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Informing WTO Reform:
Dispute Settlement Performance, 1995-2020

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Abstract

This paper presents salient facts on the performance of WTO dispute settlement, using an updated dataset on cases adjudicated between 1992 and mid 2020. The dataset provides a comprehensive compilation of information on WTO disputes, including complainants, respondents and third parties; the substantive matters tabled; the WTO provisions invoked; the claims that are accepted or rejected by adjudicating bodies; the time involved to complete the consultation, panel and appeal (Appellate Body) stages; and the identity of panelists and how they were appointed. We highlight elements of the operation of the system that are salient to WTO reform discussions, while drawing attention to the richness of the dataset by highlighting stylized facts in the hope others will use the data to investigate specific research questions and hypotheses.

Keywords

WTO; trade disputes; conflict resolution; panels; Appellate Body

JEL-Classification: F13; F51; K 40

Introduction*

Since its establishment in 1995 and July 2020, over 600 bilateral trade disputes were adjudicated through the World Trade Organization (WTO) dispute settlement system. The International Court of Justice (ICJ), a state-to-state court that adjudicates disputes in all areas of international law, has only addressed 178 disputes since 1947.[1] Given that the number of states that can submit disputes to the ICJ surpasses the WTO membership by one third, and that the ICJ also knows of non-litigious procedures (advisory opinions) that are not available to WTO adjudicators, the sheer volume of dispute settlement activity under the WTO has been impressive.

The outlook for continued use of the WTO to resolve disputes is unclear at the time of writing. A decision by the United States to block the appointment of new Appellate Body (AB) members as the term of sitting adjudicators expired led to the AB becoming non-operational in December 2019. As a result, WTO members are left with only the first stage of what was designed to be a two-instance dispute settlement process.[2] Whether the AB will be reconstituted following negotiations among WTO members remains to be seen.

In this paper, we do not engage on the reasons for the AB crisis, the views of WTO members on this matter or potential solutions.[3] Instead, we examine the record of WTO dispute settlement, using a newly updated and expanded dataset on adjudicated cases since 1995.[4] The dataset includes information on the WTO members involved (complainants, respondents and third parties), the claims made and the provisions of WTO agreements that were invoked; rulings on a claim-by-claim basis by panels and the AB (if panel findings were appealed); the time taken for each stage of the process; the identity of panelists adjudicating each case; and how they were appointed; and for a subset of disputes, the outcome – whether rulings were implemented.[5] The dataset can be freely downloaded from the EUI website.[6]

Section 1 briefly describes the basic features of WTO dispute settlement and use of the system since 1995. Section 2 discusses the frequency of participation by WTO members in panel and/or AB proceedings. Section 3 summarizes the subject-matter of disputes and the frequency of invocation of specific agreements and provisions. Section 4 presents data on wins and losses, based on the number of claims that are accepted by panels and the AB. Section 5 discusses the duration of the different stages of the process. Section 6 turns to the identity of panelists dealing with cases and the process through which they were appointed. Section 7 concludes.

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* This paper reports on findings emerging from a dataset originally compiled by Henrik Horn, Louise Johannesson and Petros Mavroidis in 2011 and updated in 2016. This version extends the data on WTO disputes to July 2020. It is downloadable from the EUI website at https://globalgovernanceprogramme.eui.eu/research-project/wto-case-law-project/. We are greatly indebted to Matteo Fiorini for assistance in processing some of the information in the dataset; thank Aydin Yildirim for sharing his work on implementation of WTO disputes and Charles-Mary Cantore, Bill Davey, Rodd Izadnia, David Palmeter, Neeraj R.S., Alan Sykes and Nisha Telesford for helpful discussions, inputs and feedback. Financial support for updating the dataset was provided by the Global Governance Programme of the Robert Schuman Centre for Advanced Studies, European University Institute, Florence (Italy).

1 International Court of Justice. Available at: https://www.icj-cij.org/en/cases.

2 In the course of 2020, the EU, China and another 20 WTO members agreed to a stop gap Multi-Party Interim Appeal Arbitration Arrangement (MPIA). This gives signatories the option to appeal against panel reports that involve other MPIA signatories.

3 We have done so elsewhere. See Fiorini et al. (2020) and Hoekman and Mavroidis (2020a; 2020b; 2020c).

4 Earlier versions were described in Horn, Johannesson and Mavroidis (2011) and Johannesson and Mavroidis (2017).

5 Information on domestic implementation was kindly provided by Aydin Yildirim. This dimension of the dataset is not used in this article as it is in the process of being updated. See Yildirim (2020).

6 See https://globalgovernanceprogramme.eui.eu/research-project/wto-case-law-project/.

1. Basic features and use of the dispute settlement process

The WTO dispute settlement system is unique in international relations in that it is a comprehensive, compulsory and binding third party adjudication regime. WTO members cannot take justice in their own hands: they must resolve trade disputes exclusively through procedures established in the WTO Dispute Settlement Understanding (DSU), the agreement organizing adjudication of disputes (DSU Art. 23.2).[7]

WTO dispute settlement starts with a request for consultations. If these are not successful, a two-stage adjudication process applies. Panels (the 'first instance court') establish the factual record, the relevant legal disciplines, and determine whether contested measures are inconsistent with WTO rules or specific commitments made by the defendant. The Appellate Body (AB) acts as the 'second instance court', with a mandate limited to review of a panel's reasoning on matters of WTO law. The composition of panels (the panelists) changes for each case – panelists are ad hoc appointments in contrast to the AB, which is standing body of seven people who are appointed for a four-year term, renewable once.

Panels and the AB are independent. The parties to a dispute cannot block the establishment of a panel, or the adoption of a panel report, or, if the report is appealed, the ruling on the AB.[8] Assuming a favorable judgement for the complainant, the defendant will be called to bring its measures into compliance with its obligations. If it fails to do so, it confronts the threat of retaliation. If it complies, the case is in principle resolved, although this is conditional on the agreement of the complainant that the measures adopted are adequate. In case of disagreement on this score, disputes will be submitted to 'compliance panels' (and eventually, the AB), which are requested to pronounce on the adequacy of measures adopted during the reasonable period of time that defendants enjoy to this effect (DSU Art. 21.5). If defendants do nothing, or a compliance panel (and/or the AB, as the case may be) determines the adopted measures are inadequate, retaliation may be authorized. The amount of authorized retaliation is limited to removal by the complainant of 'substantially equivalent concessions' – usually involving increases in tariffs on products imported from the defendant WTO member. The appropriate amount of retaliation is established by an Arbitrator (the original panel, whenever possible) (DSU Art. 22.6). Decisions by the Arbitrator cannot be appealed. Retaliation can lawfully take place only following authorization by the Dispute Settlement Body (DSB)[9] to do so. Authorization of retaliation does not remove the obligation of the WTO member concerned to bring its measures into compliance, and it must observe specific reporting requirements to this effect (DSU Arts. 21.6 and 22.8). Suspension of concessions (retaliation) is therefore 'temporary' (DSU Art. 22.8) and must be removed once measures have been brought into compliance. Consequently, whereas de jure the DSU (Article 22.1) calls for 'property rules' – imposes an obligation to perform the contract – de facto 'liability rules' are tolerated, in that WTO members can 'buy their way out of the contract' (Schwartz and Sykes, 2002).

The DSU provides for specific deadlines for completion of each stage of the process. For example, DSU Art. 4.7 states that sixty days after the receipt of the Request for Consultations, assuming that no satisfactory solution has been found by that time, a complainant can request the establishment of a panel. If disputing parties cannot agree on the panel composition within twenty days, they can request the WTO Director-General (DG) to appoint panelists (DSU Art. 8.7). Proceedings before panels should not exceed six months, unless panels inform the DSB they require nine months to complete their review (DSU Art. 12.9). In similar vein, proceedings before the AB should not exceed sixty days, unless the AB, having informed the DSB, decides that it needs ninety days to complete its review of the case before it (DSU Art. 17.5). Appendix 3 to the DSU provides an indicative list of the timetable for the whole process.

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7 The DSU is discussed in detail in Palmeter and Mavroidis (2006). Davey (2014) provides an excellent survey of its technical evolution since the inception of the GATT.

8 Decisions regarding requests for consultations, establishment of a panel, appeal to the AB, adoption of panel/AB reports, arbitration to determine the reasonable period of time for implementation and/or the level of authorized countermeasures in cases of non-implementation cannot be blocked by a party to a dispute. Instead, "negative consensus" is required: all WTO members must agree not to adopt the findings of adjudicating bodies.

9 The DSB administers the DSU. Each WTO member has one representative at the DSB.

The various timelines were adopted largely at the request of the US during the negotiations. The last years of the GATT were marked with an unusually high percentage of unadopted panel reports, as Hudec (1993) explains in his study.[10] The US was at the receiving end of this practice, which was a factor motivating aggressive use of Section 301 of the US Trade Act of 1974 against foreign trade practices deemed to be detrimental to US exports (Bhagwati, 1990). Action under Section 301 was subject to specific deadlines for USTR in processing private requests for relief (Hudec, 1990). A substantial part of the DSU negotiation focused on emulating the Section 301 deadlines at the multilateral level (Mavroidis, 2016a). The idea was that, by adopting a strict calendar for processing disputes at the multilateral level, as well as by doing away with the onerous consensus-requirement for establishment of panels and adoption of their reports, the US would abandon aggressive unilateralism, and accept submission of all trade disputes to compulsory third party adjudication. The statutory deadlines reflect a significant negotiated settlement, explaining the emphasis placed by the US on the AB exceeding the statutory timelines in the DSU.[11]

Use of the system

A total of 623 bilateral disputes were adjudicated between January 1, 1995 and July 1, 2020. Information of all these disputes is contained in the dataset that we describe in what follows. The number is greater than the 595 disputes reported on the official WTO webpage (www.wto.org) because we consider the multi-party nature of some disputes. WTO disputes start with filings of 'Requests for Consultations'. If more than one complainant drafts a 'Request for Consultations' for the same matter, these are captured in the same DS (dispute settlement) number (e.g., DS1, DS2 etc.). We do not always follow this method of counting. Instead, when warranted, we convert the data into "bilateral" disputes. That is, if two WTO members are complaining against a third member, we count each one of them as having one "dispute" each with the third member even if the complaints are captured by the same specific DS number reported on the WTO website. In *EC-Bananas III*, for example, only one DS number (DS27) was allocated to a dispute involving five complainants against the EU (European Union). We treat this litigation as five bilateral disputes.[12]

WTO members requested consultations more often during the first ten years of the WTO then thereafter (Table 1 and Figure 1). The same pattern is observed with respect to requests for establishment of a panel (Figure 2), but not for appeals of panel findings. The latter varies substantially over time with some periods in which many reports were appealed and others where the number of appeals was limited (Figure 3).

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[10] Adoption of GATT panel reports required consensus, permitting a losing party to block reports.

[11] As discussed below, in practice panels exceed statutory timelines by a greater margin than the AB, something that has not been stressed by the US in its critique of the WTO dispute settlement system.

