POWER PLAYS & CAPACITY CONSTRAINTS: THE SELECTION OF DEFENDANTS IN WTO DISPUTES

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ABSTRACT

Are smaller members of the World Trade Organization able to use the WTO's dispute settlement mechanism on an equal footing with the more powerful members of the organization? This paper examines the relationship between the wealth and power of states and their ability to participate fully within this system of dispute resolution. Two alternative hypotheses are considered. The "power hypothesis" predicts that politically weak countries will refrain from filing complaints against politically powerful states for fear of costly retaliation. The "capacity hypothesis" predicts the opposite – low income states will tend to complain about behavior by high income states because the latter offer a higher expected return.

Using the set of all WTO disputes we test these two hypotheses and find considerable support for the capacity hypothesis and no support for the power hypothesis. We conclude that poor states behave differently than their rich counterparts because they lack the financial, human, and institutional capital to participate fully in the dispute resolution system.

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Andrew Guzman & Beth Simmons [1]

I. INTRODUCTION

The 1995 birth of the WTO was accompanied by a variety of procedural and substantive changes to the rules of the international trading system. [2] The one aspect of the WTO that has received the most attention is the new Dispute Settlement Understanding (DSU). This unique mechanism for the settlement of disputes established a formal and mandatory set of procedures intended to make the resolution of disputes a matter of law rather than politics. Indeed, in the period immediately following the establishment of the WTO, the DSU was celebrated as a rule of law system that would replace the political and power-based system that had previously existed. [3] It was not long, however, before skeptics emerged, suggesting that the system remained political and that the DSU was little more than a dressing up of the cold, harsh, power politics that had always existed in the trading system. Now, with ten years of DSU practice behind us, we are just starting to understand how the system has actually worked, and we are able to investigate the extent to which it has replaced politics with law.

This paper seeks to contribute to our understanding of the role of the DSU and the role of power within that system. We investigate the litigation patterns of member states in an attempt to understand not only whether richer and more powerful countries enjoy an advantage at the DSU, but also to shed light on the source of that advantage, if it exists.

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[1] We are grateful to Chad Bown, Anne Joseph, Geoff Manne, Joost Pauwelyn, Steven Sugarman, participants at the Conference on International Dispute Resolution at the University of Chicago Law School, the Conference on International Law and International Relations at Vanderbilt Law School, and participants at faculty workshops at Boalt Hall, Chicago Kent Law School, Lewis & Clark Law School, and the University of Illinois College of Law. Andrew Sternlight and Alexander Noonan provided invaluable research assistance.

[2] New agreements on agriculture, health and safety, services, intellectual property and more introduced a blizzard of new rules and obligations for members. The previous GATT rules remained, but were themselves clarified or interpreted through several "understandings" that accompanied the final agreement. And of course the WTO itself was a new institution with new rules and procedures.

[3] See, e.g., Julio Lacarte-Muro & Petinia Gappah, Developing Countries and the WTO Legal and Dispute Settlement System: A View from the Bench, 3 J. Int'l Econ. L. 395, 400-401 (2000) ("This system works to the advantage of all [WTO] Members, but it especially gives security to the weaker Members. . . . In the WTO *right* perseveres over *might*.").

An initial look at the data does not demonstrate any striking evidence that poor countries are second class members when it comes to dispute resolution. Indeed, quite the contrary: even at first glance it is clear that developing countries are active participants in the system.[4] They litigate both as complainants and defendants, win cases at the same rate as developed states, and settle cases at a rate comparable to developed states.

There are two main reasons, however, why a more nuanced study might reveal disadvantages facing poor countries at the DSU. First, they may face capacity constraints that limit the number of cases they are able to pursue. By capacity we mean the resources available to identify, analyze, pursue, and litigate a dispute. Under this "capacity hypothesis," poor countries will file fewer cases because they lack financial, human and institutional resources to do so. Second, states may face political hurdles to bringing cases. Despite the DSU's attempt to take politics out of dispute resolution,[5] politically weak countries may be deterred from filing a dispute for fear of some sort of retaliation by the would-be defendant.[6] Like the capacity hypothesis, the "power hypothesis" predicts that countries will file fewer complaints if they are poor and politically weak than if they are rich and politically powerful.

The problem with testing these hypotheses directly is that we have no theoretically grounded baseline estimates of the number of cases a country is expected to initiate at any given level of income, capacity, or market power. This paper therefore adopts a more indirect approach. Rather than examine the absolute number of cases filed, we consider the kinds of states named as defendants. Studying the selection of defendants sheds light on the forces at work within the DSU. If the DSU is a rule of law system in which power and wealth are irrelevant, we would expect the income of the complainant to tell us nothing about the wealth of the defendant in a case. But if power structures dispute settlement processes, poorer countries should be expected to avoid litigation against more powerful defendants for fear of retaliation. Finally, if capacity constrains use of dispute settlement procedures, weak states will be able to pursue only those cases with big net payoffs and will, therefore, go after the wealthiest defendants. By looking at the choice of defendant, we are able to design a crisp test on the sources of developing countries' disadvantages – if any – in protecting their interests through the WTO's

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[4] Distinguishing developed and developing countries may not be the best way to divide up the data, but it helps to get an initial sense of the data. In the empirical work that follows we rely primarily on GDP rather than development status.

[5] See DSU art 3.10 ("[R]equests for conciliation and the use of the dispute settlement procedures should not be intended or considered as contentious acts and [] if a dispute arises, all Members will engage in these procedures in good faith in an effort to resolve the dispute. It is understood that complaints and counter-complaints in regard to distinct matters should not be linked.").

[6] There is empirical evidence that retaliation takes place. Busch and Reinhardt find that filing a case against a country increases the likelihood that the defendant will file a complaint against the original complainants by 30%.

Dispute Settlement Mechanism. Surprisingly, we find strong evidence that developing countries are constrained by their capacity to launch litigation and no evidence consistent with the power hypothesis.

The paper proceeds as follows. Part II provides a very brief sketch of the DSU, introduces some of the basic data on dispute resolution, and reviews the small empirical literature relevant to our inquiry. Part III presents the theoretical arguments that inform our expectations about dispute initiation. Part IV describes the regressions we run and the predictions made by the capacity and power hypotheses respectively, while Part V presents and discusses our results. Part VI concludes.

II. LAW, POLITICS, AND DISPUTE SETTLEMENT

A. The Working of the DSU

The DSU entered into force with the establishment of the WTO in 1995.[7] It introduced a number of changes to the practices that existed under the pre-WTO General Agreement on Tariffs and Trade (GATT), and these changes are described in great detail in many other places. We, therefore, limit ourselves to a very brief overview sufficient for present purposes.[8]

The key feature of the DSU is that it is an exclusive and mandatory system of dispute resolution. Any WTO member can complain about the conduct of any other member through a formalized process that includes consultations, a panel decision, an appeal, adoption, and implementation. A defendant can neither block the case nor generate endless delays, and the report of the panel or (if there is an appeal) the Appellate Body (AB) is formally adopted by the Dispute Settlement Body shortly after its circulation.[9] The process is mandatory in the sense that once a complainant files a request for consultations, the case proceeds along a specified timeline to its conclusion, and the defendant cannot prevent it from doing so.

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[7] Understanding on Rules and Procedures Governing the Settlement of Disputes, Legal Instruments vol. 31, 33 I.L.M. 112 (1994).

[8] See, e.g., James Cameron & Karen Campbell, Dispute Resolution in the World Trade Organization (Cameron May 1998); Andrew T. Guzman & Beth Simmons, To Settle or Empanel? An Empirical Analysis of Litigation and Settlement at the World Trade Organization, 31 J. Leg. Stud. S205, S206-S208 (2002).

[9] The report is adopted no later than 60 days after its circulation in the case of a panel report, and no later than 30 days after circulation for appellate reports. Strictly speaking, a panel or appellate report is not automatically adopted because the dispute settlement body can decide by consensus not to adopt it. Because the dispute settlement body includes all WTO members, including both parties to the litigation, however, adoption is all but certain.

In addition to its mandatory nature, the DSU is, by its own terms, exclusive. Article 23 of the DSU states explicitly that states shall make use of the DSU to address the nullification and impairment of WTO obligations and shall not make determinations about the WTO-consistency of another state's conduct except through the DSU.[10] Finally, the DSU seeks to remove politics from the dispute resolution process and discourage states from viewing a complaint as a hostile act.[11]

B. Ten Years of Cases

How successful has this system been at removing power relations from the settlement of trade disputes? Looking at the raw data from the dispute settlement system, it is surprisingly difficult to find obvious evidence of power or capacity constraints at work. Developing countries as a group are active participants in the DSU system. Of all the cases filed, 38% have featured a developing country complainant.[12] Nor are developing countries defendants any more often than they are complainants. Table I shows the frequency with which countries are defendants or complainants, with countries categorized by income. The income categories are high income (HI), upper middle income (UMI), lower middle income (LMI), and low income (LI).[13]

[TABLE 1 ABOUT HERE]

Taking into account the share of world trade attributable to each income category does not change the basic point. Scaled for relative trade shares (Table 1, line 3), it appears that developing countries (all categories except the high income category) participate in the DSU system more than we would expect. Even within the set of developing countries, there is no systematic pattern of poorer countries being defendants more than they are complainants or of poorer states litigating less than suggested by their level of trade.[14]

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[10] DSU art. 23. See also United States - Sections 301-310 of the Trade Act of 1974, WT/DS/152, Nov. 25, 1998.

[11] See supra note 5.

[12] Our date on cases filed includes all cases from the inception of the WTO through 2004. See Part IV.

[13] Note that the category of "developed country" is identical to the high income category, so 62% of cases feature a developed complainant and 38% feature a developing complainant.

[14] One striking fact that is not evident from the above chart is that only one least developed country (Bangladesh), as defined by the United Nations, has ever participated in the DSU system as either a complainant or a defendant, and that country did so in only a single case. See India - Anti-Dumping Measure on Batteries from Bangladesh, WT/DS306/1, Jan. 28, 2004. Like the WTO, this paper uses the United Nations list of least developed states. See http://www.un.org/ohrlls/.

From 2001 through 2003, developing countries seemed to increase their rate of filing while the number of cases filed by developed countries continued a decline that started in 1997 (Figure I). In 2004, however, the number of case filed by developed countries increased while those filed by developing countries fell to the lowest level since the establishment of the WTO.

[FIGURES 1 and 2 ABOUT HERE]

At a minimum, the above data make it clear that use of the DSU is not the exclusive domain of the wealthiest complainants. Developing countries turn to this mechanism to protect their interests as well. We cannot conclude from this, however, that the rule of law has erased the advantages of the wealthy. As we will show, the evidence suggests that poor countries have to pick their fights very carefully, and this is reflected in the type of defendants they pursue.

C. Empirical Research

Although empirical work on the WTOs dispute settlement system is at an early stage, there are two prior papers of particular relevance to this project. The best known paper addressing the ability of poor countries to participate in the DSU is by Horn, Mavroidis, and Nordstrom (HMN).[15] In that paper the authors investigate the initiation of WTO disputes and attempt to determine if there is an institutional bias against participation by developing countries.

HMN assume that there exists a particular functional relationship between the diversity of a state's exports and the number of potential WTO cases it faces. They use this assumption to predict the number of disputes a state should face and compare this prediction to the actual number of cases filed by the country. Using data from the first fours years of the DSU, they find that the number of disputes brought by most members falls within a 95% confidence interval around their estimated number. Two aspects of the study make it difficult to evaluate the reliability of their findings. First, for many countries the 95% confidence interval predicting the number of disputes includes zero. This means that the large number of WTO members who have never been complainants are consistent with their prediction, but it is difficult to know if this reflects the fact that diversity of trade is really driving behavior or if some other factors discourage filing by these members.[16] Second, some of the largest users of the system fall outside the relevant

[15] Henrik Horn, Petros Mavroidis & Hakan Nordstrom, Is the Use of the WTO Dispute Settlement System Biased?, Centre for Econ. Policy Research Discussion Paper 2340, 1999.
[16] For example, both the power and capacity models would be consistent with a finding that many countries have never filed a complaint.

