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INDEPENDENCE UNDER FIRE: EXTRA-LEGAL PRESSURES AND COALITION BUILDING IN WTO DISPUTE SETTLEMENT
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Abstract

This study uses quantitative analyses of the complete history of rulings made by the Panels and the Appellate Body of the World Trade Organisation’s Dispute Settlement Mechanism in order to assess the robustness of theories regarding the decision-making of these institutions, as well as to explore the potential for such studies of the WTO at this early stage of its development. Regression analyses are conducted to test for correlation between the success of Complainants in dispute settlement and a variety of factors, representing the hypothesised capacity of states to influence Panels and the Appellate Body through dimensions of political and economic power, the impact of the relative practical capacities of states in dispute settlement proceedings, and the formation of coalitions of states in support of a particular Complainant or Respondent. The data sets produced are also used to derive a number of observations about the performance of the Dispute Settlement Mechanism during its first ten years of operation. The regression analyses produce few significant trends, a result which supports claims that the judicial institutions of the Dispute Settlement Mechanism are independent from Member State interests. The one reliable correlation found in these analyses demonstrates that a Complainant state does have substantial advantage in Panel proceedings if it has previously participated in more disputes than the Respondent. Two other apparent results are that larger coalitions reduce success at the Panel stage, and that the most powerful states are less likely to prevail at the Appellate Body stage, although these results are undermined by the necessarily restricted nature of the model, and are considered to be potentially flawed.

Introduction

Founded on 1 January 1995, the World Trade Organisation (WTO) is one of the most important and controversial of organisations in global economic policy. Although the familiar depictions of it as some all-powerful nemesis of...
the global public good are nothing more than populist hyperbole\(^3\), a number of serious objections to the rules and practices of the Organisation do exist. In particular, it is argued that the Organisation is institutionally dominated by its more powerful Member States, and that its apparent equal treatment of all members masks inherent bias in towards the industrialised world\(^4\).

Nowhere in the WTO regime is institutional independence from Member State interests more important than in the Dispute Settlement Mechanism (DSM), the quasi-judicial system through which alleged violations of WTO agreements are adjudicated. Unprecedented steps were taken by the Parties to the Uruguay Round Agreements, establishing the Organisation, in attempting to create an international arbitration system free from the influence of diplomatic power relations, under which the force of legal argument alone could prevail. This study examines the results so far.

The central focus here is the posited capacity of states, as parties to formal dispute settlement proceedings, to influence the outcome of these proceedings other than by legal argument, and thereby to attack the trade policy measures of other states, or to defend their own. It assesses both the individual power of states in this regard, and the influence of third party states intervening in support of others. It is hoped that the outcome will make a novel contribution to the academic study of the DSM, and develop understanding of the system at the practical level, as well as informing the public debate about state sovereignty, international law and the concept of ‘world government’.

The approach taken in this study adopts techniques from both legal and political science scholarship to explore the workings of the Organisation’s legal machinery, and to undertake a sympathetic but sceptical analysis of political science criticisms of the DSM. This study is neither an attempt to prove nor disprove any claims made by critics of the WTO, but rather an

\(^3\) The anti-globalisation NGO Public Citizen describes the WTO as a “powerful new global commerce agency … one of the main mechanisms of corporate globalization [sic]”; see Public Citizen website, at http://www.citizen.org/trade/wto
exploratory analysis, examining to what extent quantitative techniques are useful in evaluating the performance of the DSM, and what evidence there may be to suggest that states can influence its operation. The results permit a more rigorous and comprehensive study of patterns in dispute outcomes, as well as qualitative observations about the DSM on the basis of the data available.

Furthermore, in attempting a quantitative analysis of the history of WTO dispute settlement, this study examines the potential for a more comprehensive survey of DSM litigation than has yet been made. It is hoped that the results will illuminate the patterns of dispute outcomes in the past decade, and shed light on an area of international relations and public policy which is all too often misunderstood.

The Dispute Settlement Mechanism

A dispute formally begins when a WTO Member State (the Complainant), claiming that its trade interests have been compromised by another Member’s violation of its WTO obligations, requests consultations with that State (the Respondent), under the auspices of the Dispute Settlement Body (DSB). The DSB is, in fact, the General Council of the WTO - the plenary body of Member State representatives - acting under another name. The alleged violation may be any government measure, policy or arrangement which is inconsistent with one of the ‘covered agreements’, the set of trade agreements which are within the jurisdiction of the DSM.

If consultations do not result in a solution, the Complainant may request the establishment of a Panel - a committee of three experts, selected where possible by agreement between the parties - who will hear representations from the parties on the alleged violation before making a ruling. Other Member States may make representations to the Panel as third parties, if they have a “substantial interest in [the] matter”\(^5\); this may be a direct trade interest

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\(^4\) See, eg: Raghavan (2000)

\(^5\) Understanding on Rules and Procedures Governing the Settlement of Disputes (DSU), Art 10.2
or an interest in presenting a certain interpretation of relevant legal provisions. The Panel will report their findings to the DSB, which must adopt the ruling for it to become binding.

