

MSc Public Administration

**Dispute Escalation by Developing States in the World Trade Organization:
a rational choice explanation**

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Abstract

Academic inquiries into the subject area of the World Trade Organization's dispute settlement mechanism are currently gaining societal significance due to the indeterminate future of this international organization. In particular, existing research on dispute escalation, especially in cases involving developing plaintiffs, can be advanced by an application of theoretical models from such branches of academia as Public Administration and Political Science. The present thesis applies Bueno de Mesquita's rational choice game-theoretic model of decision-making to the behaviour of developing plaintiffs in a WTO dispute in order to predict and explain the occurrence of panel requests. An analysis of 159 cases shows that plaintiff's preference for political gains, rooted in his democratic level, and the interaction between plaintiff's and respondent's salience levels are statistically significant predictors of dispute escalation to the panel stage; however, these effects are enabled by a specific contextual variable and only occur in disputes with high plaintiff salience.

I. Introduction: dispute escalation in the World Trade Organization

The World Trade Organization is, without a doubt, one of the most highly visible International Organizations to date; it rose to prominence and rapidly attracted attention of both the larger public and scholars in the academia (Narlikar, 2005). The organization is highly polarizing largely due to an inherent paradox of its nature – while more “member-driven” than most global governance IOs, it is constantly met with deeply-rooted concerns over its relationship with member states and constituents, how much impact they have in the governance process and how much they should (Hoekman & Mavroidis, 2007; Narkilar, Daunton & Stern, 2012; Charnovitz, 2004), particularly as the questions of merit of both economic liberalization and, more broadly, global governance in general lie at the hear of these anxieties (Sampson, 2001). Decades after its conception (whether one takes into account its predecessor, the GATT, or not), the organization continues to generate debate and discussion, and had been suitably characterized as “critical, complex, and controversial” (Narkilar, Daunton & Stern, 2012).

In practice, the WTO’s three main functions are: offering a forum and framework for international trade negotiations, oversight of the implementation of their results, and adjudication of arising conflicts (Davey, 2014). Interestingly, in the last few years a broad consensus has emerged that among these three functions, the Dispute Settlement Mechanism (often referred to as DSM or DSU, based on the “Dispute Settlement Understanding” agreement which guides the procedure) is by far the most successful one, while WTO trade negotiations are failing and giving more and more ground to regional trade agreements, thus inadvertently making an “international trade court” the key role of the WTO (Delimatsis, 2015; Swinbank, 2015; Blanchard, 2015; Matsushita, 2014; Bladwin, 2015; Cottier, 2016; Davey, 2014). Some researchers claim that litigation under WTO is being utilized as an instrument of breaking the negotiation deadlock, thus “correcting” the fallacies of the less-successful WTO function (Gehring, 2010). An even bolder assertion is that the DSU is the one function that saves WTO from irrelevance in the face of regionalism, as the all-encompassing court-like functions can serve as a unifying bridge between local trade arrangements (Gao & Lim, 2008; Cottier, 2015). Whatever the exact role the WTO will assume in the future, its dispute settlement mechanism will clearly play a key part in shaping it (Cottier, 2015; Hoekman & Mavroidis, 2015). The bottom line is, WTO’s future position vis-a-vis regional trade arrangements will be heavily influenced by WTO’s judicial function (de Bievre & Poletti, 2015; Davey, 2014), so now more than ever the WTO DSU requires the attention and input from academia. Should scholars fail to contribute to amelioration of the as-of-yet unresolved issues of its dispute resolution mechanism, WTO’s court runs the risk of being outsourced to regional courts much like its negotiation function had been (Alter & Hooghe, 2016). Thus, the importance of academic research

on the DSU today cannot possibly be underestimated – it is entirely possible that the fate of WTO, one of the key institutions of global governance, is at stake.

That is not to say that the WTO DSU has not received its fair share of attention from the academia over the years – only that a range of notable issues is still present (e.g. Dickinson, 2013; Acharya, 2015; Ram, 2014; Brolin, 2016; Sacredoti et al., 2016; Stewart et al, 2013); and that several aspects of the DSU process have not been sufficiently studied as to provide substantive solutions (e.g. Elsig, 2015; Bown & Reynolds, 2015). In particular, *plaintiff's choice between peaceful settlement and empanelment* has not been studied nearly as much by the scientific community as other aspects of the DSU process; only a small number of works to date have focused on this issue area. This is surprising, considering the fact that WTO strongly encourages peaceful, mutually-agreed settlement rather than litigation at the panel (Park & Chung, 2016; Johns & Pelc, 2013), but the proportions of disputes solved during negotiations and those taken to the panel are roughly equal at the moment (“Understanding the WTO: a unique contribution”); so a keener interest in determining which factors affect the likelihood of dispute escalation should be expected. Thus, of all the sub-sections of academic works on WTO DSU, this one requires further input with greater urgency.

To date, a modest body of academic works examining dispute escalation in the WTO (i.e. Guzman and Simmons, 2002; Busch & Reinhardt, 2000; Ahn, Lee & Park, 2013; Van Kerckhoven, 2015) have conceptualized the decision to transit from the consultation/negotiation stage to the panel stage (expressed in the formal request for a panel) as an explicit choice made by the plaintiff and studied possible predictor variables affecting that decision. However, a brief examination of these works reveals a certain common thread running across the selection: most of them appear to put forward either uniform or highly similar predictor variables (such as GDP differences, respective democratic levels, nature of the contested policy), but get mixed results (for instance, compare Ahn, Lee & Park, 2013; and Busch & Reinhardt, 2003). This could be attributed to the fact that most of the explanatory variables discussed above were proposed on the basis of practical knowledge or pragmatic hunches, rather than derived from IR, IL, Political Science or conflict study theories (Bown & Reynolds, 2015). This is the gap that the present thesis aims to address: introducing a *firm theoretical grounding* will help to systematize the effects of two known predictor variables which have shown mixed results in the past, GDP size/developmental status and democratic level of a country, in hopes of explaining said mixed results; as well as putting forward fundamentally new independent variables, which could contribute to the present discourse on the WTO dispute escalation and reinvigorate the field. Therefore, the present thesis aims to *build a theoretically-backed model of plaintiff's decision-making when faced with the choice between early*

settlement and empanelment in order to derive new predictor variables and test some of the familiar ones.

Finally, the focus of the present thesis will be limited to developing states only. With a few rare exceptions (i.e. van Kerckhoven, 2015; Busch & Reinhardt, 2003), the literature on dispute escalation in the WTO DSU does not draw any conclusions specific to developing states as plaintiffs. Other than including “developing/developed status” as a control variable, most works on WTO dispute escalation do not analyze the behaviour of developing states in much detail. This calls for more academic inquiry, since evidence to date suggests that developing states face a number of different systematic constraints in the DSU which can fundamentally affect their behaviour and choices (van Kerckhoven, 2015).

First, the expected utility of empanelment is different for a developing plaintiff than a developed one. Generally, if the case is brought to the panel, the complainant is almost guaranteed to achieve his desired goals: statistically speaking, 95% of claims are accepted by the panel, and respondent's non-compliance with a panel ruling is almost unprecedented (Davis, 2012). Developing plaintiffs' claims, on the other hand, are accepted only in 58% cases (Horn & Mavroidis, 2008). This is particularly troubling in the light of the fact that developing states-as-plaintiffs have been convincingly shown to only file complaints against the most obvious, easily-observable breaches (Bown & McCulloch, 2010; Bohanes & Garza, 2012), which is usually attributed to their inferior legal capacities (Guzman & Simmons, 2005). This drastic difference between claim acceptance rates means that calling for a panel generally entails more risk for a developing state than a developed one – especially considering that the substantial costs of empanelment are comparatively higher for a state with a smaller GDP (Bown & Hoekman, 2005). Finally, in the event of respondent's non-compliance with a favourable panel ruling, developing state-plaintiffs are less equipped to press for the implementation because the key enforcement instrument at WTO's disposal – the permission to introduce retaliatory protective measures – is usually dismissed as self-harming by a developing complainant (Bohanes & Garza, 2012). Thus, *empanelment* is comparatively less attractive for a developing state due to the increased risk of an unsatisfactory outcome.

Second, a *mutually agreed-upon settlement* is also more likely to be removed from the ideal preferred outcome of a developing complainant. While it is proven that respondents overwhelmingly tend to propose sizable concessions during the negotiation stage of the DSU (Busch & Reinhardt, 2000), a developed respondent facing a developing plaintiff is likely to offer less, so the concessions are only partial and usually far less attractive (van Kerckhoven, 2015). This can be explained by developing plaintiff's limited bargaining power, and sometimes by his economic dependence on the respondent (Davis, 2012; Guzman & Simmons, 2005). Therefore, the

mutually agreed-upon settlement is likely to be removed from the ideal preferred outcome of the developing complainant, while getting involved with a panel entails a bigger risk. Taken together, this shows that developing states face a number of unique constraining factors in their choice between early settlement and empanelment, which calls for more scholarly inquiry into this specific scenario.

The key research problem of the present thesis is therefore: *how can we explain, using a theory-based decision-making model, a developing plaintiff's choice between early settlement and empanelment during the WTO Dispute Settlement proceedings?*

To summarize, the subject area of the present work holds both academic and societal relevance: the future of WTO is likely to depend on the success of its DSU function, which makes the societal significance of academic contributions to understanding and improvement of the DSU greater than ever before. One of the more obvious gaps in the present body of literature on WTO DSU is the lack of a well theoretically-grounded model of dispute escalation. The present thesis aims to contribute to that issue area by building a decision-making model from the plaintiff's perspective in hopes of discovering new causal relations and offering more insight on the established ones. Finally, it focuses on developing plaintiffs specifically because evidence to date appears to suggest that they face unique systematic constraints which are not yet fully addressed in the existent body of literature on DSU dispute escalation. This contributes to the highly important ongoing discourse on whether developing states in the WTO face systematic disadvantages.

II. Contextual background and literature review

The academic discourse on WTO DSU is generally very advanced and highly diverse. However, as explained in the introduction, some gaps are present in the current state of scientific inquiry into this subject area. To illustrate the point and further justify the choice of *dispute escalation* as the topic of the present thesis, a cursory look over the DSU process and academic inquiries into its corresponding phases allows to point out the areas which require further attention from the academia.

When a state believes that its rights are being infringed and chooses to file a complaint, it goes through two modes of dispute resolution: first, the mandatory 60-day period of negotiations with the respondent during the *consultation stage*; if these negotiations fail, the plaintiff may request a *panel*, carry on with the proceedings until it receives the final report, and possibly turn to the Appellate Body if it disagrees with the panel's verdict (Marceau, 2005). Thus, there are several crucial turning points and stages within the process: dispute initiation, the consultation stage proceedings and outcomes, the panel request, the panel proceedings and outcomes, and Appellate

initiation, procedures and outcomes. Figure 1 offers a schematic illustration of the WTO DSU process from the plaintiff's perspective, outlining the crucial stages and possible alternative developments.