HMN confidence intervals, with the U.S., Canada, and India pursuing more complaints than predicted, and Japan pursuing fewer.[17]

HMN also investigate the possibility that capacity constraints limit the ability of some states to file cases. Using GDP per capita as a proxy for capacity, they find that low GDP per capita states bring fewer cases than their model predicts, but find no significant relationship between GDP per capita and the propensity to file a case. Finally, they produce some evidence that states with fewer WTO representatives tend to litigate less, but this result is significant in only one of three specifications they use, and the regressions do not control for other possible factors.[18]

The HMN paper is an important contribution to our understanding of the DSU, especially because it was completed so early in the institution's history. Its main problem, and one the authors recognize, is that we simply do not know what causes states to file cases. Without good data on the set of potential cases it is difficult to measure whether the number of cases a state has actually filed is larger or smaller than the number expected in a system without income bias.

The other paper close to our own is by Chad Bown.[19] Bown evaluates the factors that influence whether a state joins the dispute as a complainant or third party. Though the true focus of Bown's paper is on other questions, his results suggest that capacity and power influence a state's decision to become a third party, but not its decision to become a complainant. In neither case, however, is he testing these hypotheses as directly as we attempt to do.[20]

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[17] These results are found in one of their two specifications, which includes a threshold of $10 million in trade value, below which the cost of pursuing a case will deter filing. In their alternative specification, without any minimum threshold, The US, Canada, and the EC pursue more cases than predicted.

[18] The look only to the number of cases filed, so there is no way to know based on their results if the limited signs of capacity they find are really driven by capacity constraints or are a reflection of power imbalances. This is even true of their results for the number of WTO representatives because this figure is strongly correlated with GDP and GDP per capita. See infra note 63.

[19] See Chad P. Bown, Participation in WTO Dispute Settlement: Complaints, Interested Parties and Free Riders, draft, Sept. 2003.

[20] Busch & Reinhardt present evidence that rich complainants are more likely to extract concessions from defendants than are poor complainants, but that the complainant's income has no impact on the likelihood of winning before a panel. They interpret this as evidence that poor complainants are hampered by a lack of capacity, but only in pre-litigation negotiation. In contrast to Bown, Busch & Reinhardt further claim that a lack of market power with which to threaten a withdrawal of concessions does not appear to play a role. Busch & Reinhardt, Developing Countries and GATT/WTO Dispute Settlement, mimeo, at 3.

III. THEORIES OF POWER, CAPACITY, AND DISPUTE INITIATION

We assume that states pursue litigation at the WTO when doing so offers benefits that outweigh the costs. We identify and isolate two main costs associated with WTO disputes: political costs (relevant to the power hypothesis) and resource costs (relevant to the capacity hypothesis). Political costs include any form of retaliation or sanction that a complainant might suffer in response to its filing a case. Resource costs include the financial, institutional, and human capital costs of a dispute. These costs are more easily borne if the state has greater capacity. Thus, a state files a case at the WTO if and only if:

$$K - P - C > 0$$

where:

K represents the expected gains from filing at the WTO
P represents the political costs of filing
and C represents the resource costs of a dispute

In an attempt to get a better sense of the role of income on DSU use, we look to the mix of complaints filed rather than their absolute number. If income affects the behavior of complainants, we hypothesize that it will also affect the defendants they select when filing a complaint.

The benefits, K, from a case consist primarily of improved access to a country's market.[21] Most typically, a complaint will demand liberalization of a defendant's market[22] or will demand the termination of measures that harm the complainant's producers in some other way.[23] We expect the size of these benefits to depend in significant part on the market size of the defendant because, after controlling for existing trade flows, liberalizing a larger market offers a larger opportunity to domestic exporters. Liberalization of the Canadian market, for example, is likely to offer smaller benefits to, say, the EC, than

[21] In some cases a complainant will seek some goal other than the opening of a market. For example, some cases address an allegation of a WTO-inconsistent subsidy. See, e.g., Australia - Subsidies Provided to Producers and Exporters of Automotive Leather, WT/DS/126. In such cases one would still expect capacity constrained complainants to select high GDP defendants, all else equal, because violative conduct by potential defendants with large economies are more likely to have a large impact on the complainant's economy. Thus, an illegal subsidy by a large country is likely to have a larger impact on sales by local producers than would a similar subsidy by a small country. Similarly, disputes over compliance with the TRIPs agreement, see Brazil - Measures Affecting Patent Protection, WT/DS/199, are of greater importance to a complainant if the defendant has a large market.

[22] For example, a complainant may complain of illegal discrimination in the defendant's market, as was done in Japan – Alcohol.

[23] One example of this sort of case would be a complaint alleging an illegal subsidy, such as that in US – Tax Treatment for Foreign Sales Corporations (FSC), WT/DS/108 (2000). Though it is rare, the complainant may also be protesting measures that harm its consumers. See Japan – Semiconductors.

does liberalization of the American market. Characteristics of the complainant impact the cost side of the litigation decision, and we now turn to consider these.

A. Complainant's Capacity

Consider first the role of a complainant's capacity, by which we mean the institutional, financial, and human resources available to pursue a case.[24] States that commit more people to trade issues, that have more qualified individuals working in the area, that have more mature and sophisticated institutions to handle trade matters, and that have more financial resources to address trade disputes are higher capacity states.

We model capacity costs (C) as a function of the resource costs of monitoring, investigation, negotiating, filing, and litigating a case (Q) and the resources available to the country (R), such that $C = Q/R$. We assume Q to be constant across all disputes.[25] R varies depending on the capacity of the complainant.

The result is that a country with less capacity faces a higher opportunity cost when it files a complaint.[26] When well-trained and capable officials investigate and pursue a complaint, they are taken away from other work. The more limited the capacity of the government, the more difficult it is to find appropriate people to staff a case and to make up for the work that these people would otherwise be doing. A country with larger capacity will have more people with better training dedicated to the pursuit of trade cases or to other closely related responsibilities. Such a country is also likely to have a much larger number of people available to do the work that would otherwise have been done by the individuals charged with pursuing a case. The financial costs are similarly easier to bear for a country with greater resources.[27] However difficult it is for a developed

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[24] Some states may have sufficient capacity to pursue every case for which the benefits outweigh the costs. For our purposes, we need only assume that for many states this is not the case. That is, we assume that a large number of states face a capacity constraint that prevents them from pursuing as many cases as they otherwise would. This capacity constraint may exist for any reason, including limited financial resources, limited human capital, limited institutional capital (e.g., no effective mechanism for private parties to bring a complaint forward), and so on.

[25] A more realistic model might allow Q to vary based on the case or the identity of the defendant. The most obvious example of this would be to have Q increase with the capacity of the defendant on the theory that negotiation and litigation with high capacity defendants requires more resources than the same activity against low capacity defendants. If this is true, however, the net effect would be to further disadvantage low capacity complainants, making the capacity hypothesis stronger than is in the case in our model. The predictions we generate from the model, then, would remain unchanged.

[26] See Christina R. Sevilla, Explaining Patterns of GATT/WTO Trade Complaints, Weatherhead Center for International Affairs, Working Paper No. 98-01 (1998).

[27] There is an obvious relationship between human and financial capital as a state that has financial resources can afford to employ more and more qualified individuals.

country to pay the financial costs of a case, it is surely much harder for a poor, developing country to do so.[28]

The shortage of resources may represent a relevant constraint at every stage. A state with limited resources will invest less in the monitoring of trading rules abroad and the investigation of alleged violations by trading partners. Human capital constraints are likely to be especially serious at the pre-litigation stage, since the legal assistance available through the WTO's Advisory Centre – a legal aid service for member states – is limited to the litigation of cases that have already been identified.[29] But of course if a government cannot identify a violation, they cannot file a case. Similarly, once a violation is identified, pursuing the case through diplomatic efforts and, should those fail, at the WTO, consumes resources.

The growing complexity of trade law under the WTO makes these capacity deficits all the more constraining. The WTO agreements now include not only the GATT, but an array of additional agreements covering a wide range of issues and legal requirements, including new areas such as services and intellectual property.[30] Furthermore, the jurisprudence of the WTO grows with each passing year, making it necessary to read numerous book-length panel and appellate body decisions in order to properly understand the legal context. All of this complexity is compounded by the inevitable layer of procedure that goes with a formal system of dispute resolution.[31]

All else equal, then, a country with less capacity faces larger opportunity costs when it brings a case. It will, therefore, require larger benefits. Thus, low capacity states not only bring fewer cases, but bring cases that, at the margin, offer larger expected benefits. Because the state must be selective, it will pursue only those cases likely to lead to liberalization of a market that offers large gains to domestic exporters. Such cases will disproportionately involve defendants with large markets.[32] Controlling for existing trade

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[28] The cost differences may be even greater because developing countries may need to hire private counsel – generating a direct increase in costs – whereas a developed country may be able to rely on in-house government lawyers.

[29] The Advisory Centre was established in October, 2001. Even within the litigation phase, the ability of the Centre to assist states is limited by its own resource constraints. The presence of the Advisory Centre is likely to reduce the impact of capacity, but we doubt that it is sufficient to eliminate it. In any event, we include a dummy for the presence of the Centre in our regressions.

[30] See Constantine Michalopoulos, Developing Countries in the WTO, 22 World Econ. 117, 126 (1999) ("[J]ust to follow the topics of the various WTO bodies and attend their meetings requires a staff of at least 4-5 people, and the average is increasing . . . . [A] very large number of developing countries did not meet [this standard].").

[31] Concern over capacity issues have been raised by a number of other commentators. See Michalopoulos, supra note 30, at 118; Horn, Mavroidis, and Nordstrom, supra note 15; Bown, supra note 19.

[32] See supra note 21.

patterns, then, capacity constrained states are likely to pursue states with large markets, including the US and EC. What developing countries are forced to give up, this theory suggests, are cases that involve smaller tangible payoffs. Unlike their wealthier counterparts, poorer countries will be unable to pursue cases that offer modest gains, long-term precedential value,[33] or a "get tough" reputation in trade conflicts.

With different assumptions, of course, one can generate a capacity based theory under which developing countries avoid large markets. If, for example, the litigation of a dispute represents the dominant burden on capacity, and if those costs are positively correlated to the wealth of the defendant, low-capacity states may have a reason to avoid complaints targeting high income defendants. Though a model along these lines can be generated, we do not expect it to be borne out in the evidence. For capacity constrained states to avoid high income defendants, the costs of litigation must increase with the wealth of the defendant faster than the expected benefits of access to a larger market. Furthermore, litigation carries with it certain fixed costs (e.g., identifying a violation, initial negotiations, crafting the basic arguments of the case, etc.). Filing against one wealthy defendant rather than, say, two less wealthy defendants avoids the need to bear these fixed costs twice. Low capacity states, therefore, will only be deterred from pursuing wealthy defendants if the additional costs of those cases are sufficiently large to overcome the advantage of having only one set of fixed costs. In addition to our intuition that capacity is unlikely to work in this way, our empirical results are consistent with the capacity hypothesis presented in the body of the paper, and inconsistent with this alternative theory.

There is some support for the capacity hypothesis in the raw data, as shown in Table 2. Notice that of the countries that have complained only once at the WTO – and are therefore the most likely to face capacity issues – all but two brought their case against the US, the EC, or a close neighbor of the complainant.[34] This is consistent with our capacity model, which predicts that states bringing very few cases (i.e., the most capacity constrained among those that have participated as complainants) will tend to pursue the largest targets and those with whom they already have large amounts of trade.

[TABLE 2 ABOUT HERE]

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[33] Strictly speaking WTO decisions do not have precedential value, but as a matter of practice later cases look to earlier cases for guidance in much the same way as they would if those cases represented binding precedent.

[34] The cases which do not appear at first glance to be explained by an attempt to pursue the benefits of a large market or close economic ties are the complaints by Hong Kong and Sri Lanka, respectively. One might categorize the Sri Lanka complaint as being consistent with the capacity hypothesis inasmuch as Brazil represents one of the larger economies in the WTO, though it is admittedly not in the same league as the EC or US.

It is also instructive to look at the statistical evidence on the size of defendants complainants of varying income levels pursue. Figure 3 shows that lower income countries target the larger countries when they initiate cases at the WTO. The small standard deviation shows that they tend not to deviate much from this strategy. These statistics are consistent with a sever capacity limitation: the combination of high average GDP of targets and a low standard deviation suggests the poorest countries marshall their resources and focus their efforts on the biggest traders.

