

Democracy, Institutions, and Trade Dispute Duration

Greg Dixon
Department of Political Science
University of Arizona
Tucson, AZ 85721
gcdixon@email.arizona.edu

Abstract

Domestic institutions affect international behavior in a variety of ways. This paper builds upon past analyses of how democracy affects international behavior by examining the relationships between democratic domestic institutions and the duration of international trade conflict at the GATT and WTO. Using a series of Cox duration models, this paper tests the theory that democratic states will have longer trade disputes than their non-democratic counterparts. The models test the theory across all of the disputes taking place in the GATT and WTO from 1948 to 1997. The results provide mixed evidence for the role of democracy in determining duration.

This paper was prepared for presentation at the annual meeting of the International Studies Association February 26 - March 1, 2003, Portland, OR

The assumption in most popular literature regarding the World Trade Organization (WTO) is that the WTO is a body that promotes free trade across the world. In practice, however, the WTO functions as a mechanism for resolving conflicts over the rules of the international trade regime. The globalization of economic and political relations is often discussed as though the process was inexorable and the results preordained. Similar literature from the late nineteenth century assumed that the globalization of economic relations taking place at that time was likewise inevitable and inexorable. In the end of that earlier period of globalization the process ended in two generations of turmoil, depression, and war. Since the end of World War Two, the world community has sought to prevent the recurrence of that chain of events. In international trade the General Agreement on Tariffs and Trade (GATT) and the WTO have governed the international trading regime since 1947. These organizations have provided an effective means of governance in the international trade arena primarily by acting to resolve major conflicts of interest between states before these conflicts can damage the wider international trading system.

It is largely taken for granted that these organizations have brought stability to the international trade regime for over fifty years. It is less appreciated that the primary mechanism for minimizing conflict is a quasi-legal framework that has evolved over the past fifty years from an ad-hoc system for interpreting rules to a system that closely resembles a domestic law court. It is through the dispute resolution mechanisms of the GATT and WTO that relative stability in the international trade regime is maintained. Despite this, we know little about how this institution is being systematically affected by wider changes in international relations.

As democracy continues its slow spread across the globe, it is taken for granted in many arenas that the world is becoming a more peaceful and pacific place. What is rarely considered is that the peaceful relations between states often require effective means of resolving conflicts of interest. In the modern world, economic tensions remain strong in the minds of the public in many democratic nations. Citizens routinely demand protection from "globalization" or "the market". Such cries fly in the face of international commitments, but democratic leaders ignore their electorates only at the peril of their own political survival.

In this environment it is interesting to note that little systemic study has been done regarding how the mechanisms of conflict management that underpin global economic coordination function and what challenges the spread of democracy across the globe may pose to these systems. This paper builds on previous work that examines trade disputes at the GATT and WTO to attempt to determine how domestic political institutions affect the process of dispute resolution at the GATT and WTO. Previous work has shown that democratic states are much more likely to participate in trade disputes. This work seeks to test whether these disputes are also more protracted than those that involve non-democratic states.

The WTO as Coordinator

While most of the post-Westphalian period has been characterized by a lack of systemic international trade policy coordination, the period following World War Two has been the exception to this. International trade flourished under the Pax Britannica in the last half of the nineteenth century, reaching a point where the global economy was nearly as integrated as it is at the turn of the twenty-first century. (World Bank, 2002) Trade collapsed during the inter-war period under the weight of domestic political pressure to protect domestic industry. The result of a lack of coordination at the international level led to a series of disastrous trade policies that led in turn to the collapse of the world trade system. This collapse contributed to the advent of the

Great Depression and the Second World War. (World Bank, 2002) Following the Second World War, a system of international coordination was created under the GATT. This system was intended to provide policy coordination by setting formal rules for the conduct of international trade and to prevent future collapse in the face of mounting domestic pressure.

At the international level, the GATT provided coordination by creating a uniform set of rules to manage international trade. While the GATT is usually considered a force for promoting free trade, the progress towards open trade has been slow. The succession of rounds conducted first under the GATT and now under the WTO has slowly broadened the scope of international policy coordination. In spite of the general trend towards openness, it is important to remember that the GATT and WTO function primarily as managers of a system with a large body of complex rules that regulate how trade is controlled. The WTO does not simply mandate free trade. If it did, the dispute resolution system would be much simpler. Any barrier to trade would violate the trade rules. The WTO manages an incredibly complex set of rules that determine which types of protection are acceptable and which are not.