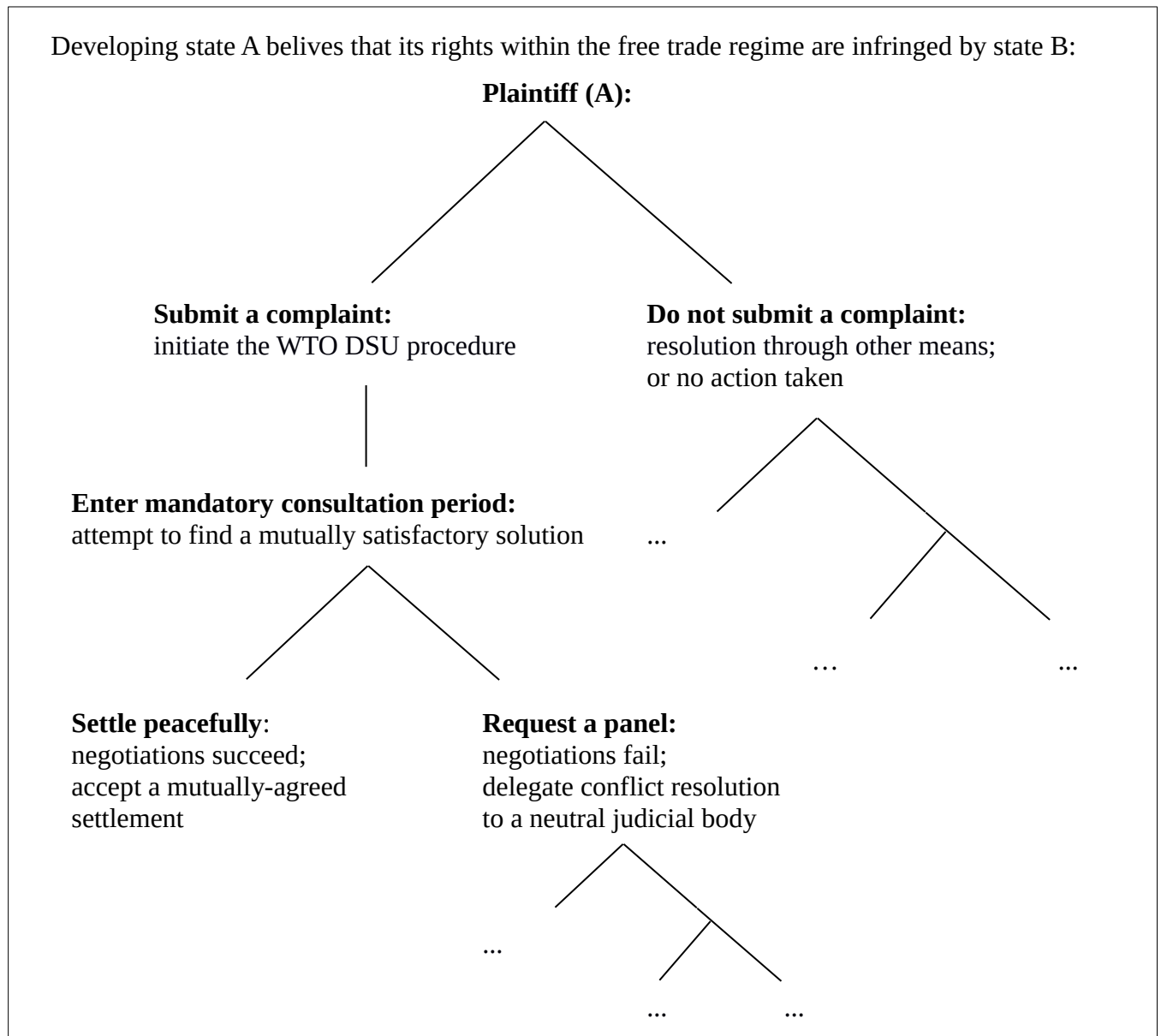


Figure 1. Decision tree depicting the WTO DSU process from plaintiff's point of view.

A wealth of literature has been amassed on the subject area of dispute initiation and factors which influence the choice to file a complaint with the DSU (i.e. Davis, 2012; Johns & Pelc, 2013; Bown, 2005; Busch, Reinhardt & Shaffer, 2008; Reinhardt, 2000; Sandhu, 2016; Khan, 2015; Bown & Hoekman, 2005; Francois et al., 2007; etc.). The outcomes of disputes which had not been submitted to the WTO system is an issue area that hardly allows for systematic quantitative studies given the nature of the subject and the subsequent difficulty of obtaining quantifiable data on conflicts which have not been brought forward (Davis, 2012). The panel stage of the dispute has

been studied very thoroughly over the years, with various academic inquiries delving into such matters as claim success rate, third party participation, economic outcomes of panel rulings, enforcement and possible countermeasures (e.g. Hoekman, Horn & Mavroidis, 2009; Mitchell, 2013; Mavroidis, 2000; Elsig, 2015; Davey, 2009; Zeng, 2013; Bown & Reynolds, 2015; Besson & Mehdi, 2004; etc.). The Appellate proceedings have also received a fair share of interest from the academia, particularly within the subject area of treaty interpretation and related issues (i.e. Hughes, 1997; Alford, 2006; van Damme, 2009; van Damme, 2010; Ortino, 2006, Howse, 2002, etc.).

By comparison, the choice between early settlement and empanelment has not been studied nearly as rigorously. The remainder of this chapter will discuss the works which comprise the existing body of literature on WTO dispute escalation, as well as the available literature on other sub-topics which are relevant to the formulated research goal: the position of developing countries in the DSU, the choice between early settlement and empanelment, and the application of rational choice models to early settlement in the DSU in the academic works to date.

2.1. Developing countries in the WTO DSU

A wide array of academic works has been written on the subject of developing states in the WTO DSU – predominantly by scholars of International Relations, International Law, and Economics (Bohanes & Garza, 2012). To a large extent, this attention is attributable to a decades-old concern that the WTO (and, previously, the GATT) adjudication system is biased against the less-powerful states – a concern which may be valid considering the patterns of limited participation of developing states in the DSU, and the well-noted over-representation of the G4. Preoccupation with this issue is also justifiable given the fact that one of the key aims of the GATT-to-WTO reform of the DSU had been to create a “rule-based” system, supposedly insulated from power politics (Besson & Mehdi, 2004). Thus, a large section of academic literature continuously aims to evaluate whether the current WTO DSU system is biased in favour of the powerful developed states. Often, such works focus on patterns of dispute initiation by developing states (i.e. Sandhu, 2016; Khan, 2015; Bown & Hoekman, 2005; Francois et al., 2007) or on the success rates of their claims, typically at the panel stage (i.e. Mitchell, 2013; Zeng, 2013; Besson & Mehdi, 2004; Hoekman et al., 2009).

Overall, the range of academic works written about developing states in the WTO DSU is impressively large, and an overview of all sub-topics which had been explored within this issue area would go far beyond the scope of the present thesis. For a comprehensive overview, one may turn to Bohanes & Garza (2012), who have compiled a synopsis of to-date academic knowledge on various aspects of developing states’ participation in the WTO DSU. For the purposes of the present thesis, it indicates the continued societal relevance of academic inquiries into the role of developing states

in the DSU, no matter which specific aspect of its proceedings is being examined. The choice between early settlement and empanelment for a developing plaintiff, however, has only been the focus of a handful of works to date (i.e. Van Kerchoven, 2015; Busch & Reinhardt, 2003; discussed in more details below), but some insights from the broader body of literature on WTO empanelment in general can be useful to tailor the most suitable approach.

2.2 Negotiation or empanelment?

In contrast with the subject of developing states' participation in the WTO DSU, the topic of choosing between early settlement and requesting a panel has not received as much attention from the academia (Ahn, Lee & Park, 2013). As mentioned in the introduction, only a few studies have conceived of early settlement (during negotiation/consultation phase) and empanelment as two alternative routes which the plaintiff state may take. One of the earliest works conceptualizing the transition from consultation to empanelment as an explicit choice of the complainant had dubbed early settlement during consultation stage as “bargaining in the shadow of the law” (Busch & Reinhardt 2000); a term which appears to have proliferated over a number of academic works dedicated to this subject. Their work, however, is mainly focused on the differences in probabilities of securing concessions during various stages of WTO dispute resolution, and discusses the consequences of the transition from GATT to WTO dispute settlement mechanism. Other prominent academic works which discuss the choice between settling early and calling for a panel include the following:

- Bernauer & Sattler (2005) test whether certain types of disputes – namely, those concerning health, safety and environment – are more prone to escalating to the panel stage. Their findings hold that, while the widespread notion that these types of disputes are more likely to end in a panel was proven to be false; the h/s/e disputes which do result in a panel have a higher probability of escalating into a compliance dispute later.
- Beshkar & Park (2016) discuss the decision to call for a panel on the basis of a signaling game with information asymmetry between plaintiff and respondent (where the defendant is always better informed). Their model, however, assumes that the defendant knows the likelihood of a positive panel ruling, which is less applicable to cases involving developing countries, since those cases tend to exhibit greater variation in claim acceptance and rejection.
- Maggi & Staiger (2016) also put forward a comprehensive model predicting which stage a dispute will be resolved at (and thus accounting for the likelihood of early settlement) based on *ex-ante uncertainty* over the possible panel ruling and *information available to the panel*. These factors are claimed to determine the equilibrium outcome.

- Ahn, Lee & Park (2013) focus on GDP differences between the plaintiff and the respondent as the independent variable which predicts early settlement during the negotiation stage. Notably, their work is rather progressive for its field since it explicitly refers to a bargaining theory and, in addition to exploring such well-established empirically driven variables as *economic size difference* and *retaliatory capacity*, proposes an interesting new predictor variable, *reputational concern*.
- Poletti, De Bièvre & Chatagnier (2015) have primarily studied the impact of litigation threats on multilateral trade negotiations in the WTO, but they do mention the causal link between the likelihood of WTO-authorized retaliation and early settlement in the DSU.

A work which comprehensively addresses the likelihood of triggering the panel stage is “To Settle or Empanel?” by Guzman and Simmons (2002). Their main hypothesis focuses on the nature of the policies which have triggered the initial complaint: they suggest that claims against “lumpier” policies (i.e. those domestic laws and practices of the respondent which are not easily adjustable) are more prone to escalation. They run a logit regression model for “lumpiness” and several other independent variables, which are hypothesized to predict the decision to settle early or call for a panel. Developmental status of the states involved in a dispute, however, is only included as a control and not a key explanatory variable - although the authors run the analysis for four different models based on developing-developed complainant-respondent pair combinations, they do not focus on disputes involving a developing state plaintiff specifically.