[FIGURE 3 ABOUT HERE]

Finally, one might think that wealthy defendants are less promising targets because they are more likely to win the case. That is, wealthy defendants are able to afford the best possible defense and may, as a result, win cases that a poorer defendant would lose. Once again, this is theoretically possible, but we are skeptical.[35] The vast majority of all cases decided by a panel yield a victory for the complainant. Both developed and developing country complainants win approximately 90% of these cases, and developed and developing countries settle their cases at about the same rates. At any rate, if wealthy defendants are unattractive because they are better litigators, we should see empirical results inconsistent with the predictions of the capacity hypothesis.

B. Power

An alternative determinant of filing patterns flows from the power defendants have to impose costs on complainants. The defendant may consider use of the DSU to be a hostile act and may retaliate through trade, foreign aid, or other areas of international relations. We hypothesize that the political costs of filing, P, are a function of the difference in political power between the complainant and the defendant, meaning that P is a function of the relative power of the parties:

$P = P(p_c - p_d)$, where p_i, $i=\{c, d\}$ represents the political power of country i, measured in absolute terms.

The greater the power differential, the greater is the ability of the more powerful state to impose costs on the less powerful state without concern for counter-retaliation. The

[35] There is empirical evidence that the complainant's income has no effect on the probability that it will win a case that leads to a panel ruling. See Busch & Reinhardt, Developing Countries and GATT/WTO Dispute Settlement, mimeo, at 16.

notion, then, is that less powerful states are reluctant to challenge more powerful states for fear of retaliation or retribution. The risk of retaliation exists in part because a defendant can react to a complaint in many ways that lie outside the WTO process. For example, foreign aid could be reduced, cooperation in other areas could be frustrated, and the general tenor of inter-state relations could be harmed. Even within the trading system there could be retaliation. Legal measures could be put in place that harm the interests of the complaining party, resolution of other trade disagreements may be frustrated, or the defendant can retaliate with a suit of its own.[36] For example, Reinhardt concludes that a complaint increases the probability of a subsequent case being filed by the defendant against the complainant by 55 times.[37] Whatever the form of the retaliation, we expect it to be most pronounced when the defendant is more powerful than the complainant.[38]

To illustrate the power hypothesis, imagine that the EC has put in place an illegal safeguard measure. Two WTO members are affected by this violation: the US and Brazil. Removing the safeguard would generate benefits to both potential complainants.[39] Though the US may face some political cost if it files a complaint, the fact that it is politically powerful gives it a greater ability to resist retaliation or to threaten harm to the EC should the latter retaliate. Brazil, on the other hand, is politically weaker than the EC and could face more severe consequences if it files a complaint. All else equal, we would expect the US to be more likely than Brazil to file a complaint.

Now imagine the same situation, but change the potential defendant from the EC to Argentina, and assume for simplicity that Argentina is comparable to Brazil in terms of political power. The US remains more powerful than Brazil, but does it face a dramatically lower political cost than Brazil if it files? What if the defendant were much

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[36] An example of a retaliatory filing is Brazil's requests for consultation in WT/DS/70 and 71, which complained about Canadian subsidies to its regional aircraft industry. These complaints followed a complaint by Canada, WT/DS/46, made 9 months earlier, alleging illegal subsidization of the Brazilian regional aircraft industry.

[37] Eric Reinhardt, Aggressive Multilateralism: The Determinants of GATT/WTO Dispute Initiation, 1948-1998 (2000). To give one concrete example, in June of 1996, Canada filed a complaint against Brazil, claiming that Brazil's financing program for aircraft amounted to a prohibited export subsidy under the SCM Agreement. In March of 1997, Brazil filed a complaint alleging that Canada's financing of its aircraft industry amounted to an illegal subsidy under the SCM Agreement. See Helena D. Sullivan, Regional Jet Trade Wars: Politics and Compliance in WTO Dispute Resolution, 12 Minn. J. Global Trade 71 (2003).

[38] Hudec points out a further problem for weak countries pursuing strong defendants. "According to conventional wisdom, it is a waste of time and money for developing countries to invoke the WTO's dispute settlement procedures against industrial countries. . . . "retaliation will harm the developing country imposing it far more than it will harm the industrial country it is supposed to punish." Robert E. Hudec, The Adequacy of WTO Dispute Settlement Remedies: A Developing Country Perspective, in Development, Trade, and the WTO: A Handbook (Bernard Hoekman, Aaditya Mattoo, and Philip English, eds 2002).

[39] For simplicity we assume that the benefits are the same to both.

weaker than Brazil – say Belize. Is it still true that Brazil faces political costs of filing that are significantly higher than those of the US?

If the political costs change linearly with the difference in political power, including when the complainant is more powerful than the defendant, there will be no obvious difference in the mix of cases filed based on the power of the complainant. More powerful states will have lower costs with respect to every potential defendant, causing them to file more cases. Because the more powerful state has a low cost of filing relative to the less powerful state, it is more likely to file in every case, regardless of the identity of the potential defendant. So the more powerful state is more likely to file against Belize, just as it is more likely to file against the EC. We would, therefore, observe more cases filed by the powerful state, but the power hypothesis would not predict a different mix of cases without additional assumptions.

This point has important implications for the results of this paper. Although our results fail to support the power hypothesis, we cannot rule out the possibility that power plays an important role in determining the number of cases filed. It may be that a more powerful country, all else equal, files more cases than a less powerful one. To be consistent with our results, however, the impact of power on litigation must only affect the number of cases filed, and not the selection of defendants. What is clear from our results is that there is no evidence to support the view that poor or weak countries are especially reluctant to file against rich or powerful countries for fear of the political consequences.

Our prior is that political power has a more pronounced effect when the complainant is weak relative to the defendant, and has less impact when the complainant is at least as powerful as the defendant. We expect that states are reluctant to file against countries more powerful than themselves, but enjoy only modest cost savings when they file against a less powerful country rather than one whose power is equal to that of the complainant. To capture this intuitively satisfying notion we consider a model in which the impact of power differentials is asymmetric. Specifically, we model the political costs P such that $P = 1/a^{(pc - pd)}$, where P represents the political costs borne by the complainant when it files a request for consultation, pc represents a measure of the political power of the complainant, and pd represents the political power of the defendant. Figure 4 illustrates the relationship we envision between power and the political costs of filing.

[FIGURE 4 ABOUT HERE]

The notion here is that differences in political power matter most when the complainant is weak relative to the defendant because that is when there is the greatest potential for costly retaliation. As the differences in political power shrink, the political costs of bringing a case fall, but do so at a decreasing rate as the difference in power shrinks and as the complainant's power grows larger than the defendant's.

The two competing hypotheses, then, make different predictions about the relationship between the power and income of defendants and complainants. These are summarized as follows:

The Capacity Hypothesis: as a country's income falls, a larger percentage of its complaints will be directed at high income defendants.

The Power Hypothesis: as a country's political power falls, a larger percentage of its complaints will be directed at states with little political power.

To illustrate the working of each hypothesis, imagine the behavior of a state that faces a list of potential defendants. In the tables below, the left hand column represents a set of potential defendants that a state might face. The subsequent columns list the cases that the state will file, depending on the income level of the potential complainant.

All else equal, the capacity hypothesis suggests that a capacity constrained state will only be able to pursue a limited number of cases. The state must prioritize the list of potential defendants and will tend to pursue larger markets rather than smaller markets. Thus a low capacity complainant may only pursue one case, and that case will be against a defendant with a large market. If the complainant had a slightly higher but still below average level of capacity it would pursue some additional cases, prioritizing the defendants with the largest markets. If the complainant had above average capacity levels it would pursue still more states, again preferring to complain against large market states. Finally, a high capacity state might be able to file against all potential defendants.

[FIGURE 5 ABOUT HERE]

The power hypothesis suggests that a politically weak state faces higher costs when it challenges a politically powerful state. So a low power complainant will be reluctant to file against any state with power greater than its own (or, more accurately, will require greater benefits as the power of the defendant increases). It will, therefore, tend to target the weakest of the potential defendants. If the complainant has slightly more power, it will target some larger number of defendants, but will still select weaker rather than stronger states. If the complainant has still more power, the list of defendants grows and, finally, a high power state might pursue every potential defendant.

[FIGURE 6 ABOUT HERE]

IV. EMPIRICAL TESTS

We evaluate these claims about power and capacity using ordinary least squares regressions with robust standard errors. Because of the possibility that observations within country-pairs are not independent, we calculate standard errors based on country-pair clusters.

Our data set consists of all "requests for consultations" filed at the WTO since its inception in 1995 through the end of 2004. This data consists of 324 distinct requests for consultation which include 352 complainant-defendant pairs because some complaints feature more than one complainant.[40] As is done in most work on WTO dispute settlement, when a complaint features multiple complainants, we treat the data as if each complainant has filed a separate case.[41] This is done because each complainant must decide independently whether it wishes to participate in the case and each complainant may settle with the defendant bilaterally.

A. The Dependent Variable

The main dependent variable of interest is the log of the defendant's GDP. This serves as a measure of both the political power and the market size of the defendant.[42]

B. Key Explanatory Variables: Capacity and Power

Our primary empirical challenge is to develop reasonable proxies that can not only capture power and capacity, but also discriminate between them. The key variable in this regard is the log of the complainant's GDP. The size of the economy plausibly measures both the power and capacity of a complainant to defend its trade interests in the WTO, and our two hypotheses have opposing predictions. The power hypothesis views complainant's GDP as an indicator of power, and expects a positive coefficient: the larger the complainant the more it is willing to take on powerful defendants, the smaller the complainant, the more it will be deterred from doing so for fear of retaliation. GDP also reflects aspects of a country's capacity to pursue disputes at the DSU. Larger economies have more human and technical resources with which to pursue a case. If capacity constraints predominate, we should see a significant *negative* coefficient for GDP, as smaller states marshal their resources and pursue primarily large defendants. In this way, GDP provides a fairly crisp test of the two hypotheses considered here.

The log of the complainant's GDP per capita is an alternative measure of both capacity and power. As a measure of power it suffers from the fact that high per capita GDP may be present in a small country with modest political power (e.g., New Zealand), but we expect it nevertheless to be positively correlated with power. It is also a useful measure

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[40] A request for consultations is the first formal step in WTO litigation and the first observable indicator of a dispute. It is roughly analogous to a complaint in a domestic dispute and, indeed, we will at times refer to it as a complaint for convenience. Because we only have economic data on states up through the end of 2002, most of our empirical tests only extend to that date.

[41] See Busch & Reinhardt, Developing Countries, supra note 20; Horn, Nordstrom, and Mavroidis, supra note 15.

[42] Further details regarding the data and its source can be found in the Data Appendix.

of capacity, in particular as a proxy for the human capital of trade officials. Ultimately we view GDP per capita as a less useful proxy for capacity or power than a country's total GDP. We expect both power and capacity to be correlated more closely with absolute measures of the state's resources and influence rather than its per capita wealth. Nevertheless, we use GDP per capita to test the robustness of our GDP results. A positive coefficient supports the power hypothesis, while a negative coefficient provides evidence in favor of the capacity hypothesis.

We include four other variables that serve as proxies for capacity. The first of these is the number of WTO representatives a state has in Geneva. The motivation for this variable is fairly clear. States that have more WTO representatives are devoting more resources (human and financial) to the handling of WTO issues in Geneva and, one assumes, devoting greater resources within their own countries to these issues. The number of WTO representatives is a fairly direct indicator of the resources a country is able and willing to bring to bear on WTO cases. The variable also has the merit of having been used in previous work on the same subject.[43]

Of course, a country's ability to pursue its trade interests is not limited to its staff in Geneva. Especially at the monitoring stage, countries with more extensive official economic contacts will be in a better position to assess trade policies that run counter to WTO rules and national interests. We capture this notion with data on the number of embassies a country maintains overseas. In part, this measures the ability of the government to field skilled diplomats (including economic officers) to gather information on which WTO complaints could plausibly be based.[44] If embassies measure capacity in this way the capacity hypothesis predicts that they should have a negative association with defendants' GDP. If, however, embassy networks are just another measure of a country's global interests and hence its power, the coefficient is expected to be positive.