[12] This issue mostly arose in the early years of the WTO—see Figure 1. The differential treatment of reporting/numbering of disputes is due to the fact that defendants can object to a request by WTO Members to become co-complainants in already initiated disputes, and/or disagreements regarding whether to merge disputes relating to the same issue (DSU Arts. 4.11 and 9). Note that if different WTO members contest the same measure, this generally will give rise to several DS numbers that deal with the same matter. For example, in *Argentina-Import Measures* three complainants requested the establishment of a panel; three different disputes were initiated, and three different DS numbers were allocated to the litigation (DS438, 444, 445). Thus, the total number of dispute cases is not the same as the total number of trade practices that were adjudicated under the WTO. The latter is a subset of the former. We make no claim that our counting method is more appropriate than that used by the WTO but use it because it ensures symmetry regarding the number of participants per dispute

Table 1: Average Number of Disputes per 5-year intervals

(based on 623 disputes, original proceedings only)

1995-1999	2000-2004	2005-2009	2010-2014	2015-2020
40.8	29.6	15.6	17.2	21

Figure 1: Number of Requests for Consultations per Year

(based on 623 disputes: original proceedings only)

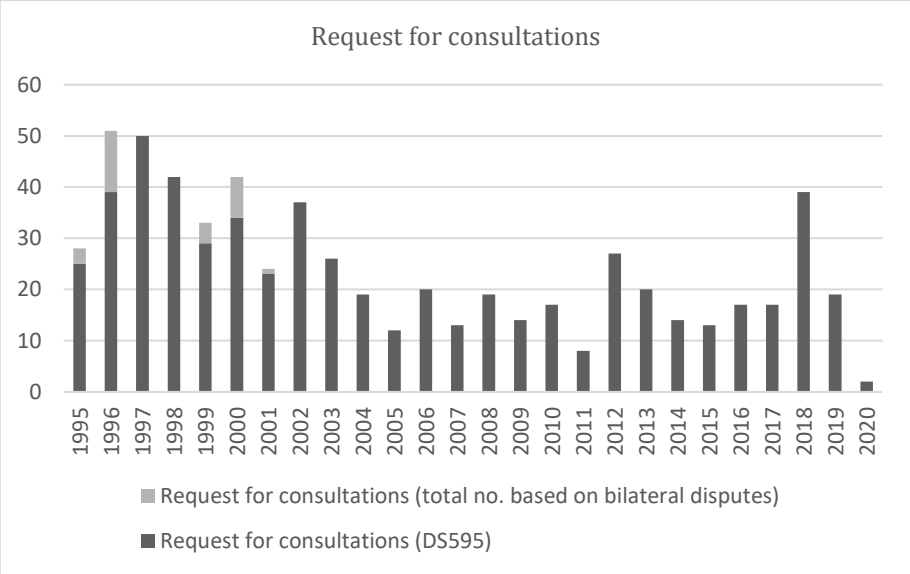


Figure 2: Number of Requests for Establishment of Panel per Year

395 in total (original proceedings)

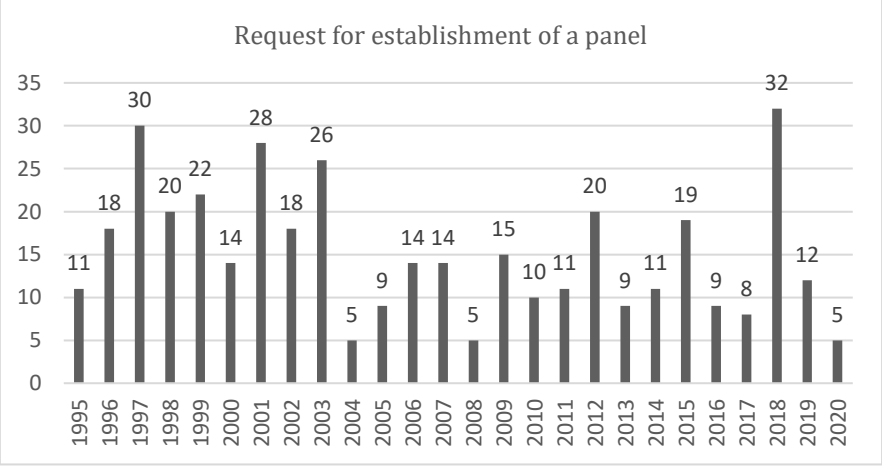
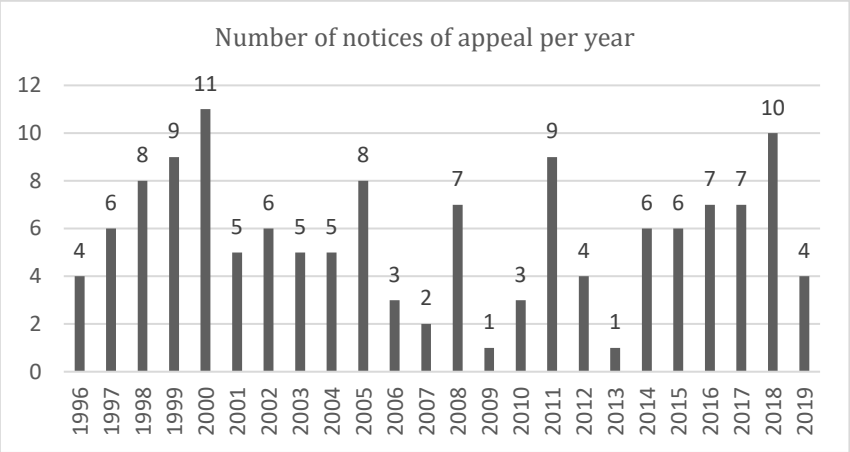


Figure 3: Number of Notices of Appeal per Year (original proceedings)



2. The Participants

There are three institutional players in WTO dispute adjudication: WTO members (the principals); WTO adjudicators (panelists and AB members); and the WTO secretariat. This section discusses the first set of players. Data on the role of adjudicators is discussed in Section 6. Information on the role of Secretariat staff on a case-by-case basis is not reported by the WTO.[13]

WTO members can choose to act as complainants, and/or participate as a third party to a dispute. Third parties have reduced rights before panels and the AB. Their arguments need not be addressed by panels and/or the AB, although in practice their arguments are reflected in the factual part of panel reports. Third parties also cannot appeal panel reports and WTO members cannot participate as third parties before the AB, unless they have participated under the same capacity before a panel (DSU Art. 17.4).[14] The value of becoming a third party is that they can participate in meetings, receive the documents distributed in the first panel meeting and/or the only AB meeting with the parties (unlike panels, the AB meets with the parties only once),[15] and make oral or written statements.

There is a substantial literature regarding what are the factors influencing participation in the DSU.[16] Potential drivers include export trade shares as higher trade volumes increase the likelihood a dispute will arise (Horn et al. 2005), bargaining power considerations (Wickens 2009), the (lack of) capacity to identify trade barriers (Bown and Hoekman, 2005; 2008) and the cost of participation (Nordström and

[13] Although DSU Art. 27.1 makes clear that the institutional function of the WTO Secretariat is to assist panel during proceedings the dataset only contains information on the members of the WTO Secretariat that participate in proceedings for early cases. The WTO Secretariat discontinued such reporting. This is unfortunate as the participation of the WTO Secretariat in dispute settlement proceedings is not inconsequential. For one, under DSU Art.8.6, the Secretariat has an important role in proposing panelists, as we discuss below. Furthermore, there are good reasons to believe that the WTO Secretariat participates quite actively in the preparation of reports. See Nordström (2005) and Johannesson and Mavroidis (2015).

[14] They can participate as amici curiae before the AB. The AB ruled this in *EC-Sardines* when accepting brief submitted by Morocco.

[15] Panels retain discretion to grant enhanced third party rights to applicants that can demonstrate an interest to this effect, see for example *EC-Hormones* here the panel upheld the request by Canada and the US to act as enhanced third party in each other's complaint against the EU (para. 8.15), and the AB upheld the way the panel had exercised discretion on this issue (para. 154).

[16] We focus on participation as complainant here. Defendants do not have discretion since they are targets of actions.

Shaffer 2008; Saggi 2012) and the extent of participation in preferential trade arrangements (Mavroidis and Sapir 2015). The dataset permits empirical assessment of these types of potential determinants.

In synthesizing the bilateral dispute data contained in the dataset we classify the 164 WTO members into five groups, two comprising developed economies and the other three spanning emerging and developing economies, as follows:

G2	EU (European Union) and US (United States)
IND	OECD member countries other than the EU and US, but excluding Chile and Colombia
BRIC	Brazil, Russia, India, China, the four largest and influential non-OECD countries
LDC	Least developed countries
DEV	All other developing and emerging economies

Apart from least developed countries (LDC), the other groups do not comprise "official" categories as the WTO does not employ criteria mapping WTO members into country groups.[17] Chile and Colombia, both OECD members, are classified under DEV because Colombia joined only in 2020. Chile joined the OECD earlier, but all its disputes occurred before it joined the OECD. Appendix Table 1 details the composition of these groups.[18]

Complainants and Respondents

Unsurprisingly, bigger markets are the most frequent targets of complaints, and act as defendants more frequently than they act as complainants themselves. Thus, the G2 is the most frequent complainant in requests for consultations and the most frequent respondent (Table 2). The same is true for disputes that led to the creation of a panel. The G2 have acted as respondents in half the total number of requests for establishment of a panel (199/395) (Table 3). DEV and BRIC have similar numbers of cases where they acted as complainants and respondents (85/70, and 52/61, respectively). The numbers are less balanced for G2 (146/199), and even more so for IND (112/65). The EU-US is the most frequent disputing dyad (72 cases) (Appendix Table 2) followed by China-US (39 cases). The US is the most frequent user/target of disputes. The EU is also a major player, but uses the system less intensively, including vis-à-vis China (14 cases vs. 39 for the US).

Table 2: Requests for Consultations

		Respondent				
		BRIC	DEV	G2	IND	**Total**
Complainant	BRIC	3	11	64	8	86
	DEV	8	57	61	16	142
	G2	64	37	80	57	238
	IND	24	20	91	21	156
	LDC	1	0	0	0	1
	Total	100	125	296	102	**623**

[17] The latest UN resolution adopting the list of LDCs is from December 2018. It comprises of 47 countries. Available at: https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/ldc_list.pdf.

[18] The dataset reports all data on a bilateral/dyadic basis. Those interested in specific WTO member participation in dispute settlement should consult the dataset. What follows is simply a way to summarize and characterize broad trends.

