

The WTO Secretariat and the Role of Economics in DSU Panels and Arbitrations

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Abstract

The WTO faces an increasing burden of arbitrating trade disputes between WTO member states. The disputes are economically complex and often lead to rulings that require changes in Members' economic policies. This paper provides a positive and normative analysis of a previously unaddressed question: What roles do economic analysis and economists play in WTO adjudication under the Dispute Settlement Understanding (DSU)? We identify a number of problems with the current Secretariat provision of technical economic support to panellists and arbitrators as well as the sources of these problems – including the small number of professional economists in the Secretariat, the lack of diversity to their fields of specialization, and the ad hoc manner in which they have been integrated into the DSU adjudication process thus far. We also point the Secretariat to useful lessons on transparency and political independence learned from other institutions – e.g., central banks, competition authorities, and national trade remedy investigating agencies - that affect economic policy in similar politically sensitive environments. Finally, given a new mandate from WTO Members that DSU adjudicators have access to more sophisticated technical economic support and expertise, we make a number of proposals for reform.

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1 Introduction

The process of resolving disputes under the WTO's Dispute Settlement Understanding (DSU) involves a complex and evolving legal jurisprudence. One foundational element to the WTO legal contract is that WTO adjudicators – i.e., panellists and arbitrators – issue formal rulings that might result in changes to Members' *economic* policies. This tight link between WTO dispute settlement and changes to Members' economic policy makes it important to understand, evaluate, and continually refine how *economic analysis* is used to influence the legal-judicial process that is a critical element of the WTO's institutional performance.

Consider two representative examples of DSU panellists' and arbitrators' direct influence on Members' *economic* policies. One is the *US – Steel Safeguards* dispute in which the prospect (or realization) of a DSU arbitration and authorized retaliation induced the respondent country to comply with WTO obligations by *reforming* a policy that adversely affected another members' expected market access benefits. In this dispute, the US responded to the threat of DSU arbitration by eliminating a WTO-inconsistent safeguard and thus decreasing the US import tariff.¹ A second example is the *EC – Beef Hormones* case; even though the dispute settlement process failed to change the respondent's economic policy and induce compliance, WTO arbitrators established a level of permissible retaliation that authorized the adversely affected complainant to change *its* economic policy. In this case, the complainant policy change was an increase in the US import tariff. And while these two disputes are examples of induced changes in national trade policies, almost every dispute involves a contested government measure affecting markets or economic incentives, and thus affects some element of a nation's economic policy.²

¹ This particular dispute never reached the stage of arbitration, as the US complied with the ruling earlier. Nevertheless, one contributing factor to the US late 2003 compliance decision was the EC's effectiveness at creating a politically sensitive list of goods produced and exported from US "swing states" expected to be contested in the upcoming 2004 Presidential election – e.g., oranges and other citrus products from Florida, etc. An early draft of the products on the eventual EC target list can be found in EC (2002). Nordstrom (this volume) presents an alternative perspective of issues surrounding the drafting of the retaliation list in this particular dispute.

² While the DSU-relevance of a contested policy typically concerns an actual or potential effect on market access protected by WTO obligations, the policy changes resulting from DSU decisions may involve an explicit trade policy (e.g., tariff, quota, or other non-tariff measure) or some other policy affecting economic activity (e.g., taxes, environmental regulation, health or consumer protection). Examples of DSU-permissible changes in economic

When the WTO Members wrote the DSU, what role did they anticipate economic analysis would play in resolving future disputes that would result in such changes to Members' national economic policies? Interestingly, Article 27.1 of the DSU leaves to the WTO Secretariat the crucial decision of how to implement the provision of legal and "technical" support in DSU panels and arbitrations.³ To our knowledge, there has been little previous analysis of Secretariat provision of the technical *economic* support that is the subject of this paper.⁴

Our goal is to analyze how economists and – more importantly – *economic analysis* interact with panels, arbitrators and WTO Secretariat legal support staff in the DSU adjudication process. The WTO is a set of voluntary, self-enforcing agreements among Member states that requires their ongoing participation and commitment. Thus, understanding and improving the way economic analysis is used throughout all areas of the Organization, including dispute settlement, can enhance the functioning of the institution, its long-term viability, and the trust its Members place in it.⁵ Furthermore, when Member litigants make arguments that are more economically advanced and submit evidence based on models and data that are more economically complex, they provide the Secretariat with a clear mandate to improve the economic sophistication of DSU adjudicators.⁶

policy available to the complainant include withdrawing WTO commitments under GATT, TRIPs, GATS, or another covered agreement.

³ The DSU Article 27.1 states "The Secretariat shall have the responsibility of assisting panels, especially on the legal, historical and procedural aspects of the matters dealt with, and of providing secretarial and technical support."

⁴ While the WTO Secretariat provides legal assistance primarily via the Legal Affairs and Rules Divisions, and these Divisions' potential influence over panel and arbitration decisions are also important subjects of investigation, we do not examine them here. We also do not examine the separate issue of the Appellate Body access to formal economic "expertise," nor do we focus on questions regarding the procedural separation of panel versus Appellate Body decisions. Nevertheless, many of the arguments of this paper would support the independent Appellate Body Secretariat having its own chief economist on staff as well.

⁵ For a discussion of the basic underlying economic theory and principles motivating the need for the WTO as an institution, its rules, and its dispute settlement procedures, see Bagwell and Staiger (2002).

⁶ The Appellate Body has itself called for panels to improve along this dimension. For example, see the Appellate Body Article 21.5 report in the *US – Upland Cotton* dispute, in which the Appellate Body states (paragraph 357) "[M]odelling exercises are likely to be an important analytical tool that a panel should scrutinize. The relative complexity of a model and its parameters is not a reason for a panel to remain agnostic about them. Like other categories of evidence, a panel should reach conclusions with respect to the probative value it accords to economic simulations or models presented to it."

That the Members delegated to the WTO Secretariat the responsibility to provide technical economic support to DSU panels and arbitrations raises a number of broad questions that we take up in this paper. We begin our analysis with a normative question: How *should* the Secretariat provide this technical economic support? Rather than attempting a complete answer, we identify trade-offs that the Secretariat confronts when adopting one approach instead of another. As a second step, we turn to a positive question: How *does* the Secretariat currently provide this technical economic support?

As a third step we examine the experiences of institutions such as central banks, competition authorities, and national trade remedy investigating agencies that have allowed economic analysis to influence the ways in which they affect policy. Such institutions are useful comparators not only out of recognition that high-level economic analysis is an important input into the determinants of their long-run performance, but also because, like the DSU, such institutions operate in challenging political environments. The wide variation in experience across such institutions allows us to draw important lessons for the DSU – especially regarding transparency, political independence, and the quality and longevity of the role of economic analysis within the institution’s operations.

Fourth, we identify areas of concern with the Secretariat’s current provision of technical economic support to the DSU process. While we do not attempt a formal theoretical or empirical assessment of whether the Secretariat’s current approach is achieving either its own or the Members’ objectives, we do identify potential areas of concern – at the institutional and individual (staff) levels - to motivate reform proposals.⁷ At the institutional level, we find that WTO operations would benefit from more analysis from PhD-level economists. We also consider where within the Secretariat PhD economists should be housed and what specialities are needed. Second, at the level of individuals, the WTO system is evolving to one in which professional staff need a clear and sophisticated understanding of both law *and* economics. We therefore discuss the hurdles facing individual Secretariat staff members who need to

⁷ Divergences between the objective functions of the Secretariat and its Members may occur if, for example, the Secretariat has a shorter time horizon (discount factor) than do the Members, etc. Elsig (2008) considers the interplay between the Secretariat and its Members from the perspective of principal – agent theory.

become effective WTO specialists – either as economists or lawyers – as they likely require substantial cross-disciplinary competency that is scarce in the external labour market.

While we argue for the injection of more economic analysis into WTO Secretariat support of the DSU, we identify limits to the role of economics and the need for increased economic analysis to be integrated with (and not supplied at the expense of) the legal and diplomatic/political elements of the DSU. Thus we describe the costs to introducing more economic analysis into the process, and we highlight specific qualifications of the economists that the WTO Secretariat needs. We therefore also identify the sort of economists that the Secretariat might avoid, as flawed economic analysis could lead to an institutional outcome that is worse than the status quo. Nevertheless, we conclude that major problems facing the WTO include the small number of economists housed in the Secretariat – i.e., a staff of eight for most of the last decade – with even the minimum academic qualifications necessary to provide technical economic support, the lack of diversity to their fields of specialization, and the ad hoc manner in which they have been integrated into the DSU adjudication process thus far.

This paper also contributes to a broader literature on the appropriate design of DSU adjudication within the WTO system. For example, Weiler (2001), Janow (2004), Shaffer (2005), and Nordström (2005) provide discussions of the broader Secretariat role in support of dispute settlement and raise other fundamental questions we do not specifically address here.⁸ We take as given the current ways panels/arbitrators are chosen and the Secretariat provides legal support to these adjudicators in order to examine questions involving the appropriate provision of technical economic support to the DSU adjudication process. Nevertheless, the key insights of this paper would also apply to proposals for more fundamental reform of the DSU. Whether under the current or a reformed institutional framework for the DSU, the WTO needs to improve the role of economic analysis in DSU adjudication.

⁸ For example, we do not examine the process by which the parties and the Secretariat choose the three panellists in a dispute, the implications of any particular method of doing so, the influence of the Secretariat legal support team in panellist or arbitrator decisions, or whether the WTO should move to a system of a permanent roster of panellists.

Before turning to the substance of the paper, we provide two additional motives for improving the technical economic support used in the DSU process. The first is simply recognition that *how* the WTO's dispute settlement process affects Members' national economic policy will become an increasingly important determinant of the institution's overall relevance and success.⁹ With its role as a traditional "negotiating forum" for trade liberalization diminishing, the WTO's performance will be judged increasingly by its ability to adjudicate disputes that are politically contentious and economically complex, involve extensive claims and evidence, and are argued by the most sophisticated legal-economic teams that the Members can provide. The Secretariat faces the challenge of gaining the trust of its Members by meeting their expanded needs for adjudicating capacity.

