Is WTO Dispute Settlement System Biased Against Developing Countries? An Empirical Analysis

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Abstract:

The aim of this paper is to examine whether developing countries have disadvantageous position in the WTO dispute settlement procedure (DSP). We provide an econometric study which suggests that the DSP does not still completely eliminate power-based relationships between countries. Although the DSP succeeds in founding a system in which asymmetry in countries sizes doesn't affect the dispute outcome, it remains a series of biases which affect developing countries performance. Our results suggest that developing countries are unlikely to win dispute because of (i) asymmetric legal capacity (ii) economic dependence via bilateral assistance (iii) international politics factors.

Keywords: Developing countries, WTO dispute settlement procedure, international political economy.

JEL Codes: F13

1. Introduction

The Dispute Settlement Understanding (DSU) is often seen as one of the major achievements in the World Trade Organization (WTO) Agreement. Since its 1995 inception, there has been a proliferation of bilateral trade disputes; 299 cases have been raised under the DSU, a figure to compare with the 300 cases proceeded under the GATT during its 47 years of existence. According to Brewer and Young (1999), the mean number of disputes cases reviewed annually by GATT/WTO dispute settlement (DS) panels has increased from 5.2 during the period of 1948-1959 to 41 in 1998. This increase is not only due to the growing membership of the GATT/WTO. The mean number of filings per year per member has risen from 0.208 during the period of 1948-1959 to 0.307 in 1998.

Within the context of trade disputes increase, the position of developing countries draws special attention. There is evidence that developing countries have a disadvantageous position in the WTO DS system. Park and Panizzon (2002) provide statistical documentation of the WTO disputes initiated between 1995 and 2001. Roughly one third of WTO disputes (80 out of 235) have involved developing countries as plaintiffs, which is slightly higher than their share of disputes initiated under the GATT period. On the other hand, developing country defendants have been the target of roughly 45 % (109 out of 242 disputes) of WTO disputes, which is much higher than was the case under the GATT. Most developing and all the least developed countries have not used the system at all since its inception whereas the G4 countries (EC, USA, Japan and Canada) are over-represented.

Most observers have emphasized the fact that the various GATT reforms were intended to help developing countries to insulate them from the "power politics" of the system. The DSU introduces greater "legalism" and provides a more "rules-oriented" system relative to the "power-oriented" one of the GATT. Although such system should encourage more participation by developing countries and establish harmonized and equitable relationships between member states, the DS procedure seems to show a bias against developing countries. Horn, Mavroidis and Nordström (1999) examine whether power-based factors explain the limited use of the WTO DS system by developing countries. They find that the probability of encountering disputable trade measures is proportional to the diversity of a country's exports over products and partners.

According to Holmes, Rollo and Young (2003), there is reason to treat Horn, Mavroidis and Nordström's (1999) conclusion about the lack of importance of power with caution because their result seems to be very sensitive to the specification of their predictive model. More over, Horn, Mavroidis and Nordström (1999) ignore the fact that developing countries may exercise self-constraint in picking their fights because of unfavorable distortions in the DS procedure. To assess the extent to which the WTO legal system remains on political foundations and, thus, power considerations, one need to analyze the dispute settlement procedure as a whole. Beyond the asymmetry between countries in using the system to root out illegal trade barriers that they may face (asymmetry in bringing compliance), we examine whether there are any biases in the litigation procedure against developing countries which decide to file. Hence, we adopt an encompassing approach which introduces factors affecting litigant governments from bringing in a dispute to bargaining over the terms of adjudication compliance.

Our article aims to answer the following questions: How should we interpret the records of WTO DS and the dynamics of the system? With more "legalization" of the DSU, would "power" still play the dominant role in DS procedure, especially in dispute involving developing countries? Is there a discernible pattern to which countries win? And finally, what explains any differences in the outcomes realized by developing countries, as opposed to developed countries?

The aim of this paper is twofold. The first objective is to analyze the WTO DS procedure from an economic perspective in order to address the issue of developing countries participation in this system. The DS procedure is perhaps not as neutral as it would like to be. The ambition of this paper is to examine the determinants being able to directly influence the final outcome of the litigation process. The WTO DS procedure thus provides an excellent analytical framework to study the place of developing countries in the world trading system and their relationships with developed countries. In this paper, we wonder thus about the relevance of a possible distortion of the procedure against developing countries. We attempt, not to distinguish and count the whole of the cases settled by the institution, but to release a general pattern highlighting the factors which affect the DS procedure and hence influence the final outcome. We adopt an approach which introduces in our theoretical analysis legal and world politics considerations which may affect trade disputes outcomes.

