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Compliance with WTO Dispute Rulings

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Abstract

Country pairs such as the US and the EU meet several times in front of the WTO dispute settlement body. Sometimes they resolve their dispute quickly whereas sometimes they do not succeed in solving the dispute at all. This paper tries to answer the question why the same countries seem to have no difficulties solving one trade dispute while they do not succeed in solving others. I argue that it is crucial to look at the interaction between dispute complexity and the domestic industry concerned to explain the time until compliance with adverse WTO dispute rulings is achieved.

Using a Cox duration model to analyze 96 compliance cases, the results confirm that disputes, which involve either non-tariff barriers to trade or the agricultural sector, significantly prolong the time it takes a country to bring its trade measures back into congruence with WTO law. This is in line with the idea that governments can rely on complex instruments for trade protection to significantly stretch out the compliance period allowing a politically relevant sector to enjoy the benefits of trade protection for a longer time. In this sense compliance with adverse rulings is an important thing to study since affected industries might not be able to prevent a WTO dispute from happening but they can well influence their government to give them more time to adapt to the new situation.

International Relations scholars and trade experts agree that the World Trade Organization (WTO) is one of the most effective global institutions. They also agree that the WTO dispute settlement procedure is one of the key elements contributing to this success (Busch and Reinhardt 2002; Palmeter 2000; Steger and Hainsworth 1998) and to the process of legalization in the global trading system more generally. Empirical support for this claim relies heavily on data that captures formal characteristics of the dispute settlement process itself, such as dispute initiation and escalation and Panel or Appellate Body rulings (Busch and Reinhardt 2002; Rosendorff and Milner 2001; Sattler and Bernauer 2010, Forthcoming). Quantitative studies rarely focus on what happens after the settlement has occurred[1]. Given that available data on GATT dispute settlement suggests that almost a third of defendants may not have complied with adverse rulings (Busch and Reinhardt 2002, 2003), the examination of whether WTO rulings are in fact implemented is deemed necessary in assessing the institution's effectiveness.

Recent literature on international organizations suggests that governments often use the pressure generated by the involvement of international institutions as a cover to push trough unpopular domestic economic reforms (Vreeland 2003). In the context of the WTO, this argument implies that governments are more likely to delegate those cases to the WTO that involve high political cost. More precisely, it is argued that governments select those cases for WTO litigation that involve highly mobilized sectors demanding strong protection (Allee and Huth 2006; Davis 2008, 2009). Governments then use the WTO ruling as a 'political cover' to impose policy change they otherwise would find hard to implement. Although these previous studies do not explicitly deal with the compliance stage of the WTO DSM, it follows from their argument that governments should implement adverse rulings more or less swiftly. Since the ruling of the WTO provides a political cover for a policy change a government would have wanted to implement anyways why delay compliance? Interestingly, however, countries tend to exhibit very different compliance behavior across disputes, since the same trading partners have no troubles solving one dispute while they delay compliance in another dispute. This is puzzling in the sense that if states needed political cover to implement policy change they should not show much variation in their compliance behavior across disputes.

In this paper I argue that the influence of domestic groups might reach beyond what has been observed so far in the literature since domestic sectors can influence their government to delay implementation of a ruling depending on how political influential they

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[1] Hofmann and Kim (2012) is a notable exception. There also exist some case study analyses discussing the implementation of specific WTO dispute rulings (Bernauer 2003; Bown 2009).

are. In line with Kono (2006) and Park (2012), I argue that governments can rely on complex instruments for trade protection such as safety regulations to significantly stretch out the compliance period allowing this politically relevant sector to enjoy the benefits of trade protection for a longer time. In this sense compliance with adverse rulings is an important thing to study since affected industries might not be able to prevent a WTO dispute from happening but they can well influence their government to give them more time to adapt to the new situation.

Empirically, this paper examines the extent of WTO members' compliance by analyzing the time it takes a country to comply with adverse dispute rulings. Using a Cox proportional hazards model on a new dataset that includes all WTO disputes that were filed until 2006, the results show that more complex disputes significantly prolong the time it takes a country to bring its trade measures back into congruence with WTO law. Furthermore, depending on the sector related to the disputes, governments seem to delay compliance accordingly. Especially, disputes that are associated with higher reputational costs seem to tempt governments to prolong the time until compliance.