The final reason to focus attention on how economic analysis is used in the DSU process is the recent call for the entire WTO to treat economics more seriously. For example, the proposals of the Sutherland Report (Sutherland et al., 2004, p. 77) complement much of the analysis we present here: "[t]he membership should also encourage and stimulate a greater intellectual output from the Secretariat... We see no reason why the status and recognition accorded to the WTO's chief economist should be any less marked than that given to his or her opposite numbers in other economic institutions – at least with respect to trade issues." Indeed, a number of the topics we identify below suggest not only an expanded and enhanced role for the WTO's chief economist, but also that the WTO Secretariat will likely require a substantially larger, more flexible, and more diversely trained economic staff than the Members traditionally demanded exist.

⁹ A certain sticking point for the Doha Round of negotiations is that, especially for many developed countries, there is little potential new market access in goods (relative to historical Rounds) "left" to negotiate over. Still, what is left to negotiate over may disproportionately affect the trade of developing countries and thus be important from an equity perspective. This is, however, a separate issue. Furthermore, more liberalization negotiations are taking place outside of the WTO framework through preferential trade agreements.

2 The Roles for Economic Analysis in DSU Adjudication

Before describing the various potential roles for economic analysis and economists in the WTO's dispute resolution process, we explore in more detail why economic analysis is increasingly relevant and necessary. First, we describe ways in which DSU rulings, in theory, affect Members' economic policy. We then appeal to research showing that WTO decisions and DSU-induced policy changes affect markets and economic incentives not only in theory but also in practice.

After concluding that there is an important role for economic analysis in WTO dispute settlement, in subsections 2.2 through 2.4 we describe the range of possible uses for economic analysis in the actual DSU process. Through this approach we identify the implicit tradeoffs at the heart of the normative question of how *should* the Secretariat use economic analysis in DSU adjudication.

2.1 Theoretical and empirical arguments that the DSU process affects economic markets

While the DSU process is by definition a legal proceeding, it differs from most other legal proceedings because the purpose of many disputes is to affect some Member government's implemented as well as projected *economic* policy. When a DSU decision finds one Member's policy to be in violation of its WTO obligations, WTO panellists and arbitrators issue rulings that promote change to one of the nation's economic policies. For example, the panel may request that a respondent Member replace its WTO-inconsistent policy with one that is WTO consistent. Likewise, a respondent's failure to comply with requests of a panel could lead to an Article 22.6 arbitration in which WTO arbitrators authorize the complainant country to change its trade policy and retaliate.

Therefore, DSU rulings, such as those that led to changes in US tariff policy affect Members' economic policy much in the same way that policymakers at central banks determine the supply of a country's money, finance ministers contribute to fiscal policy decision-making, or antitrust authorities affect conditions of market competition. From this perspective, just as it is desirable for economic expertise to be an important input into the determination of monetary, fiscal, or competition policy, economic expertise has a useful role in informing the DSU panel and arbitration process.

The above argument is that DSU rulings affect economic policy in theory. Is there evidence to suggest that these effects are “economically important” – i.e., sizable – empirically?¹⁰ If the analogy to central banks and the theory that DSU decisions affect economic policy and economic activity is not sufficiently convincing, an alternative way to highlight the economic importance of DSU rulings is to present the results of economic research and empirical evidence that DSU activity moves markets.

There is extensive research documenting how changes in trade policies, including those directly influenced by WTO decisions affect trade flows and hence underlying economic activity in importing and exporting countries.¹¹ Nevertheless, and perhaps more in line with the central bank analogy, there is even evidence from papers such as Desai and Hines (2008) and Liebman and Tomlin (2008) that WTO DSU “announcements” (and Member announcement of DSU-related actions) can similarly move *financial* markets via changes in stock prices, much in the same way as announcements made by policymakers at central banks.¹²

A final argument in favour of a more substantive role for economic analysis in the DSU process could be based on evidence that panels, the Appellate Body, or arbitrators either made economic “mistakes” in their decisions or provided decisions that were flawed in their economic reasoning or analysis. Are there examples of actual cases in which one of these three DSU actors could have gained potential insights from economic analysis? While we do not point to any particular dispute here, there is an evolving body of research to suggest that mistakes or flawed decisions have been made. For example, teams of legal and economic scholars organized by the American Law Institute (e.g., Horn and Mavroidis,

¹⁰ If there is little evidence that DSU rulings have substantial effects on trade flows or other economic activity, then increasing the resource costs of the process by injecting more economic analysis/economists to get the economic reasoning or rulings “right” may not be an efficient use of resources.

¹¹ For example, Bown (2004a,b) examines the determinants of the changes in trade flows in GATT/WTO trade disputes from the respondent exporting and third party exporting country perspectives, respectively. The research establishing that trade policy changes affect trade flows is too vast to summarize here, though we do note the interesting new approach of Brambilla, Porto, and Tarozzi (2007) that finds evidence of a link between foreign trade policies and micro-level activity in a developing country by studying the impact of US antidumping measure on Vietnamese catfish-producing households.

¹² Desai and Hines (2008) study the impact of government announcements in the *US – Foreign Sales Corporation (FSC)* case and Liebman and Tomlin (2008) study the *US – Steel Safeguards* case.

2004, 2005, 2006a) analyze the stock of evolving case law deriving from WTO Appellate Body decisions and un-appealed Panel Reports, and such interdisciplinary research identifies many such shortcomings, including some of a fundamental economic nature, across a wide variety of disputes.

When we combine the theory with evidence that panellists and arbitrators make rulings under DSU auspices that affect economic policy choices and economic outcomes, it may appear obvious to most economists that this legal process is about more than “just” the law. But this is not necessarily the accepted view of those involved either in the DSU process, the WTO Secretariat, or the Members themselves. In the next three sections we adopt the perspective that economic analysis has an important role to play in the DSU’s adjudication process, and from this viewpoint we present a range of possibilities as to how the services of professional economists might be best used in the increasingly legalized DSU process in practice.

2.2 One extreme: economists only as experts in interpreting evidence

We begin by identifying and discussing the most obvious (albeit limited) role for introducing economists in the DSU process, where economics is treated merely as evidentiary input.¹³ For example, in certain disputes the parties introduce “evidence” from economic studies or data on market conditions. The evidence might address questions such as whether two goods (one imported and one domestically produced) are sufficiently similar products (“like products”) to compete head-to-head; whether dumped or increasing imports are a likely determinant of injury to a domestic industry; or whether subsidized exports lead to “serious prejudice” or price suppression in foreign markets.

¹³ Even more extreme, it is possible to imagine a scenario in which professional economists are not even utilized in this role, or if the WTO actually discouraged the provision and assessment of economic evidence – a scenario not out of the realm of political possibility given historical experiences of related institutional settings in which the use of economic analysis has waxed and waned for political reasons. However, a legal process that did not rely on serious economic evidence or seriously interpreting economic evidence would likely be so different from the current setting that it would not be grounded in law. In such a case, the system might be better suited to a more informal and diplomatic dispute resolution process, perhaps one akin to the “Working Party” norm for dispute resolution of the early GATT era. For a discussion of dispute settlement in this era, see Jackson (1969), Dam (1970), and Hudec (1975).

The legal parties that submit such evidence typically use the services of a PhD-level economist to interpret data and construct economic models so as to reveal an empirically-based “story” in support of their legal arguments.¹⁴ The creation of convincing evidence requires a professional economist who is adept at economic theory and can construct a mathematical model of the relevant market and adapt it to provide a rough approximation to the relevant market while remaining relatively simple to analyze and interpret. The party’s economist typically collects and processes data and then uses complex computer software packages so as to undertake statistical, econometric, computable general equilibrium (CGE) or partial equilibrium modelling. The economist must also be able to interpret the output of the model – its econometric estimates or simulated predictions – and translate it into less technical language for use by lawyers litigating their case. Examples of such evidence abound, especially in DSU litigation such as *Japan–Alcoholic Beverages II*, *Korea–Alcoholic Beverages*, and *Chile–Alcoholic Beverages* as well as the recent *US – Upland Cotton* dispute.¹⁵

Given the ways in economic evidence is typically used by parties in DSU proceedings, what would an economist “on the inside” of the adjudicating process contribute? The first and most obvious role for an economist is to help the other adjudicators (panellists/arbitrators and Secretariat-provided legal support staff) interpret or weigh the relative merits of economic evidence the opposing parties provide. For example, a PhD economist has had the graduate training to assess the plausibility of the evidence or methodology from the perspective of accepted practice in economic science.¹⁶ Was the evidence

¹⁴ Critics of the DSU process, including the author, have identified litigation costs (which would include hiring economic experts) and the insufficient legal capacity of developing countries as significant hurdles that prevent them from more effectively using and participating in the WTO system. Nevertheless, amongst poor country litigants that rely on the subsidized legal assistance provided by the capable, Geneva-based, Advisory Centre on WTO Law (ACWL), even such countries are able to tap into economic expertise for their DSU needs via the ACWL’s “Technical Expertise Trust Fund” (ACWL, 2008). We thank Hunter Nottage for making this point.

¹⁵ A substantial effort to document how such evidence has been used in WTO panels and arbitrations is provided in WTO (2005) as well as Keck (2004), so we will not further delve into the topic here. See also Sapir and Trachtman (2008) for a discussion of *US – Upland Cotton*. Bown and Ruta (this volume) also discuss how this evidence and construction in arbitrations more broadly can be reconciled with insights from economic theory.