It is in this context that the WTO dispute resolution process is best understood. The WTO is a body that manages conflict over states' compliance with an agreed upon set of rules. Given conflicting interests between states, the WTO provides a forum for states to resolve their differences according to rules that both sides have agreed to accept and follow. The WTO is a forum for conflict over rule compliance.

In order to provide coordination of the trading system, the WTO manages a system of rules that member states must follow in order to maintain the benefits of membership. This system of rules binds all member states and can trump national policy in cases where national policy violates the agreed rules of the WTO treaties.

International trade conflict as undertaken at the GATT and WTO represents an interaction between domestic and international politics. At the domestic level, governments of all types are subject to the lobbying efforts of domestic interests that represent a wide spectrum of the economic and political actors in the domestic political system. A portion of these actors have a stake, directly or indirectly in the international trade policy of their nation. The portion of the population affected by international trade policy varies, as does the means by which it manifests itself in domestic politics.

The portion of the population that is impacted by international trade policy is determined largely by the degree to which the national economy is integrated into the world trading system. It is possible for a country to be almost completely isolated from the world economy. In this case international trade may affect a tiny handful of people. An economy that is highly integrated into the global economy may be greatly affected by international trade policy decisions. In this case a large proportion of the population may be active in lobbying their nation government to affect international trade policy.

As an illustration, North Korea has largely removed itself from the international economy. The only real impact of international trade policy falls on a tiny elite. This elite primarily benefits from trade in a handful of goods. This elite is part of a tiny ruling cadre that lives well amidst a population that is both deprived of democratic freedoms and is largely impoverished. While this tiny elite may be concerned with international trade policy, the vast majority of the citizenry is not.

The Republic of China is tightly integrated into the global economy. The issue of international trade affects many of the citizens of the country either directly through employment in export industries or indirectly through spin-off effects on the national economy. In this

environment, citizens have democratic rights and strong incentives to exercise them in pursuit of international trade policy that is in their economic interest.

At the international level, states must compete with each other in global markets, but also maintain a common set of rules that is beneficial to the community of nations as a whole. In an era of growing integration, national economic decisions have international effects and thus can come into conflict with international trade rules through their unintended consequences. At the international level, these consequences often lead to tension as the policy of country A affects the economic or political situation in country B. When the tension grows strong enough, trade disputes can emerge.

Democratic Government and Trade Dispute Duration

Within states the domestic political and economic actors attempt to influence policy by pressuring their governments to act in ways favorable to their respective interests. (Stolper and Samuelson 1941; Rogowski 1989; Hiscox 2002) While normally discussed in the context of democracies, this pressure exists in all states. All governments, regardless of their institutional structure are subject to pressure from their supporters. (Bueno de Mesquita, Morrow et al. 1999) Political leaders must always balance their own survival against the cost of changes to existing policy, even in the most autocratic governments.

In autocratic governments a relatively small group of supporters can keep a ruling group in power. In the language of Bueno de Mesquita, et al. (1999) the winning coalition required to gain and retain power in an autocratic state is relatively small. In most autocratic states it is small enough that private goods can be used to buy off a sufficient number of supporters. (Bueno de Mesquita, Morrow et al. 1999) In democratic states, a larger winning coalition is required. This winning coalition is normally too large to be paid off using private goods and so public goods must be used instead. International trade policy represents one form of public good that can be manipulated to benefit members of the ruling party's winning coalition of supporters.

Democratic governments have demonstrated a tendency to manipulate economic policies at the domestic level to promote electoral success. (Alesina, Roubini et al. 1999) In the domestic context, political leaders seek to manipulate the national economy to ensure the greatest likelihood of electoral success. Given that democratic states are willing to manipulate the domestic economy to gain political support, it is likely that they would also be willing to use the international economy as an additional tool to gain support.

Democracy does have an impact on the tendency to initiate trade disputes. While relatively little work has been done in this regard, such research as there is does indicate that democracy makes trade dispute initiation more likely. (Reinhardt 2001; Sherman 2001; Dixon 2002) All three authors demonstrate that democracy increases the likelihood of trade dispute initiation. The relationship between democratic domestic institutions and trade conflict is the opposite of that observed in militarized conflict. In the presence of an agreed upon structure of international trade dispute resolution, democratic states are more likely to call upon the cooperative mechanisms for resolution than are non-democratic states.