Under the General Agreement on Tariffs and Trade (GATT) system, the predecessor of the WTO, the adoption of a Panel ruling required the consent of all Member States. This requirement gave veto power to each state, including the unsuccessful party in the proceedings, to prevent the ruling from taking effect. However, under the WTO this principle is reversed - rulings are automatically adopted by the DSB, unless overruled by consensus between the Member States. Therefore the adoption of rulings is largely insulated from political influence, and is, practically speaking, automatic, while the Member States as a group retain the power to curb any rulings which are widely seen as unacceptable.

Once a ruling is adopted, if the Respondent is found to have acted inconsistently with its obligations, the Complainant is permitted to introduce sanctions against imports from the Respondent state, in order to provide redress for the loss it has suffered. This form of enforcement has been criticised as ineffective.

Another feature of the DSM which was absent from the GATT is the Appellate Body, a standing group of experts, each appointed individually by the WTO for a fixed term of four years, renewable once. The Appellate Body hears appeals from Panel rulings, usually on technical points of treaty interpretation, which may have been made by one or both of the parties to the initial proceedings. Appellate Body reports must be adopted by the DSB on the same negative consensus principle as those of Panels, and there is no higher form of redress.

The Literature

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6 In practice, this power was not exercised as frequently as might be imagined, for several reasons; see Hoekman & Kostecki (2001), p. 75

7 See, eg: Kahler (2004), p. 138
Academic study of the multilateral trading system has produced a plentiful literature, and the mood expressed in it is generally, although not unanimously, approving of the move from diplomacy to legalism made in the foundation of the WTO. In the decade since its creation, much praise has been given both to the new DSM and those responsible for engineering it, for the increased institutional independence and efficiency that it has brought about.

The developments which are most often selected for particular praise are the principle of negative consensus, and the introduction of a standing Appellate Body as the final arbiter on WTO disputes, both of which have had the effect of removing practical authority over the dispute settlement process further away from the parties, and are therefore said to have enhanced the level of delegation in the system, and in consequence, its independence from the parties. Indeed, there is some debate over whether the organs of the DSM, in particular the Appellate Body, are too insulated from Member State supervision in what is, after all, a diplomatic forum. However, some have characterised the DSM’s independence as only “moderate”, due to the influence that Member States retain over the system through, for example, the selection of Panellists.

Criticisms that the DSM is in some way biased in favour of rich countries, multinational corporations or other dominant actors are not common in serious legal-political literature, but some such arguments have been made. Garrett & McCall-Smith (1999), focusing on the Appellate Body, claim that “in the short term … decision making will be strategic and often political”, and provide qualitative evidence to support this. Steinberg (2004) argues that judicial decision-making in the WTO faces “a hard political constraint” in the

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10 See, eg: Charnovitz (2002)
13 p. 44
form of the interests of powerful Members, particularly the US and EU\textsuperscript{14}. It is theories of this nature which this study aims to assess.

A comprehensive study of the patterns of DSM decisions has yet to be conducted to assess the factual pattern of outcomes of cases under the new system; to date, statistical analyses have generally been limited to uncontroversial matters of fact\textsuperscript{15}. Those writers who have attempted to understand and explain the outcomes of DSM decision-making have purported to prove a number of theories, but only rarely are these grounded in robust statistical evidence. Indeed, few studies of the factors affecting judicial decisions have been conducted at the international level at all, although a plentiful literature exists on the decision-making of courts and quasi-judicial bodies in domestic legal systems, largely in the United States\textsuperscript{16}, and the formats of these analyses have greatly influence this study.

Those writers who have attempted similar analyses of the DSM sometimes refer to evidence that domestic civil litigation will, on average, result in approximately 50\% success for claimants\textsuperscript{17}. Comparing this to the history of GATT and WTO dispute settlement, Complainants have had far greater success than the theory predicts\textsuperscript{18}. Reasons posited for this include a pro-free trade bias in DSM rulings\textsuperscript{19}, and a lack of willingness on the part of Complainants to progress with claims of which they are not fully certain, due to the political costs involved\textsuperscript{20}. Quantitative techniques have also been used to examine the incidence of solutions being reached at the consultation stage of GATT proceedings, with the finding that this is more likely to occur when both parties are democracies\textsuperscript{21}.

\begin{itemize}
\item \textsuperscript{14} p. 275
\item \textsuperscript{15} See eg: Jackson (1998), Leitner & Lester (2005)
\item \textsuperscript{16} See, eg: Austin & Hummer (2000), George & Epstein (1992), Yates (1999)
\item \textsuperscript{17} Priest & Klein (1984)
\item \textsuperscript{18} Estimates include 77\% for the GATT (Hudec 1993), and 88\% for the WTO (Iida 2003); this study calculates similar figures, using different techniques; see below
\item \textsuperscript{19} Iida (2003)
\item \textsuperscript{20} Hudec (1993)
\item \textsuperscript{21} Busch (2000)
\end{itemize}
However, the central question remains - in what ways, if at all, can Member States influence the outcome of contentious dispute settlement proceedings? Some qualitative studies have highlighted ways in which independence of the DSM may be pressurised by parties to disputes, or by extraneous factors. These include the possibility that Panels and/or the Appellate Body may favour more powerful states, so as not to alienate the most significant actors in the WTO\textsuperscript{22}, or that pressure may be exerted on the formally independent judicial branch of the Organisation by the Member States, through the ‘political’ negotiating branch\textsuperscript{23}.

