for economic interests. The need to accumulate experience before being able to use an institution may delay the diffusion of benefits. On the one hand, international institutions help states achieve mutual gains from cooperation by the reduction of transaction costs (e.g., Keohane 1984). On the other hand, our argument highlights that the institutional setting may also be associated with start up costs for access that inhibit some countries from fully taking advantage of these benefits. As a consequence, the effectiveness of an institution may vary in ways that are neither a linear function of power nor an automatic result of accession to the institution.

From a policy perspective, our finding regarding previous WTO experience is important because countries can alter their experience level over a fairly short time horizon. Investing in the first case will make subsequent filings easier. Countries can also gain experience by serving as a defendant. However, we are not advocating a policy of targeting developing countries to educate them about trade adjudication! Our results point more generally to the importance of capacity building for developing countries, and specifically to the need for training about the adjudication process. The ACWL represents a unique model of aid to help developing states help themselves by giving them the information and legal representation they need to assert their rights under international rules.

Participation by developing countries is important for the greater effectiveness of the trade system. Complaints that challenge violations of agreements establish the incentives for compliance. To the extent that the United States and EU actively use the dispute system, they are playing the role of trade police. Yet their actions focus on the issues where their own interests are at stake. Hence distributional inequality in the system could arise from differential levels of enforcement. As developing countries gain experience, however, their participation has continued to grow. In the first five years of the WTO, high income members accounted for an average 71% of all complainants in any given year. This figure has fallen to approximately 50% over the years 2000 to 2007.⁴³ This widening use of adjudication by the full range of WTO members promises to generate more comprehensive monitoring of trade agreements.

The role of capacity building to increase participation in the WTO has implications beyond the area of international trade. We would expect that enhanced knowledge by developing countries has the potential to yield greater involvement across international institutions and issue areas. To the extent that each institutional venue has idiosyncratic rules and procedures and each issue area involves a discrete set of actors, the ability of developing states to apply experience gained in one forum to others will be limited. However, where similarities exist states may further capitalize on experience gained through WTO adjudication to become more engaged in other legal fora.

⁴³These figures are the authors' calculation based on a data available at <http://www.worldtradelaw.net> (accessed 24 June 2008).

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