When examining trade dispute duration, many of the same pressures that lead to the increased tendency to both initiate and be targeted in trade disputes will also lead democratic states to experience longer disputes than their non-democratic counterparts. Domestic lobbying groups will seek to protect their own interests. In some cases this may require protection from international competition. In others it may require that the government pursue an effort to

remove an impeding policy by a foreign government. In either case, this can lead to the occurrence of a dispute within the GATT/WTO framework.

Once a dispute is initiated, states find themselves in a very different political environment. The GATT/WTO dispute settlement mechanism is designed to adjudicate questions regarding violations of agreed upon rules and enforce compliance. The rules are complex and often subject to multiple interpretations. A formal process also exists that adjudicates between the competing claims of the disputing parties. This situation appears closer to a domestic law court or arbitration panel than to traditional international politics. Within this context, democratic states can be expected to behave differently from their non-democratic counterparts.

Democratic leaders benefit from a healthy economic climate. (Alesina, Roubini et al. 1999) An orderly international trade system promotes this by creating stability and maintaining a set of agreed upon rules. (World Bank, 2002) In the long-term, the GATT/WTO rules are in the interests of the leaders of all member states as they promote a stable economic system and help foster the conditions for growth. Likewise, keeping the national economy open to the global market has been shown to lead to higher rates of growth and a general improvement in the standards of living. (World Bank, 2002) Given these incentives, national leaders seeking to remain in office have reason to uphold the rules of the international trading system.

Democratic leaders have a normative commitment to non-violent means of dispute resolution according to Dixon's (1994) argument regarding the norm of bounded competition. Democratic states also have a commitment to "legitimate" processes for adjudicating disputes. The system of dispute resolution at the GATT and WTO is a clear example of a non-violent system of dispute resolution in the context of a process that all parties agree is legitimate. Within this context, democratic leaders should be expected to "play by the rules" and abide by the rules of procedure as well as the outcome.

At the same time as democratic leaders should prefer an open world economy and can be expected to abide by the formal rules of the international dispute resolution process, they are also expected to represent the interests of their supporters. In the domestic context, this means they must look out for the interests of the members of their ruling coalition or else risk a loss of power in the next election. (Bueno de Mesquita, Morrow et al. 1999) In order to do this, leaders must engage in policy activities that support their supporters

Democratic leaders are thus pressured from two directions: they must abide by their international commitments and they must demonstrate activity on behalf of their domestic supporters. This has serious consequences for the duration of the disputes states experience at the GATT and WTO.

Democratic leaders can use WTO disputes on behalf of domestic supporters in two ways: 1) They can initiate disputes against foreign nations in the hopes of gaining a favorable ruling and thus benefits for exporters. 2) They can enact protectionist policies that benefit local economic interests at the expense of actors in other nations. The first of these obviously leads to dispute initiation by democratic leaders. The second may lead to the state being targeted in a dispute by the nation whose economic actors are damaged by the protectionist policies implemented by the first state. In both cases, the leaders of democratic states have an incentive to demonstrate that they have done all they can to benefit their domestic supporters.

When a democratic state initiates a trade dispute, they have an incentive to press for a rapid solution to the problem. The more quickly a target removes the offending policy, the lower the cost to the initiator and the faster the benefits are felt by domestic supporters. The

democratic initiator thus has an incentive to press for a quick resolution. In the face of determined resistance, however, the democratic initiator has a strong incentive to use all of the institutional means at its disposal to win, even if this takes time. A case that is lost is potentially harmful as it has cost resources to fight a dispute that did not lead to a desired outcome. A case that is lost may not be the worst outcome, however. If a state initiates a dispute and uses the full measure of the dispute resolution process, only to lose in the end, can reasonably claim to have done all that was possible for the domestic support group in question. In this case, the blame for the harm to the domestic supporters can be laid squarely with the GATT/WTO. In the case of initiations, the democratic state has an incentive to seek a quick victory, but will prefer a protracted dispute that it wins to forgoing the dispute at all. Thus, democratic initiators should face short disputes against weak opposition and long disputes against strong opposition.