Busch & Reinhardt (2003), in contrast, do focus on developing states as plaintiffs in the WTO DSU. Like other works cited in this section, their article assumes the presence of two dispute settlement strategies and an explicit choice between early settlement and empanelment. However, this analysis, similar to their earlier work (2000), focuses on the claimant’s *likelihood of securing concessions* during different stages of the DSU, observing any changes over time between the GATT and the WTO eras. Overall, they find the choice between early settlement and empanelment to be one of the independent variables affecting the likelihood of securing substantive concessions from the opponent, along with such predictors as *per capita income* and the “*nature*” of the case (sensitive/agricultural/multilateral). Therefore, their attention to early settlement in itself is only secondary to their main issue area of interest, the ability to acquire substantive concessions from the respondent.

In short, there is a modest selection of analyses which comprehensively address plaintiff’s choice between settlement during negotiation and empanelment. In many cases, predictive variables which are being put forward by existent research (either for general models conceptualizing the choice between negotiation and empanelment, or for those which focus on developing states specifically) are derived from empirical hunches rather than a theoretical perspective, and are therefore fairly uniform - but the empirical findings which follow are often mixed and inconclusive.

For instance, both Ahn, Lee & Park (2013) and Busch & Reinhardt (2003) have discussed the idea of GDP size differences between plaintiffs and respondents as a determinant of whether the dispute will be settled early, but arrive to opposite conclusions. Finally, very little attention has been paid to the choice between early settlement and empanelment for a developing state-plaintiff specifically. This leaves ample space for further academic inquiry since, as explained in the introduction, the decision to empanel holds rather different implications and risk levels for developing states than for OECD countries, so further analysis of developing states' decision-making is warranted.

2.3 Decision models applied to WTO dispute escalation

Out of various possible theoretic approaches to conceptualizing WTO dispute escalation, *decision theories* or models addressing the choice to empanel as *rational choice* decision-making are particularly lacking. This phenomena is surprising, considering the intuitive appropriateness of such theoretical underpinning – for instance, the broader subject of WTO DSU participation sees no shortage in the usage of rational choice perspectives (i.e. Abbott & Snidal, 1998; Trachtman & Moremen, 2003). However, a new trend is beginning to emerge, and the last few years saw four examples of bargaining and game theory models being applied to the subject area of empanelment.

Among the works listed in the previous section, Maggi & Staiger (2016) have conceptualized the whole DSU process as a *signaling game*, although their focus covers the entire process so it cannot be said that they aim to contribute to the discussion on plaintiff's choice between empanelment and early settlement specifically. Beshkar & Park (2016) and Ahn, Lee & Park (2013), who do focus on empanelment, have also alluded to *bargaining* models in some parts of their works.

One notable recent work which stands out is that by van Kerckhoven (2015), who models a *game-theoretic* conception of the escalation from negotiation to the panel stage of the WTO DSU, predicting whether the plaintiff will settle early or request a panel. Despite the non-restricted sample used in the analysis, the author does strive to derive conclusions relevant for developing plaintiffs specifically. However, the author's chosen methodological approach (Statistical Backwards Induction), despite yielding statistically significant results, is unable to differentiate between the effects of specific independent variables; and the variables themselves repeat the predictors which had been proposed and tested by earlier works on WTO dispute escalation. Most importantly, this work – for all its strengths and drawbacks - is clearly indicative of the vast potential which the application of rational choice models holds for studies of WTO empanelment.

2.4. Conclusion

The brief literature overview presented above shows that there is an ample selection of works on the subject of *developing states' participation* in the WTO DSU which is being regularly updated, signaling that the issue area has maintained its relevance throughout the last several decades. However, so far little has been written on developing states' behaviour when faced with the choice between settling early or pushing for a panel. This is the knowledge gap which the present thesis attempts to fill. The literature on dispute escalation in the WTO, however, predominantly uses empirically-backed predictors, rather than those derived from a thorough theoretic conceptualization. All too often this results in a certain degree of uniformity and the usage of a similar set of predictor variables. In the meantime, the adoption of novel theoretical approaches has the potential to reinvigorate the discourse - the work of Ahn, Lee and Park (2013), for instance, shows how theoretical insights can diversify and point to new, yet-unexplored variables; while the works of van Kerckhoven (2015) and Maggi & Staiger (2016) show the benefits of a comprehensive approach to modeling.

The present thesis aims to combine those two comparative strengths – a novel theoretical perspective and detailed modeling – into a well-grounded and developed theoretical approach revolving around decision-making and choice, which would have the potential to yield new insights on the topic of WTO dispute escalation. Thus, this work will contribute to the existing body of knowledge by looking at the less-studied transition between phases of consultations and panel and backing it within a firm theoretical grounding with the aim of introducing new ideas and elements to the discourse on WTO dispute escalation and the behaviour of developing plaintiffs.

III. Theory

The decision to apply Public Administration and Political Science theories to an analysis of developing state-plaintiff's decision-making in the WTO DSU mechanism may appear to be somewhat unorthodox at first glance, since the realm of state actions on the international plane - and within IOs specifically - is typically covered by International Relation theories. In particular, the subject of developing states' experiences in the WTO DSU has been almost exclusively studied by academics from IR, International Law, and Economics (Bohanes & Garza, 2012). However, an insight from a different branch of academia may prove to be a beneficial contribution to ongoing and yet-unsolved debates within the issue area, such as the decades-long discussion on whether developing countries face systematic disadvantages at the WTO DSU (Besson & Mehdi, 2004).

The choice of the *unit of analysis* poses one potential hurdle in the application of PA/PS theories to this issue area. Both social sciences are largely informed by methodological

individualism, which rose to prominence due to the influence of economics-inspired conceptions of decision-making (List & Spiekermann, 2013). It is debatable whether deconstructing state behaviour in an international organization into individual decisions and choices is advisable. However, the calls to put less focus on an individual as a unit of analysis (Pettigrew 2014, see also March & Simon, 1958), as well as tentative proposals of reconciliation between methodological individualism and holism (List & Spiekermann, 2013), allow to move past the individualism-holism dichotomy (which would have otherwise rendered the application of a number of theories to this subject problematic), and instead focus on *decisions* as units of analysis. Decision theory is an intuitively fitting framework to study how developing states' make the choice between early settlement and empanelment.

Decision theory, the original conception of which is frequently credited to Simon's *Administrative Behaviour* (1947), had later been split into a number of traditions based on underlying assumptions of actor rationality. *Rational Choice theory* (and its related branches of *game theory* and *expected utility theory*) rests on the assumption of "pure rationality", or, at the very least, assumes *utility-optimizing behaviour* under boundary conditions (such as limited available information). Rational Choice is by far the most influential subset of Decision theory, having dominated paradigms and methodological choices of Political Science and Public Administration scholars for decades – so much so that, to this day, some authors see *decision theory* (in its broader meaning) as indistinguishable from *expected utility perspectives* of rational choice (i.e. Hansson, 2005). Within this theoretical perspective, plaintiff is a self-interested and rational actor seeking utility maximization (Bueno de Mesquita, 2009); and therefore the decision to call for a panel or accept an early settlement is based on a comparison of the expected utilities of the two available choices.

This implies that, from a rational choice perspective, attractiveness of empanelment cannot be estimated outside the decision-making context - the negotiation stage of the DSU. In order to gauge the expected utility of the two choices, a plethora of factors need to be taken into consideration, such as the extent of possible concessions by the respondent during negotiations, plaintiff's willingness to accept a suboptimal negotiation outcome, the estimated costs of pushing for a panel (which are essentially the tangible costs of a breakdown of negotiations), the unknown probability of a positive panel ruling, etc. etc. Thus, a rational choice model which incorporates both *bargaining* and *conflict* elements would be most appropriate to explain the developing claimant's decision to empanel or settle early. Two rational choice (collective) decision-making models have been extensively applied to interstate bargaining on the international plane, and gained prominence among Political Science (and, to some extent, IR) scholars in the last few decades – Bueno de Mesquita's *challenge model* and Stokman's *exchange model* (Thomson, Stokman & Torenvlied,

2003; Arregui, Stokman & Thomson, 2006). Out of those two, Bueno de Mesquita's model specifically deals with power- and conflict-based bargaining and negotiations, since it is based on non-cooperative game theory; which makes it a fitting model for a study of DSU negotiations and empanelment.

3.1 Choosing to challenge: the expected utility/challenge model

Bueno de Mesquita's *challenge model* (also known as the *expected utility model*) has been extensively applied to states' decision-making both in and outside various International Organizations (Arregui, Stokman, Thomson 2006), which further attests to its suitability for studies of state behaviour in the WTO DSU. On the macro-level, the model covers the strategic power-based interactions between negotiating parties and the outcomes of said interactions (Thomson, Stokman & Torenvlied, 2003); its full span is beyond the scope of the present paper. The model's conception of *micro-level decision-making*, however, conceptualizes strategic decision-making in a two-player situation from the perspective of one of the parties. It is therefore capable of explaining a plaintiff's strategy and decision-making vis-a-vis the respondent during the negotiation phase of the DSU. In particular, the micro-level model presents a decision tree of actor *i* in regards to challenging the position of actor *j* during negotiations (Bueno de Mesquita, 1994):

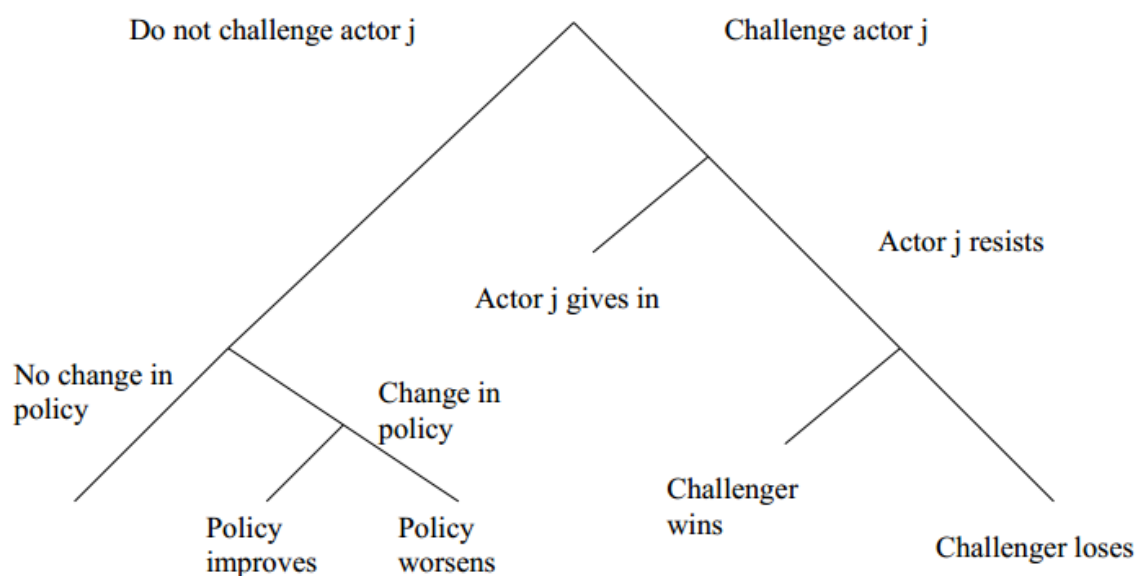


Figure 2. Bueno de Mesquita's *challenge model* depicting decision tree of actor *i* vis-a-vis actor *j*

The model holds that *challenging the opponent* can yield positive or negative results (a desirable or undesirable change of the expected negotiation outcome from *i*'s perspective) based on

the interactions between *i* and *j*, while the choice not to challenge may lead to *no change*, a *worsening* or an *improvement* of the expected negotiation outcome depending on outside influences (Bueno de Mesquita, 1994). Within the original context of this model (collective bargaining), those outside influences are comprised of other actors' challenge attempts (Thomson, Stokman & Torenvlied, 2003). Taking some liberties and applying the model to a WTO dispute scenario, *i*'s choice not to challenge *j* could be conceptualized as the decision to empanel, since in both cases the final outcome is left in the hands of third parties and external forces. Conversely, the choice to challenge entails an active attempt to shift the respondent's position during the consultations stage closer to that of the complainant. The unique appropriateness of this decision tree model lies with the fact that it links bargaining outcomes to the strategic choice of the challenging actor alone – a condition which is uniquely true for a WTO dispute, since only the plaintiff has the power to decide whether the dispute escalates to the panel stage or not.