Existing Research

A dispute in the WTO generally arises if one or more countries perceive another country's trade policies or actions as violating WTO rules (WTO 1994). As a first step consultations between the disputing parties can be requested with the intention of settling their differences bilaterally. If the parties cannot reach an agreement by themselves the complainant country can request the establishment of a Panel. The Panel reviews the dispute under consideration and issues a report, which then needs to be adopted by the WTO Dispute Settlement Body (DSB). The Panel report is automatically adopted unless the DSB decides by consensus not to do so, or if one or both parties appeal the Panel ruling (WTO 1994).

Therefore, compliance with a WTO dispute ruling only becomes meaningful when a Panel or Appellate Body report has been adopted stating that the defendant country has indeed violated WTO law. After the adoption of the report, the defendant country is given a reasonable period of time to implement the Panel's recommendations. If the defendant is unable or unwilling to comply within the given time period, negotiations over compensation for the complainant will occur. As a final step, if the parties cannot agree on a compensation scheme, the defendant country can ask the DSB to enact retaliatory measures, which entails the suspension of concessions or other obligations to the complainant country (WTO 1994).

The literature dealing with WTO disputes is plentiful. Most studies focus on the design of the WTO dispute body in comparison with its predecessor under the GATT system and on WTO dispute initiation and escalation (Busch and Reinhardt 2002; Guzman and Simmons 2005; Rosendorff and Milner 2001; Sattler and Bernauer 2010). Very few studies, however, explicitly take compliance with WTO Panel rulings into account. Hofmann and Kim (2009) is a notable exception in that they analyze the electoral motives of governments to delay compliance with certain WTO disputes. This study differs in various respects from the one by Hofmann and Kim (2009). While Hofmann and Kim (2009) also focus on sectoral pressure to explain the duration of compliance with WTO disputes, they consider the size of the sector to be the crucial element. In contrast, this study conceptualizes the importance of a sector through its ability to organize and pressure government something that should have little to do with its size (e.g. agricultural sector in the dispute on Beef Hormone case – DS26). More importantly, however, this study relies on the interaction between the sector involved in the dispute and the complexity of the trade instrument used to protect this industry to explain the timing of compliance.

In general, two main approaches in the international relations literature have been advanced to analyze a country's compliance with its international obligations, namely the enforcement and the managerial approach[2] (Chayes and Chayes 1993; Downs, Rocke, and Barsoom 1996; Tallberg 2002; Underdal 1998).

The enforcement approach perceives countries as rational actors who would comply with their international obligations only if the costs of defection outweigh the benefits from non-compliance. In this view compliance is reached by making defection costlier, for example through monitoring and enforcement mechanisms such as sanctions (Downs, Rocke, and Barsoom 1996; Tallberg 2002). The enforcement approach would consequently predict that countries would delay costly compliance with adverse Panel rulings as long as possible, and compliance should occur only if the complainant country can enforce compliance through compensation or retaliation.

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[2] A further strand of the literature analyzes how the specific design of the institution or agreement affects compliance (Abbott and Snidal 1998, 2000; Koremenos, Lipson, and Snidal 2001). With regard to the WTO, several studies evaluate how the change in design from the GATT dispute resolution system to the WTO dispute settlement body affects compliance (Rosendorff 2005; Zangl 2008). However, since this paper proposes to focus its analysis on compliance with WTO dispute rulings and since the design of the institution is constant, this strand cannot explain the variation in compliance with WTO dispute rulings.

In contrast, according to the managerial approach, non-compliance with international agreements is the exception because countries find it in their best interest not to violate agreements to which they have committed themselves. When non-compliance occurs, it occurs unintentionally because of rule ambiguity and/or capacity limitations (Chayes and Chayes 1993; Underdal 1998). Compliance can therefore be increased through transparency, rule interpretation and capacity building. Hence if WTO Panel rulings can serve as a means to clarify the interpretation of the rules and to increase the transparency of the system, then according to the managerial approach countries should not only comply with adverse WTO Panel rulings but they should also comply quickly as long as they have the capacity to do so.

From this short overview follows that the predictions of these two approaches regarding compliance are contradictory. Whereas the enforcement school predicts that compliance should be delayed as long as possible, the managerial school suggests that countries should in principle comply with their obligations unless capacity constraints limit their ability to do so. Moreover, only the managerial approach makes its predictions with regard to compliance at least partially contingent upon domestic political factors and dispute characteristics. Although, the managerial approach suggests that countries should have a general tendency to value their international commitments, factors such as a country's capacity or the complexity of its international obligations can in principal lead to non-compliance. Building on this idea, I argue that without including domestic as well as dispute characteristics into our analysis we are limited in our understanding of states' compliance with their international obligations.