¹⁶ Scepticism regarding evidence or methodology is acquired via PhD-level training in economics and reinforced as economists continue on a research trajectory beyond the PhD and attempt to publish academic-level research in professional journals. The peer-review demands inherent in this discipline’s publishing process serve to reinforce the

generated using sound statistical techniques? Are the results robust to slight changes in the testing environment – e.g., slight modifications in assumptions of the model or the time period covered by the data? The economist could also suggest clarifying questions that panellists and/or arbitrators can take back to the parties to further identify the sensitivity of their results. In the next section, we argue that this is not the only useful role that an economist might provide as an insider in the adjudication process.

2.3 The other extreme: economists as equal collaboration partners in the DSU adjudication process

Are there other ways, beyond expertise in interpreting economic evidence, in which an economist might contribute as an active participant in the DSU adjudication process? Here we identify a number of arguments that economists are not only useful to conduct scientific studies and to thus create (and interpret) evidence relevant to a proceeding, but economists also provide a “way of thinking” particularly suited to efficiently processing and assessing the information at the core of DSU adjudication.

Since many of the more sophisticated legal parties now use economists to help construct and influence arguments in DSU proceedings, there is scope for the panels, arbitrators, and Secretariat support to improve their own capacity along this dimension as well. Indeed, the legal parties in a number of disputes, especially those relying on private sector law firms, increasingly turn to economists not just for “expert witness testimony” and economic studies to be used as supporting evidence, but also to help the lawyers *draft briefs* and other supporting materials to make sure the economic arguments are coherent, consistent, and concise.¹⁷

skill set of such research economists. This creates another reason for the WTO Secretariat to expand its staff of economists at the PhD research level and also to create incentives that *encourage* them to continue to work on academic-level research in addition to their DSU support duties.

¹⁷ A number of private law firms with a substantial presence in WTO litigation have PhD or similarly trained economists on staff in their trade litigation practice groups. Since these firms *also* frequently commission external economic studies and hire expert witness, an inference is that the firms’ internal economists are being used for some other function, such as to help develop and refine the economic arguments presented in briefs.

Second, from the perspective of a DSU panellist or arbitrator, there is an additional benefit from access to an economist’s single-minded thinking about model-driven incentives. With access to such economic thinking, panellists/arbitrators are better positioned to *anticipate* many of the arguments that parties will make and the nature of the evidence they will put forward, given that well-positioned complainant and respondent parties are also likely working with economists to develop their arguments.¹⁸ Because PhD economists share a common training and set of available theoretical and statistical tools, they tend to “think” (reason) alike. While panellists and arbitrators are, understandably, only permitted to examine evidence on the claims presented to them, given the resource-constraints of the Secretariat and time constraints of the panel and arbitration process, an important efficiency argument can be made for those on the adjudicating side to be less “surprised” by what the parties are likely to argue.¹⁹ Just as a good judge relies on legal experience to anticipate the scope of likely legal arguments in order to focus attention on *evaluating* their relative merits, an economist is better positioned to anticipate both the economic *arguments* that parties are likely to make and the *ways* in which they will make them. Access to such economic thinking allows panellists or arbitrators to focus earlier in the process on evaluating economic evidence and asking clarifying questions or requesting additional probative information. Furthermore, parties’ knowledge that panellists/arbitrators are accessing technical economic expertise may have an endogenous effect, inducing the parties to provide “better” (more economically sound and data-based) evidence in the first place.

Third, panellists in the DSU process inevitably use “judicial economy” and make the conscious decision to rule on some claims that come before them while not ruling on other claims. Reasons for such an approach include recognition of political constraints (the fear of being seen as “judicially active” by the Members) as well as resource constraints (too little time or support for the panellists to rule on every claim). Regardless of the underlying cause, a DSU panel that invokes “judicial economy” as a reason to

¹⁸ In section 4 below on lessons learned from other institutions, we describe how competition authorities have increasingly used PhD-level economists together with legal teams to “develop case theories” collaboratively.

¹⁹ This is important in the time-condensed arbitration process in particular, a point raised by Lockhart (this volume).

fail to rule on a claim generates other benefits and costs on the system. In this light, one role for an economist would be to identify some of the costs and benefits of various discretionary choices that panels make when they are forced to exercise judicial economy on a claim-by-claim basis. I.e., an economist might provide data-driven information to give panellists some forecasting ability as to how their ruling – and implicitly their decision of how narrow or broad to shape it – has *externality* effects beyond the current case.²⁰ While perhaps not in the interest of any given set of panellists who may be more concerned about their decisions being appealed and overturned by the Appellate Body, there are some externality benefits to the DSU system of such an approach. Furthermore, there is also the compelling argument that panellists make better legal decisions when they receive additional and more accurate information about the political and economic implications of their rulings.

Finally, and as we have identified earlier, the case for increased interaction between lawyers and economists in DSU-related activity is proceeding on other fronts. Most noteworthy, perhaps, are the teams of economic and legal scholars that the American Law Institute (e.g., Horn and Mavroidis, 2004, 2005, 2006a) has organized to analyze the evolving WTO Appellate Body case law. As this work program illustrates, there are substantial synergies associated with putting such groups together.²¹ While economists, for example, might have a greater expertise in anticipating likely arguments or directions in the case because they are trained to focus on incentives, economists also, of course, have a comparative disadvantage at many other important elements of the DSU process. These would include failing to understand legal implications of the agreements, to pay attention to sufficient detail, to follow procedure and basic rules of evidence, etc. Furthermore, the research combinations of these ALI volumes raise other questions that will also arise for the Secretariat and that we return to below, including the difficulties that

²⁰ Bown and Sykes (2008) explore some of these costs and benefits of judicial economy in the context of how the Appellate Body itself has chosen to address the issue of zeroing in an iterative fashion, resulting in a continued progression of disputes over permutations of the issue, as opposed to a more comprehensive fashion early on in the set of zeroing cases it received.

²¹ Clearly this is the purpose of including economists in this academic exercise. I.e., the purpose for the ALI approach is not to simply have the economists use their expertise to examine the economic evidence used in a given case since the scholars did not have access to much of the technical evidence considered by the panels and arbitrators in the actual disputes.

lawyers and economists have in communicating with one another, even when they are “only” attempting to do so at a scholarly level.

2.4 The limits to the utility of economists

While the last section identified arguments in favour of staffing WTO DSU panels and arbitrations with more economic expertise, it admittedly focused only on benefits to doing so. In this section we therefore describe the costs to such staffing choices, and we also identify characteristics that economists must have to effectively work in DSU adjudication, which thus implicitly also identifies some of the limits to what economists can contribute.

The first argument is that there simply may be disputes in which the marginal cost to staffing the case with an economist (a scarce input) is likely larger than the marginal benefits. Examples are perhaps disputes that are simply procedural in nature, such as those in which the core claims are whether a country followed proper investigative procedure in a trade remedy investigation. Nevertheless, even in some of these cases, what may appear to be a *prima facie* case of inappropriate procedure often has critical economic issues at its heart that are only discovered after scratching the surface and introducing economic analysis.²² The risk is that if such a case is not staffed by an economist on the adjudicating side, many such issues would be missed opportunities for panels to provide economic clarity to the WTO agreement via the missed opportunity to address subtleties to the economic arguments that the parties make.

Thus in the immediate term, especially in light of the data we present in the next section, it may be better to endure the cost of a minimal staff of economists on every case. The extreme case of using economics only to interpret economic evidence might be most applicable in the context of areas of WTO

²² An example might be one of the procedural issues in the *US – Softwood Lumber (V)* dispute which was revealed to have deep economic complexities. While the procedural question was the propriety of a method used in a dumping margin calculation, the actual issue at stake involved the economically difficult question of how to rationally allocate capital costs across a conglomerate (multi-product) firm when capital costs are only available at the firm level and the antidumping investigation only targets a subset of the firms' products. The failure for a panel to adequately explore the full legal *and* economic issues in such a case implies that there remains both a "hole" in the case law and a missed opportunity for the DSU process to identify an important issue for WTO members that may need to "complete" the WTO contract through negotiations. For a discussion, see Bown and Sykes (2008).

law that are relatively well-developed and accepted – areas in which there is little economic controversy and thus economists have little value-added outside of technical expertise. Nevertheless, while such areas within WTO law may be easier to identify and more expansive going forward as more case law develops, given the relatively nascent stage of the current institution and the case law, the DSU is a long way from using too much economic analysis.

The second argument is that not every PhD-level trained economist is “appropriate” for the DSU adjudication process. Put differently, the technical training of an economics PhD is a necessary, but not sufficient qualification. Equally important are a number of qualities not emphasized in PhD programs but which are typically obtained only after years of practical experience. These would include understanding the overall political-legal-economic purpose of the WTO agreements, appreciating the critical *complementary* roles of lawyers and diplomats (politics) in the DSU process, knowing the limits of what technical economics can offer, as well as having the (hard-to-define) characteristic of “good judgment.” And it is certainly possible that injecting additional technical economic expertise into DSU adjudication without the appropriate legal-diplomatic balance and integration could have disastrous consequences. As a lesson learned from other institutions described below in section 4, Membership dissatisfaction with a Secretariat that was misusing economics as a technical excuse and providing a DSU that would become insufficiently responsive to law and politics could lead to an outcome in which *all* use of technical economic analysis is effectively taken away.

3 Economists in DSU Panels and Arbitrations

In current practice, economic analysis and economists can become part of DSU adjudication via one of three avenues – e.g., as the panellists/arbitrators themselves, as the support staff provided by the WTO Secretariat, or through extra-Secretariat support that the panellists/arbitrators might request. We explore each of these possibilities in the next three subsections.

3.1 The panellists and arbitrators

If injecting more economic analysis into DSU adjudication is an important objective, then simply picking panellists from the available stock of economists is one way to do it. To what extent has the DSU process chosen this route? While a complete determination of the level or influence of economic expertise in DSU panels is a potentially interesting and important empirical exercise, it is beyond the scope of this paper. Therefore, since this volume focuses on the more narrow set of DSU panels that have gone to the phase of arbitration, what we can learn about the subset of DSU panellists/arbitrators involved in these particular disputes?