Our next capacity measure more directly taps the financial capacity of the complainant government. A government pinched for resources is likely to be highly constrained in its programmatic efforts to defend its trade interests as well. Governments with limited financial resources are likely to have scant human and technical resources to devote to WTO litigation. We use the log of the complainant's non-military government expenditure, calculated annually, to test this kind of capacity constraint. Again, the capacity argument anticipates a negative coefficient.

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[43] This variable has previously been used by Bown, supra note 19; Horn, Mavroidis & Nordstrom, supra note 15; and Constantine Michalopoulos, The Developing Countries in the WTO, 22 World Econ. 117 (1999).

[44] Both the WTO representatives and the embassy variables are fixed throughout the period for each country. Though one would ideally like these proxies to adjust each year, we have no reason to think that there have been dramatic changes in either variable over the WTO's ten year history.

Our final measure of capacity looks to the quality of a country's bureaucracy. The bureaucratic quality measure is drawn from the International Country Risk Guide.[45] This indicator measures the extent to which a country's bureaucracy is capable of carrying out a range of administrative tasks on a 1 to 6 scale. The data is collected through surveys of individuals doing business internationally and reflects their *perceptions* of the quality of national bureaucracies. This measure has two weaknesses for our purposes. First, unlike the measure of Geneva staff, this measure is not specific to trade personnel. Second, it is less objective than the indicators of capacity that relate to Geneva staffs and embassy offices. Furthermore, unlike the three measures of capacity discussed above and like GDP per capita, bureaucratic quality is not affected by country size. Nonetheless, a subjective indicator of the general quality of a country's public bureaucracy may be a useful supplement to the more trade-oriented and objective measures discussed above.

Each of these capacity indicators is correlated to some degree, but they each tap into distinct aspects of the constraints developing countries may face. The number of WTO representatives is a direct indicator of staff directly available to pursue WTO issues. The number of embassies is a broader indicator of the informational and diplomatic constraints a government faces. Domestic expenditures reflect the financial resources at the government's disposal, and perhaps most directly the notion of opportunity costs implicit in a tight budget constraint. Bureaucratic quality measures the functioning of government and perhaps the human capital of government officials. Because these are distinct but highly correlated, we chose to test these indicators sequentially rather than simultaneously.

Because none of these measures is a perfect measure of capacity to litigate, we include a behavioral indicator as well. Using a dummy variable, we control for a country's past participation in the DSU process.[46] Participation itself indicates at least a marginal ability to take legal action or to defend against a claim. Moreover, participation – whether as a defendant or a complainant – contributes to capacity by developing experiential human and institutional capital. Those who have participated in DSU proceedings in the past are likely to have learned something from that experience, making it easier to pursue cases in the future. This "past participation" dummy takes on the value of 1 if the complainant has participated in DSU proceedings in the past, as a defendant or a complainant. The capacity argument would be supported by a negative correlation with the defendant's GDP as more experienced governments go after a broader range of defendants.

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[45] For a full discussion of the conceptualization and measurement of the bureaucratic quality measure, see Knack, Stephen, and Philip Keefer. 1995. Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures. *Economics and Politics* 7 (3):207-227.

[46] To have participated in the past it is sufficient to have been either a complainant or defendant in a request for consultations.

Some of the above variables are plausible proxies for power in addition to capacity (GDP, for example). Nevertheless, we include in our regressions the log of the military expenditures of the complainant as a proxy for that state's power. Though military expenditures do not translate perfectly into political power in international relations, we certainly expect the two to be related.

Table 3 summarizes the predictions each hypothesis makes with respect to the above indicators.

[TABLE 3 ABOUT HERE]

C. Controls

In addition to the variables discussed above, we include a number of control variables. The first cluster controls for the dyadic nature of the relationship between the complainant and defendant. There is empirical evidence, for example, suggesting that DSU participation is affected by the value of the complainant's imports from the defendant,[47] so we include the log of this value in our regressions. The relationship between imports and DSU activity is explained with a very particular sort of power argument. The notion is that at the end of the day, the complainant's primary tool to ensure compliance is the threat to impose trade sanctions (to "suspend concessions" in WTO parlance). The more the complainant imports from the defendant, the greater is the potential for sanctions.[48] Thus, the ability of the complainant to impose harm on the defendant through a withdrawal of concessions in the event of non-compliance with a panel or AB ruling influences the decision to pursue a case at the WTO.[49] Although the power hypothesis would predict a negative coefficient on this variable,[50] we treat it as a control variable rather than a variable that yields information about the hypotheses that interest us. We believe the complainant's imports from the defendant are better viewed as a control because the size of the defendant is likely to affect this variable for reasons unrelated to either the capacity or power hypotheses. Simply put, country A may import

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[47] See Chad P. Bown, On the Economic Success of GATT/WTO Dispute Settlement, 86 Rev. Econ. Stat. 811 (2004).

[48] The sanctions permitted under the DSU are limited to an amount "equivalent to the level of the nullification or impairment." See DSU art. 22(4). This might suggest that the threat of sanctions is maximized as long as the sanctions that can be imposed on the complainant's imports from the defendant are larger than the value of the nullification or impairment.

[49] Bown, Participation, supra note 19, at 6.

[50] The power hypothesis predicts a negative coefficient because the ability to withdraw concessions will be more valuable when it can be done without fear of retaliation (i.e., when the defendant is relatively weak). As the value of the complainant's imports from the defendant increases, a complainant has more incentive to seek a defendant against whom this can serve as a credible threat, which means weaker defendants.

a lot from country B because country B is large. This correlation between the defendant's size and the value of its exports will tend to produce a positive coefficient.[51] This should not be taken to contradict the power hypothesis as it probably just reflects the relationship between defendant size and exports.

In prior research, Bown has found that the complainant's exports affect dispute initiation.[52] To address this concern, we include the complainant's exports to the defendant divided by the complainant's total exports as a control variable. The notion here is that a state is more likely to pursue a WTO complaint if the defendant is an important trading partner. If, for example, the majority of Canada's trade is with the United States, Canada is much more likely to pursue a case against the U.S. than against its other trading partners.[53]

We include a dummy that takes on the value of 1 if the defendant has filed against the complainant within the last year. This is done to account for the possibility that some filings are retaliatory in nature, as suggested by Reinhardt.[54] If, in fact, some filings are retaliatory, the power hypothesis predicts that retaliation is less costly when the target is a relatively weak country than when it is a relatively strong one. Thus, the power hypothesis suggests that the retaliation variable should have a negative coefficient – retaliation should be more common when the defendant (against which the complainant is retaliating) is weak. That said, we do not place too much importance on this particular prediction because the threat of retaliation may affect the initial litigation decision of states. That is, a weak country may hesitate to complain against a powerful country because it fears a retaliatory complaint will be filed. If this pattern is common, it could deter enough filings by weak states to prevent the finding of a negative coefficient.

As a final dyadic indicator, we include a dummy that takes on the value of 1 if the parties to a dispute have a preferential trading agreement (PTA) in place to reflect the fact that states in preferential trading agreements may have alternative, non-WTO mechanisms for resolving disputes.

The second cluster of control variables attempts to take into consideration the nature of the case itself. For example, a truly dyadic dispute could differ systematically from those

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[51] And, indeed, that is what we observe in our regressions.
[52] Bown, Participation, supra note 19, at 5.
[53] An alternative specification would consider the dollar value of bilateral exports rather than the share of bilateral exports in total exports. Running the same regressions with this alternative specification did nto affect the results.
[54] Reinhardt, supra note 37.

involving multiple complainants.[55] It is plausible that states will behave differently when they are one of several complainants rather than the only one. Being one of a group may insulate the state from political pressure and may reduce the demands on the state's human and financial resources. For these reasons, we include a dummy variable that takes on the value of 1 when the complainant in the dyad is one of several complainants in the case before the WTO.[56] Similarly, we include a dummy for what we label "bandwagon" cases – those that feature the same defendant and same issue as a previous case, but a different complainant. The idea here is that the second complainant to file on the same issue against the same defendant may enjoy some political cover as a result of being the second to file.[57]

We include a dummy that takes on the value 1 if the case in question is a "re-filed" case, by which we mean there has been an earlier request for consultations between the same

[55] Our data set includes seven requests for consultation in which there are multiple complainants. The following table provides a glimpse at these cases.

Dispute Number	Defendant	Complainants	Dispute Name
DS16	EC	Guatemala, Honduras, Mexico, US	Bananas I
DS27	EC	Ecuador, Guatemala, Honduras, Mexico, US	Bananas II
DS35	Hungary	Argentina, Australia, Canada, New Zealand, Thailand, US	Export Subsidies of Agricultural Products
DS58	US	India, Malaysia, Pakistan, Thailand	Shrimp/Turtle
DS158	EC	Guatemala, Honduras, Mexico, Panama, US	Bananas III
DS217	US	Australia, Brazil, Chile, EC, India, Indoneisia, Japan, Korea, Thailand	Dumping & Offset Subsidy Act (Byrd Amendment)
DS234	US	Mexico, Canada	Dumping & Offset Subsidy Act (Byrd Amendment)

[56] Thus, for example, in WT/DS/35, Hungary -- Export Subsidies in Respect of Agricultural Products, we include a separate observation for each of the complainants (Argentina, Australia, Canada, New Zealand, Thailand, United States), but the dummy variable for multiple complainants is equal to 1 in each observation.

[57] For example, WT/DS/12 and WT/DS/14 are brought by Chile and Peru, respectively. Both identify the EC as the complainant and deal with "Trade Description of Scallops." The relevant dummy is set to 1 for the later complaint, brought by Peru. We include in the definition multiple cases filed on the same day and against the same defendant on the same issue. In those cases, all the dyads are labeled bandwagon cases and the relevant dummy variable is assigned the value of one in each case. For instance, WT/DS/10 and WT/DS11 are brought by Canada and the United States, respectively, on July 17, 1995. Both name Japan as the defendant and deal with taxes on alcoholic beverages.

parties on the same issues (or perhaps a subset thereof) that was not resolved.[58] We assign the value of 1 to the dummy in the re-filed case and not in the original case because it is only in the latter case that one would expect changes in the consequences of a complaint. A re-filing may put fewer pressures on a state's capacity constraint, and it may also feature a different political dynamic because it is, in some sense, a continuation of an earlier dispute.

Cases may also be influenced by the nature of the good or service under dispute. We include additional dummies to control for the particular WTO Agreement or Agreements that have sparked the dispute. In our main regressions we include dummies for the Agriculture Agreement, the Anti-Dumping Agreement, the GATS Agreement, the GATT Agreement, the SPS Agreement, the TRIPs Agreement, and the WTO Agreement. These agreements were chosen because the relative economic size of the parties seemed relevant to the existence of a dispute (e.g., one might expect TRIPs agreement to frequently feature a wealthy country complainant and a poor defendant), they accounted for a large number of disputes (e.g., the GATT Agreement was at issue in 263 of our disputes and the Anti-Dumping Agreement was at issue in 69), or because they were statistically significant in some of our robustness check regressions.[59]

A third set of controls relates to qualities of the individual complainants and defendants that could plausibly affect the decision to initiate a dispute. We account for each country's general trade openness by including the log of the total trade of both the complainant and defendant divided by its respective GDP. There are no clear predictions regarding the coefficients on these variables from either the power or capacity hypotheses, but we include them as controls because the degree of openness in an economy is plausibly relevant to the frequency with which it files a complaint.[60] And to ensure that our results are not driven by the two giants of the WTO, the US and the EC, we include dummies for when each of these countries is the defendant, and for when they litigate one another.

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[58] For example, WT/DS/3, Korea – Measures Concerning the Testing and Inspection of Agricultural Products, was subsequently refilled as WT/DS/41. The dummy variable for the earlier case (WT/DS/3) is set equal to 0, and the dummy for the later case is set equal to 1. This dummy also takes on a value of one when the later case is a follow up to the former and represents an effort to generate compliance. For example, WT/DS/158, EC -- Regime for the Importation, Sale and Distribution of Bananas is a follow up to the earlier Bananas cases (WT/DS/16, WT/DS/27) and the dummy is set to 1 for each of the dyads in the latter case. The precise definition of a re-filed case is, of course, subject to judgments about what counts as the "same issue." In an attempt to make this classification as objective as possible, we looked first to the subject matter of the case to see if this was the same as that in an earlier case, and we then looked to the request for consultations itself to determine if it reflected the same dispute as the earlier case.

[59] Other WTO Agreements were included in our robustness check regressions. See Part VI.