Domestic Reasons for Non-Compliance

Country pairs such as the US and the EU meet several times in front of the WTO dispute settlement body and sometimes they resolve their dispute quickly whereas sometimes they do not succeed in solving the dispute at all. This suggests that we cannot merely follow the literature on dispute initiation and escalation (Busch and Reinhardt 2000; Busch and Reinhardt 2002; Sattler and Bernauer 2010) and rely on country characteristics that are constant across disputes (such as the political system or a country's power) to determine the timing of compliance with adverse Panel rulings. Instead we also need to take the specificities of the respective dispute into account to understand whether a country will comply quickly or not at all with its obligations under the WTO dispute settlement. Consequently, I posit that a country's compliance with WTO verdicts is affected by both the sector associated with the dispute at hand and the complexity of the instrument chosen to protect this industry.

According to the literature on international organizations, one reason why governments involve certain international institutions, especially the International Monetary Fund and the World Bank, in their internal affairs is to use the conditionality imposed on them by the respective organization in order to implement policies that they are unable to implement independently (Vreeland 2003). By blaming an international lending institution such as the IMF or the World Bank, governments can introduce important policy changes without risking electoral punishment. In the context of the WTO, a similar argument suggests that governments tend to delegate those cases to the WTO that involve high political cost, hence those cases that involve highly mobilized sectors demanding strong protection (Allee and Huth 2006; Davis 2008, 2009). Governments can then use the WTO ruling as a 'political cover' to implement policy change they otherwise would find hard to enforce. While these previous studies do not explicitly deal with the compliance stage of the WTO DSM, their arguments imply that governments should implement adverse rulings more or less swiftly. Since the ruling of the WTO provides a political cover for a policy change a government would like to implement but has so far been unable to push through why delay compliance?

In contrast, I argue that the influence of domestic groups might reach beyond what has been observed in the literature so far since domestic sectors can influence their government to delay implementation of a ruling depending on how political influential they are. In particular, they can use complex trade instruments such as safety regulations to shield their industry from competition. In line with Kono (2006) and Park (2012), I argue that governments can rely on complex instruments for trade protection to significantly stretch out the compliance period allowing this politically relevant sector to enjoy the benefits of trade protection for a longer time. In this sense compliance with adverse rulings can be seen as an indirect measure of how well certain sectors can lobby their government. While affected industries might not be able to prevent a WTO dispute from happening they might well influence their government to give them more time to adapt to the new situation.

Sectoral Pressure for Non-Compliance

As outlined above, the time until compliance with an adverse WTO ruling is restored should depend on the types of interests able to mobilize and influence governmental actions according to their own parochial interests (Goldstein and Martin 2000; Grossman and Helpman 1994; Hofmann and Kim 2009). Regarding the implementation of WTO verdicts, the interest groups, which are most likely to lobby government, are the ones representing the industries affected by a potential liberalization of the relevant trade policy (Allee 2004). Thus,

depending on the sector affected, governments' motivations and their willingness and ability to cooperate with trading partners will vary.

Davis and Shirato (2007), for instance, show that governments' decisions during trade conflicts are influenced by sector-specific factors. Whether an industry involved in a trade dispute can generate more or less pressure on the government than any other sector involved in a trade dispute could be a function of the economic importance for the respective country (Francois, Horn, and Kaunitz 2008). However, its power to influence should mostly depend on other factors, notably the respective sector's ability to organize politically, form alliances with other stakeholders, publicize the dispute, and lobby for or against trade-restricting policies or practices (Olson 1971). The EU-US dispute over genetically modified crops (DS 291, 292 and 293) is one example. In that case, a heterogeneous but very large and well-organized political coalition among European farmers, consumer organizations, environmental groups, and left parties has emerged. Even though the importance of the issue in purely economic terms is quite modest, the highly politicized nature of the dispute has made it virtually impossible for the European Union and its member states to accommodate US requests to open Europe's market to GM-crops (Bernauer 2003; Bernauer and Meins 2003).

How is the sector protected?