The application of Bueno de Mesquita's model to the DSU empanelment scenario is shown in Figure 3. In short, the plaintiff is presented with a choice and his decision is based on comparing the expected utilities of both options (Bueno de Mesquita, 2009). Expected utilities, in turn, are a product of *the shift in expected negotiation outcome* attributable to *i*'s challenge and the likelihood of said shifts. The unavailability of data on precise state positions during the negotiation stages of the DSU (which are strictly confidential in order to facilitate the negotiation process (Weiler, 2001)) prevents direct calculation of possible policy shifts; however, cohesive insights can be gained by looking at the *estimations of likelihood of various possible outcomes*. The challenge model's *expected utility* formula offers a parsimonious and elegant method of estimating the probability of each outcome of the *challenge* option:

- "*j gives in*" and "*j resists*" are determined by the level of salience which *j* assigns to the issue at hand (thus, their probabilities are measured by $1-S_j$ and S_j , respectively)
- "*i wins*" and "*i loses*" (in a scenario where *i* exerts pressure on *j* and *j* attempts to resist) are determined by *j*'s *power*, which is comprised of the amount of resources *j* possesses (*capability*) and how willing *j* is to spent them on resisting *i*'s challenge (which is determined by *j*'s *salience*, which in this scenario is known to be high since *j* did not give in) (Bueno de Mesquita, 1994).

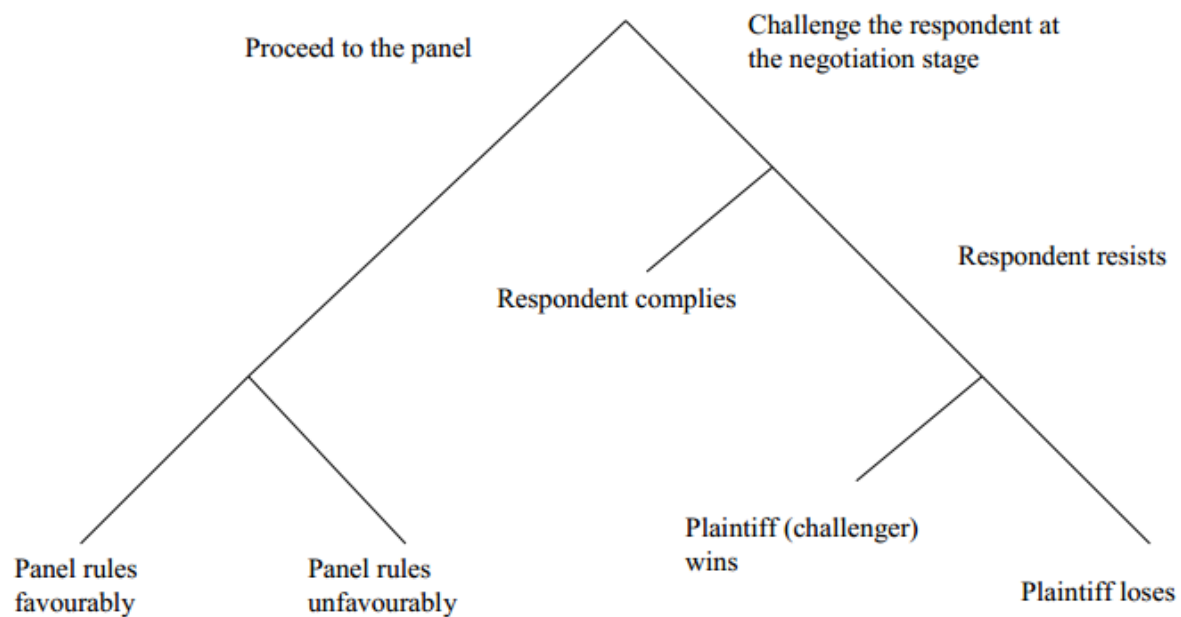


Figure 3. The *challenge* model applied to the DSU scenario, depicting the possible outcomes of challenging the respondent and proceeding to the panel

These estimations can be applied to the present study as follows. A developing state-claimant faces two options: to challenge the respondent, engage in negotiations, attempt to shift his position and accept the negotiation outcome which follows; or let the panel determine the outcome. The attractiveness of empanelment is inversely proportional to the distance between the negotiation outcome and plaintiff's preferred point. That distance is determined by plaintiff's "challenge" success, whereby the defendant "gives in" or "loses" (i.e. attempts to maintain his position but is forced to change it during negotiations). A positive outcome of the challenge means that the expected negotiation outcome is shifted closer to plaintiff's ideal point, thus making *early settlement* more attractive and lowering the comparative utility of *leaving the outcome to the panel*. Thus, the attractiveness of the negotiated early settlement is determined by the outcome of plaintiff's "challenge"; conversely, the likelihood that a developing state-claimant will request a panel is negatively associated with the probability that the respondent "gives in" or "loses" during negotiations.

The probability of the first positive outcome ("defendant gives in") is determined by the *salience level* which the defendant attaches to the issue. According to the model, lower salience level of the respondent increases the expected utility of challenging the respondent, since he is more likely to submit to plaintiff's challenge and shift its position closer to that of the plaintiff during negotiations (Bueno de Mesquita, 1994). Conversely, a highly salient respondent is likely to resist the challenge, reducing the possibility of a negotiation outcome which the plaintiff would find

acceptable and therefore increasing the comparative expected utility of requesting a panel for the plaintiff.

H1: The level of salience which the respondent attaches to the issue is positively associated with the developing state-plaintiff's willingness to request a panel.

The likelihood of the second positive outcome of the “challenge” option (“*i* wins”) depends on the respondent’s power to resist the challenge, which is measured by his capabilities. The *challenge model* defines it as: $P_{\text{resp}} = C_{\text{resp}} * S_{\text{resp}}$. Since salience is already incorporated into the theoretical framework, the focus of the next hypothesis is respondent's *capability* alone, in order to prevent potential data overlap and collinearity between predictor variables. According to the model, high capability of the respondent makes it more likely that a developing state-plaintiff’s challenge during negotiations will fail (Bueno de Mesquita, 1994). A highly salient and powerful respondent will devote more of his resources to both resisting plaintiff's influence attempts and influencing the plaintiff in turn, thus drastically reducing the likelihood of a negotiation outcome which is close to plaintiff's preferred point, which in turn makes the option to *request a panel* more attractive.

H2: High respondent capability is positively associated with the likelihood that the developing state-claimant will request a panel.

Thus, respondent salience and capacity determine how successful the plaintiff will be in persuading the respondent to shift his position during negotiations, and therefore how close the final negotiation outcome will be to plaintiff's preferred point. The two factors which reduce the likelihood of an acceptable negotiation outcome for the plaintiff increase the probability that the plaintiff will request a panel.

3.2 Choosing to settle: preference for political satisfaction and domestic audience costs

The negotiation outcomes described above are *substantive* in nature, framed as concrete policy gains. In an extension of the model, Bueno de Mesquita (1996) discusses a different type of prospective gains, introducing the distinction between *policy satisfaction* and *political satisfaction*, where the latter refers to being seen as an agreeable actor who initiates deal-making and “belongs to a winning coalition” (in a WTO DSU scenario, this translates to agreeing to a peaceful settlement even when the policy concessions that the respondent gains are suboptimal). Policy and political satisfaction typically comprise a trade-off; and the author holds that an actor's choice, while still based on salience and capability estimations, will ultimately depend on his preference of one type of satisfaction over another. The model built in the previous section assumes a decision-maker whose indifference curve is heavily skewed towards valuing policy satisfaction, since political gains from a mutual settlement aren't taken into account. In reality, an average decision-maker in international negotiations is expected to want a mix of policy and political gains (Bueno de Mesquita,

McDermott & Cope, 2001). Therefore, the theoretical model should take into account how much the plaintiff values *political gains*, secured through peaceful settlement, over the possibility of getting greater *policy gains*, which could be obtained through empanelment.

On the international level, peaceful settlement could imply preservation of good relations between belligerents. This is a relationship which has already been studied rather extensively, and so far evidence suggests that close ties do not affect the outcome of a DSU case, primarily because of a “fighting friends” culture where close countries and allies are less hesitant to use the WTO dispute settlement mechanism in the first place because the dispute will not significantly harm their relationship (Davis, 2012).

It is therefore rational to assume that political gains from peaceful settlement are driven by domestic, not international, factors. Plaintiff state representatives are beholden to their domestic governments, and, ultimately, their constituencies (Vaubel, 2006). Broadly, a bureaucratic/interest group perspective on foreign policies holds that the political leadership which represents state interests on the international plane is affected by and accountable to domestic constituencies, and therefore foreign policies are often determined by domestic interest group pressure (Bueno de Mesquita & Lalman, 1992). This means that evaluation of comparative expected utilities of the *challenge* and *no challenge* options should also take into account *domestic audience costs*, since it is precisely the economic losses of domestic companies which typically drive a state to initiate a WTO dispute in the first place (Davis, 2012).

This is where *political gains* of a peaceful settlement come into play: due to domestic pressure, arriving to a semi-satisfactory mutual agreement is preferred to a scenario where the plaintiff initiates a panel, faces the empanelment costs yet receives a negative panel report. Naturally, this pressure to appease domestic audiences should be a more significant motivator for those developing states which are more beholden to their domestic constituencies – namely, those with high levels of democracy. In a largely *democratic peace*-inspired line of thinking, Bueno de Mesquita (1999) summarizes this phenomenon by stating that governmental actors in democratic states will avoid failed policies to ensure their political survival. Within the present context, this avoidance tendency means that once a WTO dispute is started, a democratic state would prefer a semi-satisfactory peaceful settlement over running the risk of losing a panel completely – a risk which is more prominent for a developing state than for a developed one. In short, a higher democratic level of the plaintiff increases the domestic audience costs of losing a panel – therefore, a more democratic developing plaintiff values *political gains* more, which makes peaceful settlement more attractive to him.