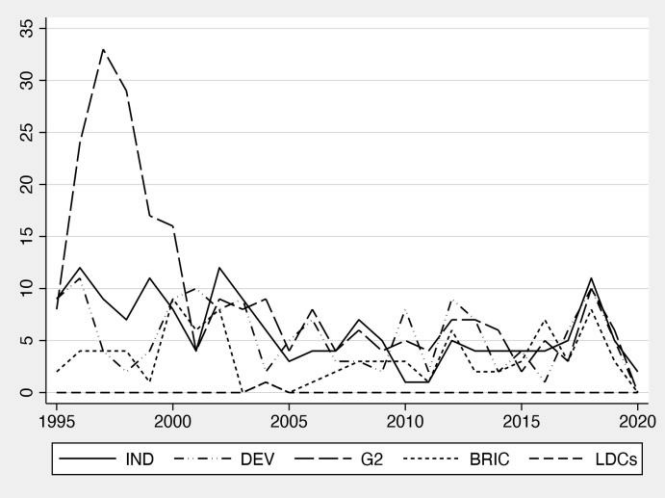
Table 3: Requests for Establishment of a Panel

		Respondent				
		BRIC	DEV	G2	IND	**Total**
Complainant	BRIC	1	4	43	4	52
	DEV	5	31	38	11	85
	G2	43	22	46	35	146
	IND	12	13	72	15	112
	LDC	0	0	0	0	0
	Total	61	70	199	65	**395**

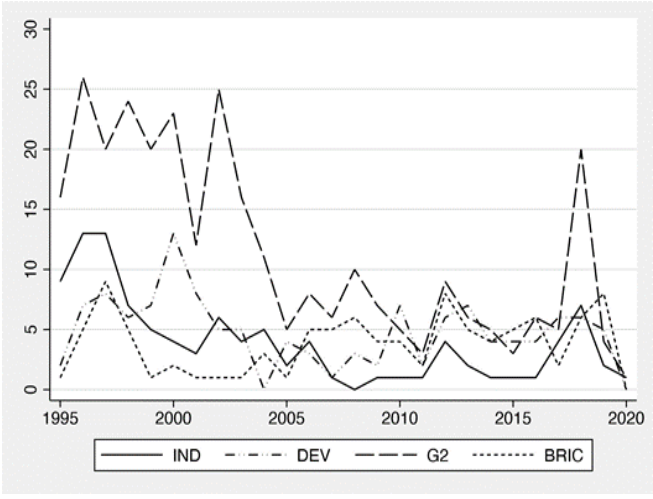
Over time the number of disputes brought to the WTO has declined, mostly reflecting more intensive use by the G2 in the early years of the WTO (Figure 4).

Figure 4: Complainant Requests for Consultations and Respondents, 1995-2020

Complainants



Respondents



The DSU requires an (original) complainant that requests consultations to submit its request to both the designated defendant, as well as the WTO Secretariat. The latter will circulate it to the membership. Any member wishing to act as co-complainant, can then do so. The defendant must accede to this request (DSU Art. 4.11). If it is rejected, there is still a gain for the eventual co-complainant(s), since they will have received information that may lead them to initiate their own dispute. The multilateralization of Requests for Consultation 'subsidizes' those WTO members that were not able to detect the potentially illegal trade measure. High-income WTO members (G2 and IND) have most frequently requested to join a consultation (Table 4).

On average requests to join consultations were accepted in less than half of all cases (550/1239). There is only partial information provided by WTO members on the outcome of a request to join consultations. There is complete information – whether a request was accepted or denied – for slightly less than half (45.5 percent) of cases where another WTO member requested to join (150 out of 330). There is no or partial information on the outcome for the other 54.5 percent of such cases.

Table 4: Propensity to Join in Consultations by Group

Complainant	Respondent	Request for consultations	Request to join consultations	Total	Propensity to join (%)	Acceptance of request to join
BRIC	BRIC	3	8	11	72.7	0
	DEV	11	13	24	54.2	10
	G2	64	128	192	66.7	65
	IND	8	5	13	38.5	3
	Total	86	154	240	58.0	78
DEV	BRIC	8	15	23	65.2	0
	DEV	57	53	110	48.2	37
	G2	61	119	180	66.1	24
	IND	16	67	83	80.7	63
	Total	142	254	396	65.1	124
G2	BRIC	64	156	220	70.9	80
	DEV	37	75	112	67.0	40
	G2	80	157	237	66.2	40
	IND	57	54	111	48.6	30
	Total	238	442	680	63.2	190
IND	BRIC	24	90	114	78.9	32
	DEV	20	33	53	62.3	25
	G2	91	227	318	71.4	83
	IND	21	38	59	64.4	18
	Total	156	388	544	69.3	158
LDC	BRIC	1	1	2	50.0	0
Total		623	1239	1862		550

Third Parties

DSU Articles 10 and 17.4 allow for third party participation of WTO members to disputes raised by other members. Neither provision assumes what the position of third parties is. As a result, third party submissions may side with the complainant or the respondent. The dataset provides information regarding third-party participation before panels and the AB for each dispute. For the panel-stage, in what follows we limit our focus to original (as opposed to compliance-) panels, as the subject-matter of compliance panels is quite limited. Focusing on original panels provides a more representative sample of third-party interest in each dispute. IND and DEV are the champions in third party participation (Tables 5 and 6). The LDCs have had very limited involvement as third parties.

Table 5: Third Parties before Panels (original proceedings)

Third party	Number of group members who have been Third parties	Number of Third party appearances for group	Group's share of all Third party appearances (%)
BRIC	4	365	17
DEV	56	686	32
G2	2	267	12
IND	14	835	38
LDC	8	22	1
Total	84	2175	100

Note: Third party frequency is not based on bilateral disputes. Hence, a third party is only counted once for each distinct DS number.

Table 6: Third Parties before the AB (original proceedings)

Third party	No. of group members who have been Third parties	Number of Third party appearances for group	Group's share of all Third party appearances (%)
BRIC	4	190	17
DEV	50	317	29
G2	2	137	12
IND	14	449	41
LDC	6	12	1
Total	76	1105	100

Note: Third party frequency is not based on bilateral disputes. Hence, a Third party is only counted once for each distinct DS number. However, the joint submissions in DS267 and DS165 are counted for each individual WTO Member.

3. The Subject-Matter of Disputes

The substance of a dispute is determined by the complainant, who must decide whether to request consultations and under what terms. The respondent can only react to claims introduced by the complainant. The situation is somewhat different before the AB as both the original complainant and the original respondent can table claims/complaints as long as these do not constitute issues that were not discussed before panels (i.e., matters cannot be raised for the first time in appeals before the AB).

In this section, we summarize information regarding the agreements and provisions invoked at the consultations-stage.[19] The reason is that complainants cannot add new claims after they have issued their Request for Consultations. This is by case law construction, and not because of statutory discipline.[20] DSU Art. 7:1 sets out the terms of reference for panels:

> Panels shall have the following terms of reference unless the parties to the dispute agree otherwise within 20 days from the establishment of the panel: To examine, in the light of the relevant provisions in (name of the covered agreement(s) cited by the parties to the dispute), the matter referred to the DSB by (name of party) in document ... and to make such findings as will assist the DSB in making the recommendations or in giving the rulings provided for in that/those agreement(s).

This does not mean that panels (and/or the AB) must agree with the legal qualification of facts as presented by the complainant. The complainant has the burden to prove the facts, but the adjudicating bodies are charged with determining the correct legal basis and the subjugation of facts under it. Based on judicial economy grounds, panels (and/or the AB) may decide not to discuss some of the issues invoked (claims made). In similar vein, the Notice of Appeal before the AB is limited to the issues decided by the panel in the report being appealed (DSU Art. 16.4).

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19 The dataset provides greater detail on the provisions and agreements invoked before panels and the AB.

20 In its report on *US-Shrimp* (Thailand) the AB noted at §293 that:

> *[a]s long as the complaining party does not expand the scope of the dispute*, [it would] hesitate to impose too rigid a standard for the 'precise and exact identity' between the scope of the consultations and the request for the establishment of a panel, as this would substitute the request for consultations for the panel request". The Appellate Body has also held that a "precise and exact identity" of measures between the two requests is not necessary, "provided that the 'essence' of the challenged measures had not changed." In our view, whether a complaining party has "expand[ed] the scope of the dispute" or changed the "essence" of the dispute through the inclusion of a measure in its panel request that was not part of its consultations request must be determined on a case-by-case basis. (emphasis in the original)
>
> As a result, when the complainant submits a Request for Establishment of panel, it will at most include the claims it had included in its Request for Consultations.

3.1 WTO Agreements invoked

What follows provides an aggregate picture of the invocation of the three main WTO agreements, GATT, GATS and TRIPS, as well as the most frequently invoked WTO Annex 1A agreements on trade in goods: those dealing with Antidumping (AD), Subsidies and Countervailing Measures (SCM); Safeguards (SG), Technical Barriers to Trade (TBT) and Sanitary and Phytosanitary Measures (SPS).

Table 7 reports the frequency with which different WTO agreements are invoked in requests for consultations. GATT is by far the agreement invoked most often (36% of the total), followed by disputes concerning practice in the realm of contingent protection (AD, SCM, SG) which together account for another 24%. The WTO agreement itself (7%) and three other Annex 1A agreements – TBT (4%), SPS (4%), and the Agreement on Agriculture (7%) – make up most of the remainder (21%). While not negligible, the relatively low share of product standards-related and agricultural disputes suggests the agreements negotiated in the Uruguay Round have been more effective than those dealing with contingent protection instruments.[21]

Services and TRIPS each account for only 3% of invocations. This is surprising given the effort that went into negotiating these agreements and the underlying arguments that policies pertaining to these areas constrained access to markets. It suggests the agreements do not provide an effective basis for launching disputes or that the associated remedies on offer are insufficient to induce firms to bring cases forward. WTO Member's GATS market access and national treatment commitments are generally limited (Hoekman, 1996), reducing the incentive to litigate about general obligations to address market access barriers (Marchetti and Roy, 2008).

The relatively low number of TRIPS disputes is striking given that emerging economies such as Brazil and India were frequent targets of Section 301 investigations, and recurrent allegations by international business that China does too little to protect foreign IPRs (Mavroidis and Sapir, 2021). Like the case of the GATS, the low number of IPR cases suggests the TRIPS agreement led to changes in national IPR legislation to comply with TRIPS and/or does not address matters that concern business or does not offer an effective remedy.[22]

Appendix Tables 3-5 provide more detail on invocation of these agreements by group of WTO members. G2 most frequently invokes the GATT and the SCM agreements as a complainant, and is most frequently the respondent across GATT, GATS, SPS, TBT, AD, SCM and SG. The G2 is the target of 50% of all invocations of these seven agreements by complainants. This is not surprising given the weight of these two players in world trade, but it is double their share of global trade. OECD member countries (G2 and IND) are the target of 65 percent of all complaints under these agreements, with SPS and SG the outliers at 77.5 and 58 percent, respectively. SG is the agreement where BRIC and DEV have the highest share of complaints, accounting for 42 percent of the total under this agreement. BRIC tends to be a less frequent target than DEV under these agreements, the only exception being SCM.

[21] Product standards have grown in prevalence over time in many WTO Members. The use of mechanisms such as raising 'specific trade concerns' in the relevant WTO committees may help explain the relatively low frequency of WTO disputes in this area.

[22] For further discussion and hypotheses see e.g., Pauwelyn (2010) and Yu (2019).