Following a recent trend in the IR literature, I argue alongside Kono (2006) and Park (2012), that governments have various options available to protect their industries. They can use simple tariff or quota regulations or they can rely on more complex instruments for trade protection such as subsidies or technical barriers to trade. Depending on the type of instrument used it should be more or less clear to judge their consistency with WTO rules. For some measures (e.g. tariffs or quotas), it should be straightforward to assess their conformity with WTO law and thus to adjust them given a potential negative ruling by the WTO dispute mechanism. For other measures, however, it should be more difficult to assess their conformity with WTO law. In the case of disputes over environment, health and safety issues, for example, it can be very complex to determine whether the underlying environmental or health safety concern justifies a trade barrier according to WTO rules.

Furthermore and most important to my argument, complex types of trade instruments are not as easy to bring into compliance with an adverse ruling. On average, complex cases should require a more substantial change in a country's policies since they usually do not only ask for a small change in e.g. tariff levels but instead for a more comprehensive modification

of a country's trade laws. While clear and straightforward rulings should be complied with quickly, complex and intricate rulings should need more time to be implemented. Hence a high level of complexity should thus prolong the time until compliance is reached.

Forward-looking governments should thus use more complex trade instruments if they want to grant strong protection to a certain industry. By using complex instruments a government could significantly stretch out the compliance period allowing the politically relevant sector to enjoy the benefits of trade protection for a longer time. This is in line with Kono (2006), who shows that democratically elected governments choose an 'optimal level of obfuscation' with regard to their mix of transparent liberalized trade policies and protectionist non-transparent technical barriers to trade. In particular, he argues that governments tend to liberalize well-traceable tariff levels in order to keep consumers and thus voters happy whereas they tend to use less well-traceable non-technical barriers to trade to grant protection to certain interest groups, which are important to a government's survival in office.

Taking the two parts of the argument together, I expect that governments should use complex trade instruments to protect pivotal sectors from trade liberalization. Hence WTO disputes involving both complex instruments as well as important domestic industries should need a longer time until compliance with an adverse ruling is observed.

Empirical Analysis

In order to test the empirical implication of my theoretical arguments on the timing of countries' compliance decisions, I rely on a Cox proportional hazards model. This model was chosen since it does not require the parameterization of the baseline hazard, as do other duration models. Furthermore, since proportional hazards assumption tests show that my model specification meets the proportional hazards requirement[3], I consider the model to be an adequate choice to test whether sectoral importance and dispute complexity increase the time of compliance with adverse WTO rulings. In particular, the hazard rate as specified by the Cox Model for the ith observation is

$$h_i(t) = h_0(t) \exp(\text{ß}' \: \mathbf{x})$$

where $h_0(t)$ is the baseline hazard function and $\text{ß}' \: \mathbf{x}$ are the regression parameters and the covariates (Box-Steffensmeier and Jones 2004).

Most existing studies on the implementation of GATT/WTO verdicts rely on the coding of Hudec (1993), which consists of three categories, namely, whether the defendant

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[3] In particular I use a test that regresses the Schoenfeld residuals on time to evaluate whether there is a non-zero slope.

liberalized the contested policy fully, partly, or not at all.[4] This measure is valid at every stage of the dispute settlement process, which implies that there need not be a WTO Panel ruling. Consequently, this measure does not capture whether the contested policy has been brought into compliance as specified in the particular Panel ruling. However, to measure compliance as perceived in this analysis, we need to focus only on those cases that actually reached the stage of a Panel ruling so as to relate compliance to the content of these rulings.

Hence I use a novel data set on trade disputes and their characteristics that was collected from WTO documents. For each dispute, we obtained information on the defendant and complainants, and at which stage in the WTO DSM the dispute ended. Furthermore, we assigned to each dispute the corresponding economic sector and identified which trade policy instrument was used to protect this industry (e.g. tariffs or subsidies). The first disputes enter the WTO system in 1995. The data set includes all disputes for which a request for consultations was filed until 2006.

The relevant compliance cases were then determined as those cases in which a Panel or the Appellate Body issued a ruling against the defendant[5]. If the ruling did not ask the defendant country to bring its trade policies back into coherence with WTO law, I did not consider this case as a compliance case. This leaves me with 96 compliance cases for which I could collect all relevant information.

The dependent variable is then calculated as the time from the Panel/Appellate Body ruling until compliance is achieved. This is the case when the complainant country officially acknowledges that the trade policies of the defendant country have been brought back into congruence with WTO law.[6] However, since until today not all disputes have reached a mutually agreed upon solution, I correct the model for right censoring.