H3: Developing state-plaintiff's preference for political satisfaction, rooted in his democratic level, is negatively associated with the likelihood of empanelment.

3.3 Choosing to delegate: Principal-Agent theory

The variables adapted from Bueno de Mesquita's model fully cover the expected utility of the *challenge* option, but not its *no-challenge* alternative. This is where the WTO DSU reality deviates the most from the negotiation scenario which the challenge model had originally been developed for: in the model's original form, the “no challenge” option entailed *inaction* by actor *i*, and letting other bargaining participants determine the outcome. For a developing state-plaintiff in the WTO DSU, the *no challenge* option entails a different type of action: delegating the decision-making and the outcome to a *neutral judicial body*. The act of delegation has a different set of costs and benefits which therefore affect the comparative utilities of the two available options. Thus, to estimate the perceived utility of the *no challenge* route, *delegation* theories should be applied.

The most prominent delegation theory connecting Public Administration to Political Science is the *principal-agent theory*. Broadly, the theory conceptualizes a relationship between an actor delegating a certain task and the agent, who then becomes responsible for the task's implementation and answers to the actor who placed the responsibility onto him (Alter, 2004). Just like there are various reasons for the principal to delegate a task (which can all be classified under umbrella terms of *transaction costs* or *credibility costs* (Pollack, 2003)), there are numerous potential issues arising in such a relationship – such as information asymmetries, divergent goals and preferences, difficulties in controlling an agent, and uncertain outcomes (Bueno de Mesquita, 2006).

Typically, the agent is subordinate to the principal, and even in the face of diverging interests principals are usually capable of placing (admittedly, incomplete) controls and constraints on the agent's behaviour (Bueno de Mesquita, 2006). Against that backdrop, delegation to a highly-powerful International Organization is a unique and highly specialized subset of P-A relationships with rather different power dynamics. Even though states are assumed to have some control over an IO agent through the usual mechanisms of recontracting (which within this context can, for example, mean the supply of funds and personnel), this control is greatly diminished and far less extensive than in a typical domestic P-A relationship (Alter, 2005). Moreover, the typical predictor variables put forward in a P-A relationship involving an international organization – such as information disparities and recontracting costs – are considered to be largely irrelevant when the IO in question is an international court (Hawkins et al., 2006). International Courts belong to a competence- and reputation-based *trustee* type of agents who are quite possibly on the farthest end of the constraint-autonomy scale and are least beholden to their principals (Alter, 2004).

The likelihood of any type of control over an international court-like agent as powerful as the WTO DSU mechanism by a developing state-plaintiff is therefore essentially impossible by default. This creates an issue for the plaintiff: according to the P-A theory, *the need to control* the agent is

positively associated with *issue salience* and exacerbated by the *level of technical complexity* which permits a specialized, technically knowledgeable agent more discretion from the principal. A high-salience and high-complexity issue thus puts the principal in a highly disadvantaged position of badly needing but lacking the ability to control the agent due to skill-based barriers to entry (Eisner, Worsham & Ringquist, 2000). In a WTO dispute, the latter two elements of the problem cannot be changed: controlling the agent is a priori impossible, and the WTO panel is always far more knowledgeable than the developing plaintiff on the case law and issue at hand. Thus, a highly-salient case would put a principal in an aggravated position where, due to the lack of much-needed control the agent's level of afforded discretion, he might bypass delegation altogether (Hawkins et al., 2006; Elsig, 2010).

Thus, the key cost of the *no challenge/delegate* option, which in the WTO DSU scenario entails empanelment, lies with issue salience. Therefore,

H4: Plaintiff salience level is negatively associated with the likelihood of empanelment.

3.4 Overarching theoretical framework: what affects the likelihood of empanelment?

According to the rational choice theory, a developing state-plaintiff facing a choice between early settlement and empanelment will evaluate and compare the expected utilities of both options. Bueno de Mesquita's challenge model holds that the expected outcome of negotiations – and consequently, the attractiveness of the compromise solution – depends on respondent's salience level and capability. The Principal-Agent theory suggests that the expected utility of empanelment is affected by plaintiff's democratic and salience levels. Thus, taken together, the four hypotheses put forward by the theoretical framework predict that, within the WTO DSU mechanism, the *likelihood that a developing state-plaintiff will request a panel is:*

- positively associated with respondent's salience level and capability;
- negatively associated with plaintiff's salience and preference for political satisfaction.

Notably, the possibility of establishing such causal relations across a variety of DSU cases rests on two underlying assumptions: that pushing towards a panel presents a risk for the developing state-plaintiff, and that both empanelment and early settlement options are available to the plaintiff when he is making the choice. The first assumption is not entirely straightforward because, even for a developing state-claimant, the likelihood of getting at least *one* claim accepted is still fairly high. On the other hand, broader models which conceptualize dispute escalation tend to agree that the claimant cannot be positively sure of a desired panel outcome (i.e. Beshkar & Park 2011; Maggi & Staiger, 2013). This uncertainty should be even greater for a developing state-claimant, considering its inferior legal capacity (Davis, 2012; Guzman & Simmons, 2005). An argument can also be made against the second assumption, should one see the transition from consultations to the panel as an

inevitable sequential process which occurs when negotiations fail and no concessions are proposed. Although respondent states' tendency to actively offer concessions (i.e. Busch & Reinhardt, 2000) means that developing claimants do typically have the option to accept partial concessions and settle early, unattractive as the option might be (van Kerckhoven, 2015), there is no guarantee that the offer had been made in the first place.

IV. Method

4.1 Data

The present thesis sets up a quantitative study based on the Horn & Mavroidis WTO dispute dataset (2008; also Horn, Mavroidis & Johannesson, 2011), which offers coded descriptions of all WTO DSU cases for the time period from 1995 to 2011. Since the focus of this study is the behaviour of *developing* plaintiffs at the DSU, cases featuring a developed or industrialized respondent have been omitted. In order to compensate for the loss of observations, the original dataset has been expanded to include cases up to and including 2015. The dependent variable (presence or absence of a panel request) has been coded on the basis of the data from Horn and Mavroidis, while the data for independent variables has been collected separately.

In order to ensure the reliability of the dataset after the inclusion of original data, some well-established causal relations have been tested with the new sample. In particular, the academic discourse on WTO had previously suggested that GDP sizes of both the plaintiff and the respondent have an impact on the claim acceptance rate by the panel (i.e. Mitchell, 2013; see also Busch & Reinhardt, 2003); both of these associations could be found on the present dataset and held statistical significance. The fact that several established and previously-tested causal relations can be seen in the new dataset testifies to its reliability.

4.2 Operationalization

The previous section has outlined several hypotheses derived from *rational choice* and *principal-agent* theories, in which the dependent variable is *developing state-claimant's decision to request a panel*. For the purposes of the present study, plaintiff's behaviour can easily be operationalized as a dichotomous variable, where "0" would indicate that the case had been settled during consultations and no empanelment took place; and "1" – meaning the plaintiff had requested a panel. The operationalization of the *independent variables* is discussed below.

H1/Independent variable: respondent's salience level;

Measured as: imports of contested good from plaintiff as a percentage of respondent's GDP.

For the purposes of the present study, *Salience*_{resp.} is measured as the magnitude of imports of the contested good from the plaintiff to the respondent as a percent of respondent's GDP (i.e. imports of footwear from Argentina to Indonesia, which were the subject of *DS123 Argentina-footwear case*, comprised ~0.07% of Indonesia's GDP). Admittedly, salience is notoriously difficult to estimate – such a task which would typically require inputs either from the parties themselves or professionals closely involved with the process (i.e. Arregui, Stokman & Thomson, 2006). However, monetary value of the trade flow at the heart of the dispute, expressed as a GDP percentage, has been chosen as the operationalization of salience in the present study because it simultaneously gauges:

- how big the *direct economic effects* of losing or winning the case on respondent's GDP would be;
- an estimation of how big of a threat the imports of the contested good from the plaintiff pose to the competing domestic industry. This is an important feature of *issue salience* because a state typically violates free-trade agreements overseen by the WTO in an attempt to protect domestic producers of a specific good, usually under pressure from lobby groups which they form (Davis, 2012). While it is not possible to measure exactly how the domestic industries could potentially developed in absence of foreign competition, this indicator does tap the immediate alleviating effects of respondent's protectionist policies as the monetary value of reduced foreign competition within its domestic markets.

H2/Independent variable: respondent's capability;

Measured as: respondent's status as a developed state, coded as a dichotomous variable with 0 signifying a developing respondent and 1 – a developed one.

Technically, respondent's capability is best estimated by its GDP size: first, because it indicates its overall economic power and therefore its negotiation weight in terms of possible positive and negative economic incentives it can utilize during negotiations. Additionally, high GDP is associated with the ability to obtain legal counseling upon demand or keep state-employed layers specialized in international trade law within government staffing, which directly affects legal capacity of the respondent (Steinbert, 2002; Bohanes & Garza, 2012; Zeng, 2013; Davis, 2012). Due to these findings, the operationalization of this variable makes the implicit assumption that state capacity in the WTO DSU context is reflected in its GDP size.

However, an examination of the dispersion of respondent GDP size values has demonstrated an abnormal, highly polarized distribution with two clear clusters overlapping with respondent's developmental status: around half of the cases had been filed against the US or EU, while the other half against largely similar-sized developing states. Since little within-group variation was present,

for the purposes of parsimony the variable of respondent's capacity has been coded as dichotomous, corresponding with its status as either developing or developed.

H3/Independent variable: plaintiff's salience level;

Measured as: exports of contested good to the respondent as a percentage of plaintiff's GDP.

Plaintiff's salience level is measured in the same manner as the respondents in order to enable reliable and meaningful cross-group comparison or interaction. Therefore, in this case the salience level measures the direct monetary losses that the plaintiff exporters have suffered from respondent's protectionist policies, which are assumed to be directly linked to the amount of pressure that domestic producers put on the plaintiff to restore their access to foreign markets.

As stated above, salience levels are measured as the monetary value of exports (for the plaintiff) or imports (for the respondent) of the contested good. The export trade flow of a certain good from plaintiff to respondent in a given year is recorded in the World Integrated Trade Solution (WITS) database. When expressed as a percentage of state's GDP, the monetary value of this trade flow serves as a measure of the case's salience level for the state. Notably, the data for both trade flow values and GDP sizes which had been used in the present analysis has been recorded in current (nominal) US dollars in order to retain reliability between percentage values across the sample.