Table 7: Frequency of Invocations of WTO Agreements in Requests for Consultations

Cited Agreement	Frequency	Percent
GATT	510 (491)	36
Antidumping (AD)	142 (133)	10
Subsidies and Countervailing Measures (SCM)	139 (130)	10
Agriculture (AG)	93 (84)	7
WTO	78 (69)	6
Technical Barriers to Trade (TBT)	55	4
Import-Licensing Procedures (ILA)	59 (48)	4
Safeguards (SG)	62	4
Sanitary and Phyto-Sanitary Measures (SPS)	49	4
Trade-Related Investment Measures (TRIMs)	49 (45)	4
Trade-Related Intellectual Property Rights (TRIPs)	42	3
Trade in Services (GATS)	37 (30)	3
Protocol of Accession of the People's Republic of China	26	2
Dispute Settlement Understanding (DSU)	20	1
Customs Valuation (CV)	18	1
Textiles and Clothing (ATP)	16	1
Rules of Origin (ROO)	7	1
Preshipment Inspection (PSI)	5	0
Enabling Clause	4	0
Government Procurement (GPA)	4	0
Trade Facilitation (TFA)	3	0
Paris Convention	3	0
1979 Understanding Regarding Notification, Consultation, Dispute Settlement and Surveillance	3	0
GATT 1947	1	0
WTO Decision on Notification Procedures	1	0
Total	1,424	100

Notes: The number of times various WTO Agreements have been invoked in Request for Consultations. No account is taken of how many articles are invoked under each agreement. If only one number is reported the number of invocations is the same for the WTO classification of 595 disputes and the dataset of 623 bilateral disputes. If two numbers are reported, the first one corresponds to the 623 disputes; the second number in brackets is based on the 595 disputes.

3.2 Provisions invoked

Nondiscrimination, i.e., MFN (Article I) and national treatment (Article III) are the most frequently invoked provisions in disputes, accounting for 30 percent of all claims under the GATT (Table 8). Transparency (Article X) and use of quantitative restrictions (Article XI) are the third and fourth most frequently invoked provisions, jointly accounting for another 26 percent. Allegations of violation of tariff commitments (Art. II) account for only 10 percent of the claims made under the GATT.

Most GATS disputes concern market access commitments. GATS Articles XVI (market access) and XVII (national treatment) are by far the most frequently invoked provisions in disputes concerning services trade (Table 9). Article II (MFN) usually is invoked in conjunction with one of these two provisions as it is a general obligation that is relevant for all specific commitments made by a WTO

Member. National treatment, MFN, and Art. 28 (rights conferred by a patent) are the most frequently invoked TRIPS provisions (Table 10).

Table 8: Frequency of Invocations of GATT Provisions

Article	Frequency	Share (%)
I (*MFN*)	185 (175)	14.8
II	129 (122)	10.3
III (*NT*)	190 (183)	15.2
IV	1	0.1
V	18	1.4
VI	135 (126)	10.8
VII	12	0.1
VIII	21	1.7
IX	3	0.2
X	165 (149)	13.2
XI	159 (152)	12.7
XIII	63 (53)	5
XV	2	0.2
XVI	17	1.4
XVII	9	0.7
XVIII	7	0.6
XIX	57	4.6
XX	9 (6)	0.7
XXI	1	0.1
XXII	4	0.3
XXIII	42 (33)	3.4
XXIV	11	0.9
XXVIII	8	0.6
Total	1248	100

Note: Numbers in the brackets are based on 595 disputes.

Table 9: Frequency of Invocations of GATS Provisions

Articles	Frequency	Share (%)
I	2	1.6
II (*MFN*)	25 (18)	19.5
III	8	6.3
IV	6 (2)	4.7
V	1	0.8
VI	12	9.4
VIII	2	1.6
X	1	0.8
XI	4	3.1
XVI (*Market Access*)	28 (21)	21.9
XVII (*NT*)	29 (22)	22.6
XVIII	5	3.9
XX	1	0.8
XXIII	4	3.1
Total	128	100

Note: Numbers in brackets are based on 595 disputes.

Table 10: Frequency of Invocations of TRIPs Provisions

Articles	Freq.*	Percent	Articles	Freq.*	Percent
1	4	1.7	34	1	0.4
2	10	4.3	39	5	2.1
3 (*NT*)	20	8.6	41	12	5.1
4 (*MFN*)	9	3.9	42	9	3.9
7	1	0.4	43	2	0.8
8	1	0.4	44	3	1.3
9	6	2.6	45	2	0.8
10	3	1.3	46	3	1.3
11	2	0.8	47	2	0.8
12	2	0.8	48	2	0.8
13	2	0.8	49	2	0.8
14	6	2.6	50	5	2.1
15	6	2.6	51	2	0.8
16	9	3.9	52	1	0.4
17	1	0.4	53	1	0.4
18	1	0.4	54	1	0.4
19	1	0.4	55	1	0.4
20	9	3.9	58	1	0.4
21	1	0.4	59	2	0.8
22	6	2.6	61	7	3
24	6	2.6	62	2	0.8
27	12	5.1	63	6	2.6
28	10	4.3	65	15	6.4
31	3	1.3	70	11	4.7
33	4	1.7	**Total**	**233**	**100**

Appendix Tables 6 and 7 provide similar information on the five most frequently invoked Annex 1A agreements: TBT, SPS, AD, SCM and SG. TBT Articles 2 and 5, and SPS Articles 2, 3, and 5 are the quintessential provisions invoked in the two product standards agreements. Market access is largely a function of complying with these provisions and it is not surprising that the majority of disputes center on these provisions. With respect to the three contingent protection instruments, complaints have focused on both provisions with substantive as well as procedural disciplines. The latter are frequently invoked both because the agreements contain detailed prescriptions on the processes to be followed by WTO Members when taking action and because victories on procedural grounds are often easier to accomplish and lead to the same outcome, as WTO case law, unlike domestic administrative legal orders, does not acknowledge "healing" procedures (Mavroidis, 2016b).

4. Winners and Losers

One of the allegations sometimes made by critics of WTO dispute settlement rulings – especially those on the losing end of a cases – is that adjudication is somehow biased in that some countries tend to 'win' more than others. Assessing whether this is the case is not straightforward. One reason is that in practice it is often not possible to determine objectively whether a WTO member 'wins' or 'loses' a dispute.

Take for example, *Mexico-Telecoms*. In this case, the US complains and wins its dispute to the effect that the owner of the telecom network (Telmex) contravened its obligations under the Telecoms Reference Paper, by charging unreasonably high prices. Mexico did not appeal the panel report. Did Mexico lose? Only if the government wanted to sustain the practice. The dispute permitted the Mexican government to require Telmex to change its access pricing policy because not doing so would give rise to retaliation by the US. Mexico could use GATT as an excuse to do something it wanted to do but could not because of domestic political economy forces. Moreover, Mexico generated goodwill from the US by not appealing the report while at the same time enhancing its standing at the WTO, showing it is a good international citizen.

In *EC-Bananas III*, Ecuador, one of the complainants, won, and EU, the defendant lost. The panel and the AB unanimously condemned the EU bananas import regime, and, when the EU did not implement the report, Ecuador received authorization from the competent body (Arbitrator under DSU Art. 22.6 of the DSU) to retaliate against the EU. While this sounds like a win for Ecuador, retaliation is costly and unlikely to have any effect on the EU. Trade in bananas represents a substantial percentage of its GDP and the EU is one of its most lucrative export markets. EC-Bananas III was the third attempt to prevail against the EU before a GATT/WTO panel. Over the more than twenty years until the EU changed its regime in 2011 (Guth, 2012), Ecuador never received any compensation for the loss of trade caused by EU policy, as retroactive remedies are not suggested by WTO panels. By refusing to implement adverse rulings, for some twenty years the EU member states concerned placated a domestic lobby they cared about (mostly distributors) and the EU showed its support to the ACP (African, Caribbean, Pacific) producers of bananas, whose exports were treated preferentially in the EU market. These examples illustrate that winning or losing is a matter of private information: one must know the true objectives of the parties, which they may not reveal publicly. Losing may in fact constitute winning and vice versa. Determining overall winners and losers of disputes is a fraught proposition, one that often will be subjective and context specific

More generally, ascertaining who wins and who loses is very difficult because many disputes involve several claims. Suppose a WTO member invokes various provisions and prevails in some and not in others. How do we distinguish between 'important' and 'unimportant' claims in similar scenarios? How do we know which claims matter more? One objective measure contained in the dataset is information on the individual claims presented in a dispute (Hoekman, Horn and Mavroidis, 2009). DSU Article 6.2, as interpreted in the AB report on *Korea-Dairy*, requires a Request for Establishment of a Panel to include all claims the panel must pronounce on. A claim involves (i) the identification of a factual situation (the challenged measure), **and** (ii) the legal provision that the challenged measure arguably is inconsistent with. For example, complainants in DS27 claimed that the EU bananas import regime, by imposing two different import duties depending on the origin of bananas, violated GATT Article I (MFN). WTO panels and the AB can rule on a dispute by deciding on fewer than the total number of claims on judicial economy grounds. DSU Article 7.1 permits this by calling on adjudicating bodies to make such findings as will assist the DSB in making the recommendations or in giving the rulings provided for in that/those agreement(s). Judicial economy has no consequences for quantifying the number of claims made, since it cuts across all disputes.[23]

Figure 5 reports the percentage of successful claims by group. Except for BRIC, with more than 50% of all claims rejected by panels, the other groups are similar in the number of claims won when acting as complainants: some two-thirds of all claims are accepted. The data support the view that there is a process of self-selection of disputes. Complaining WTO members pick winning cases. This is an important observation insofar as the data on share of successful claims in disputes suggest WTO members do not litigate for the sake of litigating (e.g., to placate domestic lobbies).

[23] This is a potentially interesting research question. To date, WTO Members have not raised concerns regarding asymmetric exercise of judicial economy.

Figure 5: Successful claims as complainant by group (all disputes, %)

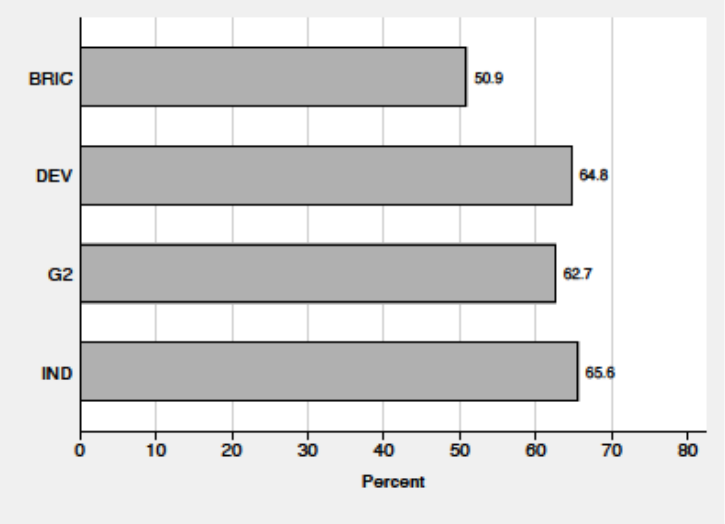


Table 11 disaggregates the information on claims won across 'target' respondent groups.[24] Overall, the share of successful claims is similar across country groups except for DEV, where there is a lot of heterogeneity. DEV comprises countries that are likely to have the weakest administrative capacity (except for LDC, which do not participate in dispute settlement), wins substantially more claims in cases against BRIC and IND than against G2 and other DEV countries. Understanding this pattern requires further research.