[60] To the extent countries with smaller GDP tend to be more open, the coefficient for the defendant should be negative.

In this third cluster we also include a measure of the complainant's level of democracy. The notion here is that more democratic complainants may be more responsive to interest groups, and may, therefore, pursue different defendants. The data we use is from the Polity IV dataset, and taps the general openness of domestic political institutions. The includes six components: the extent to which a country has institutionalized procedures regarding the transfer of executive power; the extent to which governing executives are chosen through competitive elections; the extent of opportunities for non-elites to attain executive office; the extent of operational (de facto) constraints on the chief executive; the development of institutional structures for civil society's political expression; and the extent to which non-elites are able to access institutional structures for political expression.[61] These characteristics pick up the main components of democratic governance. The scale runs from –10 (highly autocratic) to 10 (highly open and democratic).

Finally, one additional variable is included that does not fall into any of the above clusters. We include a control for the presence of the WTO's Advisory Centre. This takes the form of a dummy variable equal to 1 if the Centre was in existence at the time of the dispute and the complaining state was eligible to use the resources of the Centre.[62] It is equal to zero otherwise. The Centre attempts to address the capacity problems facing poor states, and it is included because it may have affected the ability of developing states to pursue cases.

V. RESULTS

Table 4 presents OLS regression results testing the main hypotheses. The results offer strong support for the capacity hypothesis, and virtually no support for the power hypothesis.

[TABLE 4 ABOUT HERE]

The coefficient on the GDP of the complainant is negative and highly significant (at the 1% level), suggesting that as complainants' per capita income falls they tend to pursue wealthier defendants. This is precisely what the capacity hypothesis predicts – poor states will have limited resources and these resources will be used strategically. Controlling for a variety of relevant factors, poor countries will use the DSU to bring cases against countries that offer larger rather than smaller markets for their products and, therefore, larger expected gains. The power hypothesis predicts just the opposite result,

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[61] See http://www.cidcm.umd.edu/inscr/polity/index.htm#data.
[62] The Advisory Centre was established on October 5, 2001.

of course. So the coefficient on GDP is the first – and probably the most decisive – indicator that the results are driven by the complainants' capacity rather than the fear of retribution.

In five of the six models presented the complainant's GDP is omitted. Our various measures of power and capacity – GDP, WTO representatives, number of embassies, non-military expenditures, military expenditures, bureaucratic quality, and GDP per capita tend to be highly correlated.[63] Each of the capacity variables is used as a proxy for the same basic country characteristic – the resources available for trade issues. We use a variety of measures as a robustness check and, to that end, we include them one at a time in our regressions. We have left GDP per capita in the reported regressions to control for a complainant's developmental level because this measure is likely to be relevant for reasons other than capacity.

In Models II-V we include our other proxies for capacity. In the first three of these models, our capacity measures are strongly negative and significant, indicating that countries with the capacity to do so extend their litigation to include smaller defendants. The number of WTO representatives, the number of embassies and the level of non-military government spending are all negative and significant (at the 1% level) as predicted by the capacity hypothesis. This constitutes reasonably consistent evidence in favor of the capacity hypothesis. Model V, which includes bureaucratic quality as a capacity measure, yields a negative coefficient as predicted by the capacity hypothesis, but the coefficient is not significant. Notice that GDP per capita is negative and significant at the 1% level in this regression. Given the significant correlation between the bureaucratic quality measure and the GDP per capita measure, it is not surprising that only one of them is significant. When the same regression is run without GDP per capita included, bureaucratic quality is negative and significant ant the 1% level. As a result, though this regression does not provide strong evidence for the capacity hypothesis, we do not interpret it as being inconsistent with that hypothesis either.

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[63] The correlation matrix for the various capacity variables is as follows:

	GDP	GDP per Cap.	WTO Reps.	No. Embassy	Non Mil. Exp.	Mil. Exp.	Bureaucratic Quality
GDP	1.00						
GDP per Cap.	.75	1.00					
WTO Reps.	.81	.73	1.00				
No. Embassy	.65	.62	.52	1.00			
Non-Mil. Exp.	.95	.66	.81	.42	1.00		
Mil. Exp.	.93	.70	.65	.81	.78	1.00	
Bureaucratic Quality	.66	.80	.54	.51	.61	.62	1.00

Looking at Models II-IV, notice that when the GDP variable is not included, the GDP per capita variable is significant and negative in two of the regressions. Because we view both GDP and GDP per capita as proxies for capacity, it is not surprising that the exclusion of GDP makes GDP per capita and the other proxies significant in the predicted direction. What is remarkable is that despite the correlation among these variables when GDP per capita is included along with one of these other proxies they are at times *both* significant and behave as the capacity hypothesis predicts.

More support for the capacity hypothesis can be found in the strong negative relationship between past participation and the GDP of the target. The data indicate that states that have been party to one or more WTO cases and that, therefore, are likely to have greater familiarity with the system, tend to complain against less wealthy defendants. This suggests that lower capacity (in this case, less experienced) states select wealthier defendants. Once again, the power hypothesis would have led us to expect the opposite, at least to the extent that participation in WTO cases is a reasonable proxy for political power.

In Model VI we include military expenditures as a power variable. To the extent this variable is correlated with the wealth of the country (which it is, see note 63), it could also be seen as a rough proxy for capacity. The relevant coefficient is negative and highly significant. This contradicts the power hypothesis and supports the capacity hypothesis.

Interestingly, the dummy for the Advisory Centre is not significant in any of our regressions. Coupled with the strong evidence of the capacity hypothesis, it is tempting to interpret this result as casting some doubt on the success of the Centre in relieving the burden on the capacity of poor states. This is not necessarily correct, however. If the Centre has increased the ability of poor states to litigate, it may have both caused some states to pursue defendants with lower GDP and prompted some states, that would otherwise have been unable to do so, to file a complaint. That is, the Centre may bring resource poor states into our dataset by allowing them to pursue high GDP defendants. This would tend to reduce the size of the coefficient. At the same time, the Centre may allow states that would file against a large defendant regardless to also file against smaller defendants with lower GDP. This would tend to increase the size of the coefficient. Both of these results would represent success for the Centre, and the net effect on the coefficient on our dummy variable is ambiguous.

VI. ROBUSTNESS

To check the robustness of our results, we ran a number of variations on the specifications presented in Table 4. This section provides a summary of these robustness checks, some of which have already been mentioned. Our robustness checks are not reported because none of they all yield results consistent with presented results.

First, we changed the combinations of explanatory variables. For example, we ran the regressions with the complainant's GDP per capita omitted, the net effect of which was to

increase the magnitude of the other capacity measures. We also ran versions of Models II-V with GDP included. These yielded highly significant negative coefficients on GDP, much like in Model I, and coefficients on the other capacity proxies (WTO representatives, embassies, and non-military spending) that were of the same sign in the reported regressions but not significant. We interpret this as evidence that the GDP proxy swamps these other proxies when they are combined.

We experimented with various combinations of country dummies included and excluded. Omitting the US and EC dummies did not alter our basic results. We also included the five most frequent complainant states: India, Brazil, Canada, United States, and EC without affecting the results.

To guard against the possibility that the results are driven by some sort of change over time, we included a time trend as well as year dummies, without significant changes to our results. Neither the time trend nor any of the year dummies were significant in any of our regressions.

We included the log of the value of the complainant's exports to the defendant in place of the complainants exports to the defendant divided by total complainant exports. This was done because it is plausible that the decision to litigate is triggered more by the absolute value of exports to a country than by the share of those exports to total exports.

The reported results include robust standard errors with standard errors clustered in country pairs. We ran the same regressions without clustering, and the results were similar to those reported.

To ensure that individual WTO Agreements were not driving the results, we included all agreements at issue in more than 20 disputes. These additional dummies were almost never significant in our regressions and all of the regressions that included these dummies generated results similar to those reported.

One final question relates to the issue of selection bias. Clearly, countries have self-selected when they decide to complain against the trade policies of others; we are under no illusions that complainants in the WTO system are randomly selected. Is the problem of selection bias important, and is it likely to affect the claims we are making in this paper? Though we cannot rule out such an effect, we think it is unlikely to be present.

Notice that to undermine our results any selection effect must be very specific. It would have to lead to a set of filed cases in which low capacity states tend to pursue high GDP defendants. So it would have to be a tendency for low capacity states to settle their cases prior to the litigation phase at a disproportionate rate when the would-be defendant is a low GDP state; and it would require that no similar effect is present with high GDP states. Thus, for example, if low capacity states simply file fewer cases, without regard for who the defendant would be, our results remain reliable. This is possible, but we are unable to imagine a plausible reason why disputes would behave in this way.

Because we observe the pattern of disputes conditional on the complainant initiating a case at the WTO, there are some claims that we are unable to make. In particular, we have not shown that a deficit in legal capacity explains the general reluctance of some countries to launch cases in the first place. It is possible, for example, that power plays a large role in determining which cases are brought. It may be that politically weak states simply bring fewer cases, reducing the total number of cases brought by weak states without altering the mix of defendants. To the extent power is having this effect, our results indicate that the reluctance to litigate applies to all potential defendants, and not simply the most powerful.

VII. IMPLICATIONS & CONCLUSION

Has the WTO succeeded in replacing politics with law in the settlement of international trade disputes? A look at the number of cases initiated and eventually won by developing countries seems to suggest that they suffer no great disadvantage, and that in fact they have equal access to trade justice under the enhanced dispute settlement mechanisms in place since 1995.

We have argued, however, that the number of cases launched is hardly proof that developing countries are equally able to defend their interests through legal forms of dispute settlement. In the absence of a clear sense of how many cases developing countries "ought to" have initiated, we really do not know whether these filed cases represent equal access or not.

The evidence presented here indicates, however, that developing countries are using the DSU in a way that reflects their current incapacity to launch effective legal cases against potential trade law violators. Much of the difficulty, we have argued, is in the pre-complaint phase where a lack of human and technical resources reduces the ability to detect and develop a credible complaint. The capacity constraint is evident in the indirect evidence of highly constrained choice of defendants. Where the ability to effectively detect and prosecute violators is low, governments will pursue only the largest cases involving the most lucrative markets. Surprisingly, limitations on a government's capacity to litigate seem to be more important than the fear of political or economic retribution. Controlling for many alternative explanations, poorer complainants have tended to focus on the big targets, a strategy that is consistent with a tight capacity constraint rather than the fear of retaliation.

The capacity hypothesis is supported by a range of indicators, none of which we would say is perfect, but which taken together present a fairly coherent picture of complainants' strategy. Whether measured by GDP, GDP per capita, specific WTO staff resources, general diplomatic resources, domestic financial resources, or past participation in WTO disputes, we found that meager means produces highly targeted complaints aimed at the largest markets.

In some sense, our results are encouraging for developing countries. After all, they show that they are going after the targets that matter most for their immediate trade interests.

Some might even interpret our results as evidence that the weaker countries are in fact free-riding on the broad trade law enforcement efforts of the wealthier governments. By this interpretation, the wealthiest governments may be supporting the public good of enforcing trade liberalization against a broad range of potential violators, even if the size of the market to which they seek access in a particular case is not especially large. Moreover, because accessing smaller countries is not worth the costs to any but the highest capacity complainants, our results suggest the former benefit as potential defendants by the capacity constraints of other developing countries.

These conclusions may be tempting, but capacity constraints also imply the inability to achieve longer-term goals by making it difficult to pursue cases for their value as a precedent or their value in reputation building. Our findings suggest that these constraints relegate developing countries to tactical rather than strategic players in the international trade regime. Their necessary obsession with immediate net gains means they will likely be regime takers rather than regime makers for the foreseeable future. Of course, this state of affairs could eventually reinforce the perception of the WTO as a biased and ultimately illegitimate institution.

If our results unveil new evidence of inequality between small players and major powers at the WTO, the good news is that the main problem does not appear to be the threat of coercive tactics by the powerful. If the problem is a deficit in the ability to initiate legal action, there are measures the international community can take to address this situation. The Doha Round of WTO talks have been labeled the "Development Round." If this is to represent more than simply good marketing, WTO members might usefully turn their attention to matters of development with greater commitment than we have seen in the past. With respect to dispute resolution, this means giving developing countries the best possible access to the DSU, to include assistance in the pre-complaint phase. We view the WTO's Advisory Centre as a positive step, and acknowledge that the ability to use private counsel in WTO proceedings, established in the EC – Bananas case, is crucial.[64] Increased funding and support for the Advisory Centre as well as continued efforts to train government officials from all countries in WTO law would further assist developing countries.