However, using the WITS database entails one drawback: international trade flow data per dyad is only available within broad sector groups, divided on the basis of the products' assigned HS 1998/92 classification codes: Vegetable, Animal, Food Products, Fuels, Machinery and Electronics, Chemicals, Transportation, Plastic or Rubber, Metals, Wood, Textiles and Clothing, Footwear, Minerals, Stone and Glass, Hides and Skins, and Miscellaneous. Thus, if one relies on sector trade flows alone, three different disputes over

(a) *all fruit and vegetable* exports from plaintiff to respondent,

(b) *banana* exports, and

(c) *canned peaches* exports, would all use the same broad trade flow category indicator, although case (a) clearly has more exports at stake than case (c). Such imprecise measurement would invite significant reliability concerns. To remedy this issue, trade flow by category is divided by the aggregation tier of the contested good. The tiers are coded in accordance with the product's HS commodity code specification:

Tier 1 - sector (1-digit code) – i.e. vegetables, clothes and textile, rubber and plastic;

Tier 2 - division (2-digit) - i.e. fruit and vegetables, fish and fish preparations, tobacco, handbags and travel bags, paper, petroleum and petroleum products;

Tier 3 - group (3-digit) - i.e. all fresh fruit excl nits, coffee, crude petroleum, refined petroleum, road motor vehicles, iron and steel bars, iron or steel pipes;

Tier 4 - sub-group (4-digit) - i.e. bananas, fresh, coffee extracts or concentrates, petroleum -

crude and partly refined, buses, seamless tubes of iron or steel, craft paper;

Tier 5 - subsidiary heading (5-digit) - i.e. poultry liver, coated machine-made writing paper.

Thus, the monetary value of all footwear exports would be divided by 1, since it comprises a standalone sector category; while the export value of bananas would equal all fruit/vegetable sector exports divided by 4, which is the assigned aggregation tier of bananas. In a sense, division by tier category is used as a weight to differentiate disputes over broad trade flows from disputes over a more narrow category of goods.

H4/Independent variable: plaintiff's preference for political gains;

Measured as: plaintiff's Freedom House Democracy Index score at the year of the dispute.

As explained in the theory section, the present thesis makes the assumption that plaintiff's preference for political gains over policy gains is directly dependent on his democratic level due to the inherent threat of greater domestic audience costs of a failed performance at the panel. Therefore, the preference for political gains is measured with plaintiff's democracy score. While there are several indices of democratic levels worldwide (i.e. the Polity Index, Unified Democracy Scores, the Economist Intelligence Unit Democracy Index), only one of them – the Freedom House Democracy Index – offered data for all the countries and years needed for the present analysis. The Freedom House index is a fairly renowned and widely-used indicator, and it has been used in studies of WTO dispute escalation before (i.e. Guzman & Simmons, 2002). It offers an ordinal scale of 7 to 1 for “civil liberties” and “political freedoms”. The present analysis uses a sum of inverse scores (7*2 being the highest possible score) for a comprehensive and more intuitive estimation of plaintiff's democracy level. The resulting 2-to-14-point scale is large and sensitive enough to reflect the substantial differences among plaintiffs; and a cursory look at value distributions across the sample has shown an adequate and sufficient variation. The assigned democracy scores of developing plaintiffs could be found on both sides of the continuum – for instance, 14-point Chile on the one end of the scale and 3-point Pakistan on another, while most results fell closer to the midpoint.

V. Results and discussion

The present analysis uses a sample of 159 WTO disputes which had involved a developing complainant within the timeframe from 1994 (the year of establishment of the WTO DSU in its present form) and 2015. The year 2016 had not been included in the analysis because many disputes initiated in that year have not reached the stage where the plaintiff is at liberty to request a panel when the dataset for the present thesis was being compiled. Over the span of 12 years, the WTO DSU has seen a total of 165 cases brought forward by developing states (if one utilizes the developing/developed classification system suggested by Horn & Mavroidis, the creators of the most widely used WTO dispute dataset). However, the present analysis omits 6 cases (DS numbers of the excluded disputes are: 29, 58, 247, 274, 318, and 377) because these disputes had been brought forward either by one of the following states: Taiwan (Chinese Taipei), Hong Kong, or Antigua and Barbuda; or by multiple plaintiffs. In cases 29, 247, 274, 318, and 377, either all or most of the data required for the operationalization of the independent variables could not be obtained (i.e. state GDP sizes in current US dollars, trade flows between the plaintiff and the respondent, and the democratic score of the plaintiff). In case number 58, the only one which had involved multiple developing plaintiffs, operationalization of the independent variables as simply a sum of each complainant's respective indicators would have raised reliability issues, skewed the distribution of variable values across the sample, and possibly created a powerful outlier which could drive false effects. For that reason, out of 165 disputes presented by developing plaintiffs in the WTO, 6 cases had been dropped and the sample size had been reduced to 159 valid cases.

Descriptive statistics and correlations for the proposed independent variables are presented below in Table 1. Notably, for further statistical analysis, the standard errors within the sample will be clustered by individual plaintiffs, since complainants (especially developing states) often display and exhibit unique and rather prominent individual behavioral patterns. (i.e. Harpaz, 2010; Shaffer, Badin & Rosenberg, 2008). One possible alternative approach is clustering by plaintiff-respondent dyad, but the present work chose not to employ this strategy since the decision to empanel is made solely by the plaintiff, so it is reasonable to assume that the plaintiff's singular role in dispute escalation would be far more prominent.

Table 1. Descriptive statistics of the independent variables in the analysis, and correlation matrix

Variable	Total				Correlation			
	Mean	SD	Min	Max				
RESPsalience	0.05	0.22	0	2.18	-			
RESPcapability (dich.; developmental status)	-	-	0	1	-0.10	-		
PLAINTdemocracy (pref. for polit. satisfaction)	9.64	2.81	3	14	-0.12	-0.20	-	
PLAINTsalience	0.23	1.03	0	9.81	0.42	0.02	0.04	-

As the dependent variable in the present study is nominal and dichotomous (panel/no panel), it is appropriate to use a *binomial logistic regression* (logit) analysis in order to determine which independent variables hold significant predictive power. Notably, the usage of binomial logistic regression analysis requires that the following three assumptions are met: mutually exclusive and exhaustive categories of the dependent variable's dichotomy, independence of observations, and a linear relationship between continuous independent variables and the dependent variable. The first assumption clearly holds true, as there is no conceivable overlap between the two categories of the dependent variable. The second assumption cannot be met due to nested nature of the sample, which precludes independence of observations. As mentioned earlier, adjustment of the Standard Error for 26 clusters based on individual state-plaintiffs is utilized in order to remedy the issue of possible correlations between same-plaintiff cases.

With these nuances in mind, the final model takes the following form:

Table 2. Binomial Logit regression analysis of the likelihood of empanelment

Dependent variable: Panel requested? (Dich. 0/1)				
	Rob. Coefficient	Odds Ratio	SE	z-value
PLAINTdemocracy (pref. for polit. satisfaction)	-0.126***	0.882	0.041	-3.08
PLAINTsalience	-0.333	0.717	0.227	-1.47
RESPsalience	0.777	2.175	1.289	0.600
INTERACTIONsalience	1.082*	2.951	0.543	1.99
RESPcapability (dich. developmental status)	0.236	1.279	0.313	0.79
N		159		
Wald chi2		17.44		
Prob > chi2		0.004**		
Pseudo R2		0.036		

Note: *** signifies two-tailed $p < 0.001$; ** - $p < 0.01$; * - $p < 0.05$. Standard Error adjusted for 26 clusters by plaintiff state.

The overall model appears to be statistically significant. “Prob>chi2” indicates the likelihood of obtaining the statistical results if the null hypothesis is true (thus, if no relationship between the independent and dependent variables exists), and is in essence the p-value of the model. Here, the overall model's chi-squares are shown to be significant at a .01 level. Moving onto the individual predictor variables, the first key finding is that, as expected, plaintiff's democracy levels have a *highly significant* and *negative* effect on the chances of empanelment. This confirms hypothesis 4 on the general effects of plaintiff's democratic level: as a general rule, democratic states are more likely to settle peacefully. Figure 3 shows the predicted probability of empanelment as a function of plaintiff's democracy score: the strong association clearly demonstrates that the likelihood of a panel request by a developing plaintiff with a near-perfect democracy score ($\sim 7 \times 2$) is almost twice as small as that of a non-democratic state with a minimal summary democracy index score of ~ 3 .

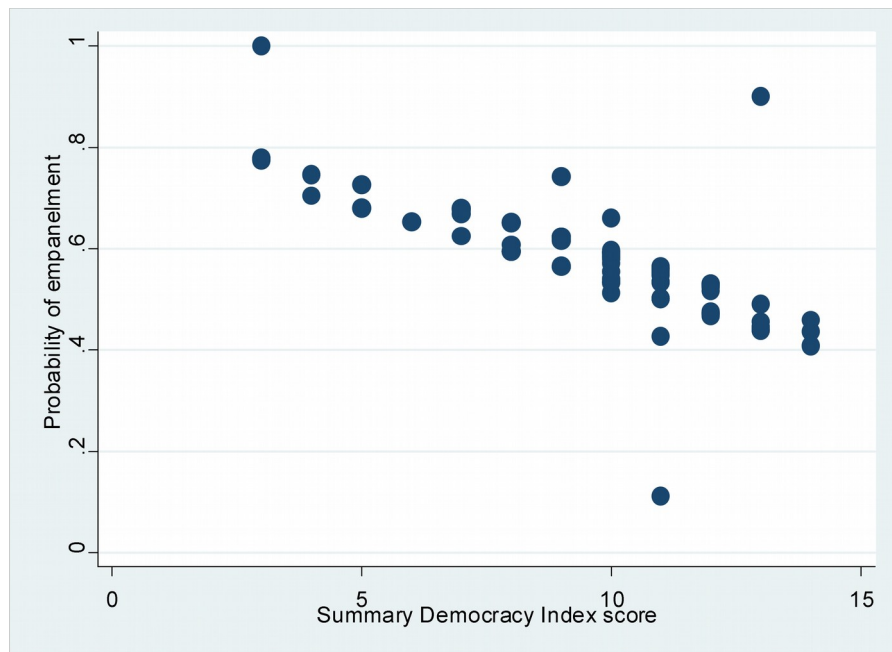


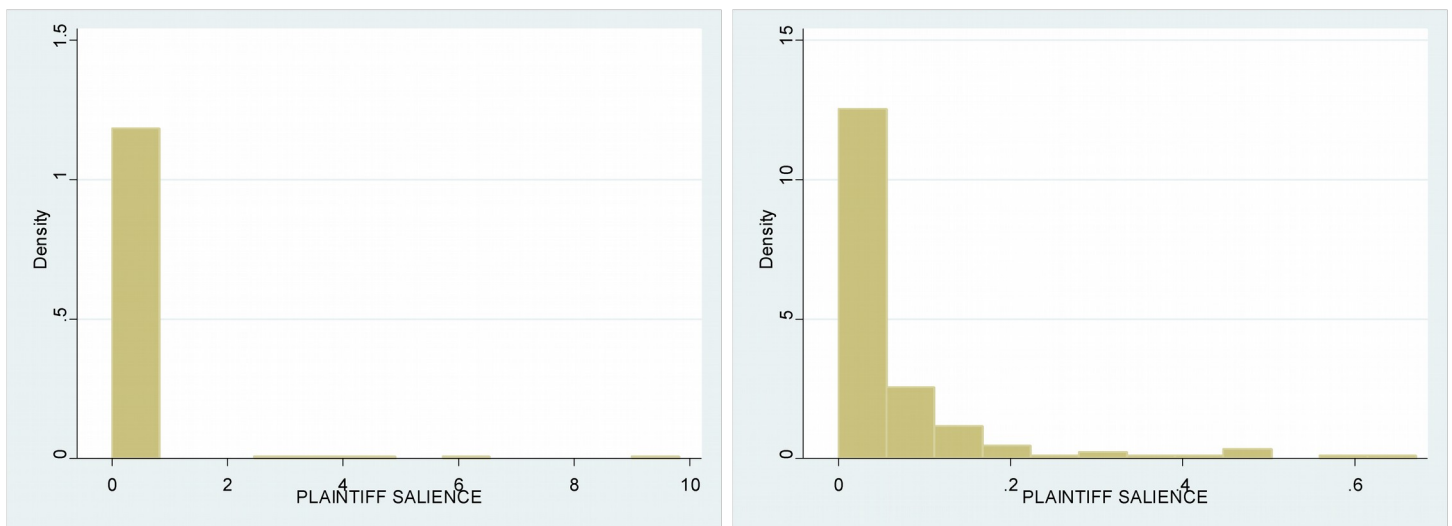
Figure 4. Predicted probability of empanelment as a function of plaintiff's democracy score