Table 1 presents information on the twenty-three different arbitrators from the ten DSU disputes that have gone to stage of arbitration. While economic “expertise” is, of course, subjective and difficult to measure, the table provides some information on the arbitrators’ relevant backgrounds in this area via two pieces of information: his or her current professional position (at the time of the arbitration) as well as the highest university degrees received. Interestingly, in at least half of the disputes, one out of the three arbitrators did have university or professional studies in economics.²³ Nevertheless, in only the *EC – Banana Regime* arbitrations is it apparent that one of the arbitrators (Kym Anderson) is an individual who another economist would likely classify as an analytical research economist at the level necessary either to interpret technical economic evidence or to construct the economic counterfactuals that are of utmost importance to arbitration proceedings in particular.

Overall, while the data in table 1 suggest some economic “thinking” permeates the panel and arbitration process because a handful of individuals report some university or graduate training in economics, this phenomenon is not pervasive. The majority of panellists’/arbitrators’ most relevant WTO expertise derives from experience in the two other core areas of DSU adjudication- law or diplomacy (politics) – as even the panellists with an academic background in economics (with the exception of

²³ Note that all of the data on individual characteristics in this table is “self—proclaimed” – i.e., what each arbitrator claims was their highest university degree received and professional position was obtained by the author via internet searches for curriculum vitae and/or personal email contact with the arbitrator.

Anderson) have left the analytical/technical economics profession. The implication from table 1 is that, while panels and arbitrations appear well-selected to represent the legal and political expertise needed for DSU adjudication, panellists/arbitrators are likely to have a high level of demand for the WTO Secretariat to appropriately tailor analytical economic support we describe in the next section.

3.2 The WTO Secretariat: legal and economic staff

The second avenue through which economic analysis has the potential to become part of DSU adjudication is through the support staff the WTO Secretariat provides to the panellists and arbitrators. In the next two subsections we describe the evolving Secretariat process for staffing DSU cases with legal and economic assistance and the data on the size of this Secretariat support.

3.2.1 The process of staffing panels and arbitrations with Secretariat support

In this section we provide a brief discussion of how the Secretariat currently staffs legal and economic support teams to panellists and arbitrators in disputes. We begin by attempting to shed light on the default rule for staffing.²⁴ The first item to recall is that under Article 27.1 of the DSU, the Members abdicated the decision of how to support panels and arbitrations to the discretion of the Secretariat – therefore, such decisions are based on internal Secretariat procedures.

The primary legal support to the panellists and arbitrators in DSU cases is typically supplied by one of two Divisions in the WTO Secretariat: the Legal Affairs Division or the Rules Division.²⁵ For

²⁴ The information in this section is based on not-for-attribution conversations and discussions with current and former WTO Secretariat staff. As far as we are able to research from public information, an explicit Secretariat practice on how it supports panels and arbitrations is not codified or written down.

²⁵ Assisting panels and arbitrators is not the only function of the staff in either these divisions or the Economics Research Division. The Legal Affairs Division, for example, also provides a number of annual WTO publications such as the *Analytical Index* and *Dispute Settlement Reports*, in addition to assisting with technical assistance and trade policy course (TPC) training. The Rules Division is heavily involved in Committee work and rules negotiations between Members (in the more “legislative” context). The economists in the Economic Research and Statistics Division also provide support to research requests submitted by the Director General, construct the annual World Trade Report, participate in TPC activity, as well as engage in academic-level scientific research to maintain their analytic skill-sets.

historical reasons, the Rules Division handles all disputes involving trade remedies (antidumping, countervailing measures, safeguards) and subsidies unless it faces staffing shortages, which may increasingly be the case given the growing number of trade remedy disputes. In such instances, the Legal Affairs Division provides assistance if it has temporary excess capacity. Legal Affairs then provides the lead legal officer in all "other" disputes, though in "interdisciplinary" disputes covering multiple agreements (e.g., Goods, Services, Agriculture, TRIPs), Legal Affairs will turn to legal staff from the other relevant divisions to also provide support and agreement-specific expertise.²⁶

The legal support staff that the Secretariat provides to a panel is typically in the range of 2-5 attorneys from the Divisions, with likely cross-case variation explained by the complexity of issues involved in the dispute, the number of WTO Agreements with claims at issue, the anticipated amount of evidence involved, the number of parties involved, the resource constraints associated with limitations on available Secretariat support staff, etc.²⁷ The professional staff in the Legal Affairs Division is entirely made up of trained lawyers, while the professional staff in the Rules Division is a mix of lawyers and other professionals. While some of the "professionals" in the Rules Division have significant training and perhaps prior professional experience in economics, including experience in national trade remedy investigating agencies, currently none of them would be classified as an analytical "research" economist with PhD-level technical preparation.

Most of the economic "expertise" housed in the WTO Secretariat, at least as measured by technical economic expertise at the PhD-level equipped to make such a contribution to the DSU process,

²⁶ In addition to permanent staff, in times of peak demand for legal assistance on DSU panels and arbitrations, the Secretariat can rely on short-term contract lawyers as well as legal interns.

²⁷ First, using the "Legal Affairs Division Officer advising the Panel" variables from the database in Horn and Mavroidis (2006b), of the 119 disputes with adopted Panel Reports and available data, over 55% (65 disputes) list the names of two Secretariat lawyers, 33% (39 disputes) list the names of three lawyers, while four (11 disputes) and five (4 disputes) Secretariat lawyers were named in fewer instances. Second, note that the statement in the text on the likely determinants of the number of Secretariat legal support staff assigned to any one case is simply a conjecture. Empirically this question could be rigorously addressed through examination of the data in Horn and Mavroidis (2006b).

is currently found in the Economic Research and Statistics Division.²⁸ While the default staffing rule is that the Secretariat team to support panels always consists of a set of lawyers from the Rules or Legal Affairs Divisions, the teams have only rarely been staffed with a Secretariat-provided economist at the panel stage. Even in the instances in which an economist is brought in to the support team, the context and process may differ. It may not be until sufficiently complex economic evidence is brought into a dispute that the legal support staff and/or panellists recognize the need for such economic expertise, which of course limits the economists' ability to fully collaborate with panellists in developing their basic case theories, which likely began much earlier in the process.

Conditional on an economist being used to help inform adjudicators at all, the follow-up issue of how an economist is used in any given dispute also likely varies with a number of factors. These would include demand side factors such as the needs and expertise of the panel, the personalities involved and the various technical competencies of the Secretariat-provided legal support staff. Supply side factors, such as the matching of the skill-set of available Secretariat economists, would certainly also affect whether economists are utilized.

A final note relates to an important distinction between the panellists versus the Secretariat-provided support staff in DSU cases that go to arbitration. While the panellist side of the process typically does not turn over (i.e., the panellists in the dispute typically also serve as the arbitrators), the Secretariat support teams can take the opportunity to "re-staff" in order to bring in additional competency to disputes that proceed to arbitration. For example, Legal Affairs may re-staff the arbitration phase with lawyers with a greater facility at processing the economics inherent at this stage. Second, although Secretariat-provided economic expertise may not have been used in the panel process, an economist staff member from the Economic Research Division has been brought in to provide assistance to the arbitrators and the legal support staff in the arbitration phase of all of the recent disputes in table 1. This decision is likely based on learning and Secretariat recognition of their value-added for this stage of the process.

²⁸ There are a handful of other PhD-level economists located in other Divisions – namely Agriculture & Commodities, Trade in Services, and Trade Policies Review Divisions.

A key reform proposal motivated by our earlier discussion is to make economic analysis more available throughout the entire DSU adjudication process. If the Secretariat makes the conscious decision to treat economic analysis more seriously, a politically benign approach would be to simply change the default rule for supporting DSU panels to one in which the Secretariat provides a support team that includes at least one PhD-level economist *from its inception*. The economist should then be expected to help all economics-related aspects of the legal team's support of the panel and arbitrators in the dispute – not only interpreting technical economic evidence, but also collaborating in the formulation of questions and the development of case theories.

3.2.2 The data on divisions that staff panels and arbitrations with Secretariat support

In order to examine questions related to whether the WTO Secretariat has the right level of legal and economic capacity and the right level and mix of expertise given DSU caseload coverage so as to optimally staff disputes, a researcher would like access to data. The most useful data would be the number of full-time equivalent legal support staff allocated to work on DSU matters, the full-time equivalent economic support staff that could potentially be allocated to work on the DSU, information on how they have been used historically, their personal qualifications such as education and prior professional experience, some measure of their technical expertise, etc. Not surprisingly, such detailed data are not publicly available.

Nevertheless, table 2 illustrates data from publicly available sources on how the WTO Secretariat has staffed various divisions over the 2000-2007 period. The first item to note is the extremely small number of staff in both the Legal Affairs and Rules Divisions over the period. Furthermore, while the staff support in Legal Affairs is essentially flat, the Rules Division has experienced a small amount of growth. This is likely in response to the massive shift in DSU activity related to trade remedies and subsidies taking place since 2001, the increasing number of claims the parties submit by in these disputes, and the increasingly complex and resource-intensive nature of the technical evidence that the parties

provide.²⁹ Nevertheless, the fact that there is very little overall increase in legal staffing support between 2001 and 2007 is perhaps surprising, given that the stock of DSB-adopted Panel and Appellate Body Reports has more than tripled during this time period, increasing the amount of "institutional knowledge" per capita that is required of the staff in these divisions.³⁰

The second item to note is the number of PhD-level economists in the Economic Research Division between 2000 and 2007. The number is both small (8.0) and unchanging over the time period. Thus, despite the increasing demands that DSU cases have put onto its staff, in addition to their more historical supportive role that the economists provide in the Secretariat, the Secretariat has not provided additional staffing resources to the Division.

Consider again our reform proposal that, out of recognition that DSU adjudicators could benefit from additional support from economists, the Secretariat could adjust the staffing "default" rule and assign one PhD-level economist to each dispute that arises, from the inception of the panel. Going back to table 2, one implication of such a staffing procedural change would be on the demand for time of Secretariat economists. Assigning a more active role to economists will require that there are many more of them than has traditionally been the case in the Secretariat.