One of the few quantitative studies of this kind to date, analysing GATT dispute rulings, finds a (counterintuitive) trend towards decisions in favour of states with lower GDP values, controlling for other variables\textsuperscript{24}. However, the confidence intervals in the study were acknowledged to be too wide to permit any firm conclusions.

Some writers maintain that the organs of the DSM are not vulnerable to extra-legal influence\textsuperscript{25}. This may be the case, but to the author’s knowledge, such assertions have not yet been backed by either statistical evidence or a comprehensive survey of all dispute rulings. In addition, analyses of DSM and other international jurisprudence often focus on examining the institutional characteristics and preferences of judicial bodies, rather than on tendencies in their substantive decision-making. Without such evidence, it is difficult to either support or rebut criticism from those who do not subscribe to the view of the DSM as an impartial arbiter of WTO law.

**Methodology - The Research Model**

The first step in constructing the model for this study was the selection of the appropriate unit of analysis. The study was conducted using the complete

\textsuperscript{22} Garrett & McCall-Smith (1999), Steinberg (2004)
\textsuperscript{23} See *WTO Members Warn Appellate Body on Amicus Procedures*, Inside US Trade, 1 December 2000, as quoted in Charnovitz (2002)
\textsuperscript{24} Busch & Reinhardt (2002), pp. 475-6
\textsuperscript{25} Charnovitz (2002), p. 240, Ehlermann (2002a) p. 628
history of substantive Panel and Appellate Body decisions on disputes under the WTO regime, with the following exceptions: the list was curtailed at 31 December 2004, due to the lack of sufficient economic data after this point; the analysis excludes reports which simply confirm a mutually agreed solution between the parties; and, in order to preserve the clarity of the model, rulings following challenges under Article 21.5 DSU are also omitted.26

One important observation regarding the unit of analysis is that the disputes as categorised by the WTO do not correspond precisely to the number and range of trade policies which have been litigated through the DSM. Some disputes involve claims brought by multiple Complainants, whereas groups of others may involve the same Respondent and the same issues, but be divided into separate disputes. Conceptual consistency cannot therefore be maintained by analysing all disputes, classified by their WTO classification numbers, as equal units, due to the potentially influential effect of the intervention of multiple participants.

In this study, the unit of analysis retains the WTO’s numerical classification system, but divides disputes involving multiple Complainants into several bilateral disputes, one for each Complainant, in each case treating the other Complainants as third parties, to be included at the secondary level of analysis. This method enables a detailed examination of bilateral legal relations, and, with the addition of third party analysis (described below), does not ignore the impact of multiple Complainants.

The Independent Variables

26 DSU Art 21.5 disputes relate to the correct implementation of previous Panel or Appellate Body decisions
27 See Leitner & Lester (2005), p. 232
30 This method of classification is adopted by several writers - see Busch & Reinhardt (2002), p.460
The central issue for this study is whether, and in which ways, it is possible for Complainant states to influence the outcome of disputes through extra-legal means. The independent variables used to test this hypothesis were chosen to reflect the range of ways in which the parties to a dispute could conceivably influence the outcome of Panel or Appellate Body proceedings.

For the purposes of this study it is suggested that this influence may be in the form of either deliberate action taken by states, or strategic choices made by Panels or the Appellate Body, and that it can be classified into three categories - Political Power, Economic Power and Practical Capacity. Political Power refers to the capacity of states to influence others through diplomatic or institutional avenues; Economic Power relates to the enhanced bargaining power of those states with greater trade volumes and economic size; and Practical Capacity refers to individual characteristics of states which, for systemic or institutional reasons, may give such states an advantage in dispute settlement proceedings, including the level of experience which a state has in dispute settlement, the practical resources available to a state in terms of finances and personnel, or simply the position of the individual state in the multilateral trading system. From these three categories, a set of six independent variables, (two continuous (interval) variables and four dichotomous) was derived, forming the first level of the model.

The continuous variables were differentials between the Complainant and Respondent in the ‘Economic Power Index’, developed as described below, and in previous participation in WTO disputes, up to the date of the initial request for consultations.

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31 For example, states may be able to pressurise Panels and the Appellate Body through their influence over other Member States in WTO negotiations, where the rules for the DSM are set (Charnovitz (2002), Steinberg (2004)); they may also have greater influence over Panel selection (Shoyer (2003), Stewart & Burr (1998)), or over reappointment of Appellate Body members, and have greater capacity to damage the credibility of DSM rulings by successfully defying sanctions (Steinberg (2004) p. 249)
32 The bargaining power of individual states may be closely linked to their economic strength in terms of trade volumes and economic size. Equally, the strength of a state’s national economy will affect its capacity to weather the impact of retaliatory sanctions. There are also criticisms that the WTO system is inherently biased in favour of richer states, due to its institutional structure and system of rules (See eg: Raghavan (2000))
Initially, differentials in GDP, trade volume and market capitalisation of domestic companies were used as independent variables, as all could hypothetically have an impact on the decision making of Panels or the Appellate Body. It was then found in the initial stages of the regression analyses that these three variables exhibited extreme multicollinearity, showing that their patterns of variance are too similar for conclusions drawn from them to be reliable. However, the model would not retain its conceptual completeness if these variables were removed. Therefore, an index variable was constructed to take account of the major economic differentials between parties.