Independent Variables

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[4] A notable exception is Kim and Hofmann (2010) who also rely on a newly coded dataset.

[5] If one of the countries appealed the Panel ruling, I considered the Appellate Body report as the final ruling to this case.

[6] Relying on the fact whether the complainant country officially acknowledges that the trade policies of the defendant country have been brought back into congruence with WTO law to measure actual compliance leaves room for the possibility that there was no actual policy change but that the parties merely say so. However, since fighting a WTO dispute is costly I do not expect the complainant to "give up" after having come so far by acknowledging compliance when in fact there is none. In contrast, using this coding has the advantage that it does not rely on any personal assessment of whether the contested policy has been changed as mandated by the ruling, but instead relies on the assessment of the disputing parties themselves. This assessment tells us whether they consider the policy change as sufficient.

To proxy how much influence the industry related to the respective dispute can exert, I coded the sector– agricultural, complex manufacturing, simple manufacturing and various – to which the dispute refers. In line with the existing literature, I expect disputes involving the agriculture, resource extraction and mining sector to last longer than disputes on manufacturing (Bernauer 2003; Bernauer and Meins 2003; Davis and Shirato 2007; Elsig and Stucki 2012). The reasoning is that especially the agricultural sector has a strong ability to organize politically, form alliances with other stakeholders, publicize the dispute, and lobby for trade-restricting policies or practices. Hence I include a dummy variable measuring whether the dispute in question involves the agricultural sector.[7]

A second dummy variable captures whether the dispute in question refers to a complex trade-protective instrument, such as technical barriers to trade, anti-dumping, subsidies or various other instruments, in contrast to tariffs and quotas, which I assume to be least complex. Coding tariff and quota cases as non-complex follows a similar logic as the coding by Guzman and Simmons (2002). Analyzing dispute escalation the authors argue that tariff and quota cases should by easiest to settle since they refer to a continuous issue, in contrast e.g. to a ban, which has an `all or nothing' character.

To capture the interaction effect implied by the theoretical argument, I include the product of the two dummy variables agricultural sector and complex trade instrument.

Control Variables

Two country variables are included to measure a country's power, which has been highlighted by previous research to be crucial when it comes to the *initiation* of WTO disputes since powerful countries seem to have an advantage in using the dispute settlement system to advance their own interest(s) (Busch and Reinhardt 2003; Davis and Blodgett Bermeo 2009; Guzman and Simmons 2005). Moreover, there is no reason to believe that this advantage should disappear after the issuing of a Panel report. Since the WTO system allows for retaliation if the defendant country does not eventually comply with an adverse ruling, powerful countries possess a clear advantage because their potential to retaliate clearly outweighs the potential of less powerful countries (Sattler and Bernauer 2010). Hence if the defendant country is less powerful than the complainant country, we should expect compliance to arise faster, and vice versa. Retaliatory power is measured using the difference

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[7] The results are essentially the same if I include dummies for simple and complex manufacturing respectively and leave out the agricultural sector as a baseline category. However, since I do not have a strong theoretical expectation as to the difference in duration time between simple and complex manufacturing, I consider including the agricultural sector as the most straightforward test of my argument.

in GDP between the defendant and complainant country and relative export dependence of the two countries. The latter is measured as the difference between the percentage of the complainant's total exports that go to the defendant and vice versa and captures which country is relatively more dependent on exports to the other. Data on GDP are from the Penn World Tables database (Heston, Summers, and Aten 2009) and country-level trade data are from Barbieri et al. (2008).[8] Both variables are log-transformed.

In addition, I use several variables that vary at the dispute level. First, I include the number of agreements cited in the request for consultations to capture how extensive the implementation of the respective ruling should be for the defendant country. The reasoning is that the more agreements are covered by a particular dispute, the more extensive the implementation of a Panel ruling becomes. Second, I control for the fact whether the dispute is between the EU and the US since some of their disputes have dragged on for very long times. Finally, I include the tariff level with which the corresponding sector is currently protected in both the defendant and the complainant country as another measure of how influential the domestic industries are. Table 1 presents the summary statistics.

Results

Table 2 shows the results of the Cox proportional hazards model. The results suggest that those disputes that involve the agricultural sector but are not protected by a complex trade instrument are associated with significantly longer compliance duration than those disputes that involve manufacturing and no complex instruments. In percentage terms, the model implies that the chance of compliance is 86 percent lower for agricultural disputes with non-complex trade barriers.[9] This result is a first indication in favor of my theoretical argument that governments do indeed grant influential sectors more time to comply with an adverse ruling.