With respect to the latter issue – pre-litigation capacity issues – solutions are more difficult to identify. Certainly the training of officials in relevant law and the greatest possible transparency in import measures are helpful but seem unlikely to be sufficient to give developing countries the maximum benefit of the DSU. Increased assistance (both financial and technical) to developing countries is needed. The WTO itself, though it has

[64] European Communities--Regime for the Importation, Sale and Distribution of Bananas, WTO Doc. WT/DS27/AB/R, paras. 5-10 (adopted Sept. 25, 1997).

understandably been reluctant to act as a development organization, could provide expertise akin to the Advisory Centre, intended to assist countries in establishing appropriate monitoring schemes and evaluating potentially violative foreign practices. Developing countries themselves may be able to make some progress by pooling resources in the monitoring of trade practices, especially by countries with similar export portfolios.

Before jumping to conclusions about appropriate policy remedies, however, further research is needed to confirm and understand the extent of the capacity constraint examined here. We would welcome more diverse measures of a state's capacity to use the DSU such as the size and budget of the trade ministry, as well as indicators of the quality of personnel (type and quality of training). Case studies on how highly constrained complainants actually select their defendants would provide interesting contextual evidence. Testing for the effect of alliances (security dependence) and aid or special trade preferences (developmental dependence) would be a good way to further explore the possibility for power to influence the selection of defendants. At this early stage in the research program, however, it would appear essential to take seriously the idea that limitations on the ability to pursue a case, rather than the fear of retaliation, is a major reason for the litigation patterns we see.

TABLE 1: DSU PARTICIPATION BY INCOME LEVEL♣

	HI	UMI	LMI	LI	Total
Cases as Complainant	217 (61.7%)	66 (18.8%)	44 (12.5%)	25 (7.1%)	352 (100%)
Cases as Defendant	222 (63.1%)	73 (20.7%)	36 (10.2%)	21 (6.0%)	352 (100%)
Percentage of World Trade♠ (1999)	78.7%	6.8%	12.1%	2.3%	100%

♣Income categories are based on per capita incomes and correspond to the World Bank's income categories, which are: low income (LI), $735 or less; lower middle income (LMI), $736 - $2,935; upper middle income (UMI), $2,936 - $9,075; and high income (HI), $9,076 or more. See http://www.worldbank.org/data/countryclass/countryclass.html).

♠This data treats the EC member states as a single country in calculating shares of world trade. The year 1999 is chosen because it falls in the middle of the data set.

FIGURE 1: CASES FILED BY DEVELOPMENT STATUS BY YEAR

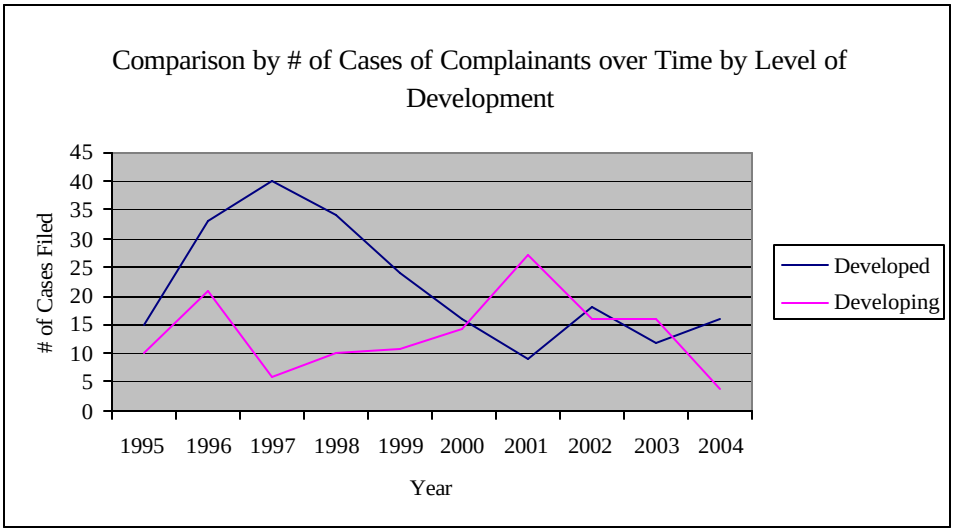

FIGURE 2: CASES FILED BY INCOME CATEGORY BY YEAR

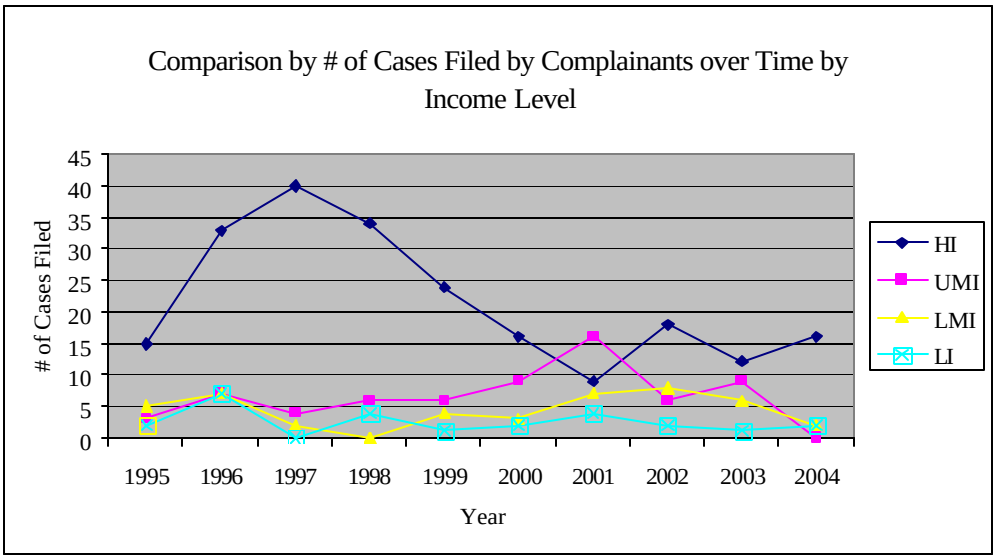

TABLE 2: INFREQUENT FILERS

Countries That Have Filed a Single Case	
Complainant	Defendant
Antigua & Barbuda	US
Bangladesh	India
China	US
Czech Republic	Hungary
Hong Kong	Turkey
Malaysia	US
Nicaragua	Mexico
Norway	US
Singapore	Malaysia
Sri Lanka	Brazil
Uruguay	EC
Venezuela	US

FIGURE 3: STANDARD DEVIATION AND AVERAGE GDP OF DEFENDANTS, BY INCOME CATEGORY OF COMPLAINANT

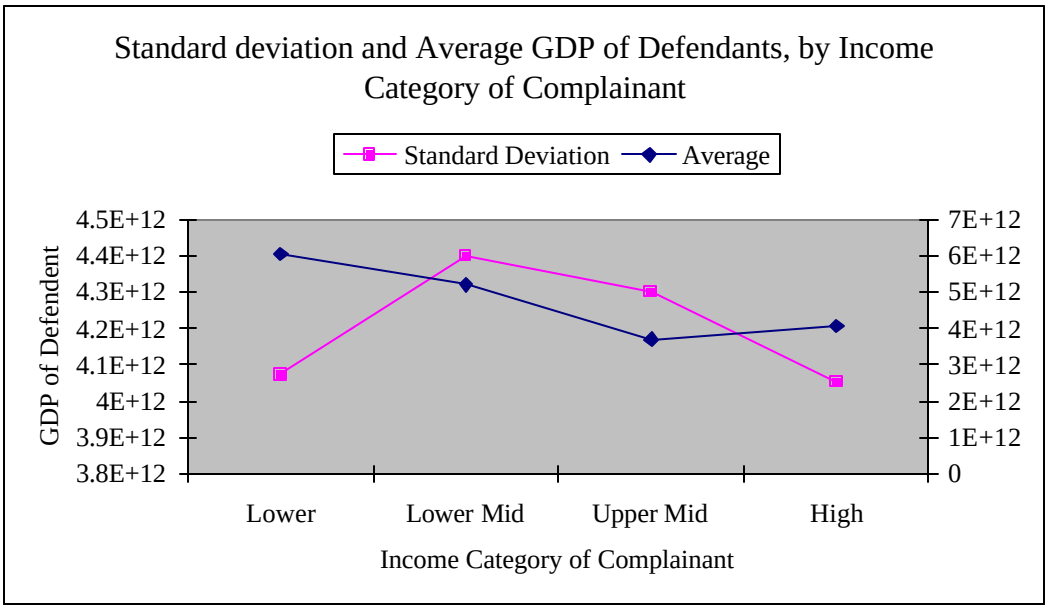

FIGURE 4: POLITICAL COST OF FILING

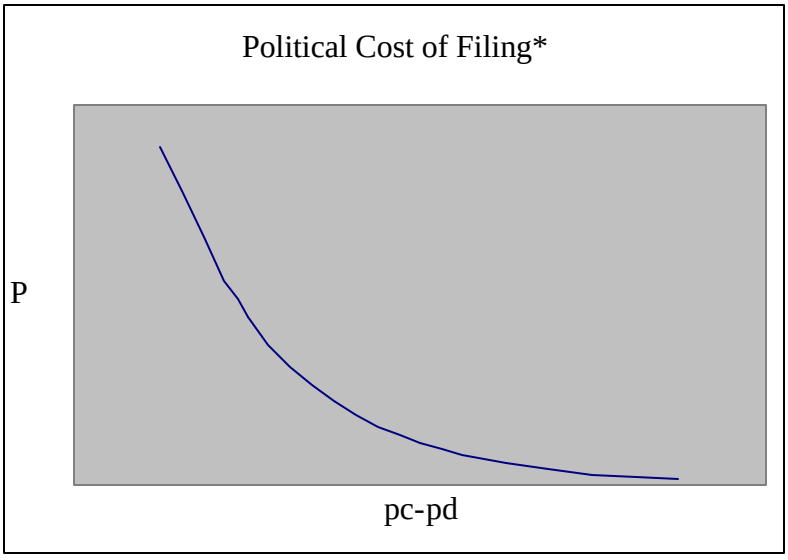

FIGURE 5: ILLUSTRATING THE CAPACITY HYPOTHESIS

Potential Defendants	Low Capacity Complainant Cases	Below Average Capacity Complainant Cases	Above Average Capacity Complainant Cases	High Capacity Complainant Cases
US	US	US	US	US
Japan		Japan	Japan	Japan
Brazil		Brazil	Brazil	Brazil
South Africa			South Africa	South Africa
Turkey			Turkey	Turkey
Egypt				Egypt
Costa Rica				Costa Rica
Pakistan				Pakistan

FIGURE 6: ILLUSTRATING THE POWER HYPOTHESIS

Potential Defendants	Low Power Complainant Cases	Below Average Complainant Power Cases	Above Average Complainant Power Cases	High Power Complainant Cases
US				US
Japan				Japan
Brazil			Brazil	Brazil
South Africa			South Africa	South Africa
Turkey		Turkey	Turkey	Turkey
Egypt		Egypt	Egypt	Egypt
Costa Rica	Costa Rica	Costa Rica	Costa Rica	Costa Rica
Pakistan	Pakistan	Pakistan	Pakistan	Pakistan

TABLE 3: PREDICTION OF THE HYPOTHESES

Variable	Predicted Effect	
	Power	Capacity
C GDP	+	-
C GDP per capita	+	-
C WTO Reps.		-
C # Embassies	+	-
C Non-Military Exp.		-
C Military Exp.	+	
Bureaucratic Quality		-
Past Particip. by C		-