This index was achieved by calculating the sum of all three factors for each state (measured in millions of US dollars), finding the mean average of this figure over the time period of the study\(^3^3\), and dividing each mean by the lowest mean figure calculated from sufficient reliable data. Therefore, under this calculation, the US was given an Index figure of 11,526.8109; Swaziland was given an index figure of 1.0000. (The small number of developing states for which substantial data were unavailable were given a nominal index figure of 0.9000). This scheme was designed to standardise all three input variables, in a way which would reflect the true magnitude of the disparities in economic strength and political power between states. The differential between this ‘Power Index’ figure for the Complainant and Respondent in each dispute was then applied as an independent variable.

It was hypothesised that if the potential Political, Economic and Practical channels of extra-legal influence do in fact have an impact on DSM decision-making, the greater the (positive) difference in Power Index value or previous use of the system between the Complainant and Respondent, the more likely the decision in a particular dispute is to favour the Complainant.

\(^3^3\) The mean figure was calculated using only those years for which sufficient reliable data were available for all significant states in the analysis; that is, data for the years 1996 to 2003 were summed, and divided by 8 to achieve the mean average.
The four dichotomous variables used were based upon whether (1) the Complainant or (2) Respondent was classified as a Developing Country, and whether (3) the Complainant or (4) Respondent was a member of the dominant ‘Quad’ of major trade powers - Canada, the European Communities (EC), Japan and the US - which have historically dominated WTO negotiations\(^{34}\). It was further hypothesised that, if claims about systemic bias and extra-legal influence are true, then Complainants are more likely to “win” if they are developed or Quad countries, and Respondents are correspondingly less likely to win if they are developing countries or not members of the Quad.

**The Dependent Variable**

In coding the dependent variable in this study, the results of disputes, decisions of the Panel or Appellate Body were coded according to whether the policies under challenge are found to be consistent or inconsistent with the Respondent’s obligations under the covered agreements. Purely procedural decisions which do not have a direct policy impact were not included. The scheme by which results were coded is of fundamental importance to the structure of this study, and therefore merits explanation in some detail.

Due to the complexity of many disputes litigated through the DSM, the coding scheme for results was based around individual *arguments*. For these purposes, an ‘argument’ is a claim by a WTO Member State that a trade policy measure of another state (not an action during dispute settlement proceedings) is inconsistent with that state’s obligations under the covered agreements. A claim regarding a separate measure, or regarding the legality of the same measure under a different provision of the covered agreements, is a separate ‘argument’. Claims regarding legal exceptions which may legitimise inconsistencies alleged in other arguments, or claims made in the alternative to others, are not considered separately.

\(^{34}\) See Hoekman & Kostecki (2001), p.60
This scheme for categorising arguments was then applied to the conclusions of the Panel / Appellate Body, as described in the relevant published report\textsuperscript{35}, to assess the number of arguments in which each party is successful. Each argument under which the Respondent is found in violation of its obligations is awarded to the Complainant. Arguments in which a claim fails, or which a Panel refuses to consider for procedural reasons are awarded to the Respondent. Elements of the ruling which do not directly relate to the consistency of a trade policy measure with WTO agreements are ignored for the purposes of this scheme.

In each dispute, three forms of coding were applied to the result. In the first, binary coding, results were coded as a “win” or “loss” for the Complainant, depending upon whether or not in the Complainant won as many or more arguments as the Respondent. The second form of coding was a percentage score of arguments won and lost by the Complainant, from 0 to 100. The third scheme provided an ordinal data set, consisting of coding each result with a value between 0 and 4, representing a spectrum of results between complete success for the Complainant (4), substantial Complainant success (the Complainant winning on three or more times as many arguments as the Respondent - 3), neutral (2), substantial Respondent success (1) and complete Respondent success (0).

Previous quantitative analyses have coded results in a variety of ways, including: dichotomously, according to whether or not violations are found\textsuperscript{36}; in three categories, as rulings favouring the Complainant or Respondent, and mixed rulings\textsuperscript{37}; or according to the eventual policy outcome of the dispute as a whole, with the formal ruling being only one element of this\textsuperscript{38}. The coding scheme used here focuses in more detail on individual legal arguments than previous analyses, and provides a more sophisticated analysis of the formal result of DSM proceedings than has been carried out to date.

\textsuperscript{35} All dispute settlement reports are available on the WTO website, at www.wto.org
\textsuperscript{36} Iida (2003)
\textsuperscript{37} Reinhardt (2001)
The quantitative literature on judicial decision-making at the domestic level often makes use of logit (or probit) regression to analyse factors which influence decisions, and these techniques were adopted here. An experimental logit regression was carried out using the binary coding of results outlined above; in order to provide further detail, the percentage result variable (the percentage of arguments won by the Complainant) is used as the output for an Ordinary Least Squares regression.