The status of the respondent as a *developing* or *developed* state is not a significant predictor, which goes against the expectations outlined in hypothesis 2. Notably, the indicator of respondent's *power* as conceptualized in Bueno de Mesquita's model originally involved a *product* of *salience***capacity*, so this result alone could have been attributed to an imprecise operationalization. In order to address this question comprehensively, two additional measures were undertaken for a more complete assessment of the hypothesis: adding an *interaction between respondent's status and salience* to the model; or, alternatively, an interaction between respondent's status and a natural log transformation of its salience. Neither variable was statistically significant, and the overall model

performed worse (i.e. $p = 0.0055$ as opposed to 0.0037 in the original model). This comprehensively disproves hypothesis 3.

The *interaction term* of two other key predictor variables – plaintiff's and respondent's salience levels – is statistically significant. However, the interpretation of its coefficient is less straightforward because its components have opposite (if less than fully significant) effects on the dependent variable. As it stands, developing plaintiffs appear to avoid delegating highly-salient cases to a panel (which falls in line with the broad conceptions of Principal-Agent theory) since the PLAINTsalience coefficient is negative; while higher salience of the respondent has a positive coefficient and thus affects the likelihood of empanelment in the opposite direction. Their interaction term gains statistical significant, and is *positively associated* with the chances of empanelment. This indicates that high respondent salience *reverses* the initial negative impact of plaintiff salience, and when facing a highly-salient respondent, increased plaintiff salience makes empanelment and delegation more likely. Thus, high-profile cases which both parties attach great significance to are far more likely to see a breakdown of good-faith negotiations and proceed to a panel.

However, an attempt to build a probability prediction graph (similar to one depicting the effects of plaintiff democracy level) for the salience-based variable had exposed a skewness in one of its component variables which was not as apparent from descriptive statistics. Histograms of value frequencies for the *plaintiff salience* variable (full range and cutoff at value = 1) display the following deviation from normality:



Figures 5 and 6: Value distributions of the independent variable “Plaintiff salience level”.

An exploratory data analysis shows that most of the cases in question are considered *severe outliers*, since a letter-value display using order statistics placed them outside the *outer fence* of the

distribution (which, in this case, is $\sim .299$) (Hamilton, 2012). If the model is restricted to cases with plaintiff salience value < 0.1 to better account for the variation within that range, the whole model – including both key predictor variables – loses statistical significance, and the effects of both salience and democracy on the likelihood of empanelment disappear:

Table 3: Binomial Logit regression analysis of the likelihood of empanelment with reduced sample size omitting cases with PLAINTsalience > 0.1

Dependent variable: Panel requested? Dich. 0/1	Rob. Coefficient	SE	z-value
PLAINTdemocracy (pref. for polit. satisfaction)	-0.040	0.041	-0.98
PLAINTsalience	-12.060	15.938	-0.76
RESPsalience	-25.167	72.937	-0.35
INTERACTIONsalience	-182.316	329.678	-0.55
RESPcapability (dich. developmental status)	0.327	0.323	1.01
N	125		
Wald chi2	3.86		
Prob > chi2	0.570		
Pseudo R2	0.020		

Note: Standard Error adjusted for 26 clusters by plaintiff state.

Essentially, this implies that the key effects of the model were driven by a limited number of outlier cases with an abnormally high plaintiff salience level. For instance, when restricted to $> .1$ plaintiff salience level cases only, the graph of plaintiff's democracy effects on the likelihood of empanelment shown above transforms into the following scatterplot:

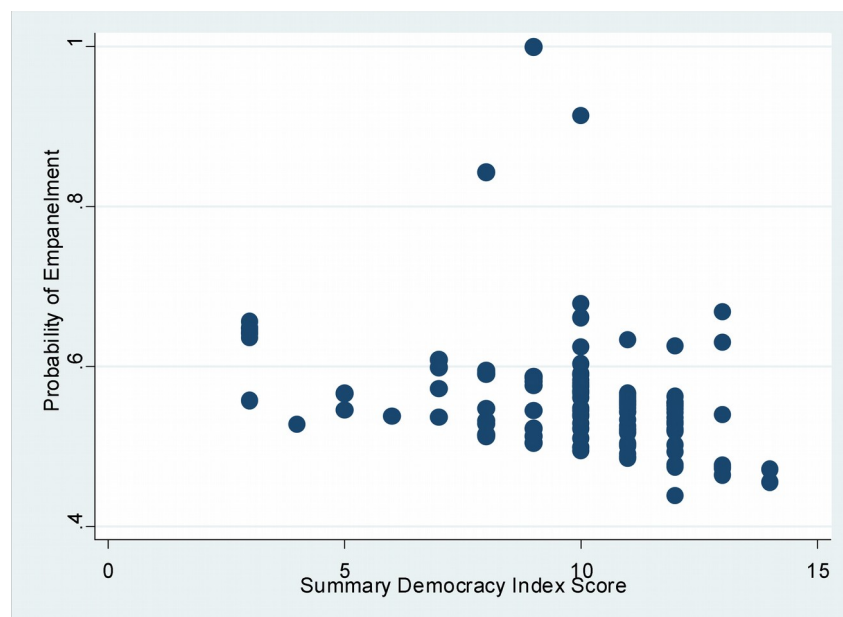


Figure 7. Predicting the likelihood of empanelment based on plaintiff's democracy score for the dataset which omits cases with abnormally high value for "Plaintiff salience".

In this example, the overall downward trend can still be observed to some extent, but the significance of the previous association is absent and the effect size of the predictor variable “plaintiff’s democracy score” is generally negligible. This brings into question the validity of the main (overall) model (Sarker, Midi & Rana, 2011). The key question is then, would a removal of this tail be justified?

First, a distinction should be made between a simple outlier and an influential (high-leverage) observation. The first entails an unusual dependent variable value which falls against the expected observations; while the latter term applies to cases with (a) unusual independent variable values which (b) affect the regression estimates markedly if removed from the sample. It is thus the *influence* of the outlier cases which lies at the heart of the dilemma. Although Cook's Distance or DFITS indicators, which are typically utilized to estimate outlier case influence, are not available for a logit regression analysis, the underlying method of estimating leverage typically involves comparing the statistical significance of the overall model with and without the outliers (Golic, 2013). As a crude measure, such comparison has already been performed above, and the observable deterioration of the overall model's significance testifies to the influence of the *group of cases as a whole*. Interestingly, the DeltaBeta coefficient, which is sometimes seen as equivalent to Cook's Distance method of estimating influence for a logit regression, did not appear to show unusually high values for the outlier group of cases separately: out of the 34 observations, only seven held values higher than the arbitrary threshold of $4/n$ (0.02) (Fox & Long, 1998).

On the one hand, there are scholars which advocate dropping the outliers, particularly if there is good reason to suspect that the statistical association is driven or created by said outliers (Osborne & Overbay, 2014). The justification for this removal is avoiding “false positives” among the discovered associations. Other justifications entail blatant errors in measurement, coding, or collection of data (Acock, 2008; Kennedy, 2003). However, it should be noted that in the present case, the size of the tail containing the outliers in question is 34 cases (see the difference in number of observations in tables 1 and 2). This comprises 21.4% - nearly a quarter - of the original sample. This rules out the possibility of either a data error or a false positive, which would have been a justification of omitting these outliers. If one quarter of the sample comprises influential outlier cases which were creating a strong association, it cannot be said that the effects are invalid or created by chance. Clearly, the effects are systematic and not random or false.

This brings forth the key question that determines the appropriate way of handling outliers: what do they signify and how should their presence be interpreted in a specific case? In his influential work, Kennedy (2003) argues that omitting a high-leverage outlier is almost never justified, because the observation may contain important information about the associations and

relationships that the regression model attempts to capture. Thus, if an influential outlier is able to refine or improve the model, it should be preserved. In the present case, 34 outliers create a systematic, statistically significant, and strong general association between the dependent variable and two predictor variables, so the information they contain is indeed valuable. In fact, it can be said that the outliers have improved the specificity of the model by drawing out a moderator variable: *several expected associations laid out in the hypotheses held true*, but they are essentially *enabled by the presence of a third variable*: plaintiff's salience above the threshold of .1. The systematic and general effect of the associations created by the tail are further validated by the fact the sample of observations *above .1 plaintiff salience* involved a wide range of plaintiffs, instead of being driven by one or two specific developing states, so the effect cannot be attributed to some state-specific factors. Taken all together, this permits to hold the findings of Model 1 regarding the *general effects of plaintiff democracy and salience interaction on the likelihood of empanelment* as true and valid.