Democratic targets are in a very different position in that they have not chosen to engage in a dispute, but been forced into the process by another state. Democratic targets have a strong incentive to seek to retain their protectionist policy. To simply surrender in the dispute (even if the policy is clearly illegal under GATT/WTO rules) is to demonstrate a lack of commitment to the local supporters that demanded the policy in the first place. If a democratic state is certain of defeat, they must balance their commitment to the GATT/WTO system with the need to maintain the support of their domestic coalition. If defeat is certain, the ideal strategy is to fight to the bitter end, removing the policy only when there is no other choice. This demonstrates a commitment to the domestic support group, but also demonstrates an ultimate commitment to the international agreement when the state ultimately complies. This balances the maintenance of the system with the maintenance of the necessary winning coalition. Targeted states thus have a strong incentive to use the dispute settlement process to delay compliance for as long as possible in cases where defeat is certain.

When both the initiating state and the target state are democratic, these effects will be additive. Both states will have strong incentives to carry the process out to the fullest possible extent. In these cases, disputes will be much more likely to be carried out to the full extent allowable under GATT/WTO rules. Both states have a strong incentive to demonstrate their resolve in the dispute to their domestic audience.

Non-democratic states do not face the same level of domestic political pressure to engage in international policy behavior and are likewise not normatively committed to a formal dispute settlement process. This has two basic implications: 1) Non-democratic states are less likely to experience dispute as domestic interests can be secured using private goods. 2) When a non-democratic state does become involved with a dispute, the leadership is more readily satisfied with narrow concessions targeted at preferred domestic groups or the leadership itself. In short, non-democratic leaders can buy off their supporters with private goods. They can also be paid off by potential targets through means outside of the formal procedures of the GATT/WTO system. In other words, autocrats can be bought off more readily than democrats.

What this argument implies is that democratic states have an array of incentives that should make them more determined to take full advantage of the GATT/WTO mechanisms both as initiators and as targets. In both cases, we can expect to see a greater commitment to carrying the dispute out to the bitter end.

Other Factors in Dispute Duration

Trade dispute duration can be affected by a number of factors. It has been observed in studies of the initiation of disputes that a range of economic factors play a role in the decision to

initiate a dispute. (Reinhardt 2001; Sherman 2001; Dixon 2002) These factors can be expected to also play a role in dispute duration.

Trade disputes are expensive. Disputes can take years to reach their conclusion and require a considerable investment in both money and manpower during the period of the dispute. The institutional changes under the WTO have increased this cost by increasing the legalization of the process. Disputes now require a full time staff of international trade lawyers while the dispute is in process. To afford this, a state must have significant financial resources available. To maintain this staff through the years of legal action requires substantial cost over time. This suggests that as states become wealthier they will have a greater ability to sustain their disputes, leading to an overall increase in dispute duration for states with larger GDP.

Trade also matters. The connection between trade and dispute duration has not been explored, but the literature on initiation demonstrates that there are clear linkages between the decision to initiate and the overall volume of trade as well as the trade dependence of the states in question. In dispute duration, there should be parallels to the effects on initiation. The motivation to support domestic interests that drives a state to become engaged in a dispute also provides an incentive to carry the dispute out to its fullest extent. A state heavily dependent on trade will be more likely to have large domestic interests who seek to influence trade policy. This will increase the pressure to demonstrate resolve in the dispute process, whether as an initiator or as a target.

The institutional changes that took effect when the GATT ceased to operate and the WTO took over the management of the international trade system are also likely to play a role in determining dispute duration. The WTO's rules greatly increase the formalization of the process. The WTO resembles a domestic law court to a much greater degree than did the GATT system. The system now includes a formal process for appeal of panel rulings and has several formal stages. This increase in procedural complexity allows cases to be drawn out for much longer periods within the process itself. States who do not wish to accept a ruling and have the financial wherewithal to continue the process have several avenues of appeal and arbitration that can extend the process for several years.

While there is little previous work on trade dispute duration on which to draw, the combination of economic elements and domestic institutional elements should provide a significant step in this direction.

Hypotheses

When engaged in formal international trade disputes, democratic states have strong incentives to use all aspects of the formal process before ending the dispute. By binding their hands in trade disputes, democratic governments have limited their ability to use international trade policy (and to a lesser extent some kinds of domestic economic policy) as a means of maintaining a domestic winning coalition. When their hands are tied within a formal process, domestic governments have strong incentives to demonstrate that all possible action in defense of their coalition was undertaken. In international trade disputes this should manifest in democratic governments experiencing longer trade disputes than their non-democratic counterparts as democratic rulers use the trade dispute process to protect their domestic winning coalition. This argument leads to several testable hypotheses regarding trade dispute initiation.