Table 11: Successful Claims of Complainants by Group (%)

		Respondent (Panel)				
		BRIC	DEV	G2	IND	**Total**
Complainant (Panel)	BRIC		62.5	48.5	65.8	58.9
	DEV	26.7	66.7	75.7	25.2	48.6
	G2	68.1	58.1	59.0	60.3	61.4
	IND	76.7	63.7	68.8	62.3	67.9

5. Statutory Deadlines and Observed Practice

The dataset includes detailed information on the duration of each stage of the proceedings in practice. We start with Table 12, which relays the duration for each stage of the proceedings based on data reported by the WTO for the 595 DS cases.

Comparing practice to statutory deadlines reveals the former usually exceeds the latter. Furthermore, there is evidence it pays to make unreasonable demands when there is discretion to decide on the duration of a process. Under DSU Art. 21.3(c) for example, an Arbitrator decides on the reasonable period of time (RPT) during which implementation of rulings included in a panel and/or AB report

[24] The numbers are calculated as follows. For each WTO member (complainant) all claims across all relevant disputes are summed. These may be all disputes, as in Figure 5, or all disputes against a specific group of respondents, as in Table 11. In the latter case the share of successful claims is computed over the total number of claims and averaged across all complainants in a country group. The share of successful claims over total claims therefore is computed after summing claims within a set of relevant disputes. Consequently, the numbers in Figure 5 and the averages across respondent groups reported in Table 11 will only be the same if the total number of claims are equal across groups of respondents.

should occur. The statutory limit (fifteen months) established in the DSU serves as guideline – arbitrators remain free to decide on longer (as well as on shorter) periods for implementation.[25]

Table 12: Duration of Each Stage of Proceedings

(based on the WTO DS classification, i.e. n=595)

Average length of process, months		Statutory deadline	Mean
Consultations	From the date of Request of consultations to the establishment of panel	2 months	5.4
Panel proceedings	From the establishment of panel to circulation of the panel report	9 months	17.1*
Appeals	From the date of the Notice of Appeal until the date of the circulation of the Appellate Body	2–3 months	4.3
RPT, Bilateral agreement	Total length of period agreed between parties during which implementation must occur.		9.7
RPT, Arbitration Award	The average RPT awarded by the arbitrator in the awards circulated.		11.5
Compliance panel	From the date of the request to establish a first compliance panel until the date of circulation of the Compliance Panel Report.	3 months	13.2
AB compliance	From the date of the first Notice of Appeal until the date of circulation of the Appellate Body compliance report.		5.4

Note: RPT: reasonable period of time.
* Average length of panel proceedings is based on our full bilateral dataset of 623 cases.

Figure 6 reports data on the duration of consultations from the date of request for consultations to request of establishment (lightly shaded bars). We have also counted the time from the date of request for consultations to the date of settlement (settled/mutually agreed solution), for all those disputes where no request for establishment of a panel was ever submitted (dark bars). Whereas complainants can request establishment of a panel sixty days after the receipt of the Request for Consultations (DSU Art. 4.7), in practice the average consultation lasts substantially longer.[26]

Table 13 provides data on the average time taken for consultations by different groups. There are very large differences across groups, both when acting as complainants and as respondents. DEV on average takes the least time when acting as a respondent and the most time when acting as a complainant. The average period for complainants is 10 months; for respondents, 12.3 months. Reich (2018) has shown that the propensity to resolve disputes at the consultations-stage has fallen over time. Figure 7 confirms this observation: the propensity to resolve a dispute through consultations has declined in recent years. Initially, almost two thirds of all formal disputes were resolved at this stage of the proceedings, whereas in recent years it is closer to 50%.

[25] Mavroidis et al. (2017) show that complainants consistently request for short, even on occasion unrealistic periods of implementation, whereas defendants seek lengthy periods. Arbitrators tend to adopt periods that spilt the difference. Similar evidence emerges from practice under DSU Article 22.6. Complainants generally claim greater damages suffered because of illegalities than defendants are willing to recognize, with arbitrators usually establishing numbers between the two. See Bown and Brewster (2016).

[26] Busch and Reinhardt (2001) show why it might be in the interest of both parties (on occasion) to press for a deal through consultations than to bring their dispute out in the open.

Figure 6: Duration of Consultations

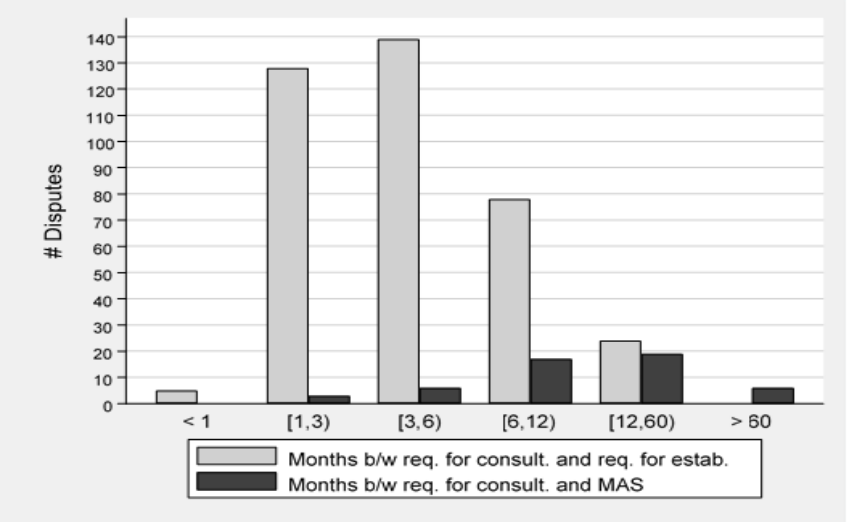
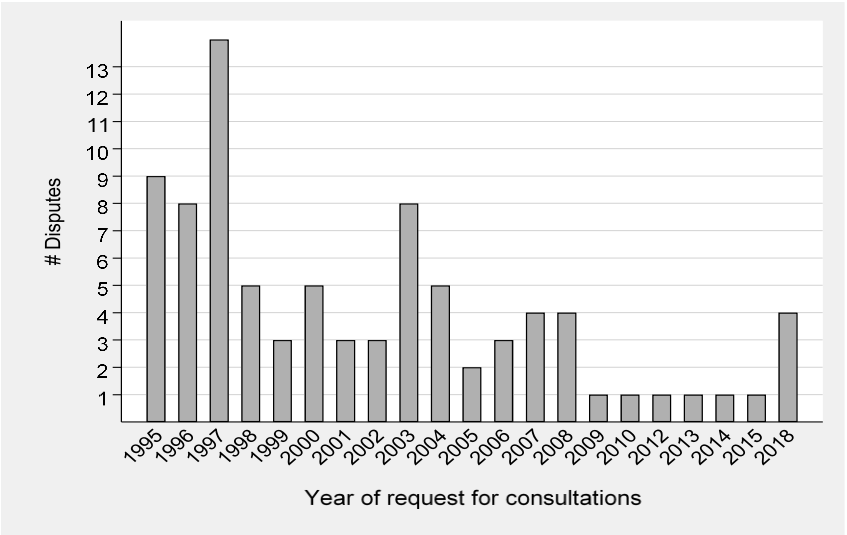


Table 13: Duration of consultations by group (months)

		Respondents				
		BRIC	DEV	G2	IND	**Average**
Complainants	BRIC	4.5	7.3	6.5	11.7	7.5
	DEV	5.8	3.9	30.9	10.0	12.6
	G2	6.7	8.1	15.6	6.6	9.2
	IND	6.1	6.2	10.7	4.7	6.9
	LDC	25.1				25.1
	Avg	9.6	6.4	15.9	8.2	**10** | **12.3**

Figure 7: Settlements at the Consultation Stage, 1995-2018



Turning to the duration of panel and AB proceedings, Figure 8 provides information regarding how long panels and the AB take to resolve a dispute on average; Figure 9 does the same for each year since 1995. Once again, duration is defined as the time between composition of panel, and the date of the issuance

of the report, and for the AB, the time between notice of an appeal and the date of issuance of the AB report. Table 14 reports data on average duration of panel and AB proceedings by group.

Figure 8: Duration of Panel and AB Proceedings

Panel proceedings **AB proceedings**

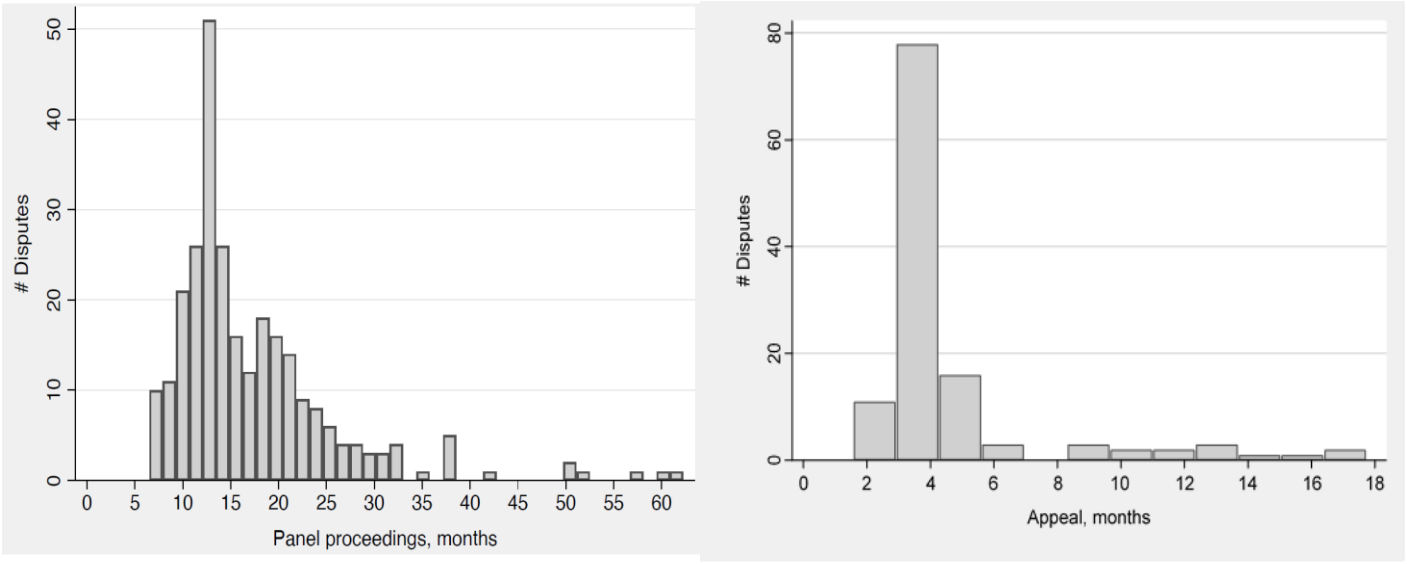


Figure 9: Duration of Panel and AB Proceedings, 1995-2018

Panel proceedings **AB proceedings**

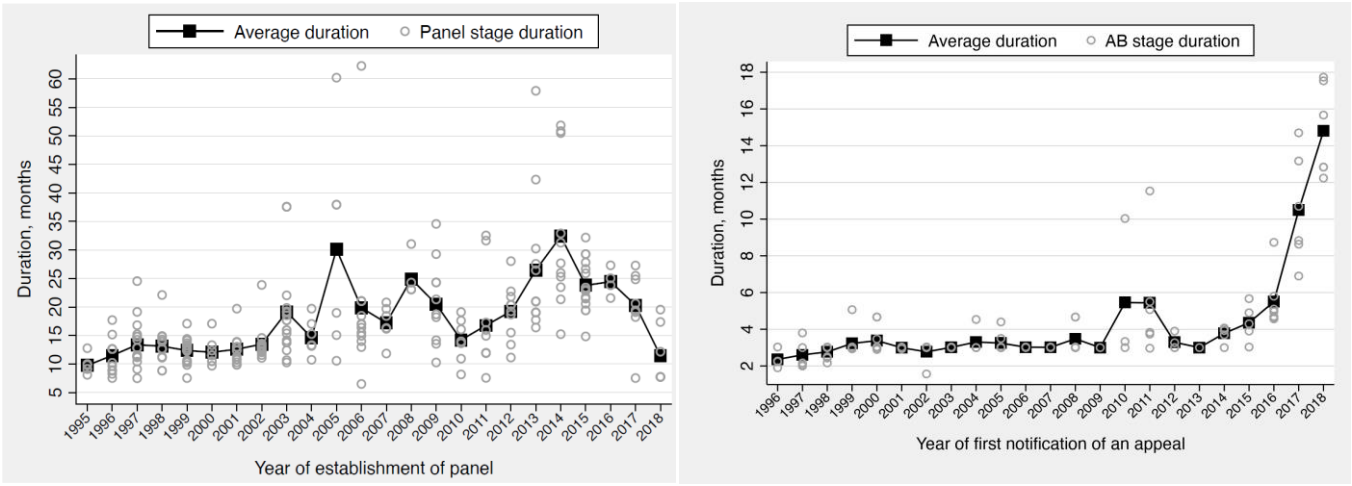


Table 14: Duration of Panel and AB Proceedings by Group (months)