Second, we question whether there is empirical evidence that DS system is biased against developing countries. From our theoretical analysis, we distinguish four categories of explanatory variables which affect directly or not litigation outcomes: trade, legal resources, economic and political retaliation. Economic retaliation, which may consist for instance of development aid withdrawal, and political retaliation, which occurs in the international politics field, are extra-procedure determinants of litigation outcomes. Trade retaliation which can be allowed by the DSU when defendant refuses to comply with the DSU adjudication, and legal resources, which cover the adjudication costs, are intra-procedure determinants of litigation outcomes.

This paper proceeds in five sections. Section II provides a brief summary of the WTO legal framework. Section III introduces the various variables emphasized by the economic, legal and international politics literature likely to affect the result of litigation. Section IV sets out our empirical tests. Section V concludes.

2. WTO legal framework

Our intention is not here to describe in a precise way the DS procedure since many authors already presented it in detail[1]. We just announce the three principal stages according to the deposit of a complaint to the DSU.

When a dispute arises between WTO member states, they must initially attempt to solve their dispute through bilateral consultations. The litigation procedure starts with consultation which must give place to an agreement in the sixty days. The second stage is the recourse to a panel if the consultation fails to yield a settlement. After parties agree on three panel members among those chosen by the WTO members, they present their submissions to the panel. Then, the panel presents its conclusions and recommendations in a final report which is adopted by all WTO members within the DSU. Parties apply the decisions of the panel or can refuse them. In the last case, they seize the Appellate Body which is composed of seven independent personalities. The conclusions and recommendations of the Appellate Body are automatically adopted. Finally, the third stage consists in the implementation of the recommendations (panel or Appellate Body). The implementation of the final decision has to be made for a reasonable period of time which is defined by arbitration. If there is discord

[1] See, for example, Sevilla (1997), Butler et Hauser (2000), Guzman et Simmons (2002).

between parties, they inform the DSU about the compliance timetable. If the defendant does not conform to the final decision, the plaintiff can impose temporary trade retaliatory measures (i.e. concessions or obligations suspension). The level of these retaliations is the object of arbitration[2].

The WTO DS procedure presents various innovating characteristics compared to those which officiated during the GATT. In addition to the fact that it proves now to be applicable to all WTO agreements, the principal innovation is the abolition of the right of veto which made it possible before to the defendant to block the request of the plaintiff. In other words, the rules of unanimity no more prevailing, each member state has from now on the right to ask for the establishment of a panel. The Appellate Body is also one of the outstanding innovations of the new procedure since each part can blame the conclusions of the panel by thus appealing of its decisions. Lastly, the adoption of the final decision by the DSU is henceforth imperative; the defendant has an obligation to conform to the recommendations. Thus, the phase of implementation of the decisions is much legally structured and thus, if the defendant found guilty does not put in conformity its illegal trade practice with the recommendations expressed by the verdict, at the end of the reasonable period of time (approximately 15 month), the plaintiff can be authorized to ask for compensations or to take retaliatory measures specific against the defendant.

WTO sets up a specifically advantageous series of provisions for developing countries[3]. The difficulties encounter by developing countries appears with more acuity in the sphere of the DSU. Indeed, in the framework of the WTO negotiations, developing countries can bring together their means when they consider that their interests are sufficiently common. But the situation is very different into the DS procedure since the litigation relates only to one specific case which concerns a limited number of countries (trade measure which triggers the dispute). WTO establishes some legal provisions specifically intended for developing countries but many underline their weaknesses: an assistance can be requested to the WTO secretariat, through the Advisory Centre on the WTO legislation; however, this

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[2] More exactly, to assure a real resolution of the disputes: the losing defendant has to inform, in thirty days following the adoption of the report, of its intentions of compliance. It has to immediately conform to it or for the reasonable period of time; should the opposite occur, temporary measures of retaliation are possible, as the suspension of concessions or other obligations in the same sector (goods, services or ADPIC) or, if it is impossible, in another sector. These temporary measures are withdrawn as soon as the incriminated measure was suspended.

assistance can only be about very general legal councils since a precise and specific help would then call into question the impartiality of the institution.