**Incorporating Third Parties**

The second level of analysis in this study examines the impact of third party “coalitions” on DSM proceedings. This was assessed both as a new variable in itself, specifically the differential between the raw numbers of third parties supporting each participant, and also by weighting this figure to take into account the totals of the Power Index and previous use figures relevant to the states in coalitions.

In order to assess the impact of coalition building on dispute settlement proceedings, it was necessary to create a coding scheme for third party positions, and this was done on the basis of their submissions and answers to questions, as presented in published reports. Third party submissions were coded as favouring the Complainant if they argued that the policies under consideration are inconsistent with WTO agreements; if they presented legal arguments which, if accepted, would render the measures inconsistent; or if they claimed that a ruling favouring the Respondent would have solely negative consequences. Submissions favouring the Respondent were those which argued for the opposite conclusions. Submissions which presented some arguments for either side, or which display none of the above characteristics, were coded as neutral.

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38 Hudec (1993)
39 See, eg: *supra*, fn 15
40 In this study, the term “coalition” refers to groupings of states consisting of either a Complainant or Respondent, and the third parties which support that state’s arguments in a given dispute. There is not
This coding scheme, while admittedly not capturing all the nuances of the legal positions involved, provides for a clear and reliable analysis of third party positions regarding the policies under challenge in each dispute.

**Results**

For both the Panel and Appellate Body data sets, logit regressions and Ordinary Least Squares (OLS) regressions were conducted. These techniques permit the analysis of dispute rulings at both the level of overall outcomes, and that of individual arguments, rather than relying solely on oversimplifications at the generalised level.

The independent variables of Difference in Power Index Score and Total (Coalition) Power Index Score, Developing Country status, Quad status, Difference in Previous Use of the System, and Difference in Third Party numbers were each regressed against both the binary and percentage dependent variables, using logit and OLS methods respectively. These regressions were carried out separately, on a bivariate basis, due to the problems of multicollinearity outlined earlier.\(^{41}\)

**Panel Decisions: OLS Regression**

In the OLS regression analysis of Panel data, only two of the independent variables used yielded results which demonstrated any noticeable trend, the others being unsuitable for several reasons. The $R^2$ statistics for the Difference in Index Score and Total Index Score, and for the Developing Country Status and Quad Country Status variables, are 0.045 or less in all cases (as low as 0.001 in the case of the variable C=Quad). This means that none of these variables can be said to explain more than 5% of the variation in the dependent variable, the percentage success rate of individual

\(^{41}\) See above
arguments. In addition, the F and t significance statistics in each case are unacceptably high, at between 0.08 and 0.728. At values of more than 0.05, the hypotheses that these variables have no effect on the success of claims cannot be rejected at the 0.05 level, meaning that there is a greater than 5% chance that any relationships between these factors and the results can be considered random.

The two variables which provided positive results are Difference in Previous Use and Difference in Third Party Numbers. The significance statistics for these variables are 0.006 and 0.007 respectively, meaning that the null hypotheses of no effect can be rejected at the 0.01 level. There seems, therefore, to be a relationship between these factors and the outcome of Panel proceedings.

<table>
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<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
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<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td>t</td>
<td>Sig.</td>
</tr>
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<td>.175</td>
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<td>.050</td>
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<tr>
<td>TP - No. Diff</td>
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<td>.442</td>
<td>-.167</td>
<td>-1.893</td>
<td>.061</td>
</tr>
</tbody>
</table>

The Tolerance and VIF statistics, of 0.873 and 1.145 respectively, show that the two variables do not covary to an extreme extent.

Interpreting the standardised coefficients, we can see that for each unit increase in the Difference in Use (every previous dispute litigated by the Complainant more than the total for the Respondent), we see a corresponding 0.237 increase in the percentage of arguments won by the Complainant. For every unit increase in the Difference in Number of Third Parties (every one third party state supporting the Complainant more than the total supporting the Respondent), we see, perhaps surprisingly, a 0.836 decrease in dependent variable of percentage of arguments won by the Complainant. Examining the standardised coefficients, we can see that both independent
variables have a similar degree of impact on the result, but in opposing directions.

However, there remain some problems with these results. The $R^2$ statistics for these regressions are 0.055 and 0.053, meaning that less than 6% of the variation in the dependent variable can be explained by these factors. Also, as these bivariate regressions are very limited models, we cannot draw particularly strong conclusions from them, due to the very slight margins involved.

In conclusion, there seems to be a weak relationship between both previous experience and coalition size and the number of arguments won at the Panel stage of WTO proceedings.

**Appellate Body Decisions: OLS Regression**

For the same reasons as those affecting some of the Panel results discussed above, none of the results in the OLS regression of the Appellate Body data can be interpreted in depth. The F-test significance statistics for these regressions were all between 0.072 and 0.566, and therefore none of the null hypotheses can be rejected at the 0.05 level. In addition, the $R^2$ statistics are all less than 0.032, and in one case as low as 0.003, meaning that none of these variables explains more than 4% of the change in the number of arguments won by the Complainant before the Appellate Body.