		Respondent (Panel stage)					Respondent (AB stage)					
		BRIC	DEV	G2	IND	**Avg**		BRIC	DEV	G2	IND	**Avg**
Complainant	BRIC		20.8	15.7	11.5	16.0	BRIC		12.8	3.6	3.0	6.5
	DEV	13.3	17.0	16.9	37.0	21.1	DEV	9.9	4.0	3.8		5.9
	G2	18.8	14.9	19.4	14.1	16.8	G2	4.9	3.3	4.3	3.1	3.9
	IND	19.8	16.5	16.4	18.6	17.8	IND	5.0	8.8	4.1	6.1	6.0
	Avg	17.3	17.3	17.1	20.3	**17.9**	**Avg**	6.6	7.2	4.0	4.1	**5.6**

Note: The average duration of cases across groups is different from that reported in Table 12 because the averages across groups differ. For the dispute settlement process as a whole over the period 1995-July 2020, the average duration of panel proceedings is 17.1 months.

6. WTO Adjudicators

WTO judges are divided into panelists serving on panels, the 'first instance WTO courts', and AB members serving the AB, the 'second instance WTO court'). The former are ad hoc appointments with jurisdiction to adjudicate only a specific dispute. The latter are term-appointments, serving for a four-year term that is renewable once.[27]

The WTO Secretariat is heavily involved in the selection of panelists (per DSU Art. 8) but does not engage in the selection of AB members. Panelists can appear as members of the original panel, the compliance panel, and as Arbitrator to decide on the level of compensation under DSU Art. 22.6. If there is no intervening conflict or event that makes their appearance an impossibility, the members of the original panel will also compose the compliance panel, as well as the Arbitration body. AB members, besides serving on the AB are routinely appointed as arbitrators to decide the reasonable period of time for bringing measures into compliance with panel/AB findings.[28] The WTO provides little information on matters such as remuneration, professional background and qualifications, or the criteria for selection of panelists, factors that are salient in terms of assessing the independence and impartiality of appointed adjudicators. Unfortunately, secondary sources are needed to shed light on matters such as remuneration of panelists,[29] and the role of the Secretariat.[30] The dataset is limited to aspects we can systematically document: the national origin of panelists, the frequency of their appointment, and whether the parties or the DG appointed them.[31]

The Process for Selecting Panelists

According to DSU Art. 8.1:

> Panels shall be composed of well-qualified governmental and/or non-governmental individuals, including persons who have served on or presented a case to a panel, served as a representative of a Member or of a contracting party to GATT 1947 or as a representative to the Council or Committee

[27] Whether this will continue to be the case if and when the AB crisis is resolved remains to be determined.

[28] Mavroidis et al. (2017) provide detailed information on this dimension of the dispute settlement process.

[29] Johannesson and Mavroidis (2015); Pauwelyn (2015).

[30] Nordström (2005); Pauwelyn and Pelc (2019).

[31] Some information on education and professional experience of some panelists is reported but this is not done on a systematic and comparable basis, precluding inclusion in the dataset.

> of any covered agreement or its predecessor agreement, or in the Secretariat, taught or published on international trade law or policy, or served as a senior trade policy official of a Member.

Expertise is not the only relevant criterion. Panelists must exhibit demonstrable independence (DSU Art. 8.2). This is important considering that many panelists, per DSU Art. 8.1 as well as long-standing practice are members of WTO delegations. To this effect, panelists must sign a document indicating any existing or supervening conflict.[32] DSU Art. 8.3 bolsters the requirement for independence by barring nationals of complainants, respondents and third parties to a dispute from acting as panelists, unless the parties to the dispute agree to their selection.[33]

The WTO Secretariat maintains a list of individuals from which panelists to a specific dispute may be selected (DSU Article 8.4). The list comprises both governmental as well as nongovernmental potential panelists. WTO members propose individuals to be included in the list during the regular DSB meetings, and they can indicate whether the proposed individuals are experts in one or more areas of WTO law. This roster is of indicative nature since inclusion does not automatically lead to selection. To our knowledge, proposals for inclusion on the list have never been opposed, probably because inclusion does not guarantee automatic appointment to a panel. Furthermore, the Secretariat can and often does propose non-roster panelists.

Following the request for establishment of a panel, the Secretariat meets with the parties to compose the panel. A panel can be composed of three or five panelists (DSU Article 8.5), although in the WTO-era, panels have always been composed of three individuals. The Secretariat will propose names that the parties can reject only for compelling reasons (DSU Article 8.6). There is no case law on this score, although proposals by the Secretariat are routinely rejected. If parties to the dispute cannot agree on one or more panelists within twenty days (counting from the day of establishment of the panel), they can request that the DG complete or appoint the full panel (DSU Article 8.7). The DG must do so within ten days, after consulting the Chairman of DSB, as well as the Chairman of the relevant Council or Committee.[34] Thus, the Secretariat is quite influential in panel appointments. WTO staff members of the divisions have discretion to propose potential panelists, and the DG has the right to decide on appointments when the parties to a dispute reject Secretariat-proposed panelists.[35]

The Process for Selecting AB Members

The Secretariat does not play a similar role in the appointment of AB members. The AB comprises seven persons appointed for a four-year mandate, renewable once (DSU Art. 17.1 DSU). Candidates must correspond to the requirements embedded in DSU Art. 17.3, which largely reflect similar characteristics that inform the selection of panelists:

> The AB shall comprise persons of recognized authority, with demonstrated expertise in law, international trade and the subject matter of the covered agreements generally. They shall be unaffiliated with any government. The AB membership shall be broadly representative of membership in the WTO. All persons serving on the AB shall be available at all times and on short notice, and shall stay abreast of dispute settlement activities and other relevant activities of the WTO.

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[32] WTO Doc. WT/DSB/RC/1 of December 11, 1996. This document includes the Rules of Conduct that not only panelists, and AB members, but also experts appearing before the WTO courts, as well as members of the WTO Secretariat must observe.

[33] This has happened only exceptionally. An example is *US-Zeroing (EC)*, where the parties (EU and US) agreed to the selection of two of their nationals (Hans Beseler, EU; William J. Davey, US) to serve as panelists.

[34] In disputes involving alleged inconsistencies with the Antidumping Agreement for example, the DG will consult with the Chair of the Council for Trade in Goods, as well as the Chair for the Antidumping Committee.

[35] This procedure differs from investment arbitration where parties to the dispute appoint one arbitrator each, and the two appointed arbitrators decide on the umpire. See e.g., Pauwelyn (2015). There is circumstantial evidence that parties to a WTO dispute have very exceptionally preempted the Secretariat's discretion to propose panelists on which they agreed between themselves.

> They shall not participate in the consideration of any disputes that would create a direct or indirect conflict of interest.

When the AB was constituted for the first time, WTO delegations created a Preparatory Committee to determine the selection process for the members of the AB. Following a recommendation by this body, the DSB established an organ comprising the WTO DG and the Chairs of the General Council, the DSB, the Council for Trade in Goods, the Council for Trade in Services, and the TRIPs Council. This group would receive nominations by WTO members, deliberate, and propose its nominees to the DSB. Appointments to the AB are made by DSB, deciding by consensus.[36]

DSU Art. 17.1 states that three (rotating) members of the AB (a division) hear an appeal. Neither the DS nor its Working Procedures define the formula for selection of a division.[37] A presiding AB member will be selected for each division (Working Procedures, Rule 7). Although a division hears and decides specific cases (Rule 3), a practice of collegiality has developed. To promote consistency and coherence in decision-making, Rule 4 reflects the so-called collegiality-requirement, calling on the members of a division to exchange views with other AB members on the resolution of the dispute before them. It is the Division alone, however, that takes the final decision.

Panelists

Whether recommendations on the panelist selection made by the Secretariat are accepted by the parties to the dispute or are appointed by the DG may have a bearing on understanding how the dispute settlement system operates. In practice, panelists mostly are appointed by the DG – in some 70 percent of the time (Table 15). The dataset suggests the role of the DG may matter for the outcome of cases as the percentage of winning complainants increases substantially when the DG appoints panelists. Using our measure of number of claims 'won' in DG appointed cases complainants won 64.7 percent of their claims. In the other 30 percent of cases where parties accepted the panelist suggestions made by the Secretariat, complainants were successful for only 52.2 percent of the claims put forward. This dimension of the process calls for further research to understand whether this pattern is robust and why it occurs.

Table 15: Frequency of Appointment by Parties and DG (Original and 21.5 DSU proceedings)

Appointment by	Frequency	Share (%)
DG	219	70
Parties	94	30
Total	313	100

One input into analysis of this pattern is information on the background of panelists. Tables 16 and 17 report data on one potentially relevant factor: the nationality of panelists. IND and DEV account for most panelists (Table 16). The EU28 and eight other WTO Members (New Zealand, Switzerland, Australia, Canada, Mexico, South Africa, Chile, and Uruguay) account for 56.5 percent of all panelists

[36] WTO Doc. WT/DSB/1.