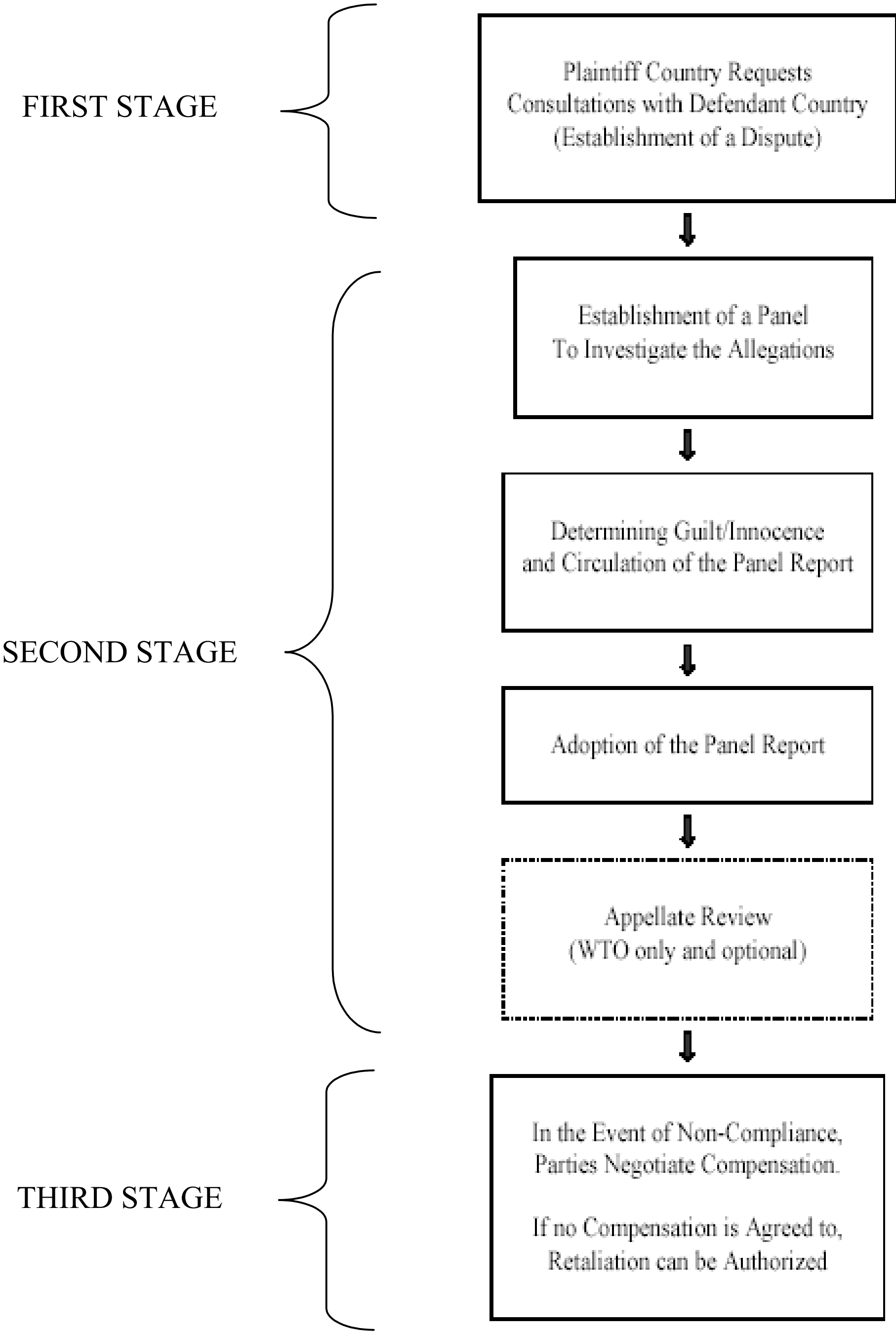

Figure 1: Stages of the WTO Dispute Settlement System[4]

[3] Uruguay Round agreements granted a preferential treatment for developing countries in particular in sectors concerned with Sanitary and Phytosanitary, Standards and Trips: long-term period of implementation, technical aid to fulfil their obligations...
[4] Petersmann (1997), quoted by Bown (2002).

3. Theoretical framework

3.1 Trade retaliation

The establishment of the DSU as a tool allowing to judge trade dispute between WTO members raised the legitimate question of the type of sanctions adopted in case violation of a WTO agreement. Thus, when the guilty defendant refuses to comply with the recommendations of the verdict, at the end of the reasonable period of time (approximately 15 month), the plaintiff can be authorized to set up specific retaliatory measures against the defendant.

Bagwell and Staiger (2000) emphasize that retaliation threat is a central component of the WTO DS system. Retaliation threat provides an enforcement mechanism which deter violation of trade agreements. However, this mechanism is limited by the severity of credible threat of retaliation. Retaliation must be sufficiently high to induce enough long-term losses in order to incite the defendant to conform its trade practice to WTO rules. Therefore, the current rules of the DS procedure entail a bias against countries with weak capacity to retaliate. Bütler and Hauser (1999), Breuss (2001) and Bown (2003a) argue that the nature of authorized sanction is likely, not only to discourage some countries to use the DSU, but more specifically, to influence the final outcome of the litigation. The advanced arguments refer to the traditional economic analysis.