Therefore we can say that, on this model, there does not seem to be any relationship between the independent variables used and the percentage balance of decisions of the WTO Appellate Body.

**Panel and Appellate Body Decisions: Logit Regression**

In order to analyse the effects of the given variables on the probability of a result being awarded to one party or the other, at a broad level, bivariate logit analyses were also carried out. Multivariate analysis was precluded by the
multicollinearity among the independent variables described above. Among the logit regressions conducted, the low Cox & Snell and Nagelkerke values, and high p values for significance demonstrate that no robust conclusions can be drawn from this analysis.

For the Panel data, the Cox & Snell and Nagelkerke scores showed that no variable explains more than 7% of the observed change in the dependent variable (probability of a verdict for the Complainant), with all but one variable, Difference in Total Index Scores, measuring far less than this. The significance values are mostly far above the acceptable 0.05 level, and the relevant null hypotheses of no effect cannot be rejected.

The only exception to this in the Panel data was Difference in Total Index Scores, measuring the difference in the total value of the Economic Power Index between the Complainant and the third parties supporting the complaint, and the Respondent and the third parties opposing the claim. However, the predicted logged odds of a result favouring the Complainant showed 0.000 change as a result of changes in this factor.

The Cox & Snell / Nagelkerke values for the Appellate Body logit regressions were, with one exception, all below 0.04 and 0.062 respectively, meaning that most of the independent variables explain 6.2% or less of the variation in the logged odds of a win for the Complainant.

For the Appellate Body data, the only variable for which the p significance value is less than 0.05 is C=Quad (the Complainant being a ‘Quad’ country). Interpreting the results shown in the table, we can see that, in the change from 0 to 1 in the independent variable, that is, if the Complainant is a Quad country, the logged odds of the Complainant achieving a verdict in its favour decreases by 1.232. Looking at the odds ratio of 0.292, this translates to a conclusion that, if the Complainant is a Quad country, the odds of winning are transformed using the following procedure:

\[
0.292 - 1 = -0.708; \quad -0.708 \times 100 = -70.8
\]
Therefore, on the data in this study, the odds of winning a particular dispute before the Appellate Body are reduced by over 70% if the Complainant is a Quad country, as against a non-Quad country.

However, the limited conclusions which seem to be possible from the foregoing analysis must be fully interpreted.

**Analysis**

To summarise, three apparently significant correlations can be seen in the regression analyses. These are: (1) that greater experience of the DSM on the part of the Complainant increases the percentage of arguments won by the Complainant in Panel proceedings; (2) that a larger number of third party states supporting the Complainant reduces the percentage of arguments won at the Panel stage; and (3) that when Quad countries, as Complainants, appeal against Panel proceedings, they are less likely than non-Quad countries to be successful. Each of these results will be examined in turn.

(1) Greater experience in dispute settlement is a question of practical capacity - where states have participated in a greater number of disputes, their trade ministries and personnel will have greater experience of the system, and hence greater skill at dealing with it, both personally or institutionally. It is interesting to note that this trend is absent in Appellate Body results, suggesting that it has less impact there. This result, however, is subject to several qualifications, described below.

(2) The suggestion that a larger number of third party supporters reduces the chances of Complainant success at the Panel stage is a surprising one. Hypothetically, one would expect the effect of large coalitions, if any, to be an increase in the percentage of arguments won, and this conclusion seems to go against all theoretical premises regarding the DSM.
This conclusion is undermined by the consideration that this variable is an extremely crude representation of the factor which it attempts to measure, in that only takes account of the raw number of third parties who have contributed submissions to proceedings in favour of one party or the other. More importantly, the conclusion based upon it is not corroborated by the Difference in Total Index Scores variable, which sums the value of the index scores of each coalition of parties. This variable individually is therefore not especially useful for drawing conclusions, although it does suggest a possible avenue for further investigation.

(3) That Quad countries should be less likely to be successful in Appellate Body proceedings may also be a surprising result. This goes directly against both the theory that the Appellate Body will show deference to states which have the economic strength to defy its rulings, in order to preserve its own legitimacy, and against the intuition, based on the fact that the Quad states, particularly the US and EU, have a major role in the appointment and reappointment of Appellate Body members, that appeal decisions will be largely in their favour.

One interpretation of this result, following the reasoning of some critics, is that the Appellate Body, mindful of its institutional role as the final arbiter of WTO disputes, acts to preserve and enhance its legitimacy; not by pandering to the interests of large states, but by deciding more disputes in favour of less powerful states, thereby counteracting accusations that the major trade powers dominate its rulings.

The observed correlation may alternatively be a sign that the Appellate Body is mindful of the rise in negotiating power of developing countries, and is acting to balance its rulings in their favour. Events such as the collapse of the 2003 WTO Ministerial meeting in Cancún, as well as the widely heralded rise of China and India as economic superpowers, have signalled the emergence of a powerful bloc of developing countries, with increased corresponding weight in international trade diplomacy. Could this apparent trend in Appellate
Body decision-making represent deference to a new set of dominant global economic actors?