TABLE 4: THE DETERMINANTS OF DEFENDANT SELECTION

Dependent variable: Defendant's GDP

Explanatory Variables	Model I	Model II	Model III	Model IV	Model V	Model VI
C GDP	-.424***					
C GDP/capita		-.076	-.196***	-.069	-.182***	-.109**
C WTO Reps		-.077***				
C Embassies			-.011***			
C Non-Mil.Exp.				-.348***		
Bureauc. Qual.					-.137	
C Mil. Exp.						-.376***
Past Partic. by C	-.293*	-.416***	-.475***	-.283*	-.464***	-.324**
Dyadic Controls						
C Imports from D	.632***	.516***	.512***	.605***	.458***	.640***
C Exp. to D over C total Exp.	-.490	-.295	-.258	-.429	-.375	-.565
Retaliation	.096	.136	.081	.144	.107	.097
PTA	-.905***	-.818**	-.474	-.898***	-.526	-.895***
Case Controls						
Multiple Complainants	.279**	.208	.273*	.121	.244	.208*
Bandwagon	.057	.062	.120	.129	.112	.146
Repeat Filing	-.355**	-.403**	-.305*	-.411***	-.419**	-.409***
Anti-dumping	-.223	-.156	-.234	-.166	-.254	-.227
Agriculture	.021	.064	.100	.011	.114	.004
GATS	.397**	.705***	.475**	.493***	.564**	.346**
GATT	-.236*	-.179	-.212	-.314**	-.177	-.296**
SPS	.331**	.321**	.441***	.326***	.363***	.319**
TRIPs	-.242*	-.344*	-.193	-.304*	-.348*	-.201
WTO	.318**	.244	.248	.317**	.264	.300**
Controls for C & D						
C imports + exports over C GDP	-.555**	-.098	-.538*	-.364*	.113	-.551**
D imports + exports over D GDP	-2.049***	-2.118***	-1.900***	-1.897***	-2.108***	-1.731***
C Polity	-.039**	-.032*	-.006	-.004	.006	-.015
EC Defendant	1.859***	2.334***	2.387***	1.852***	2.524***	1.720***
US Defendant	1.442***	1.982***	1.820***	1.542***	2.126***	1.374***
EC v US	-.688***	-1.127***	-1.020***	-.736***	-1.166***	-.572**
Advisory Centre						
Advisory Centre	.053	.057	.022	.063	.000	.007
Observations	303	303	303	285	296	289
R^2	.91	.90	.90	.91	.89	.91

*** statistically significant at the 1% level

** statistically significant at the 5% level

* statistically significant at the 10% level.

COUNTRY CLASSIFICATION APPENDIXES

COUNTRY CLASSIFICATION: DEVELOPED V. DEVELOPING[65]

Developing Countries	Developed Countries
Antigua & Barbuda	Australia
Argentina	Belgium
Bangladesh	Canada
Brazil	Chinese Taipei
Chile	Denmark
China	EC
Colombia	France
Costa Rica	Greece
Croatia	Hong Kong
Czech Republic	Ireland
Dominican Republic	Japan
Ecuador	Korea
Egypt	Netherlands
Guatemala	New Zealand
Honduras	Norway
Hungary	Portugal
India	Singapore
Indonesia	Sweden
Malaysia	Switzerland
Mexico	UK
Nicaragua	US
Pakistan	
Panama	
Peru	
Philippines	
Poland	
Romania	
Slovak Republic	
South Africa	
Sri Lanka	
Thailand	

[65] We define a developed country to be a country that is in the World Bank's "high income" category. All other states are defined as "developing." The World Bank classification is available in excel format at http://www.worldbank.org/data/databytopic/CLASS.XLS.

Trinidad & Tobago Turkey Uruguay Venezuela	

COUNTRY CLASSIFICATION: HIGH, UPPER MIDDLE, LOWER MIDDLE, AND LOW INCOME[66]

HIGH	UPPER MIDDLE	LOWER MIDDLE	LOW
Australia	Antigua & Barbuda	Brazil	Bangladesh*
Belgium	Argentina	China	India
Canada	Chile	Columbia	Nicaragua
Chinese Taipei	Costa Rica	Dominican Republic	Pakistan
Denmark	Croatia	Ecuador	
EC	Czech Republic	Egypt	
France	Hungary	Guatemala	
Greece	Malaysia	Honduras	
Hong Kong	Mexico	Indonesia[67]	
Ireland	Panama	Peru	
Japan	Poland	Philippines	
Korea	Slovak Republic	Romania	
Netherlands	Trinidad & Tobago	South Africa	
New Zealand	Uruguay	Sri Lanka	
Norway	Venezuela	Thailand	
Portugal		Turkey	
Singapore			
Sweden			
Switzerland			
UK			
US			

* Bangladesh is the only LDC to have participated in DSU proceedings. It filed a complaint against India in February 2004, India -- Anti-dumping measure on batteries from Bangladesh.

[66] These are World Bank classifications as of July 2004, taken from the World Bank website and available at http://www.worldbank.org/data/databytopic/CLASS.XLS.

[67] Indonesia is classified as lower middle income from 1995-1997 and LI from 1998-2002.

LDCs[68]

Afghanistan	Madagascar
Angola	Malawi
Bangladesh	Maldives
Benin	Mali
Bhutan	Mauritania
Burkina Faso	Mozambique
Burundi	Myanmar
Cambodia	Nepal
Cape Verde	Niger
Central African Republic	Rwanda
Chad	Samoa
Comoros	Sao Tome and Principe
Democratic Republic of Congo	Senegal
Djibouti	Sierra Leone
Equatorial Guinea	Solomon Islands
Eritrea	Somalia
Ethiopia	Sudan
Gambia	Timor-Leste
Guinea	Togo
Guinea-Bissau	Tuvalu
Haiti	Uganda
Kiribati	United Republic of Tanzania
Lao People's Dem. Rep.	Vanuatu
Lesotho	Yemen
Liberia	Zambia

To qualify as an LDC a country must have a gross domestic product of less than $1035 (a country is added to the list if its GDP is below $900 and graduates from the list is GDP exceeds $1035 per capita) and meets certain other quality of life indicators. See http://www.un.org/special-rep/ohrlls/ldc/ldc%20criteria.htm.[69]

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[68] This list is taken from the United Nations list. http://www.un.org/special-rep/ohrlls/ldc/list.htm. It reflects the list of LDCs as of December 2003.

[69] The UN website offers the following explanation of their criteria: a low-income criterion, based on a three-year average estimate of the gross domestic product per capita (under $900 for inclusion, above $1,035 for graduation); a human resource weakness criterion, involving a composite Augmented Physical Quality of Life Index (APQLI) based on indicators of: (a) nutrition; (b) health; (c) education; and (d) adult literacy; and an economic vulnerability criterion, involving a composite Economic Vulnerability Index (EVI) based on indicators of: (a) the instability of agricultural production; (b) the instability of exports of goods and services; (c) the economic importance of non-traditional activities (share of manufacturing and

DATA APPENDIX

A. COUNTRY INCOME & DEVELOPMENT CLASSIFICATIONS

Income Level Classification
Economies are classified according to 2002 GNI per capita, calculated using the World Bank Atlas Method. The groups are: Low Income (LI), $735 or less; Lower Middle Income (LMI), $736 - $2,935; Upper Middle Income (UMI), $2,936 - $9,075; and High Income (HI), $9,076 or more. Data are from the World Bank's Data & Statistics webpage at http://www.worldbank.org/data/countryclass/classgroups.htm.

Development Status Classification
A country is classified as "Developed" if it is categorized as High Income by the World Bank classification (see entry above). A country is classified as "Developing" if it is categorized as one of the other three income classifications: Upper Middle Income, Lower Middle Income, or Low Income. The development status dummy variable takes on the value of 1 if the country is "Developed" and the value of 0 is it is "Developing."

Least-Developed Country Classification
We use the same categorization of least-developed country (LDC) as the WTO, which recognizes as LDCs those countries which have been designated as such by the United Nations. There are currently 50 least-developed countries on the UN list, 31 of which have become WTO members to date: Angola, Bangladesh, Benin, Burkina Faso, Burundi, Central African Republic, Chad, Democratic Republic of the Congo, Djibouti, Gambia, Guinea, Guinea Bissau, Haiti, Lesotho, Madagascar, Malawi, Maldives, Mali, Mauritania, Mozambique, Myanmar, Nepal, Niger, Rwanda, Senegal, Sierra Leone, Solomon Islands, Tanzania, Togo, Uganda, Zambia. Nine additional least-developed countries are in the process of accession to the WTO: Bhutan, Cambodia, Cape Verde, Laos, Nepal, Samoa, Sudan, Vanuatu and Yemen. Furthermore, Equatorial Guinea, Ethiopia and Sao Tome & Principe are WTO Observers. Data are from the WTO website at http://www.wto.org/english/thewto_e/whatis_e/tif_e/org7_e.htm.

B. DEPENDENT VARIABLE

Log of Defendant's GDP

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modern services in GDP); (d) merchandise export concentration; and (e) the handicap of economic smallness (as measured through the population in logarithm). In the 2000 review of the list, a country qualified to be added to the list if it met the above three criteria and did not have a population greater than 75 million. Application of this rule resulted in the admission of Senegal.

The log of the defendant's 1995 GDP in constant 1995 U.S. dollars. Gross domestic product (GDP) data were accessed on the World Bank's World Development Indicators (WDI) online database on June 10, 2004 at http://devdata.worldbank.org/dataonline.

C. EXPLANATORY VARIABLES

Log of Complainant's GDP
The log of the complainant's 1995 GDP in constant 1995 U.S. dollars. Gross domestic product (GDP) data were accessed on the World Bank's World Development Indicators (WDI) online database on June 10, 2004 at http://devdata.worldbank.org/dataonline.

Log of Complainant's GDP per capita
The log of the complainant's 1995 per capita GDP in constant 1995 U.S. dollars. Per capita gross domestic product (GDP) data were accessed on the World Bank's World Development Indicators (WDI) online database on June 10, 2004 at http://devdata.worldbank.org/dataonline.

Number of Complainant's Representatives to the WTO
Data were taken from Rhian Wood's 15.08-15:00 working draft of "Liaison Officers and Representatives to WTO." This variable has previously been used by Chad P. Bown, "Participation in WTO Dispute Settlement: Complaints, Interested Parties and Free Riders," draft, Sept. 2003; Henrik Horn, Petros Mavroidis & Hakan Nordstrom, "Is the Use of the WTO Dispute Settlement System Biased?," Centre for Econ. Policy Research, Discussion Paper 2340, 1999; and Constantine Michalopoulos, "The Developing Countries in the WTO," 22 World Econ. 117 (1999). The WTO representatives from each country were tallied, but personal secretaries to the WTO representatives were not counted. The number of WTO representatives from a given country is fixed throughout the ten-year period as we have no reason to believe that there have been dramatic changes in the variable over the WTO's history.

Number of embassies worldwide
The total number of embassies worldwide maintained by each country in mid-2000. Data were accessed on June 10, 2004 at the Tagish Diplomatic Directory: http://www2.tagish.co.uk/Links/embassy1b.nsf/. Because no listings for the European Communities are included in this dataset, we averaged the number of worldwide embassies of the EC's member states to obtain a reasonable estimate of the EC's worldwide diplomatic force.

Log of Non-Military Government Expenditure over GDP
Log of Non-Military Government Expenditure/GDP was calculated by subtracting military expenditure (as a percentage of GDP) from total government expenditure (as a percentage of GDP), then multiplying by GDP, dividing by 100, and taking the log. Data for government expenditure (as a percentage of GDP) and military expenditure (as a percentage of GDP) were accessed on the World Bank's World Development Indicators online database on June 11, 2004 at http://devdata.worldbank.org/dataonline.

Bureaucratic Quality
Data are spread on a one to six scale and measure the extent to which a country's bureaucracy is capable of carrying out a range of administrative tasks. The bureaucratic quality measurements for a given country is fixed throughout the ten-year period as we have no reason to believe that there have been dramatic changes in the variable over the WTO's history. For a full discussion of the conceptualization of the bureaucratic quality measure, see Knack, Stephen, and Philip Keefer. 1995. "Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures." Economics and Politics 7 (3): 207-227. Data from Knack, Steve and Keefer, Philip. IRIS-3: File of International Country Risk Guide (ICRG) Data, 3rd ed., New York: PRS Group, 1998.

Past Participation in the DSU Process
If a country has previously participated in the DSU process as either a complainant or a defendant then the dummy variable receives a value of 1, and otherwise a value of 0. Data compiled from the WTO DSU online database at http://www.wto.org/english/tratop_e/dispu_e/dispu_status_e.htm.