The economic literature on the optimal tariffs shows that large countries can improve their terms-of-trade by imposing tariffs. Johnson (1953) and Kennan and Riezman (1988) demonstrate that a sufficiently large country would be better off under tariff war. Bown (2002) develops a model applied to WTO framework that illustrates how a large country capacity to influence its terms-of-trade significantly determines the credibility of its retaliation threat[5]. This result explains why large countries are the main users of the DS system. Even if small countries are authorized by the DSU at the term of the procedure to apply retaliatory measures, the impact on terms-of-trade is null and the threat is then regarded as non credible. Thus, if the plaintiff is a large country, then the threat of trade retaliation can be sufficiently

[5] Trade sanction of a large country plaintiff may have two effects: increasing its own welfare and decreasing the defendant welfare. These two impacts of retaliation influence all the more the final outcome of trade negotiation, especially during the stage of bilateral consultations. On contrary, if the plaintiff is a small country, the

dissuasive for the defendant. In the opposite case, when the plaintiff is a small country, the long-term losses from retaliation are very low and have no influence on the defendant behavior. In this second case, not only the defendant will have no incentive to conform its trade policy (if its decisions are only guided by trade motivations), but the plaintiff will also have no interest to go at the term of the procedure and will then privilege the way of the negotiation in which it will be generally found then in unfavorable position.

Bown (2004) brings an additional analytical precision. According to him, the motivations of countries to carry cases are only of an economic nature, in term of attempted trade liberalization. From the plaintiff point of view, its decision to carry a complaint is determined by its anticipated probability of success, and it is, in fine, the threat of retaliation which will determine the economic outcome of the dispute. In this economic perspective (the other variables considered after are not taken into account), "trade" bias will be then all the more strong. It is quite conceivable that the plaintiffs, since the creation of the DSU, have had to operate a strategic change for their deposits of complaints since only the litigation would be judged now for which the credible threat will be effective. This analysis thus consolidates the idea that small countries with weak capacity of retaliation will not be encouraged to resort to the DSU and, if necessary, will not be in position of force to gain the lawsuit.

To sum up, the first source of the procedural bias of the DS system is a simple question of country size (Breuss, 1999). Some countries can exert only a weak relative pressure on the deviating country when they are small. Retaliation is then not an efficient mean to defend their interest. If the defendant country refuses to comply with WTO judgment, the DSU allows the plaintiff to impose higher tariffs on the defendant exports. However, the economic theory shows that the risk of trade war such a system can generate and that large country would be better off under this situation.

<u>*Hypothesis 1:*</u> *Retaliations authorized by the DSU and the threat which they represent during the procedure favor large countries to the detriment of small ones. Even if the latter would be authorized to sanction a large country, it will not set up these retaliatory measures for fear of a trade war under which it will loose. Consequently, the higher the asymmetry between two countries is, the lower the probability of victory for the small country is.*

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retaliatory tariffs have a small effect on terms-of-trade: even if it can impose adjustment costs, its bargaining power is deteriorated by its low capacity to improve its own welfare with higher tariffs.

3.2 Legal costs

Bown (2003b), Breuss (2001), Bütler and Hauser (2000) and Busch and Reinhardt (2000, 2003) stress that legal costs, and thus the legal capacity of each country to support these costs, influence the resolution of dispute carried.

The whole of the stages of the legal procedure of WTO proceeds over a rather consequent time (it can run out three years before the plaintiff is authorized to take retaliatory measures), in spite of the efforts of regulation of time compared to the preceding provisions under GATT. The procedure can thus generate considerable costs for each of the two litigants. The total cost of the procedure thus will cause a real investment (financial, temporal, search of information...) for each party and in front of which the country with the most limited means could then move back.

As Shaffer (2003) advances, when countries are not able to mobilize the necessary legal resources to conclude the procedure, their threats to resort to the DSU miss credibility then. Consequently, the important and necessary resources to start the procedure will be a determining factor of the decision to carry a case up to its term. Moreover, some countries, who have not a large trade surface, can anticipate that they will not have an intensive use of the DSU as a plaintiff (they will not be "repeat players") and will thus not be incited to mobilize the necessary resources to develop a complete system of legal expertise on WTO law.

The costs relating to the legal capacity likely to bias the procedure can take various possible forms. Two are to be put particularly ahead. The first is about the real financial cost to carry a case to DSU which can be extremely important, for example, materialized by the lawyer's and the diplomat's wages[6] (Guzman and Simmons, 2002). The Appellate Body as well as the Panel develops a very specific legal approach, centered on the particular characteristics of the case and on which necessary legal documentation is voluminous. Since the establishment of the DSU, one thus attends an exponential growth of a "legal demand" to

[6] As underline the two authors, it can also be a question also of an opportunity cost here, because the resources are already allocated, whether the litigation takes place or not. By way of example, to represent the financial aspect of the litigation, Bown (2003b) integrates in its econometric study two variables: GDP per capita of the complaining country and its number of diplomats at the head office of WTO in Geneva.

obtain a highly specialized expertise: this evolution translates in an obvious way the increased importance of the legal capacity under the new procedure[7]. Thus, for example, the recourse to foreign legal experts will be a too exorbitant cost for some countries.