[37] Anecdotally, it seems that on appointment, each member of the AB receives a number. A combination of three numbers, rotating according to a secret formula, will hear appeals as they are coming to the AB. For example, numbers 1, 2 and 5 will hear appeal against DS 1, numbers 2, 6 and 9 will hear appeals against DS 2 and so on. What is unknown is the formula for rotating the divisions. Julio Lacarte-Muró has noted that a member of the first AB designed the formula for appointment to divisions. See https://www.acwl.ch/interview-with-ambassador-julio-lacarte-muro/.

appointed between 1995 and 2020. The US has not seen many of its nationals sit on panels – Americans represent less than 2 percent of the total – compared to 9 percent for the EU (Table 17).[38]

Table 16: Frequency of Appointment of Panelists by Group (Original and 21.5 DSU proceedings)

Panelists	Frequency	Share (%)
IND	408	43.4
DEV	371	39.5
BRIC	54	5.8
G2	101	10.7
LDC	5	0.5
Total	939	100

Table 17: National Origin of Panelists and Frequency of Appointment by WTO Member Original and 21.5 DSU proceedings

IND	Freq.	Share (%)
New Zealand	76	8.1
Switzerland	72	7.7
Australia	64	6.8
Canada	45	4.8
Mexico	41	4.4
Hong Kong	25	2.7
Singapore	17	1.8
Israel	16	1.7
Norway	15	1.6
Japan	14	1.5
Korea	12	1.3
Iceland	9	0.9
Chinese Taipei	2	0.2
Total	**408**	**43.5**

DEV	Freq.	Share (%)
South Africa	51	5.4
Chile	51	5.4
Uruguay	46	4.9
Philippines	32	3.4
Colombia	27	2.9
Argentina	24	2.5
Pakistan	24	2.5
Venezuela	24	2.5
Thailand	16	1.7
Jamaica	12	1.3
Egypt	11	1.2
Costa Rica	9	0.9
Ecuador	8	0.8
Barbados	5	0.5
Belize	5	0.5
Mauritius	5	0.5
Peru	4	0.4
Guatemala	3	0.3
Morocco	3	0.3
Malaysia	2	0.2
Saudi Arabia	2	0.2
Indonesia	1	0.1
Kenya	1	0.1
Panama	1	0.1
Saint Lucia	1	0.1
Trinidad&Tobago	1	0.1
Tunisia	1	0.1
Zimbabwe	1	0.1
Total	**371**	**39.5**

BRIC	Freq.	Share (%)
India	19	2.0
Brazil	33	3.5
China	2	0.2
Total	**54**	**5.8**

G2	Freq.	Share (%)
EU	85	9.0
US	16	1.7
Total	**101**	**10.7**

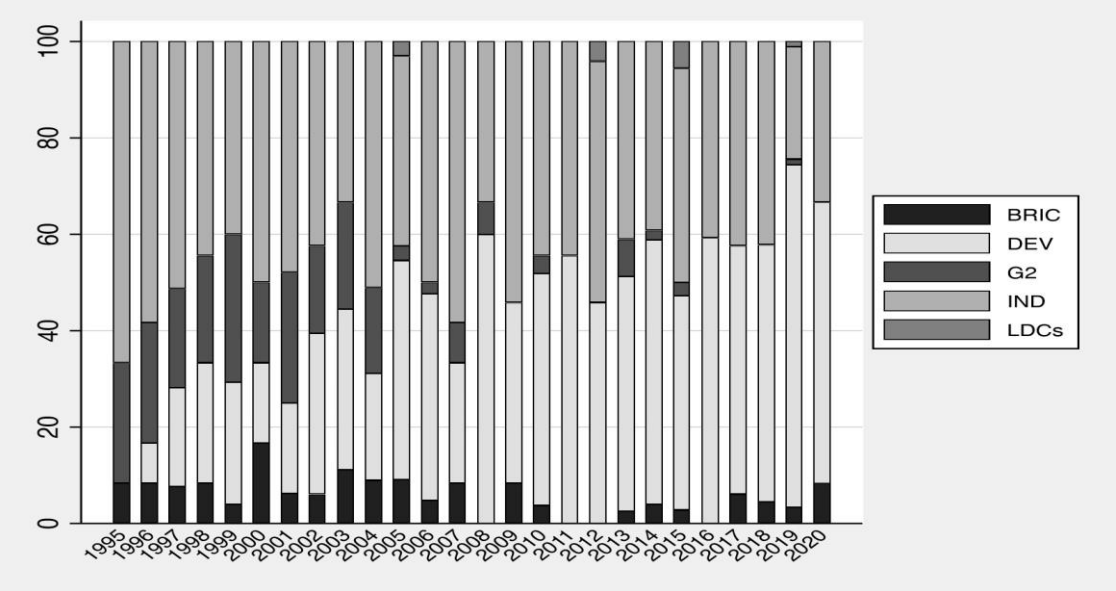
LDC	Freq.	Share (%)
Bangladesh	3	0.3
Zambia	2	0.2
Total	**5**	**0.5**

In the early years of the WTO the share of panelists from the G2 was relatively large. Over time, this declined, as did the share of IND (Figure 10). Conversely, the share of DEV increased substantially, in recent years accounting for over 50 percent of panelists. One reason for this pattern is that it has become increasingly difficult to appoint panelists of a certain nationality, as parties routinely disapprove of nationals of members participating as third parties or that have trade agreements with a disputing party.

[38] Nationality is of course, not necessarily a reason for bias. Nevertheless, there is a good basis for this provision, since most panelists are or have been government officials.

The increasing influence of developing countries in the WTO and/or preferences of the Secretariat/DG regarding the composition of panels may also play a role.

Figure 10: Origin of Panelists by Group over time (Original and 21.5 DSU proceedings)



Another potentially relevant factor concerns the frequency of individual appointments. In principle, one might expect panelists with expertise in issues coming under the purview of regularly invoked WTO agreements to be nominated repeatedly. Panelists are appointed on an ad hoc basis to adjudicate one specific dispute. If all appointed panelists were legitimate experts of WTO law and policy, repetition in appointments would be largely an un-interesting issue. There are good reasons to doubt the depth and extent of expertise of appointed panelists, although the lack of transparency regarding the qualifications of a sizeable percentage of panelists impedes a systematic evaluation. Table 18 presents information on the number of nominations of individual panelists. Two-thirds (65.8%) of all panelists were appointed once or twice. Only 13 percent of all panelists have served more than four times. This suggests limited interest by the Secretariat and the WTO membership in creating a pool of panelists with demonstrated expertise and capturing learning economies.

AB Members

As noted above, appointments to the AB are a matter for WTO Member to determine. The United States supplied four AB members during the 1995-2020 period; the EU and Japan both supplied three; China, Egypt, India, Korea and the Philippines provided two; and Australia, Brazil, Mauritius, Mexico, New Zealand, Uruguay, and South Africa each supplying one. The countries providing AB members tends to correlate only imperfectly with the nationality of panelists and is skewed more towards large traders that are underrepresented in panels – e.g., US, Japan, and China. Mapped into our groups AB appointments are roughly balanced: G2: 7; IND: 8; BRICS: 5 and DEV: 7.[39]

Once appointed, allocation of cases to AB members is automatic, following the process described above for allocating AB members to divisions, unless AB members indicate a conflict of interest in adjudicating a dispute. Appendix Table 8 reports the number of divisions in which individual AB

[39] Information on the professional background of AB members is provided on the WTO website (https://www.wto.org/english/tratop_e/dispu_e/ab_members_descrp_e.htm), This permits assessment of the characteristics of appointees. This information is not included in the dataset.

members participated. There is no reporting on instances where an AB member indicated a conflict of interest. Doing so relies on self-disclosure only – no disciplines are imposed by the WTO membership nor are there formal criteria to establish when a conflict may arise.

Table 18: Number of Repeat Panelists (Original and 21.5 DSU proceedings)

Number of panels served on	As Chair	Non-chair	Total no. of panelists	Share (%)
1	44	122	160	44.8
2	21	58	75	21.0
3	13	35	46	12.9
4	14	19	30	8.4
5	3	13	16	4.5
6	4	3	6	1.7
7	1	10	11	3.1
8	3	1	4	1.1
9				0.0
10	2	1	3	0.8
11		1	1	0.3
12		1	1	0.3
13	2	1	3	0.8
14				0.0
15				0.0
16	1		1	0.3
Total	108	265	357	100

7. Concluding Remarks

Often heralded as the 'crown jewel' of the WTO, the dispute settlement system today is under extreme stress. Critics point to its reliance on forward looking compliance, that is, to only recommend prospective remedies and a failure to 'complete' the contract through methodologically sound reasoning and understanding of the various WTO provisions. Others, notably the US, have been critical of the system for the opposite reason, alleging the AB has too frequently overstepped its mandate and does not abide with some of the provisions of the DSU, e.g., timelines.[40] The AB ceased being able to operate in December 2019 as a result of US refusal to agree to appoint new AB members. Resolution of the crisis is likely to require reform to how the system works. Doing so is critical, as irrespective of views on its operation, the WTO dispute settlement system remains the only comprehensive compulsory third party adjudication regime extant. Ensuring it can fulfill that role in promoting peaceful resolution of trade conflicts is vital for salience of the WTO looking forward.

Our overview of some of the stylized facts that emerge from the first 25 years of WTO dispute settlement suggests many potential areas for empirical research on the operation of the system. The data also shed light on some of the criticisms directed at the system and potential areas for reform-oriented deliberation. We have argued elsewhere (Hoekman and Mavroidis, 2020b) that the US critique of the operation of the AB has detracted from focusing on other features the dispute settlement system, notably the first stage panel process. The data make clear that panels regularly do not come even close to satisfying the timelines called for in the DSU, suggesting consideration be given to revisiting the statutory deadlines. Given the importance of timely conflict resolution, determining why this pattern has emerged would help inform whether extending deadlines is an appropriate measure. Insofar as the general pattern of one-time ad hoc appointments to panels and the inevitable associated learning curve

[40] There is a large literature on these matters. See e.g. Wu (2015) and Mavroidis (2016a, 2016b). For a compilation of arguments offered by the US for its stance on the AB, see USTR (2020).

for appointed panelists explains the pattern, another option could be to revisit this dimension of WTO dispute settlement.

The consistently high share of panel reports that are appealed, notwithstanding the decline in the average number of cases over time, also suggests a focus on the operation of the panel process may be warranted as WTO members consider reform options and opportunities. The changing composition of panels has been accompanied with more appeals, more pressure on the AB and greater contestation of the process generally. Research on the role of the professional background of panelists; the association between appeals and panels that include panelists that have repeat experience; the utility of the roster of panelists and role of the Secretariat/DG in appointing panelists may generate valuable insights to inform deliberations on reform.

A related question concerns the evolution of the 'complexity' of dispute settlement cases. There is a perception that cases have become more complex over time.[41] Assessing the extent to which this is the case can be relevant from a reform perspective. One challenge here is how to assess 'complexity', but one indicator could be the frequency and extent to which statutory deadlines are exceeded. The trend in the number of claims made in disputes over time may also correlate with complexity. However complexity is assessed, what is unambiguous is that the WTO has substantially increased the number of lawyers working in the various Divisions of the WTO dealing with dispute settlement. This rose from less than ten in 1995 to almost sixty in 2019. Much of the growth occurred in the post 2015 period.[42] To what extent this is associated with 'complexity' and the quality of panel adjudication – and the quality of appointed panelists – is another question that deserves greater attention and research. The desirability of the very high turnover of panelists associated with ad hoc appointments that have come to exclude nationals from the G2 and skew towards DEV, and the absence of a pool of experts that regularly engage in adjudication at the panel stage may be a once desirable feature of the system that has become a bug that WTO Members may want to re-consider.