Log of the Complainant's Military Expenditure
Complainants' military expenditure data were accessed on the World Bank's World Development Indicators (WDI) online database on June 10, 2004 at http://devdata.worldbank.org/dataonline. This variable takes the log of the military expenditure.

B. CONTROL VARIABLES

a. DYADIC CONTROLS

Imports to Complainant from Defendant
Complainant's imports from defendant, measured in current U.S. dollars. Data are from the 2003 IMF Direction of Trade Statistics (DOTS) Database. Data for Taiwan are from the Board of Foreign Trade online reference page for bilateral trade with Taiwan on June 28, 2004 at http://www.trade.gov.tw/eng2002/type_sub_list.asp?sub_code=1036&Rnd=0.3735362. Because there were slight discrepancies in the trade data (exports from C to D ? imports to D from C), we decided to use the complainant country's claimed amount of trade, since it is ultimately the complainant country's decision to bring a case. The discrepancies in trade data are slight, and general trends remain consistent no matter which metric we use (complainant's claimed amount or defendant's claimed amount).

Exports from Complainant to Defendant over Complainant's Total Exports
Complainant's exports to defendant divided by complainant's total exports, measured in current U.S. dollars. Data are from the 2003 IMF Direction of Trade Statistics (DOTS) Database. Data for Taiwan are from the Board of Foreign Trade online reference page for bilateral trade with Taiwan on June 28, 2004 at http://www.trade.gov.tw/eng2002/type_sub_list.asp?sub_code=1036&Rnd=0.3735362. Because there were slight discrepancies in the trade data (exports from C to D ? imports

to D from C), we decided to use the complainant country's claimed amount of trade, since it is ultimately the complainant country's decision to bring a case. The discrepancies in trade data are slight, and general trends remain consistent no matter which metric we use (complainant's claimed amount or defendant's claimed amount).

Retaliation
Dummy variable that takes on the value of 1 if the defendant has filed against the complainant within the last year. Data compiled from the WTO DSU online database at http://www.wto.org/english/tratop_e/dispu_e/dispu_status_e.htm.

Preferential Trading Agreement
Dummy variable that takes on the value of 1 if the countries in the case in question were involved, at the time of the dispute, in a preferential trading agreement (PTA). To determine if a PTA was in force between the countries at the time of the dispute, we consulted the WTO's list of "Regional Trade Agreements Notified to the GATT/WTO and in Force," available at http://www.wto.org/english/tratop_e/region_e/region_e.htm. Agreements identified as "free trade agreements" or "customs unions" are considered PTAs for our purposes. Agreements identified as "preferential arrangements" were not counted as PTAs. This latter category consists of agreements such as the "Protocol Relating to Trade Negotiations Among Developing Countries" which do not incorporate the features of a PTA that are likely to affect the decision to litigate at the WTO.

b. CASE CONTROLS

Multiple Complainants
Dummy variable that takes on the value of 1 when the complainant in the dispute is one of several complainants in the case before the WTO. Multiple-complainant disputes include DS16, DS27, DS35, DS58, DS158, DS217, and DS234, supra note 55. Data compiled from the WTO DSU online database at http://www.wto.org/english/tratop_e/dispu_e/dispu_status_e.htm.

Bandwagon
Dummy variable that takes on the value of 1 if the case in question features the same defendant and same issue as a previous case, but a different complainant. Data compiled from the WTO DSU online database at http://www.wto.org/english/tratop_e/dispu_e/dispu_status_e.htm.

Repeat Filing
Dummy variable that takes on the value of 1 if the case in question is a "re- filed" case, by which we mean there has been an earlier request for consultations between the same parties on the same issues (or perhaps a subset thereof) that was not resolved. We assign the value of 1 to the dummy in the re-filed case and not in the original case because it is only in the latter case that one would expect changes in the consequences of a complaint. Data compiled from the WTO DSU online database at http://www.wto.org/english/tratop_e/dispu_e/dispu_status_e.htm.

WTO Agreements
Series of dummy variables that take on the value of 1 if the parties to the dispute are involved in particular WTO agreement(s). In our main regressions, we include dummies for the Agriculture Agreement, the Anti-Dumping Agreement, the GATS Agreement, the GATT Agreement, the SPS Agreement, the TRIPs Agreement, and the WTO Agreement. These agreements were chosen because the relative economic size of the parties seemed relevant to the existence of a dispute, they accounted for a large number of disputes, or because they were statistically significant in some of our robustness check regressions. Data from "List of All WTO Complaints Brought Pursuant to the DSU" on WorldTradeLaw.net at http://www.worldtradelaw.net/dsc/database/wtodisputes.asp.

c. CONTROLS FOR COMPLAINANT & DEFENDANT

Log of Total Trade over GDP
The log of the sum of exports and imports of goods and services measured as a share of gross domestic product. Data were accessed on the World Bank's World Development Indicators (WDI) online database on June 10, 2004 at http://devdata.worldbank.org/dataonline.

US as Defendant
Dummy variable that takes on the value of 1 when the United States is the defendant in the case in question. Data compiled from the WTO DSU online database at http://www.wto.org/english/tratop_e/dispu_e/dispu_status_e.htm.

EC as Defendant
Dummy variable that takes on the value of 1 when the European Communities (EC) is the defendant in the case in question. Data compiled from the WTO DSU online database at http://www.wto.org/english/tratop_e/dispu_e/dispu_status_e.htm.

US vs. EC
Dummy variable that takes on the value of 1 when the US brings suit against the EC (not vice versa) in the case in question. Data compiled from the WTO DSU online database at http://www.wto.org/english/tratop_e/dispu_e/dispu_status_e.htm.

Complainant's Level of Democracy
Data are from the Polity IV dataset, and tap the general openness of domestic political institutions. The polity rubric is comprised of six components: the extent to which a country has institutionalized procedures regarding the transfer of executive power; the extent to which governing executives are chosen through competitive elections; the extent of opportunities for non-elites to attain executive office; the extent of operational (de facto) constraints on the chief executive; the development of institutional structures for civil society's political expression; and the extent to which non-elites are able to access institutional structures for political expression. These characteristics pick up the main components of democratic governance. The scale runs from –10 (highly autocratic) to 10 (highly open and democratic). Data are from the Polity IV online database accessible at http://www.cidcm.umd.edu/inscr/polity/index.htm#data.

d. ADVISORY CENTRE

Advisory Centre
Dummy variable takes on the value of 1 if the WTO Advisory Centre was in existence at the time of the dispute in question and the complaining state was eligible to use the resources of the Centre. The Centre was established on October 5, 2001, and the conditions of eligibility can be found at the Centre's website at http://www.acwl.ch/e/index_e.aspx.

Country Development and Income Level
Dummy: Developed (1), Developing (0)
Income Level: High Income (HI), Upper Middle Income (UMI), Lower Middle Income (LMI), Low Income (LI)

Economies are classified according to 2002 GNI per capita, calculated using the World Bank Atlas Method. The groups are: Low Income (LI), $735 or less; Lower Middle Income (LMI), $736 - $2,935; Upper Middle Income (UMI), $2,936 - $9,075; and High Income (HI), $9,076 or more. A country is classified as "Developed" if it is categorized as High Income by the World Bank classification. A country is classified as "Developing" if it is categorized as one of the other three income classifications: Upper Middle Income, Lower Middle Income, or Low Income. Data were taken from the World Bank's Data & Statistics webpage: http://www.worldbank.org/data/countryclass/classgroups.htm.

Least-Developed Countries
We use the same categorization of least developed country (LDC) as the WTO which, in turn, recognizes as LDCs those countries which have been designated as such by the United Nations. There are currently 50 least-developed countries on the UN list, 31 of which to date have become WTO members. They are: Angola, Bangladesh, Benin, Burkina Faso, Burundi, Central African Republic, Chad, Democratic Republic of the Congo, Djibouti, Gambia, Guinea, Guinea Bissau, Haiti, Lesotho, Madagascar, Malawi, Maldives, Mali, Mauritania, Mozambique, Myanmar, Nepal, Niger, Rwanda, Senegal, Sierra Leone, Solomon Islands, Tanzania, Togo, Uganda, Zambia.
Nine additional least-developed countries are in the process of accession to the WTO. They are: Bhutan, Cambodia, Cape Verde, Laos, Nepal, Samoa, Sudan, Vanuatu and Yemen. Furthermore, Equatorial Guinea, Ethiopia and Sao Tome & Principe are WTO Observers. Source: the WTO website at http://www.wto.org/english/thewto_e/whatis_e/tif_e/org7_e.htm (last accessed on Aug. 23, 2004).

GDP (constant 1995 US$)
Gross Domestic Product (GDP) data were taken from the World Bank's *World Development Indicators (WDI)* online database on June 10, 2004 at http://devdata.worldbank.org/dataonline.

GDP per capita (constant 1995 US$)
Taken from the World Bank's *World Development Indicators (WDI)* online database on June 10, 2004 at http://devdata.worldbank.org/dataonline.

Trade (% of GDP)

Trade is the sum of exports and imports of goods and services measured as a share of gross domestic product. Data were accessed on the World Bank's *World Development Indicators (WDI)* online database on June 10, 2004 at http://devdata.worldbank.org/dataonline.

Non-Military Government Expenditure/GDP
Non-Military Government Expenditure/GDP was calculated by subtracting military expenditure as a percentage of GDP from total government expenditure as a percentage of GDP, multiplying by GDP and dividing by 100.
Data for government expenditure (as % of GDP), and military expenditure (% of GDP), were taken from the World Bank's *World Development Indicators* online database on June 11, 2004 at http://devdata.worldbank.org/dataonline.

Number of embassies worldwide
Data was taken from http://www2.tagish.co.uk/Links/embassy1b.nsf/. For the EC, the average of EC members was used.

Bureaucratic Quality. A one to six scale measuring the extent to which a country's bureaucracy is capable of carrying out a range of administrative tasks. For a full discussion of the conceptualization of this variable, see Knack and Keefer (1995).
Source: Knack, Steve and Keefer, Philip. IRIS-3: File of International Country Risk Guide (ICRG) Data [Computer file]. 3rd Edition. College Park, Maryland: IRIS [producer], [1998]. East Syracuse, New York: The PRS Group, Inc. [distributor], [1998].

Number of Representatives in Geneva (of Complainant)
Data were taken from Rhian Wood's 15.08, 15:00 working draft of "Liaison Officers and Representatives to WTO." The WTO representatives from each country were tallied. Personal secretaries to WTO representatives were not counted. The number of WTO representatives from a given country is constant over our dataset.

Are the parties in a PTA together?
Dummy: Yes (1), No (0)

To determine if a PTA was in force between the countries at the time of the dispute, we consulted the WTO's list of "Regional Trade Agreements Notified to the GATT/WTO and in Force," available at http://www.wto.org/english/tratop_e/region_e/region_e.htm. Agreements identified as "free trade agreements" or "customs unions" are considered PTAs for our purposes. Agreements identified as "preferential agreements" were not counted as PTAs. This latter category includes agreements, such as the "Protocol Relating to Trade Negotiations Among Developing Countries," which does not include the features of a PTA that are likely to affect the decision to litigate at the WTO.

Bilateral Aid

Data were taken from the Organization for Economic Co-operation and Development (OECD) International Development Statistics, Development Assistance Committee (DAC) online database on June 21, 2004 at http://www1.oecd.org/scripts/cde/queryScreen.asp?DSET=dac3a_agr&SETNAME=Destination+of+Official+Development+Assistance+and+Official+Aid+%2D+Commitments+%28Table+3a%29&DBASE=cde_dac&EMAIL=&DBNAME=Development+Assistance+Committee. Bilateral Aid is equal to the total official development assistance commitments by the case defendant to the complainant during the dispute year, in millions of dollars.

Aid (% of GNI)

Aid includes both official development assistance (ODA) and official aid. Ratios are computed using values in U.S. dollars converted at official exchange rates. *Source:* Taken directly from WDI Online; originally from Development Assistance Committee of the Organisation for Economic Co-operation and Development, and World Bank and OECD GNI estimates.

Imports & Exports (including bilateral trade data)

Data were taken from the IMF Direction of Trade Statistics (DOTS) Database. Data for Taiwan was taken from the Board of Foreign Trade online reference page for bilateral trade with Taiwan on June 28, 2004 at http://www.trade.gov.tw/eng2002/type_sub_list.asp?sub_code=1036&Rnd=0.3735362.