While the levels of Secretariat staff in Divisions critical to the DSU support process – Legal Affairs, Rules, and Economic Research – are essentially unchanged over the 2001 to 2007 period, the overall size of the Secretariat staff has grown by over 14% during this period. An interesting feature of the data in table 2 is that nearly 50% of this recent growth in WTO Secretariat staff is in two *other* Divisions – i.e., Informatics (IT), and Language Services and Documentation.³¹ Some of this particular

²⁹ Indeed, Bown and Hoekman (2008) report that while 14% of the set of disputes initiated between 1995 and 1998 involved trade remedies, this percentage increased to nearly 50% in the 1999-2006 period.

³⁰ Sutherland et al. (2004, p. 51) document that, of the 81 adopted DSB panel reports by 2003, the result was more than 27,000 pages of jurisprudence. One important role for the Secretariat's legal support staff in DSU cases is to help facilitate the transmission of relevant DSB case law to panellists and arbitrators who may not be specialists or experts in the particularly detailed topic under dispute. Thus, one might expect that as the stock and complexity of case law to which panellists/arbitrators should be aware grows, so would the size of the support staff.

³¹ A substantial share of the total increase has also gone to increase staffing of the Trade Policies Review Division, which also makes sense given the rise in WTO membership and that more countries now need to have their policies

growth is to be expected, as the information technology revolution has increased demand for IT professionals in most all similarly situated public and private institutions. Furthermore, the increased demand for staff in Language Services and Documentation is to be expected given the growth in meetings and proceedings related to both the DSU as well as other WTO-related (e.g., Doha negotiations) "business." Nevertheless, a particular irony arising from this WTO data is that the private sector is increasingly taking advantage of globalization, technological innovation, and trade to digitize much of this material and to outsource/offshore the sort of services being provided by these two Divisions to lower costs, and in many instances this services trade is occurring with developing countries.³²

As a reform proposal, such an outsourcing approach might be of interest if the institution really does find itself confronted with an overall resource/budget constraint and yet the need to substantially increase its technical economic and legal support capacity – i.e., core WTO Secretariat services that may be more costly to offshore/outsource – to handle an increasingly complex dispute settlement process and caseload.³³

3.3 The panellists, arbitrators and extra-Secretariat assistance

In addition to economic expertise permeating the DSU process via panellists/arbitrators themselves and/or Secretariat-provided support staff, a final possibility is that panels/arbitrators recognize need for a certain economic specialty or expertise that is not available within the support functions provided by the Secretariat and request that this expertise is provided from the outside. Obviously such requests for

reviewed, and that there are an increasing number of commitments to review within countries, given the full phase-in of TRIPs, the end of the Multi-Fibre Arrangement and transitional Agreement on Textiles and Clothing, the expiration of the 'Peace Clause' for the Agreement on Agriculture, etc.

³² For more on this phenomenon, see WTO (2008).

³³ There is, of course, a legitimate argument that the Members deliberately keep the Secretariat with a small overall staff – not because of resource constraints but because of a political decision to not cede too much power. One implication of this is that how the Secretariat chooses to allocate resources across Divisions is jointly determined with the Members and with the knowledge of the size of the overall budget.

outside expertise occur in other evidentiary domains in the DSU process – e.g., see the role of scientific experts in Sanitary or Phytosanitary (SPS) disputes.³⁴ Thus such an approach is a procedural possibility.

What are the costs and benefits of applying such an approach to economists? On the positive side, attracting technical outside expertise that is important to only one particular dispute would be less costly to the Secretariat, as it would not have to commit “in house” resources to hiring permanently an individual who might not have much utility elsewhere in the institution. Indeed, subsidy cases such as *Foreign Sales Corporations (FSC)*, the Canada and Brazil *Civil Aircraft* disputes as well as others likely require *specialized* expertise in corporate finance – a sub-discipline of economics that is not likely to be the *ex ante* specialty of the typical high quality WTO research economist.³⁵ Similarly, environmental or regulatory economic expertise and experience with constructing cost-benefit analysis is extremely important in a dispute such as *Brazil – Retreaded Tyres*.³⁶ Finally, even in disputes in which “trade” is the core issue, DSU adjudicators would find it useful to access specialized knowledge over competitiveness conditions of the *particular* market at issue – something that is typically the expertise of economists in subfields of industrial organization (for the case of manufactures) or agricultural economics.

There are, of course, a number of downsides to a system in which the DSU receives the bulk of its technical economic expertise from the outside. The first is that any learning (externality) that the economist generates by working on one case is not maintained within the Secretariat to be used in a subsequent dispute, given that the economist was hired one-off and will return to the private sector. The second is the issue of informational asymmetries, as it is more difficult for the Secretariat to judge the quality of outside candidates, to be able to monitor outside resources, and to ensure the confidentiality of

³⁴ See the discussion in Pauwelyn (2002). For arguments that scientific expertise should be included into panels themselves, see Iynedjian (2008).

³⁵ Economists most interested in being a full-time staff member at the WTO Secretariat are likely to be trained in the fundamental economics of international trade, given that that is the Secretariat’s “core” business. Professional experts in corporate finance is likely to be found in University business school programs, and are thus academics that typically attract very high salaries. Given that “finance” is not the core business of the WTO, it is not obvious that the top-level researchers in this field would be attracted to working in the Secretariat, given the lack of colleagues that would share their research interests.

³⁶ See, for example, the legal-economic analysis described in Bown and Trachtman (2008).

data, relative to its own staff. Furthermore and perhaps most importantly, just as the parties in any dispute frequently have difficulties agreeing on a set of panellists that they feel are sufficiently neutral ex ante, getting the parties to agree on outside experts in any given dispute would also be problematic.

4 Experiences and Lessons from Similarly-Situated Institutions

In this section we examine the experience of other relevant institutions that have injected “economic analysis” into their policymaking procedures. The DSU adjudication process has many lessons to learn from central banks, trade remedy investigating agencies, and competition authorities as these institutions operate in similar, politically sensitive environments and confront many of the same issues as the WTO Secretariat.

4.1 The lessons from central banks

While it may not seem like an obvious point of comparison, arguably there are lessons to be learned from the policymaking process of central banks such as the Federal Reserve in the United States, or more recently, the European Central Bank (ECB) for the European Union. First, out of recognition that central banks require political independence to give them credibility, successful central banks have an institutional structure that is divorced from day-to-day political pressure which allows them to better focus on their primary policy objectives – whether it be establishing a supply of money to the economy that keeps inflation low (ECB), or price stability combined with economic growth (Federal Reserve).

Second, central banks have recently undertaken a forceful debate about the benefits to providing additional transparency to the decision-making process that they go through to conduct monetary policy.³⁷ For central banks that seek to reduce costly fluctuations and volatility in financial markets, a claim is that institutional transparency improves the discipline of policymakers, as well as the public's

³⁷ An accessible account of this debate is Blinder et al. (2001). See also the Svensson (2001) comments on Blinder et. al (2001).

understanding of how policymakers are conducting monetary policy. Combined, this transparency serves to increase foundational support for the underlying monetary-policy regime. The policy mechanism for this additional transparency may include both the use of more consistent language in public announcements, but also providing greater accessibility to the tools that the policymakers are using in their decision-making processes via access to the minutes of their meetings, etc.

From the perspective of lessons learned from central banks, it is clear that the WTO's dispute settlement system faces a difficult balancing act in terms of information, privacy, and transparency. On one hand, DSU adjudication surely needs to maintain the privacy of individual firms that have the right to protect proprietary information, trade secrets, etc. Furthermore, the disputants in the cases are sovereign nations whose governments face political pressure and sensitivity at home – despite having signed off on the ability to delegate some of their sovereignty (perhaps for their own good) by agreeing to the terms of membership in the WTO system. Nevertheless, one public perception of the Secretariat, which lingers because of its concurrent role as a separate forum for trade liberalization negotiations, is that it is non-transparent. The Secretariat's initial reaction to any inquiry or challenge is frequently to make sure to protect the privacy of its Members. Surely this is rooted in the desire to protect and legitimize its own existence, but also to ensure that the Members ensure it with additional trust and responsibility going forward.

Nevertheless, non-transparency for the WTO, when it comes to DSU adjudication, can create problems when the legitimacy of the system requires that the players who have the most at stake from fair use of dispute settlement understand and appreciate the *process* by which rulings are made. For example, for the firms that engage in trade, the consumers that benefit from access to foreign goods and services via trade, or the governments that have to be politically responsive to various interests at home, all parties require information on how decisions are made, so they can form expectations and adapt their behaviour appropriately going forward. Transparency and fairness are also needed if we expect Members and their constituencies with a trading interest to place *more* trust in the system via additional policy commitments and the delegation of power to a rules-based WTO. From the perspective of the other extreme, an opaque

dispute settlement process could end up with massive distrust for how the DSU process "works" in the same manner that there is apprehension and misperception over how WTO negotiating rounds work (Fatoumata and Kwa, 2004).

Thus there are important arguments that DSU adjudicators' legal and economic should be reasonably transparent so that outsiders can understand and assess them. DSU adjudication also needs to be receptive to outside "influence" – though of the intellectual (learning) and not necessarily of the political kind. Consider, in particular, the nature of formal economic analysis. While the economics field has become increasingly scientific, it is also *evolving* as a science. What economists “know” is improving over time as models become better grounded in reality, and as competing theories face more accessible and available data to test between them. Since the DSU process is fundamentally about economic policymaking, DSU adjudicators must recognize not only how economic science can contribute to their task at hand, but also recognize its limits and how it is evolving, so that they do not stubbornly refuse to change their reasoning, mode of analysis, and argumentation as the precision and insight from economics improves over time. Sometimes the panellists and arbitrators will rely on WTO Secretariat-provided economic support that will turn out to be incorrect *ex post*, even though it may have been the best information that was available at the time. Such is the nature of economics as a science that relies on inference via statistical analysis of data and probability. It is better to be honest about it and prepared for it, rather than simply being surprised about it when it happens.