The second form of costs, which is not obviously independent of the first, concerns the field of information relating to the litigation. Information about the legal characteristics of the litigation, indeed took a very new dimension under WTO and the legal complexity of the trade agreements. For Hoekman and Mavroidis (2000), the legal capacity of each country results thus in the access to information on the illegal trade practices. This information can be obtained by various manners: the TPRM (Trade Policy Review Mechanism), national procedures to obtain and collect the private information and private complaints. For each one of these mechanisms, asymmetry between countries emerges which induces disparities in the level of costs.

According to Horn, Mavroidis and Nordström (1999) trade law knew more and more ramifications through time, both because of the increasing extent of the covered field (new sectors like services or intellectual property) and also with the legal delimitation to define with the other fields of the international law (labor or environmental law). Today, even legal experts can encounter some difficulties in evaluating whether a trade practice raises or not of an WTO agreement, and if this later is not in contradiction with another branch of international law. Consequently, one of the explanations advanced by the three authors to justify the over-representation of some countries to the DSU compared to others is that some are perhaps better equipped to identify suspicious trade barriers, and then to prepare and carry the case. To take again their terms, the identification and the action phase are both intensive in legal human capital and this last is not available in same quantity for all the countries since all do not have an identical legal qualification level. One can thus admit that, even if each country is able to identify illegal trade barriers itself or using public reports, some can however miss legal resources to initiate and conclude the procedure.

The point of view of Michalopoulos (1999) is nearly similar since he argues the costs due to the weakness of administrative resources and thus advances that the active participation

[7] For example, developing countries can bear costs of defence being able to amount to 600 dollars per hour. In the Japan-Photographic Film case, lawyers thus claimed for their services approximately 10 million dollars. Another anecdote illustrating resources deployed disparities, the United States, through its USTR (United States Trade Representative) employs more than 30 lawyers specialized on international trade conflicts to which are added, with the favour of the nature of the case, other lawyers specialized on the specific point of the litigation and coming from different American State Departments (trade, agriculture, treasure, environment...)

of developing countries inside the DSU crucially depends on their level of institutional development. In other words, their respective governments must have enough capacity of analysis to seize all the aspects related to the WTO trade agreements.

Hypothesis 2: *Asymmetry in legal capacity disadvantages the country which have less resources. The more important legal resources engaged by a country, that it is plaintiff or defendant, are, the higher the probability of success is.*

3.3 Economic retaliation

In addition to trade retaliation authorized by the WTO DS procedure, a country can exert a threat of retaliation against a trading partner via other available economic instruments since bilateral economic relationship has various aspects. Retaliation is indeed not limited to higher tariffs. It must be extended to economic factors which are not under WTO control. They may influence the final decision at the term of the procedure. Economic retaliation also forms part of an overall asymmetric relationship between two litigant countries. Various economic variables, being able to generate costs for one or the other parts, thus necessarily appear as from the moment when a complaint is lodged to the DSU. It lets us suppose an incoming deterioration of the international relations between the plaintiff and the defendant. The economic dependence which can exist between the two parts then necessarily influences the nature, the amount and the impact of these costs.

Two forms of retaliation in international economic scale have been emphasized in the economic literature. First, Breuss (2001), Bown (2003a) and Chang (2002) deal with the bilateral economic assistance which leads to close economic interdependence. In this context, such a variable may influence the dynamic of the procedure. The country, which receives economic assistance, exercises self-constraint during the whole process in order not to jeopardize its privilege. The second economic retaliation can be expressed under the perspective of pre-existent preferential trade agreements between two countries or to their joint participation in a privileged trade area (Bown 2003b; Chang, 2002). Once again, the threat of economic relationship deterioration, after litigation between two countries with close economic interdependence, influences the litigant behaviors during a dispute settlement. The starting point of this degradation can then come either from the illegal trade practice (the defendant is economically depending on the plaintiff, which will seek to sanction it while

carrying a complaint), or from the even complaint (the plaintiff is economically depending on the defendant, which is bothered by the plaintiff initiative and then will seek to sanction him).

<u>Hypothesis 3:</u> *The possibility of economic retaliation of a country against a trading partner disadvantages the later during DSU litigation. The higher the threat of economic retaliation is, the smaller the probability to win a dispute is.*

3.4 International politics factors

We now focus on international politics factors which could also influence country positions during DS procedure. In the literature of the international political economy, the realist and neo-realist models have largely studied the economic and political impact of the relation of power between countries, and more specifically on the need for the hegemonic country to establish and maintain international organizations (Keohane, 1989; Kindleberger, 1981). In the framework of international trade, the most powerful countries are favorable to free trade because this regime politically weakens the small countries and strengthens the hegemon supremacy on the whole of the world by integrating the other countries into its leadership. The free-trader organization wanted by the hegemonic power end up including the small countries because of their relative weakness and of their incapacity to resist to the influence of the hegemonic power. This approach explains the establishment of the WTO as international organization charged to control and to fix the rules of the international trade regime. Krasner (1976) underlines the use of the military force to impose, on the XIX century, free trade to countries in autarky which escaped before from the hegemonic influence zone. Applied to the DSU, the transposition of this theoretical paradigm can thus bring some additional elements to show up the whole of the determinants which can bias the final result of the litigation.