If we turn to the variable measuring whether a complex trade instrument is used we see in line with the above made theoretical argument that disputes that do not involve the agricultural sector and that use non-tariff barriers to trade significantly increase the duration

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[8] I use data from the IMF DOTS for Hong Kong, which is not included in Barbiere et al. (2008). Values for the EU are the sum of the values for the individual EU member states. For total exports and imports of the EU, I subtract intra-EU trade because, considering the EU as a single actor, I am interested in the EU's dependence on trade with non-EU countries. Data on intra-EU trade is from the IMF DOTS.

[9] $100*((\exp(-1.950295*1)-\exp(-1.950295*0))/\exp(-1.950295*0))$ (see Box-Steffensmeier and Jones 2004, 60) page 60

until compliance is restored. More precisely, these disputes have a 90 percent lower chance of compliance than those disputes that involve tariffs or quotas and the manufacturing sector.

In order to assess the interactive nature of the theoretical argument, however, it is necessary to look at the interaction term in Table 2. To ease interpretation, Figure 1 provides a graphic illustration of the interaction term in Table 2. As predicted by theory those disputes that involve the agricultural sector as well as a non-complex trade instrument have by far the shortest survival time, implying that they are complied with rather fast. This is in line with the above hypothesis that we should not see a delay in compliance if neither the instrument used to protect the industry is difficult to adjust nor the sector can push hard to stay as long as possible under protection. In contrast, if either a complex trade instrument is in place or the dispute involves the agricultural sector (or both) we observe a significantly enhanced survival and thus compliance time. As can be seen in Figure 1, these three combinations are very similar with respect to their predicted survival time making it difficult to statistically differentiate between the three scenarios (which is probably due to the rather low number of observations). Nevertheless and not in line with the theoretical argument, it is not the combination of the two characteristics that results in the longest duration of compliance but rather those disputes that involve not the agricultural sector and are protected by a non-tariff instrument.

With regard to the control variables, the results are mostly as expected. Both variables measuring a country's retaliatory power lower the chance of compliance. However, only in the case of export dependence does the coefficient reach standard significance levels. Substantively, the results implies that if the complainant is relatively more dependent on the defendant, the complainant has lower retaliatory power, which induces the defendant to take a longer time to comply with an adverse ruling.

Higher tariffs in both the defendant and the complainant country are associated with a longer time until compliance, which is in line with the idea that influential domestic industries – indicated by a higher tariff level in place – can lobby their government to increase the time until compliance. Interestingly, however, only the variable for the complainant country reaches standard significance levels.

Turning to the dispute characteristics, we find that those disputes with a higher number of agreements cited take a longer time until compliance is restored lending support to the argument that these are disputes that demand a more extensive adaptation of a country's trade laws. Finally, disputes that involve both the EU and the US have a significantly lower

chance of ending in compliance as indicated by the negative and statistically significant coefficient.

Overall, the results lend support to the theoretical idea that governments can grant sectors more time under protection by using complex trade instruments that involve a longer time until compliance with an adverse WTO ruling is achieved.

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Robustness Checks

Following the predictions of the managerial approach of compliance a country's legal capacity should be crucial for its ability to quickly implement an adverse WTO ruling. Several scholars have argued that legal capacity is a crucial requirement for countries to brachiate through the complex process of WTO dispute settlement (Busch and Reinhardt 2003; Busch, Reinhardt, and Shaffer 2008; Guzman and Simmons 2005). The underrepresentation of developing countries in the WTO dispute settlement process is often seen as an indication of the argument that a lack of legal capacity limits countries' ability to use the DSB to advance their trade interests. Following the managerial school of compliance one can take this argument one step further to claim that countries with low levels of legal capacity do not only have difficulties in using the complex process of the DSB but that they should also need more time to then implement an adverse dispute ruling. Since dispute rulings usually require a substantive change in a country's trade policies, a lack of legal capacity should prolong the time until compliance. Following the literature, legal capacity is measured using the defendant's level of GDP per capita (Busch and Reinhardt 2003; Guzman and Simmons 2005). It reflects the idea that poor countries should not have many resources available to invest in legal capacity. A second, more direct measure is the number of staff at the WTO. Both variables are incorporated in duration 1 and 2.