Finally, what is the track record for transparency of the economic analysis used by DSU adjudicators thus far? When it comes to Article 22.6 arbitrations in particular, it appears that some improvement is being made. Consider the measure of the number of pages of the arbitration reports, which we use a proxy for the level of detail the arbitrators provided when describing the methodology taken to determine the level of permissible retaliation.³⁸ Figure 1 provides some anecdotal evidence that

³⁸ While this is admittedly a crude measure, the number of pages of an arbitration report is a useful benchmark because each arbitration has essentially one task – determine the permissible level of retaliation. On the other hand, the number of pages of a panel report would not be a useful measure because the number of tasks asked of the

this has been going up over time, as the more recent cases of *US – Byrd Amendment* (2004) and *US – Internet Gambling* (2007) had public reports of 69 and 98 pages, respectively. While certainly not too much inference should be drawn from so few observations, it is worth noting that these reports are much more informative than the arbitration reports of the 1999-2002 period, which were less descriptively in the range of 24 (*EC – Beef Hormones*, US) to 47 pages (*EC – Banana Regime*, US).

Furthermore, in terms of the informative content found in the reports, there is arguably also an improvement along this dimension. For example, while the decision by the arbitrators in the most recent *US – Internet Gambling* case has become somewhat controversial amongst legal analysts and scholars – one of the causes of these groups’ ability to be critical is because the arbitrators were transparent in their approach and methodology. When outside analysts have such information, which was not as clearly the case in some of the earlier arbitrations in table 1, it is possible to provide useful critical analysis to inform the process of reflection for future arbitrations. Thus, the arbitrator's transparency in this and other recent cases is to be applauded – even if such transparency allows the external community to be more critical.

Another important insight that the transparency of the reports of both *US – Internet Gambling* and *US – Byrd Amendment*, is that the arbitrators not only clearly reveal their own methodological approach, but they also identify the approach that they would have *preferred* to adopt had they not been constrained by factors as diverse as data availability, cooperation of the parties, etc. Such information is also useful, of course, to future litigating parties seeking guidance on approaches most in line with the goals of DSU adjudicators.

4.2 The lessons from national trade remedy investigating agencies

The history of the antidumping investigations in the United States provides a second institution with important experiences from using economic analysis. The US antidumping process involves a history of economic policymaking bodies that have used economists, but in a way that illustrates the dangers from

panellists is endogenously determined by the number of claims submitted by the parties, which is not normalized across disputes.

misuse that have led to bumps in the road that the WTO Secretariat should anticipate *ex ante*. Two notable events stand out in particular.

First, in the late 1970s, out of concern that there was not sufficient political sensitivity to antidumping investigations, the US Congress moved the dumping determination out of the US Treasury and to the Department of Commerce. Irwin (2005, pp. 655-666) recalls the history behind this by noting that a 1979 US House Ways and Means Committee report stated,³⁹

" 'This Committee has long been dissatisfied with the administration of the antidumping and countervailing duty statutes by the Treasury Department. . . . Given Treasury's performance over the past 10 years, many have questioned whether the dumping and countervail investigations and policy functions should remain in the Treasury Department.' In its report, the House (1979, pp. 6–7) committee noted (without specifically naming the Treasury Department) that 'past deficient administration of these laws' was due to 'low priority and inadequate staffing levels'. The committee noted that the shift 'will give these functions high priority within a Department whose principal mission is trade. In the past, agencies have arbitrarily set a course of administration of these statutes contrary to congressional intent.' ”

Second, in the period from the mid-1980s through early 2000s, the injury investigation side of the US antidumping process underwent fluctuations in how to treat economic evidence— in particular, vis-à-vis the question of attribution, or whether dumped subject imports are a cause of domestic industry injury.⁴⁰ Durling and McCullough (2004) present an interesting perspective on the early use of economics

³⁹ The passages quoted from Irwin (2005, pp. 655-666) are taken from Committee on Ways and Means, US House of Representatives. Report on the Trade Agreements Act of 1979. House Report No. 317, 96th Congress, 1st Session. July 1979. See also Finger (1993).

⁴⁰ As J. Michael Finger (1981, p. 1270), the former Director of the Office of Trade Research at the US Treasury Department stated upon his exit with the dissolution of the office due to political events of the period, "[F]or a year I was privileged to observe both the deliberations of the [International Trade Commission] to reach decisions and the diligent efforts of their staff to produce a staff report. But there was no relationship of one to the other. Indeed, the

at the US International Trade Commission (USITC) via partial equilibrium simulation models.⁴¹ Such models rely on minimal data and assumptions about elasticity parameters to identify the effect of an increase in subject imports on the price and volume of domestic shipments. It is a method able to obtain some empirical basis for understanding the likelihood of injury.

Over time and with the arrival of new Commissioners, as well as political pressure from domestic industry groups and Congress, the USITC's interest in using such models waned, as they instead switched to relying on a less rigorous (and economically satisfying) approach typically referred to as a 'trends analysis' where the USITC examines simple correlations between imports and various measures of industry injury. Durling and McCullough (2004) also describe how the use of more sophisticated econometric regression models was introduced in some steel antidumping cases in the early 2000s. After the USITC offered an initially positive response, this support decreased as well under what was perceived as renewed political pressure sceptical of the utility of formal and rigorous economic analysis and evidence.⁴²

From the perspective of DSU adjudication, what lessons can be learned from the US experiences with antidumping over the last thirty years? First, the WTO Secretariat must be wary for inevitable political push-back by members – in particular, countries that will have had economic analysis used against them in a dispute. Of course, the main way for the DSU process to withstand this pressure is if adjudication decisions are intellectually “right” – i.e., supported by strong economic evidence that will stand the test of time, as well as sound legal reasoning. This is much more likely if the DSU process is transparent and the panellists/arbitrators methodologies are receptive to modification in the face of informed outside scholarship.

place where the commission's decision and the staff report came together was always the printshop. I notice that though its purpose was obscure, the staff report did serve a function-to misdirect and to obfuscate."

⁴¹ See also the discussion in Suomela (1993).

⁴² On the other hand, the USITC does at least report quite detailed information and much of the data that was used in the case, although not always fully disclosing the extent to which it relied on (some of the more rigorous forms of assessing) economic evidence in the reasoning behind its decision. While not perfect, such transparency does create some additional benefits to the system that would be usefully adopted by the WTO.

A final lesson from both central banks and the US antidumping process is that the economic analysis used within the process needs independence from political influences that might arise from within the Secretariat or its Members. This is not to suggest that DSU adjudication should be based only on economic analysis – it is simply recognition that if economic analysis is to be used to inform DSU decisions, the best use of economics will take place when it is based on science and as politically neutral as possible.

4.3 The lessons from competition authorities

Finally, we briefly turn to lessons from national authorities in antitrust, which typically focus on policies to maintain competitive conditions in domestic markets. While there are so many insights from antitrust that an entire chapter in this volume is needed to sufficiently expand on them (see Evenett, this volume), here we choose to highlight one particularly interesting point.

In section 2.3 we presented a discussion of the potential benefits to DSU adjudication if economists were to become, along with lawyers and diplomats, more equal collaborators in dispute resolution. In particular, we described the contributions that economists might provide beyond simply interpreting specific technical evidence provided by the parties, but also in the process of formulating the panellist/arbitrators “case theories.”

While such an approach has already been adopted by competition authorities in a number of countries, including the US, it is important to point out that this has not always been the case. In describing how this evolved, former Chief Economist in the Antitrust Division of the US Department of Justice, Lawrence White, describes it as,

"[e]conomists' direct involvement in antitrust extends back at least to the beginning of the twentieth century, although their role prior to the 1970s was often limited to simple litigation support -- in a sense, as "hewers of wood and haulers of water" -- rather than being able to

participate in the *development of case theories* and the formulation of policy" (White, forthcoming, emphasis added).

White (forthcoming) provides an interesting account of how economists – both inside and outside (via scholarship) the actual antitrust enforcement process in the US – served to influence policymaking, in ways that appear to have many parallels with the current evolution of DSU adjudication that we have described throughout this paper.

5 Providing Additional Economic Support to the DSU via the WTO Secretariat

Thus far this paper has proceeded in three steps. First, we identified ways in which economic analysis and expertise could be increasingly useful in DSU adjudication, and we used theory and empirical evidence to motivate why such economic expertise is necessary for the WTO system. Second, we examined how the DSU process – through panellists, arbitrators, and Secretariat-provided support staff – has historically introduced formal economic expertise and analysis. We concluded that there is an under-utilization of economic analysis, and that the Secretariat will likely need to add more going forward – for reasons including the increasing economic complexity of disputes and the fact that parties to disputes are using more sophisticated economic analysis both to construct arguments and to support them with technical economic evidence. Third, we drew lessons from other relevant institutions on some of the costs and benefits that they experienced from injecting economic analysis into their policymaking process.

Nevertheless, any infusion of economic analysis into the Secretariat, even if it is intended to improve support for and the quality of DSU adjudication, will affect the nature of the institution. In this section, we attempt to identify issues that may arise. This section is thus intended to provoke thought and discussion about likely changes and frictions (and the sources thereof) that may evolve if more economic analysis does begin to permeate the Secretariat.

We start by considering institutional-level issues, such as what kind of economists the Secretariat should add and where they should be placed. Then we turn to questions at the individual level that will

arise as Secretariat support for panels and arbitrations starts to employ a greater mix of legal and economic resources. Finally, we raise the question of what needs to be done to make those interdisciplinary teams more effective, and we speculate as to some of the key underlying differences between economists and lawyers that need to be overcome in order to ensure the quality of a collaborative model of DSU-support going forward.