A notable feature of the first 25 years of WTO dispute settlement is the underrepresentation of services trade and IPR-related disputes. Similarly, one can point to the relatively limited use of the DSU to address matters that partially motivated the resort to unilateral trade measures by the United States starting in 2017. As noted by many observers, to a significant extent this points to gaps in the multilateral rulebook and a need to update the substantive provisions of the WTO (Hoekman and Mavroidis, 2020a). But it may also point to weaknesses associated with the characteristics of the dispute settlement process. The stylized facts provide indications and pointers for WTO Members to reflect on these and other dimensions of dispute settlement working practices as part of WTO reforms more generally.

41 See e.g., https://www.wto.org/english/tratop_e/dispu_e/carim318_e.htm.

42 See Davey (2015) and Mavroidis (2015).

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Appendices

Appendix Table 1: Mapping of WTO Membership to Groups

G2			**LDC**
EU	Brunei Darussalam	Montenegro	Afghanistan
US	Cabo Verde	Morocco	Angola
	Cameroon	Namibia	Bangladesh
BRIC	Chile	Nicaragua	Benin
Brazil	Colombia	Nigeria	Burkina Faso
China	Congo	North Macedonia	Burundi
India	Costa Rica	Oman	Cambodia
Russian Federation	Côte d'Ivoire	Pakistan	Central African Republic
	Cuba	Panama	Chad
IND	Dominica	Papua New Guinea	Congo, Dem. Rep.
Australia	Dominican Republic	Paraguay	Djibouti
Canada	Ecuador	Peru	Gambia
Chinese Taipei	Egypt	Philippines	Guinea
Hong Kong, China	El Salvador	Qatar	Guinea-Bissau
Iceland	Eswatini	Saint Kitts and Nevis	Haiti
Israel	Fiji	Saint Lucia	Lao
Japan	Gabon	Saint Vincent & the Grenadines	Lesotho
Korea	Georgia	Samoa	Liberia
Liechtenstein	Ghana	Saudi Arabia	Madagascar
Mexico	Grenada	Seychelles	Malawi
New Zealand	Guatemala	South Africa	Mali
Norway	Guyana	Sri Lanka	Mauritania
Singapore	Honduras	Suriname	Mozambique
Switzerland	Indonesia	Tajikistan	Myanmar
Turkey	Jamaica	Thailand	Nepal
	Jordan	Tonga	Niger
DEV	Kazakhstan	Trinidad and Tobago	Rwanda
Albania	Kenya	Tunisia	Senegal
Antigua and Barbuda	Kuwait	Ukraine	Sierra Leone
Argentina	Kyrgyz Republic	United Arab Emirates	Solomon Islands
Armenia	Macao, China	Uruguay	Tanzania
Bahrain	Malaysia	Venezuela	Togo
Barbados	Maldives	Viet Nam	Uganda
Belize	Mauritius	Zimbabwe	Vanuatu
Bolivia	Moldova		Yemen
Botswana	Mongolia		Zambia

Appendix Table 2: Most Frequent Dispute Dyads

WTO Members		# Disputes	WTO Members		# Disputes
EU	US	72	Colombia	Panama	3
China	US	39	Dominican Rep.	Honduras	3
Canada	US	28	EU	Colombia	3
Korea	US	20	EU	Guatemala	3
EU	India	19	EU	Honduras	3
India	US	19	EU	Norway	3
Mexico	US	17	EU	Panama	3
Canada	EU	16	EU	Turkey	3
Brazil	US	15	Pakistan	US	3
Argentina	EU	15	Russia	US	3
China	EU	14	US	Venezuela	3
Japan	US	14	Armenia	Ukraine	2
Brazil	EU	11	Australia	Canada	2
Argentina	US	10	Australia	India	2
EU	Russia	8	Australia	Indonesia	2
Japan	Korea	8	Australia	Philippines	2
EU	EU[43]	8	Brazil	Japan	2
Argentina	Chile	7	Brazil	India	2
EU	Japan	7	Brazil	Indonesia	2
EU	Korea	7	Canada	Korea	2
Indonesia	US	7	Chile	Colombia	2
EU	Mexico	7	Chile	Peru	2
EU	Thailand	7	China	Japan	2
EU	Indonesia	6	Costa Rica	Dominican Republic	2
Australia	US	6	Costa Rica	Trinidad & Tobago	2
Thailand	US	5	EU	New Zealand	2
Russia	Ukraine	5	EU	Pakistan	2
Chile	EU	5	EU	Peru	2
Brazil	Canada	5	Ecuador	Mexico	2
Turkey	US	5	India	Japan	2
Philippines	US	5	India	Turkey	2
Australia	EU	4	Indonesia	Japan	2
China	Mexico	4	Indonesia	New Zealand	2
Guatemala	Mexico	4	Moldova	Ukraine	2
Canada	China	4	Morocco	Tunisia	2
US	Viet Nam	4	New Zealand	US	2
Argentina	Brazil	3	Norway	US	2
Argentina	Peru	3	Qatar	Saudi Arabia	2
Canada	Japan	3	Qatar	UAE	2
Chile	US	3	Switzerland	US	2
Chinese Taipei	India	3	Thailand	Turkey	2

[43] There have been disputes at the WTO between countries that have become EU member states since the WTO was established. For example, DS297 was a dispute between Hungary and Croatia. These cases are captured in the data as part of G2.

Appendix Table 3: Frequency of Invocations of GATT in Requests for Consultations by Group

Agreement	Complainant	Respondent				
		BRIC	DEV	G2	IND	**Total**
GATT	BRIC	2	6	55	3	66
	DEV	7	51	51	15	124
	G2	54	29	55	39	177
	IND	23	19	81	19	142
	LDC	1	0	0	0	1
	Total	87	105	242	76	**510**

Appendix Table 4: Frequency of Invocations of GATS in Requests for Consultations by Group

Agreement	Complainant	Respondent				
		BRIC	DEV	G2	IND	**Total**
GATS	BRIC	0	2	2	0	4
	DEV	0	6	8	1	15
	G2	5	0	4	4	13
	IND	1	0	2	2	5
	Total	6	8	16	7	**37**

Appendix Table 5: Frequency of Invocations of Select Annex 1A Agreements (Trade in Goods) in Requests for Consultations by Group: SPS, TBT, AD, SCM, SG

Agreement	Complainant	Respondent				
		BRIC	DEV	G2	IND	**Total**
SPS	BRIC	0	3	2	0	5
	DEV	1	1	5	4	11
	G2	4	0	5	9	18
	IND	1	1	8	5	15
	Total	6	5	20	18	**49**
TBT	BRIC	0	4	2	0	6
	DEV	2	0	10	6	18
	G2	1	2	7	4	14
	IND	1	1	14	1	17
	Total	4	7	33	11	**55**

Agreement	Complainant	Respondent				
		BRIC	DEV	G2	IND	**Total**
AD	BRIC	1	4	24	2	31
	DEV	1	16	16	3	36
	G2	8	4	10	5	27
	IND	4	9	30	4	47
	LDC	1	0	0	0	1
	Total	15	33	80	14	**142**
SCM	BRIC	0	2	21	4	27
	DEV	2	2	9	0	13
	G2	18	6	20	14	58
	IND	8	2	26	5	41
	Total	28	12	76	23	**139**
SG	BRIC	1	0	6	1	8
	DEV	0	16	2	1	19
	G2	0	4	7	1	12
	IND	1	4	18	0	23
	Total	2	24	33	3	**62**

Appendix Table 6: Frequency of Invocation of Annex 1A (Trade in Goods) Agreements (Aggregate results)

TBT			SPS		
Articles	Freq.*	Share (%)	Articles	Freq.*	Share (%)
1	1	0.9	1	2	0.8
2	54	50	2	48	19.9
3	2	1.8	3	27	11.2
4	1	0.9	4	9	3.7
5	22	20.4	5	47	19.5
6	7	6.5	6	13	5.4
7	4	3.7	7	25	10.4
8	3	2.8	8	26	10.8
9	2	1.8	10	5	2.1
10	1	0.9	13	1	0.4
12	8	7.4	Annex B	19	7.9
14	1	0.9	Annex C	19	7.9
Annex 1	2	1.8			
Total	**108**	**100**	**Total**	**241**	**100**

*The number of times various articles have been invoked in the Request for Consultations by the original complainants. An Article is counted only once even if referred to several times. Hence, if for instance SCM or AD, Arts. 3.1 and 3.2 have been both invoked, the Table counts this as one invocation of Art. 3. Equivalently, if for instance GATT Art. III.1 and III.2 have been both invoked; the Table counts this as one invocation of Art. III.

Appendix Table 7: Frequency of Invocations of Provisions in the AD, SCM, and SG Agreements

AD			SCM			SG		
Article	Freq.	Share (%)	Article	Freq.	Share (%)	Article	Freq.	Share (%)
1	92 (83)	10.4	1	50	8.6	1	2	0.5
2	98	11.1	2	35	6	2	54	14.5
3	84	9.5	3	74	12.8	3	47	12.6
4	32	3.6	4	14 (6)	2.4	4	55	14.8
5	89 (80)	10.1	5	26 (25)	4.5	5	52	14
6	93	10.6	6	25	4.3	6	15	4
7	31	3.5	7	15 (7)	2.6	7	33	8.9
8	15 (6)	1.7	9	1	0.2	8	24	6.4
9	69	7.8	10	57 (48)	9.8	9	17	4.6
10	9	1	11	39 (30)	6.7	11	23	6.2
11	49	5.6	12	23	4	12	50	13.4
12	61	7	13	5	0.9	**Total**	**372**	**100**
15	8	0.9	14	27	4.7			
16	1	0.1	15	23	4			
17	7	0.8	16	5	0.9			
18	74 (65)	8.4	17	11	1.9			
19	1	0.1	18	12 (3)	2			
21	1	0.1	19	32	5.5			
32	1	0.1	20	3	0.5			
Annex I	9	1	21	18	3.1			
Annex II	56	6.4	22	14	2.4			
Total	**880**	**100**	25	5	0.9			
			27	7	1.2			
			28	3	0.5			
			30	1	0.2			
			32	47 (38)	8.1			
			Annex I	1	0.2			
			Annex II	2	0.3			
			Annex III	2	0.3			
			Annex IV	2	0.3			
			Total	**579**	**100**			

Appendix Table 8: Frequency of Appointment of AB Members

(Original and 21.5 DSU proceedings)

AB Member	No. of Appeals
James Bacchus	27
Georges-Michel Abi-Saab	27
Ujal Singh Bhatia	25
A. V. Ganesan	24
Giorgio Sacerdoti	23
Yasuhei Taniguchi	22
Julio Lacarte-Muró	22
Peter Van den Bossche	22
Florentino P. Feliciano	21
Claus-Dieter Ehlermann	21
Luiz Olavo Baptista	21
R. Ramírez-Hernández	20
Thomas R. Graham	20
Yuejiao Zhang	17
Shree B. C. Servansing	16
Mitsuo Matsushita	13
David Unterhalter	13
Said El-Naggar	12
John S. Lockhart	11
Merit E. Janow	10
Jennifer Hillman	10
Christopher Beeby	10
Lilia R. Bautista	9
Seung Wha Chang	9
Hong Zhao	9
Shotaro Oshima	9
Hyun Chong Kim	1

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