If capacity in then difference GDP and exports insignificant. In contrast, capacity constraints seem to play an important role. The more staff at the WTO the shorter compliance. But GDP per capita works the other way around. Maybe no good measure of capacity but richer countries might think that they more easily get away with non-compliance. Richer defendants also are involved in shorter panels.

A third country characteristic that is argued to be of importance in the process of WTO disputes is the political system of the disputing parties. Generally, it is alleged that liberal democracies are more respectful of international law (Guzman and Simmons 2002; Keohane,

Moravcsik, and Slaughter 2000; Mansfield, Milner, and Rosendorff 2002; Rickard 2010)[10]. Furthermore, democracies supposedly perceive WTO disputes as legitimate and beneficial means of settling trade disputes[11] (Allee 2004; Davis 2008). Hence one could deduce from these assertions that democracies also display this cooperative behavior when it comes to the compliance with dispute rulings, and I therefore expect democratic countries to exhibit a stronger tendency to comply with WTO rulings and to do so more quickly. To measure the democracy level, I use the Polity IV data (Marshall, Jaggers, and Gurr 2002).

If policy in then difference GDP and exports insignificant. A country's decision whether to comply with an adverse Panel ruling is not affected by the type of its political system. Although the coefficient has the expected sign, it does not reach standard significance levels. Thus, the argument that democracies seem to be more respectful with regard to international law and thus accept the findings of an international court more easily than do autocracies does not receive support.

Similarly, the number of pages of the Panel report should proxy the complexity of a dispute since more extensive cases should need more elaboration.

Conclusion

Which factors determine whether a country complies with extensive international obligations, and how much time does it take a country to do so? This project proposes to study compliance with WTO dispute rulings to enhance our understanding of the factors that could compel countries to abide by international rules even when this implies costly adjustments to domestic policies. The study of compliance in the context of the WTO is crucial as its dispute settlement system is mostly seen as very effective (Bush and Reinhardt 2001). However, to definitively evaluate this statement, it is important to understand compliance with the dispute settlement system. The theoretical framework of my research consists of a coherent and comprehensive theoretical model on compliance with WTO verdicts that highlights factors pertaining to a country's political system, its power, and the role of interest groups.

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[10] Rickard (2010) shows that there are differences within democratic countries when it comes to violating WTO rules. Majoritarian governments are more likely to violate WTO rules than political leaders who are elected via proportional electoral rules.

[11] In contrast, (Reinhardt 2000) shows that trade disputes involving at least one democracy seem to be less likely to end with a liberalization of the contested policy. However, his analysis focuses on trade liberalization in general and does not capture compliance with Panel rulings as such.

To test the empirical implications of the theoretical framework this study relies on newly coded data that identifies both the extent of compliance and the time elapsed until compliance with WTO dispute rulings is realized. This new dataset, based on expert interviews with country representatives at the WTO as well as trade experts, allows for both quantitative analyses of the factors that drive compliance as well as a more in-depth analysis of certain cases that can help us better understand the mechanisms underlying the compliance process.

Correspondingly, this paper argues that it is important to take dispute characteristics such as the complexity of the dispute and domestic audience costs into account when analyzing a country's compliance decision with an adverse Panel ruling. The theoretical argument thus proposes that there are instances when its reputation towards a domestic audience is more important for a country than its general reputation as a reliable trading partner towards an international audience. This idea is in line with Milner and Rosendorff (2001) who argue that the inclusion of a dispute settlement process in an international regime allows countries to violate the rules of the regime in those cases in which they have a domestic reason to do so without completely leaving the regime framework (Rosendorff and Milner 2001).

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Table 1

	(1)
Agricultural dispute	-1.95**
	(0.817)
Complex instrument	-2.27**
	(0.932)
Agriculture *complex instrument	2.44**
	(0.965)
Number agreements cited	-0.06**
	(0.027)
Difference GDP (Complainant- Defendant)	-0.20
	(0.136)
EU US dispute	-1.82***
	(0.669)
Difference in Export Dependence	-0.30*
	(0.180)
Tariff Complainant (A)	-0.07**
	(0.030)
Tariff Defendant (B)	-0.08
	(0.056)
Observations	96
LogPseudo Likelihood	-238.49719
Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1 Efron Method for ties is used	

Cox proportional hazards regression

Cox proportional hazards regression

Cox proportional hazards regression