5.1 Institutional reform: Staffing the Secretariat with the right economists

As a first step, the WTO Secretariat must think critically and attempt to forecast what type of economic expertise is most necessary to have “in house” – given its expectations on the evolution of future dispute settlement activity. For example, the set of economic expertise in house and the economic training required will be much different depending on whether the future caseload is dominated by agricultural disputes, trade remedy disputes, TRIPs disputes, environmental disputes, SPS/TBT-type disputes, subsidy disputes, etc. While it is difficult to forecast accurately where the future frictions will arise, the WTO Secretariat can certainly take into consideration the information learned from the level of commitments undertaken in any Doha Round agreement, the contentiousness between the parties at coming to these agreements (which may manifest itself in political backlash and potential policy backsliding), and other related factors.⁴³

As a second step, the Secretariat needs to make the decision of where to house any expanded capacity for analytically-trained economists. If an essential skill for any PhD-level economist employed by the Secretariat is his or her ability to provide technical economic support to DSU panels and arbitrations, there will be suggestions that they might be put directly into the Legal Affairs or Rules Division instead of Economic Research.

⁴³ Furthermore it should also be noted that we can expect that trade remedies such as antidumping and countervailing duties are likely to remain on the DSU docket for political economy and free-riding reasons. I.e., antidumping cases are more likely to be brought because they are specific to one country (even one firm) – which reduces the size of positive externalities associated with getting a WTO-inconsistent measure removed and hence the free rider problem of organizing a dispute in the first place.

For a number of reasons, any expansion of PhD-level economists within the Secretariat should continue to be through the Economic Research Division. First, other economists in Economic Research are much better positioned at evaluating the appropriate skill set and expertise of potential hires, as well as their professional performance once they are on the job. Second, it is important that all hired economists be encouraged to spend some of their professional time engaging in academic-level research, so that they continue to upgrade their technical skills as the outside economics profession evolves. Recall, the legal-economic teams of the parties in the disputes are providing increasingly sophisticated economic models and evidence, so the Secretariat support staff needs the time and resources to intellectually “keep up.” Third, hiring top-level economists is easier if they are in a workplace able to interact substantially with other researchers. The best people in this field are *less* likely to be interested in working in a Division in which their colleagues are mostly non-economists. This should thus be avoided, as the WTO Secretariat needs to attract the best candidates in the field.

A final point to note is that an expansion of economic resource capacity within the Secretariat will likely be accompanied by a more frequent turnover in economic staff. This is an endemic feature within the economics “job market” more broadly, although it is somewhat at odds with the overall across-Secretariat staffing culture, which is historically beset by extraordinary little staff turnover. While excessive turnover itself can be problematic (i.e., losing institution-specific knowledge), turnover in a continually evolving field like economics can also have positive aspects, as it will permit the Secretariat to more routinely have openings and thus continually be able to add more recently educated economists, who are individuals most likely to have knowledge on the latest technological advances, and who are best able to pass these on to colleagues. The main point is that the Secretariat should be prepared for the fact that with a larger economic support staff there will be more turnover in this staff, and it should see this as natural and plan to deal with it effectively.

5.2 Reform at the individual-level: Bridging the legal-economic communications gap

Because economists are trained in graduate programs and lawyers are trained in law schools, they have different expertise and comparative advantage. While it would solve all problems if the Secretariat could hire an “all-inclusive” staff – i.e., lawyers and economists with substantial in-depth cross-disciplinary training – unfortunately, there are very few graduate and legal programs that do an excellent job at training the *same* person in both subjects. In the short run, injecting more economic analysis and economists into the DSU support process will therefore also create costs, and in particular, the communications costs of two groups of people (legal staff and economic staff) who are not yet well-positioned to communicate with one another.

In order to identify ways to address these new communications costs, we begin by undertaking the admittedly sociological exercise of speculating as to some of the underlying causes of these communication difficulties. As it is important for the legal and economic support teams in these disputes to be able to communicate effectively with one another, to be more certain of their own and their teammates’ strengths and weaknesses, we then identify as a reform proposal the Secretariat’s need to put its own resources into appropriate additional training to bridge the legal-economics communications gap.

What are the likely sources of lawyer-economist communication difficulties? First, while economists rely on models and theory to influence their statements and decisions, lawyers aren’t easily convinced that the “reality” at the heart of a case can be easily boiled down to something so simple and mechanical. Furthermore, models are based on assumptions that implicitly impose a discipline on what one can say – limits that economists are used to having to live under, but which lawyers may not be. Finally, since lawyers are trained to base arguments on evidence, they may seek reassurances that even the assumptions that an economist is willing to make can be defended empirically.

For an economist to be effective, the first step is to recognize the need to spend time explaining to the lawyers what the benefits to the modelling process are, so that they increasingly buy into what it has to offer. Nevertheless, the economist will also need to be aware of and to clarify to lawyer teammates the “limitations” to economic models. I.e., what questions can the model not answer, or can the model only

answer with a low level of certainty? Such completeness and honesty is necessary to ensure the trust of the legal partners so that they do not get blindsided by arguments presented from either the parties' legal-economic teams, or the panellists/arbitrators themselves.

A second communications gap may be due to the differential training the teammates receive in a “research” program such as economics versus “professional” law program. First, economists are trained to be collaborative researchers with a purpose to seek and expand knowledge. Thus, their method of problem-solving is typically to discuss ideas with other economists, get their ideas rejected, have to rethink them and then present them again – all through an iterative process associated with the scientific method. In an actual dispute in which the Secretariat provides support of only one PhD-level economist who is not permitted legally to discuss the case with anyone outside of the team of lawyers or panellists, the economist is likely to feel uncomfortable, given prior experiences in collaborative research and the fact that he or she has no other economist peer with which to (legally) discuss their ideas or questions regarding complex economic problems. This suggests an important reform to Secretariat staffing on DSU support – legally clear at least two economists from the Economic Research Division to work on each case so that they can collaborate.⁴⁴

On the other hand, economists' training to use the scientific method may help complement the experience of lawyers on the legal-economic teams and improve the process along other dimensions. For example, research economists' experience of being at the centre of critical attention (when presenting their own research findings) may allow them to better grapple with the reality that DSU decisions establish an evolving set of law that must be continuously debated and revised, in light of many factors. From this perspective, economic scientists perceive the set of laws coming out of DSU rulings much like

⁴⁴ There are also additional lessons to be learned from central banks along this dimension. Some central banks have external consultants (typically academics) who provide valuable advice to internal permanent staff on the process of understanding models, and the consultants answer questions related to frontier-level methodologies for modelling. Nevertheless, such consultants are never privy to any confidential information nor the underlying data in the central banks' actual forecasts. It is conceivable for the WTO to adopt a similar approach for disputes that involve complex economic models submitted by the parties - the WTO's Economic Research Division might hire consultants to advise its internal staff on modelling decisions and help provide interpretations of basic questions, without having access to any of the actual underlying data submitted by the parties. We thank Meredith Crowley for making this point to me.

an ongoing expansion of knowledge that is continually being challenged by others in order so that it is further refined.⁴⁵ Indeed, as the Sutherland report also notes along this dimension,

"Finally, it is interesting to note how extensively the WTO dispute settlement system is being treated in literature from non-governmental sources. There is an enormous amount of scholarly and policy-centered literature about the dispute settlement system. This is evidence of the general and public interest in the subject, and in the recognized importance and, perhaps, value of the system. Individual cases are debated at length (similar to attention received by decisions of national courts). This activity, either of scholars or of intelligent and pointed argumentation by other perceptive observers, can play a constructive and complementary role in support for a rules-based institutional framework for international trade, just as similar activity plays such a role within nations." (Sutherland et al, 2004, p. 59)

Perhaps ironically, introduction of more PhD-level research economists to support the DSU process may help contribute such a positive effect that the Sutherland report envisions. This derives from the fact that economists typically have much more experience in learning from this type of external "feedback" (criticism) than either their peers in the legal support staff or the panellists/arbitrators themselves.⁴⁶

Given the resource constraints of the Secretariat, there is also the benefit of obtaining this "knowledge" from outside expertise via academics or other researchers. Looking for useful information and relying on the efforts of others is a particular strength of PhD-trained economists. This may be less

⁴⁵ For example, given that our (broad) understanding of the fundamentals of the global economy are changing, the rules of the world trading system are evolving, the scientific techniques that allow us to evaluate policies and economic effects are changing, there is going to be an inevitable and ongoing process of revising DSU case law. It will be natural that DSU panellists, arbitrators, and Secretariat legal and economic staff that do much of the underlying support work in these cases will have their rulings challenged and criticized on intellectual grounds – by future parties, as well as academics.

⁴⁶ Economists may be better prepared for this criticism, unless it were the case that either the panellists/arbitrators or legal support staff had prior judicial experience and were used to being the focus of such critical commentary. While

common among professional lawyers who may be less familiar with the need to continually improve one's technical skills (e.g., mathematical or empirical modelling) – something that is mandatory to remain relevant within the economics profession.

6 Conclusions and Policy Recommendations

The WTO's DSU adjudication process inherently involves bringing about changes to Member nation's economic policies. Therefore, panellist and arbitrator's decisions and rulings should be informed by the best available economic analysis and support that the Secretariat can provide.

Our analysis concludes that the current use of economic analysis in DSU adjudication is insufficient. To that end we offer a number of proposals for reform we summarize here. First, in each dispute, at least one of the three panellists/arbitrators should have formal graduate training in economics – in order to complement the other legal and diplomatic experience that is the expertise of majority of constituted panels. Second, the default staffing rule for WTO Secretariat support team to panels and arbitrations should be at least one PhD-level economist from the Economic Research Division, and this allocation should be made at the inception of the panel so that the economist is made in an equal, collaborative partner in Secretariat support process. Furthermore, at least one other economist from the Division should be legally cleared to also work on the case, so that the lead economist has other economic peer colleagues with which to collaborate and share ideas regarding complex economic evidence and party arguments.