Thus, the results of the regression have proven the following theory-backed associations:

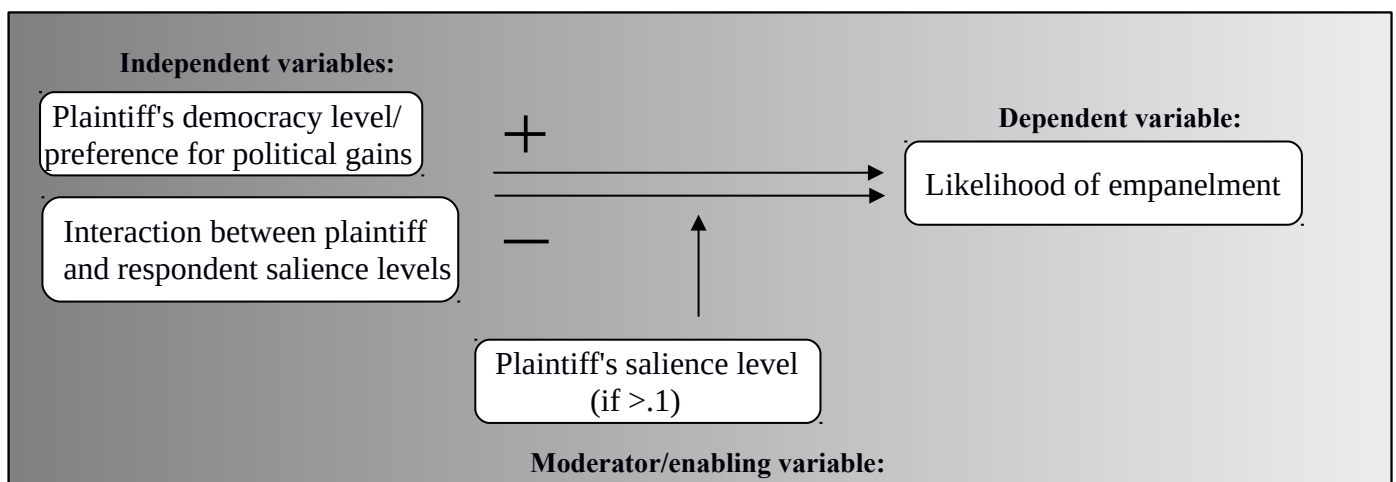


Figure 8. A summary of causal relations established in the present thesis

A *high democratic score* of the plaintiff is negatively and strongly associated with the likelihood that the plaintiff will request a panel. *High plaintiff salience* when facing *high respondent salience* is positively associated with the likelihood of empanelment. Both causal links are enabled when plaintiff salience passes the .1 threshold. What practical significance do these findings entail for the behaviour of developing state-plaintiffs at the WTO DSU?

First, the association between democracy and empanelment, as predicted by the Principal-Agent and domestic audience cost theories is an interesting finding in the light of previous works on democracy and WTO performance and dispute escalation. Guzman and Simmons' study (2002) has addressed the effects of democracy on the likelihood of empanelment both as a standalone control variable and as a factor for a democracy*policy lumpiness interaction (which was the main focus of

their work). However, perhaps due to a larger sample, they only found an association between *shared* democratic levels of plaintiff and respondent (a “democratic pair” dummy variable, as they put it) and the likelihood of dispute escalation, which appears to fall along the lines of the Democratic Peace theory of IR. The present study, however, proves that when faced with little variation in the respondent's democratic level (only ~5 cases within the entire dataset have involved a respondent with a democracy score approaching the medial value of 3-4 out of 7 on the Freedom House Democracy Index), *plaintiff's democracy level alone* is a highly powerful predictor variable, thus making it possible to speak in terms of delegation and Principal-Agent theories instead of democratic peace alone. Another interesting finding is that, despite the assumptions of an overarching effect of democracy which had been noted either in DSU empanelment studies like that of Gizman and Simmons (2002) or in works regarding WTO dispute initiation, such as that by Davis (2012), the *effect of democracy is conditional*: low-salience cases do not show its effect, meaning that in cases of middle-to-low relevance the behaviour of the plaintiff is not restricted by such considerations. Thus, the mediating effect of plaintiff salience level is an important aspect which adds fundamentally new discourse to the discussion of the causal link between democracy and dispute escalation. Overall, the results of the present analysis do fall in line with a larger discourse linking democracy to peaceful settlement, which is a reassuring finding from a normative standpoint in the light of the diffusion and proliferation of democratic values in the last decades (Torfason & Ingram, 2010).

Despite the theoretical expectations, the *status of the respondent* as a developing or developed state did not prove to be an influential factor. This is a comforting finding in the light of the ever-present discussions on the possible systematic disadvantages of developing states in the WTO: it means that a developing plaintiff does not feel pressured to accept an early settlement in the face of a powerful developed respondent – despite the arguments that developing states have less negotiating power, legal capacity and lower likelihood of winning a panel (Davis, 2012; Bohanes & Garza, 2012; Zeng, 2013). This is another piece of evidence that suggests that WTO reforms have had some success in attempting to insulate its dispute settlement mechanism from power politics (Bohanes & Garza, 2012).

Within the framework of the present study, *salience* has been put forward as a fundamentally new predictor variable within the discussion on WTO dispute escalation (even within the discourse on the DSU system at large), inspired by a rational game-theoretic model of Bueno de Mesquita. The interaction variable – a product of plaintiff's and respondent's salience levels – had a statistically significant positive effect on the likelihood of empanelment, meaning that *high-profile cases are more likely to see a failure of peaceful negotiations and proceed to the panel stage*, a finding which falls fully within the longstanding theoretical traditions on international bargaining

and conflict resolution. Interestingly, high mutual salience overrides the negative effect of plaintiff salience on the tendency to avoid delegation, which had been predicted by Principal-Agent theories. Broadly, there are no strong normative implications stemming from the link between salience and dispute escalation, although the effect itself appears to be fairly commonsense in the light of both theoretical perspectives and anecdotal evidence from real-life disputes.

Interestingly, the complex effects of salience bring together seemingly contradictory characteristics of developing states' behaviour in the WTO DSU: lower legal capacity of the developing states, contrasting with their tendency to empanel far more often than settle peacefully, despite higher costs and lower chances of winning (Besson & Mehdi, 2004; Busch & Reinhardt, 2003; Bohanes & Garza, 2012). Salience effects seem to offer the answer: generally, a developing claimant would prefer to avoid the delegation of a salient case to an impartial body, apparently in awareness of the systematic disadvantages it might face in the panel stage. However, when facing a highly-salient respondent (more often than not, a *developed* respondent), who would be willing to invest more of its bargaining power and exert more unofficial pressure during the negotiations (Davis 2012), developing states prefer to take their chances and delegate to the neutral body, rather than challenge a salient and powerful respondent.

The final important finding of the present analysis is that a limited number of highly salient cases essentially drove the causal effects described above. The effects only turn significant when plaintiff salience level was above .1, which implies that high plaintiff salience has contextual enabling effect on the relationship between other predictor variables and the probability of empanelment. While the theoretical implications of this finding have already been addressed, its practical meaning within the WTO DSU context is also highly interesting: this enabling effect means that when a case is of low- or medium- significance, the plaintiff allows the process to occur naturally and sequentially, without any noticeable pressure of external factors. The moment a case passes a particular salience threshold, however, a set of heuristics and fundamental influences are able to convincingly predict plaintiff's decision to escalate the conflict or settle early. The predictability of developing states' behaviour in the face of high salience might carry implications for other studies of WTO empanelment: previously-discarded hypotheses on what can affect plaintiff's (especially a developing plaintiff's) decision to call for a panel can be revived and re-examined by controlling for or interacting with plaintiff salience, and some of those proposed variables can gain significance. This might turn out to be the key contribution of this study to the subject area of DSU empanelment, since it can potentially bring forward more statistically significant associations in other works on WTO dispute escalation.

VI. Conclusion and future research

As stated in the introduction, the WTO is currently undergoing a shift in its functions as the key pillar of the international trade regime, and its DSU mechanism will be at the heart of its redefined place on the global arena. This highlights the urgency of further academic inquiry into the DSU with the purpose of understanding and improving its current state. In particular, the scholarly discourse on dispute escalation within the DSU holds ample space for further investigation, needing both a firmer theoretical foundation and more attention to problems of developing states as plaintiffs.

The present thesis has utilized a rational choice bargaining model to explain a developing plaintiff's decision to settle peacefully or empanel. The subsequent analysis has highlighted a strong linear association between a developing plaintiff's preference for political gains derived from his democratic level and the likelihood of early settlement, a positive interaction effect between plaintiff's and respondent's salience levels, and a significant moderating effect of plaintiff salience level. Thus, it has offered new insights on some well-known independent variables, as well as put forward fundamentally new predictors. The uncovered moderating effects of plaintiff's salience levels point out the wide range of possibilities for future inquiry on *moderator, contextual, or enabling variables*, which is still a largely unexplored topic within the discourse on DSU dispute escalation. Testing for moderator variables can offer some answers to the current paradox of mixed or inconclusive results for the same predictor variables across various works on WTO dispute escalation.

While it is perfectly natural that some of the anticipated relationships did not appear in the present dataset despite the theoretical expectations, the lack of predictive power of one variable in particular was both unexpected and puzzling. *Respondent capability*, an integral part of Bueno de Mesquita's challenge model, did not have a significant effect on the dependent variable, meaning that developing plaintiffs facing developing and developed respondents have a similar likelihood of empanelment. As stated in the "Discussion" section, this may create a false sense of security that developing states do not face systematic constraints when facing a powerful respondent, in spite of a wealth of academic evidence to the contrary. Therefore, further research is needed to see if this result of the present analysis holds true. Admittedly, coding capability as a dichotomous variable based on developmental status had been a rather rough measure, so the most obvious path forward will therefore entail repeating the analysis with different operationalization of capability. One likely candidate is *legal capacity*, a characteristic which has entered WTO DSU discourse in the recent years and attracted a lot of attention as an alternative to GDP size as an indicator of actor's power within the DSU. Thus, rather than discarding the hypothesis that power plays have become largely

irrelevant within the DSU, one should turn to a more precise or contextually fitting measurement of power.

Another point of discussion is the operationalization of the “salience” variable. The operationalization itself is fairly straightforward and does not seem to entail any strong reliability or validity concerns, and the expected effects have been found within the present dataset. However, as discussed earlier, measuring salience is considered to be a notoriously difficult task, as the authors of several bargaining models which utilize this variable admit (i.e. Arregui, Stokman & Thomson, 2006), and advocate obtaining first-hand salience estimations from professionals who are knowledgeable in the issue area at hand. The time frame of the present thesis did not allow for the collection of such first-hand data, as doing so would be an extremely resource-intensive task. However, since plaintiff and respondent salience are fundamentally new predictor variables and the discovered effects hold a lot of potential for future research, it might be worthwhile to invest in a more direct and refined measurement of salience to see if the effects hold up to closer scrutiny.

Overall, the present analysis has yielded interesting insights on the subject of the WTO dispute escalation; and has shown that a novel theoretical approach can generate curious results which indicate the paths for further inquiries. Theory-wise, one possible direction for future research is application of cooperation-based game theory and bargaining models instead of conflict-based ones, like Stockman’s exchange model. Potentially, these models can offer greater predictive power because they assume long-term collaborative ties between the players, which is closer to the reality of WTO dispute settlement since most cases involve allies and neighbors with a vested interest in long-term positive relations.

Thus, this thesis has shown that decision-making models with a firm theoretical grounding are capable of introducing fundamentally new variables and uncovering significant effects, thereby contributing to the discourse on WTO dispute escalation. These results can serve as an encouragement to prospective researchers to explore diverse theoretical approaches and try adopting insights from academic traditions outside of the usual comfort zone. Overall, further inquiries are certainly warranted into the issue area of WTO dispute escalation at a time when its societal relevance is peaking, and the broad spectrum of theoretical and modeling approaches which are beginning to enter this discourse hold great promise and potential.

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