At this stage, this is simply speculation. If this result did in fact signify a general trend towards decisions in favour of less powerful states, one would expect to see it corroborated in the results for the variables C=LDC, R=LDC and R=Quad. As explained above, this is not the case. Moreover, it would be a gross oversimplification to draw conclusions about the pattern of global economic power relations based solely upon a bifurcation of states in Quad and non-Quad countries. This distinction is merely instructive, intended to assess broad patterns of behaviour, and such patterns cannot conclusively be said to exist on the basis of this single result.

Unfortunately, there remain serious problems which affect all of the results of the regression analyses in this study - poor levels of model fit, as measured by $R^2$ and F significance statistics, combined with the fact that most of the results are drawn from bivariate analyses, which do not control or exclude for other variables.

On the basis of these results, it may be suggested that model itself is poorly specified for this analysis, and that some variables may be removed or added in order to improve it. In anticipation of such criticism, it is submitted that the modelled variables are all required in the study, as all represent different aspects of the range of capacities which states possess to attempt to influence the outcome of WTO proceedings\(^\text{42}\). It is acknowledged however that much further study, incorporating the inclusion of a wider range of variables than used here, is necessary to achieve a comprehensive understanding of the factors affecting dispute settlement decisions.

**Conclusions & Observations**

\(^\text{42}\) See above
The results of the regression analyses in this study suggest that only one of the extra-legal factors considered has a substantial effect on the decisions of WTO Panels or the Appellate Body. The presented evidence suggests that Complainant states which have participated in a larger number of dispute settlement proceedings than their opponents are likely to enjoy a higher success rate in terms of their arguments presented to Panels, as a result of this difference.

In making any statement on the basis of this evidence, we must bear in mind the limitations of the model. The independent variables used in this study provide a broad survey of the dimensions of influence which states may have in the legalised diplomatic arena of the DSM. Unfortunately, it is not possible in a study of this limited scale to take account of all potential factors, or even to fully quantify all variables. For instance, the coding of third party submissions is based purely on the content of dispute settlement reports, using a rigid (and thereby repeatable) coding method. It takes no account of states which may support one party or the other, but fail to make submissions. Within the institutional structure of the WTO, such states would certainly be able to make their feelings known on certain issues without fulfilling all of the formalities of the DSM, but the quantification of such aspects of influence would be a task well beyond the scope of this work.

It is more instructive to note the theories which are not supported, and are even undermined by this research. Bearing in mind that the regression analyses in this study constitute a quantitative survey of the entire history of decided WTO disputes, there is no reliable evidence to suggest that either body supports richer or more powerful states as against others, or that they defer to larger coalitions of states on any issue. At this level of abstraction, then, it seems possible to state that the organs of the DSM seem immune from such pressures, adding weight to the arguments of the Organisation’s supporters.

As the late Robert Hudec notes in his own statistical analysis of GATT disputes, “quantitative studies must always be approached with caution, of
course, because the data are never as neat and tidy as they appear”\textsuperscript{43}. Other, less rigorous observations are possible, which contribute to our understanding of the DSM.

The high success rate for Complainants in DSM rulings continues; Complainants “win” (on binary coding) over 80% of all disputes (193 of 240 rulings), combining Panel and Appellate Body data; 81.9% of Panel rulings and 78.4% of rulings by the Appellate Body have been in favour of the Complainant. In fact, applying techniques from previous analyses\textsuperscript{44} to the data collected for this study, the Complainant success rate has risen between June 2002 and December 2004 - from 88% (52 of 59 rulings)\textsuperscript{45} for Panels and the Appellate Body combined, to over 92% (222 of 240 rulings). Reasons for this high percentage of success have been discussed elsewhere in the literature, however, and are not the focus of this study.

Regarding the posited influence of the more powerful Member States on DSM rulings, it is also interesting to note the rates of success of the major trading powers in dispute settlement. The US and the EC (EU), the only two parties to have been involved in enough decided disputes to be analysed, provide interesting results.

\textit{EU and US success rates in DSM disputes}

<table>
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<th></th>
<th>Comp.</th>
<th>Won</th>
<th>Lost</th>
<th>Win %</th>
<th>Resp.</th>
<th>Won</th>
<th>Los</th>
<th>Win %</th>
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<tbody>
<tr>
<td>Panel</td>
<td>24</td>
<td>22</td>
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<td>91.67</td>
<td>67</td>
<td>13</td>
<td>54</td>
<td>19.40</td>
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<tr>
<td>AB</td>
<td>17</td>
<td>13</td>
<td>4</td>
<td>76.47</td>
<td>55</td>
<td>7</td>
<td>48</td>
<td>12.73</td>
</tr>
<tr>
<td>EC</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Panel</td>
<td>26</td>
<td>24</td>
<td>2</td>
<td>92.31</td>
<td>19</td>
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<td>3</td>
<td>83.33</td>
<td>16</td>
<td>7</td>
<td>9</td>
<td>43.75</td>
</tr>
</tbody>
</table>