In this perspective, trade disputes are partly generated by political relationships and are the result of the structures of power and conflicts between countries. Power is traditionally defined by its means, i.e. by the resources which make it possible to impose its will on others (or to prevent the others from being opposed to its will). In other words it is defined like means of constraint on the decisions of the others. Iida (1999) argues that power is likely to influence the issue of the DS procedure, through bilateral arrangements, and to allow favorable verdicts in spite of trade deviant practices from WTO rules. Griffin (2002) also

examines how military factors are likely to act on the final dispute outcome. The analytical assumption is thus the following one: important gap in military expenditures between two parties increases the probability that the DSU is seized. Moreover, to consolidate his theory of hegemon, Griffin introduces the assumption that the presence of the United States or the European Union in a dispute increases the probability that the DSU is seized.

Hypothesis 4: *Political power of a country disadvantages its trading partner during DSU litigation. The politically weaker one country, that is plaintiff or defendant, is, the lower its probability of success is.*

4. Empirical results

In this section, we will test consistency of the hypothesizes emphasized in the previous section when they are applied to WTO trade disputes which involve developing countries in order to examine the determinants of their performance in the WTO trade dispute system. We focus only on dispute in which developing countries are brought into dispute against developed countries. We investigate a sample of 40 disputes that were initiated and completed since WTO inception. Our econometric study consists in estimating a linear relationship which supposes that developing countries success depends on economic, legal and world politics factors.

We measure developing countries success by a simple dummy variable, SUCCESS, that takes on a value of 1 if the developing country wins, that means the outcome is in favor of the developing country whatever the stage in which the dispute has been settled. We therefore estimate the linear relationship with a binomial probit specification:

$$\text{Prob(SUCCESS = 1)} = \Phi(\beta x)$$

where x is the set of the explanatory variables and β the set of the coefficients to be estimated. Thus, we report estimates of the marginal effects of the explanatory variables on the probability of developing countries success. The explanatory variable vector includes four sets of variables. The description of the variable construction and data sources are presented in appendix.

The first set of explanatory variables represents the credibility of retaliation threat of countries involved in a dispute. The share of the developed country's exports received by the developing country, $SEXP_{ji}$, and the share of the developing country's exports received by the developed country involved in the dispute, $SEXP_{ij}$, are used to measure the credibility of retaliation threat respectively of the developing and the developed countries. The capacity to retaliate through trade policy is determined by whether the retaliating country accounts for a sufficient amount of its trading partner's export (Bown, 2004). Therefore, the higher the share of developed country's exports received by the developing country is, the higher developing country probability to win is. Conversely, the higher the share of developing country's exports received by the developed country is, the lower developing country probability to win is. The coefficient sign associated to $SEXP_{ji}$ and $SEXP_{ij}$ are respectively positive and negative.

The second set of explanatory variables measures the impact of legal capacity differences on developing country performance in the WTO trade dispute system. We use a set of proxy which captures the legal capacity gap among a developing country and its developed trade partner. The probability of a country to gain a favorable outcome depends on its relative advantage due to a greater capacity to summon up legal resources in order to overcome the complexity of the international trade law and rules and to be able going on to the bitter end of the DS procedure. First, this capacity to bear the costs of a dispute within WTO is represented by its GDP. Thus, the differential of GDP, GDPG, is used to capture the legal relative advantage of a country. The more the gap important is, the less a developing country is able to win a dispute when it is opposed to a developed country.

Second, the legal resources summon up by a country to settle trade disputes are measured by the number of its WTO representatives. The number of representatives gap among a developing country and its developed trading partner, REPG, also reflects asymmetry in legal capacity. The probability of a developing country to win decreases with the growth of the gap. The expected relationship between SUCCESS and theses two variables is negative. Third, to measure more specifically the impact of the costs of litigation on the developing countries performance, we include in the empirical model the duration of the conflict, TIME. The lengthier a dispute is, the more legal resources to summon up increase and the more the developing country probability to win decreases. Thus, SUCCESS should be negatively related to TIME.