In order to provide this additional staffing of economists to support DSU panels and arbitrations, our third proposal is that the Secretariat significantly expand the staff of PhD-level research economists and house them in Economic Research. However, it is critical for the institution that any expansion of economic staff target individuals with important complementary characteristics beyond simply a PhD – including understanding the overall political-legal-economic purpose of the WTO agreements,

some of this experience may have come from being a repeat panellist, it is unlikely that either of these groups' prior experience before becoming part of the DSU adjudication process was in the "judicial" realm.

appreciating the critical complementary roles of lawyers and diplomats (politics) in the DSU process, knowing the limits of what technical economic analysis can offer, as well as having “good judgment.” Fourth, once this economic staff has been expanded, in order to effectively complement the legal and diplomatic expertise found in current DSU adjudication, the Secretariat will need to expend substantial resources to integrate the "legal-economic" support teams by improving their communication abilities and respective skill sets.

Finally, the Secretariat should continue to improve transparency regarding how economic analysis is being used in DSU adjudication, following the model of central banks. After injecting more economic support to panels and arbitrations, the Secretariat should also continue to provide its economists with political independence. The Secretariat must also anticipate the likely political backlash that may arise from the Membership and thus develop safeguards to prevent politics from disrupting the positive contributions that increased economic analysis can mean for the DSU process. The Secretariat staff will then be better positioned to interact with outside resources – in particular, informed critical commentary from the scholarly community – to continually refine the role of law, diplomacy, and economic analysis used in the DSU adjudication that forms the enforcement backbone of the WTO system.

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Table 1. The Arbitrators in the Disputes

Dispute	Arbitrator	Primary Employer at time of Arbitration	Education
<i>EC – Banana Regime</i> , US, 1999	Stuart Harbinson (Hong Kong)	Permanent Representative of Hong Kong to the WTO	MA, University of Cambridge
	Kym Anderson (Australia)	Professor, University of Adelaide	PhD in economics, Stanford University
	Christian Haberli (Switzerland)	Swiss Federal Department (Ministry) for Economic Affairs	PhD in law, University of Basel
<i>EC – Beef Hormones</i> , US and Canada, 1999	Thomas Cottier (Switzerland)	Professor, University of Bern and World Trade Institute	Dr. juris LLM, University of Bern Law School
	Peter Palecka (Czech Republic)	Permanent Representative of the Czech Republic to the WTO	Graduate of the University of Economics, Bratislava
	Jun Yokota (Japan)	Deputy Director-General, Economic Affairs Bureau, Ministry of Foreign Affairs, Japan	Undergraduate coursework in law, University of Tokyo
<i>EC – Banana Regime</i> , Ecuador, 1999	Stuart Harbinson (Hong Kong)	Permanent Representative of Hong Kong to the WTO	M.A., University of Cambridge
	Kym Anderson (Australia)	Professor, University of Adelaide	PhD in economics, Stanford University
	Christian Haberli (Switzerland)	Swiss Federal Department (Ministry) for Economic Affairs	PhD in law, University of Basel
<i>Brazil – Aircraft Subsidies</i> , Canada, 2000	Dariusz Rosati (Poland)	Professor, Warsaw School of Economics; Monetary Policy Council, Republic of Poland	Masters in economics, Warsaw School of Economics
	Akio Shimizu (Japan)	Professor, Waseda University School of Law (Tokyo)	LLM, Waseda University School of Law (Tokyo) and Yale Law School
	Kajit Sukhum (Thailand)	Commercial Counsellor, Permanent Mission of Thailand to the WTO	PhD in agricultural economics
<i>US – Foreign Sales Corporations</i> , EC, 2000	Crawford Falconer (New Zealand)	Chief Trade Negotiator, New Zealand Ministry of Foreign Affairs and Trade's (MFAT)	Victoria University of Wellington, London School of Economics
	Didier Chambovey (Switzerland)	Deputy Permanent Representative to the WTO for Switzerland	PhD in economics, University of Lausanne

	Seung Wha Chang (South Korea)	Professor, Seoul National University	SJD, Harvard; LLM Harvard University and Seoul National University
<i>US – AD Act of 1916</i> , EC, 2002	Dimitrij Grear (Slovenia)	Counsellor, Permanent Mission of Slovenia to the WTO	BA, Law, MA in Social Anthropology, University of Ljubljana
	Brendan McGivern (Canada)	Senior Legal Adviser, Canadian Mission to the WTO	LLB, University of British Columbia
	Eugeniusz Piontek (Poland)	Professor, University of Warsaw and Lawyer, Piontek, Rymar, Ślęzak, Wiśniewski and Co.	NA
<i>Canada – Aircraft Subsidies</i> , Brazil, 2002	William J. Davey (US)	Professor, University of Illinois College of Law	JD, University of Michigan
	Seung Wha Chang (South Korea)	Professor, Seoul National University	SJD, Harvard; LLM Harvard University and Seoul National University
	Usha Dwarka- Canabady (Mauritius)	Mission of Mauritius to the WTO	NA
<i>US – Byrd Amendment</i> , Brazil, Canada, Chile, EC, India, Japan, Korea, Mexico, 2004	Luzius Wasescha (Switzerland)	Ambassador, State Secretariat for Economic Affairs (SECO), Switzerland	Dr in Law, University of Lausanne
	M. Maamoun Abdel- Fattah (Egypt)	Advisor to the Minister, Ministry of Economy and Foreign Trade, Egypt	NA
	William Falconer (New Zealand)	Company Director, Meat Industry Association of New Zealand	LLB (Bachelor of Laws), Victoria University of Wellington, New Zealand
<i>US – Internet Gambling</i> , Antigua, 2007	Lars Anell (Sweden)	Research Council on Working Life and Social Science (FAS), and former Swedish Ambassador to the WTO	BA, Stockholm School of Economics and University of Stockholm
	Mathias Francke (Chile)	Permanent Mission of Chile to the WTO	JD, Universidad Católica de Chile
	Virachai Plasai (Thailand)	Director-general of the Department of International Economic Affairs of the Ministry of Foreign Affairs, Thailand	NA

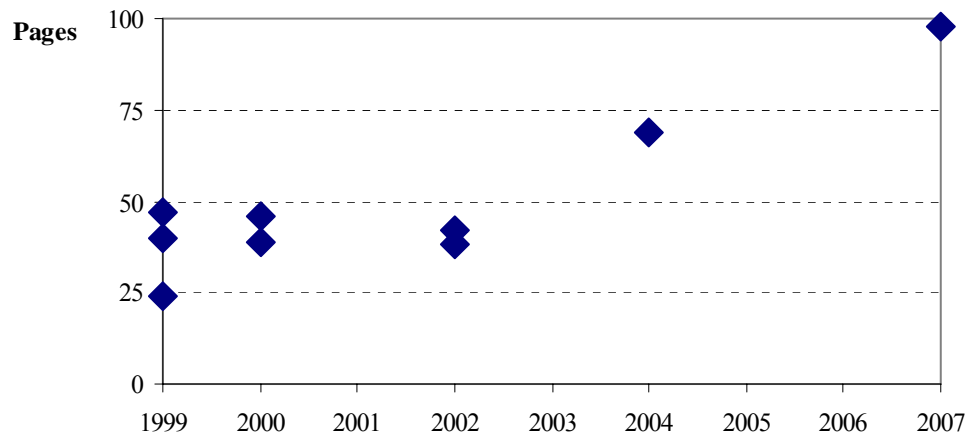
Sources: internet searches and personal correspondence, available from the author on request. “NA” indicates not available.

Table 2. WTO Members, Disputes, and the Distribution of Secretariat Staff Positions within Various Divisions, 2000-2007

	2000	2001	2002	2003	2004	2005	2006	2007
Economic Research*	8.0	8.0	8.0		8.0	8.0	8.0	8.0
Legal Affairs Division	15.0	17.0	16.5		17.0	17.0	16.0	16.8
Rules Division	13.0	16.0	16.0		17.0	18.0	19.0	19.0
Agriculture and Commodities Division	15.0	16.0	16.0		16.0	16.0	16.0	17.0
Intellectual Property Division	12.0	13.0	13.5		15.5	14.5	14.0	13.0
Trade in Services Division	15.0	16.0	15.0		16.0	16.0	17.0	17.0
Appellate Body	9.0	13.0	13.0		14.0	15.0	15.0	15.0
Trade Policies Review Division	29.5	29.5	34.5		34.0	35.0	36.0	37.0
Informatics Division	16.0	16.5	17.5		28.0	33.0	37.0	38.0
Language Services & Documentation	137.0	138.0	138.0		144.0	147.0	160.0	162.5
Other Divisions	269.5	269	272		298.5	296	297.5	294.2
Total WTO staff	539.0	552.0	560.0		608.0	615.5	635.5	637.5
Members**	135	140	143	144	146	148	149	149
New Requests for DSU Consultations	34	23	37	26	19	12	20	13
Stock of DSB-adopted Panel Reports	38	55	70	82	98	106	120	122
Stock of DSB-adopted Appellate Body Reports***	29	40	51	58	71	77	87	90

Sources and notes: WTO Secretariat staff data based on the table "Distribution of staff positions within the WTO's various divisions" in the *WTO Annual Report* for years 2000 through 2007. This table is missing data from 2003 because the relevant table was omitted from that year's Annual Report. *Data is for PhD economists within the "Economic Research" Division since the staff coverage changed a number of times over this period - e.g., at various points including Statistics, Library Services, and Development. The implication for this table is that data from the *WTO Annual Report* tables neither reflects the number of PhD Research economists in the Division nor is it consistently defined (and thus comparable) over time. Information on stock of adopted Panel and AB reports is taken from Horn and Mavroidis (2006b). **WTO Membership as of 1 January. ***Appeals of Panel Reports only and not Article 21.5 actions.

Figure 1. Page Length of DSU Article 22.6 Arbitration Reports, 1999-2007



Source: compiled by the author from Article 22.6 reports identified in table 1.