\textsuperscript{43} Hudec (1993), p. 352
\textsuperscript{44} Iida (2003) - counting Complainant success as a ruling in which any violation is found.
\textsuperscript{45} \textit{ibid}, p. 4
<table>
<thead>
<tr>
<th>TOTAL</th>
<th>138</th>
<th>113</th>
<th>25</th>
<th>81.18</th>
<th>138</th>
<th>25</th>
<th>113</th>
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<td>22</td>
<td>78.43</td>
<td>102</td>
<td>22</td>
<td>80</td>
<td>21.57</td>
</tr>
</tbody>
</table>

The EC enjoys above average success at all levels - as a Complainant and Respondent, before both the Panel and the Appellate Body. The US enjoys the same elevated success rate before Panels, but is less likely than average to be successful on appeal. Is this indicative of a pattern of bias in Appellate Body rulings? The regressions in this study suggest not, and the data for both states is surely insufficient for the drawing of any conclusions. However, these anecdotes may provide clues for trends to be borne out in future.

In observing patterns in dispute settlement, it is also instructive to examine the third form of coding which was applied to dispute outcomes, but not used in regression analysis, the ordinal coding for complete, substantial or neutral results, described above. In Appellate Body proceedings, mixed results are the most common, representing 49% of all results, as opposed to 32.6% for Panel proceedings, in which complete wins for the Complainant (44.9%) are the most common verdict. This could be interpreted as indicating that the Appellate Body is more concerned than are the Panels to achieve compromise between the parties; however, further research would be required in order to prove this. Given the independence of the Appellate Body from Member State influence, supported by the results of this study, it is more realistic to argue that this demonstrates the technical nature and greater complexity of appellate claims compared to those before the Panels.

The comparison between the formation of coalitions around trade interests and the patterns of international alliances on other issues is also interesting to observe. Some disputes offer anecdotal evidence that trade interests transcend strategic alliances and rivalries, even in the contentious atmosphere of international legal proceedings. Examples include the 1996 joint complaint made by bitter regional rivals India and Pakistan, among
others, against US controls on imports of shrimp\textsuperscript{46}, and the arguments made by Israel, as a third party, against its erstwhile ally the US in a dispute over trade legislation in 2001\textsuperscript{47}. Other disputes demonstrate that non-trade factors influence allegiances in WTO matters, through their impact on trade issues - in 2002, a large coalition of Latin American states supported EU measures, using allegedly illegal tariff preferences (which favoured them), to combat the international narcotics trade\textsuperscript{48}.

It is also noticeable that coalitions are fluid, and will shift depending on the issues at stake. Canada and the US share a long history of protracted disputes regarding Canadian timber exports\textsuperscript{49}, but, when US concessions to its partners in the North American Free Trade Agreement (NAFTA), namely Canada and Mexico, have come under threat, Canada has staunchly supported its Southern neighbour\textsuperscript{50}.

All this demonstrates that, in trade diplomacy, national interest is brought starkly to the fore, and national \textit{economic} interest is considered paramount.

This study explicitly focuses on the decisions of Panels and the Appellate Body as they specifically relate to the ‘legality’ of Member State trade policy measures. However, theories of DSM decision-making have often addressed the more complex question of whether the DSM institutions, and the Appellate Body in particular, are pressurised by Member States in their procedural rulings regarding their own jurisdiction and working procedures\textsuperscript{51}, and any impact such pressure may have is not represented in this analysis. Also, this study says little about any potential institutional bias in the structure of the WTO in favour of powerful Member States, or theories which claim that the very premise of a legalised multilateral trade system is grounded in Western

\begin{footnotesize}
\textsuperscript{46} US - Shrimp, WT/DS58/R, WT/DS58/AB/R  
\textsuperscript{47} US - Offset Act (Byrd Amendment), WT/DS217/R WT/DS234/R, WT/DS217/AB/R, WT/DS234/AB/R  
\textsuperscript{48} EC - Tariff Preferences, WT/DS246/R, WT/DS246/AB/R  
\textsuperscript{50} US - Line Pipe, WT/DS202/R WT/DS202/AB/R  
\textsuperscript{51} See, eg: Garrett & McCall-Smith (1999), Steinberg (2004)
\end{footnotesize}
legal and political theory, and that developed countries therefore enjoy a dominant position in the system, at an abstracted theoretical level⁵².

Nevertheless it is submitted that this study has been a success. It raises a number of possibilities for further research, including a more detailed analysis of the impact of DSM experience on trade personnel and their success in dispute settlement proceedings, and a fuller conceptualisation of the effects of coalitions in DSM litigation. It is hoped that it has presented useful guidance on potentially fruitful areas of future investigation, and has also made a useful contribution to WTO scholarship.

Finally, it is also suggested, on a practical level, that if third party submissions really have no impact whatsoever on the outcome of proceedings, states have no need to continue to make them. There are significant costs in taking part in litigation, and these costs weigh especially heavily on the states least able to afford them. Why take on such costs if there is no increased likelihood of a favourable outcome? Further research, with more complex models and data sets, would be required to confirm this conclusion, but this is to overlook the simplest explanation, and indeed to ignore the overall conclusion of this study: that from the statistical survey presented, there is no evidence to support claims of bias in WTO dispute settlement.

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