The third set of explanatory variables consists of proxies which measure economic retaliation threat effects on developing countries performance. We introduce two indicators to capture two kind of pressure a developed country may exert on a developing country. First, a dummy variable is used, BILAIDUM, which takes on a value of 1 if the developing country receives a bilateral aid from the developed country. From a retaliation threat perspective, we might expect a negative relationship between SUCCESS and BILAIDUM. A developing country that is reliant on the developed country for bilateral assistance may exercise self-constraint during the DS procedure. The second indicator is a dummy variable, RTAP, which takes on a value of one if the developing country is member of a regional trade area with the developed country. As a developing country enjoys a preferential treatment in the developed country access market, the former might fear to lose this trade privilege if it is opposed to its developed trading partner in dispute. A regional trade agreement results in close trade interdependence which gives to the developed country a way to exert a threat of extra-WTO trade retaliation. Therefore, the expected relationship between SUCCESS and RTAP is negative.

The last two explanatory variables are variables designed to measure the impact of political power on DS outcome. The first indicator measures the military expenditures gap, MEXPG which captures difference in military power among developing and developed countries. The international political economy theory predicts that this variable should have a negative impact on the probability to win of developing countries: the higher military expenditures gap is, the more developing countries are under political influence of the developed country. Finally, the last variable is a dummy variable, MILAP, that takes on a value of one if the developing country is member of a military alliance with the developed country. We used this variable to capture a possible close military relationship. When a developing country is allied with a developed country, it is reliant on the later military support. So, SUCCESS should be negatively related to MILAP.

The statistical results are presented in Table 2. Among the two variables which capture retaliation threat, sole $SEXP_{ij}$ is significant. It appears that the retaliation threat of developing countries has no influence on the DS outcome when they are opposed to developed countries. Even if $SEXP_{ij}$ achieves statistical significance, its coefficient has not the predicted sign. Our estimations show that share of the developing country's exports received by the developed country has a positive effect on the probability of the former to win a dispute. Therefore, the

first hypothesis concerning the impact of trade retaliation threat on DS outcome receives no statistical support. In this perspective, the positive sign of $SEXP_{ij}$ may be explained by the fact that this variable captures something different from retaliation threat of the developed country. We argue this is likely because this variable is indicative of the nature of trade relations between a developed and a developing countries: the closer trade relation, the more developed country likely to satisfy its developing trading partner request.

Variable	Variable definition	Expected sign
$SEXP_{ji}$	Share of the developed country's exports received by the developing country	+
$SEXP_{ij}$	Share of the developing country's exports received by the developed country	-
GDPG	GDP gap	-
REPG	Representatives gap	-
TIME	Dispute duration	-
BILAIDUM	Bilateral aid dummy	-
RTAP	Regional trade agreement participation	-
MEXPG	Military expenditures gap	-
MILAP	Military alliance participation	-

Table 1: Explanatory variables description and prediction

We find that legal capacity seems to play a significant role in the outcome of the dispute in which developing countries are involved. Except for GDPG, the variables tapping this influence are statistically significant and give a strong support to hypothesis 2 since the coefficients estimated have the sign predicted by the literature. Our results indicate that developing countries are handicapped by a low number of representatives in the WTO when they are opposed to developed countries which are better endowed. Asymmetry in number of representatives negatively affects the developing countries performance in the DS procedure. More over, the litigation duration also seems to influence negatively the developing country probability to win a dispute. The negative sign of TIME supports the idea that developing countries don't have enough legal resources in hand to face disputes which take a long time to

be settled. The coefficient of GDPG is insignificant probably because GDP represents a too general and includes many over factors besides legal capacity.

Variable	Estimate	z-ratio
$SEXP_{ji}$	-32.47424	-1.195
$SEXP_{ij}$	9.807773	2.040**
GDPG	-4.66^{e}-08	-0.154
REPG	-.3704088	-1.919*
TIME	-.0021267	-1.735*
BILAIDUM	-3.159707	-2.333**
RTAP	-1.116269	-0.960
MEXPG	- .0000114	-1.668*
MILAP	-2.394163	-1.708*
CONS	7.756328	2.680***
Pseudo R^2	0.3436	
Prob(chi2)	0.0259	
Number of observations	40	

*** Indicates statistical significance at the $\alpha = 0.01$ level
** Indicates statistical significance at the $\alpha = 0.05$ level
* Indicates statistical significance at the $\alpha = 0.1$ level

Table 2: Statistical results

Threat of economic retaliation seems to affect developing countries performance only through bilateral aid. Indeed, the outcome of the DS procedure when a developing country is opposed to a developed country is independent of participation to a regional trade area. The coefficient of RTAP is not statistically significant. This result corroborates the first one which shows that close trade relation does not imply a threat of trade retaliation. As the coefficient of BILAIDUM achieves statistical significance and has the predicted sign, our finding

confirms the idea that a developing country which receives a bilateral aid from a developed country is at a disadvantage during the DS procedure when it is opposed to the later.

Finally, our results give a strong statistical support to the fourth hypothesis concerning the influence of power factors on the outcome of the DS procedure. The coefficient of the two military variables achieves statistical significance and has the expected sign. The military expenditures gap appears to negatively affect the probability of a developing country to win a dispute. This finding confirms the idea that dispute settlement is in keeping with the general pattern of international politics and relation of power among countries. In this framework, as almost developing countries represents military weak countries which are under political influence of developed powerful countries, their probability is low to impose their trade policy preferences and to obtain a favorable outcome during the DS procedure. In the same manner, when a developing country is member of a military alliance dominated by a powerful developed country, its probability to obtain a favorable outcome is reduced when it is opposed to the military leadership.

5. Conclusion

The regression results stress an interesting series of learning about the position of developing countries into the DS procedure. Our estimation shows that retaliation threat has no influence on developing countries performance in the DS procedure. In the sense that asymmetry in countries sizes doesn't affect dispute outcome, the WTO DS procedure succeeds in founding a more "rule-based" DS system. However, this success is very limited because a set of bias affects the DS procedure against developing countries when they are opposed to developed countries in other area beside trade relations.

First, our finding suggests that developing countries are unlikely to obtain a favorable outcome because of asymmetric legal capacity. Developing countries are unlikely to win dispute when the gap number of representative is important and dispute are long in time. This result corroborates the idea pointed out by many scholars that developing countries lack of representation in Geneva and legal resources to adjudicate cases. The increasing number of legal reviews under the strengthened procedures of the new WTO places a "premium on sophisticated legal argumentation" that may work against developing countries. The dispute settlement system is so technical and the comparative advantage in legal skills held by

countries such as the United States or the European Union may further augment the disparity in power resources. The DSU seems to fail to offset differences in legal capacity in spite of legal provisions specifically intended for developing countries.

Second, the DS procedure also fails to rub out economic dependence between developing and developed countries which leads to a bias in the DS procedure against the former. Indeed, it appears that when a developing country is reliant on a developed country for bilateral assistance, it is unlikely to win dispute when it opposed to the later. It seems that developing countries exercise self-constraints during the litigation process in order not to jeopardize privileges they depend on. Third, DS procedure also fails to insulate developing countries from international politics factors and hence contains bias against weak developing countries. Countries do not put military power aside when they are involved in a trade dispute. Our results seems to show that a developing country is unlikely to win a dispute against a developed country when it participates to a military alliance with the later and the military expenditures gap is high.

In the light of the current results, it appears that the idea that the DSU procedure is biased finds an empirical support. This procedure does not still anaesthetize asymmetries among protagonists. Therefore, the DS system does not still completely eliminate power-based relationships between countries. However, the conclusions which we advance thus are to be treated with caution and will ask to be confirmed in the future. Given the available data, we work on a reduced sample of disputes setting developing and developed countries. Other areas of researches about the DS procedure remain to investigate. As in Busch and Reinhardt works, it seems that one of the fundamental stages of the procedure is the bilateral consultations between parties because disputes are often settled at this stage. It would thus be interesting to examine what of our variables are significant at this given stage. To extend our analysis of distortion sources of the procedure, other kinds of variables will be to incorporate: domestic variables, particularly the influence of pressure groups, or trade measure which triggers litigation.

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Annex: Variable definition and data source

Dependant variable:

SUCCESS: Dummy variable that takes on a value of one if the developing country wins, that is the outcome is in favor of the developing country.
Source: WTO website.

Explanatory variables:

$$\mathrm{SEXP_{ij}} = \frac{X_j}{\sum_{n=1}^{k} X_n}$$

where X_j represents export of the developing country i to the developed country j and ΣX_n is the total export of the developing country i.
Source: UN and UNTCAD websites.

$$\mathrm{SEXP_{ji}} = \frac{X_i}{\sum_{n=1}^{k} X_n}$$

where X_i represents export of the developed country j to the developing country i and ΣX_n is the total export of the developed country j.
Source: UN and UNTCAD websites.

GDPG = $GDP_j - GDP_i$, where GDP_j is the gross domestic product of the developed country j and GDP_i is the gross domestic product of the developing country i.
Source: World Bank data base.

REPG = $REP_j - REP_i$, where REP_j is the number of WTO representatives of the developed country j and REP_i is the number of WTO representatives of the developing country i.
Source: Michalopoulos (1999).

TIME = Duration of a dispute (number of days)
Source: WTO website.

RTAP: Dummy variable that takes on a value of one if the developing country is member of a regional trade area with the developed country.
Source: UNTCAD website.

MEXPG = $MEXP_j - MEXP_i$, $MEXP_j$ is the military expenditures of the developed country j and $MEXP_i$ is the military expenditures of the developing country i.
Source: SIPRI website.

MILAP = dummy variable that takes on a value of one if the developing country is member of a military alliance with the developed country.
Source: COW2 website.