Hypothesis 1: Trade disputes involving democratic states will be longer in duration than disputes involving non-democratic states

Hypothesis 1a: The more democratic a state's institutions, the longer its trade disputes.

Hypothesis 2: Jointly democratic dyads will have longer disputes than mixed or non-democratic dyads

Method

The hypotheses are testing using a series of Cox proportional hazards models.¹ These models test the effects of democracy and a range of control variables on the duration of disputes under the GATT and WTO. Due to the potential influence of institutional changes, separate models are estimated for all years, GATT years only, and WTO years only using both scaled and dichotomous measures of democracy.

< Table 1 about here >

The population of this dataset is all disputes taking place under that GATT and WTO dispute settlement mechanisms from 1948 to 1997. To accommodate the inclusion of country level economic data the dataset is structured as a dyadic dataset showing pairs of countries A and B involved in the disputes. In the case of bilateral disputes, there is a single entry for the dispute as dyad A vs. B and the unique reference number for the dispute in question. For multilateral disputes (including all disputes involving the European Union) there are coded country pairs A vs. B, C vs. B, D vs. B and so on for all parties to the dispute. Each dyad is referenced with the unique dispute reference number. Pairs of states A and B are coded with a dyad reference number to allow for the inclusion of multiple, simultaneous disputes within a dyad. The resulting dataset contains a total of 3130 dispute dyads representing 606 unique disputes (295 GATT and 311 WTO.) The data on GATT dispute duration was compiled from a combination of Eric Reinhardt's GATT dispute dataset, Hudec (1993), and the WTO's "Dispute Settlement Gateway" (WTO 2003). The data on WTO dispute duration comes from the WTO "State of Play" dispute reference (Oct, 2002) also part of the WTO's "Dispute Settlement Gateway". (WTO, 2003) The duration of all disputes was measured in days from initiation to the conclusion of the dispute.

Data on democracy is taken from the commonly used Polity Data set (version IV) and follows the conventional definitions of democracy scores. Scaled democracy is calculated by subtracting the autocracy score from the democracy score, generating a scale of -10 to 10. The dichotomous measure is calculated by taking all states with scores of seven or higher and coding

¹ The GATT/WTO dispute data presents formidable methodological challenges in the duration modeling context. The data contain multiple simultaneous events as well as competing risk of failure. While the literature is not in agreement on the most appropriate method for compensating for these issues, the Wei, Lin, and Weissfeld method seems best suited to compensate for these problems. All of the models in this context use the Wei, Lin, and Weissfeld method for handling multiple, simultaneous events.

them 1 and all states with a 6 or below and coding them as 0. A joint democracy score is calculated by multiplying the dichotomous democracy score of the initiator by that of the target. A 1 on joint democracy indicates that both states are democratic, a 0 indicates that one or both states is non-democratic. Of the dispute cases 87 percent (2678 cases) had democratic initiators while 93 percent (2858 cases) had democratic targets. 80 percent of the cases (2422) were disputes within jointly democratic dyads.

The economic data used in these models is taken from Kristian Gleditsch's expanded economic dataset.(Gleditsch 2002) This dataset contains economic data on a wide range of states and provides the most comprehensive coverage of equivalent economic data for the years in question. It also provides a wide range of dyadic trade data for the dyad years under consideration. All economic variables are calculated from the information in this dataset.

A variety of economic control variables are calculated from the Gleditsch expanded economic data. GDP for both the target and defender are calculated and the natural logs of these values are used in the analysis to account for the non-linear impact of GDP. A GDP asymmetry measure is created to account for the relative economic power of the two states. This value is calculated by subtracting the target's GDP from the initiator's GDP and dividing the result by the sum of the initiator and target GDP's. The resulting value is added to 1 to create a continuous variable with a theoretical range of zero to two. Zero indicates total target dominance and 2 indicates total initiator dominance. The higher the value, the greater the relative dominance of the initiator over the target.

Trade is measured in two basic ways. The first is as a percentage of GDP and the second is in absolute terms. The percentage of GDP is calculated for both the initiator and the target using the total sum of imports and exports between the two states as a percentage of that states GDP. This percentage measure accounts for the relative trade dependence of the two states in the dyad. From this percentage measure, an asymmetry measure is calculated in the same manner as the GDP asymmetry measure in order to account for the relative importance of mutual trade to each states economy. As with the GDP asymmetry measure, a higher value represents higher initiator dependence (the mutual trade represents a higher percentage of the initiator's GDP.)

To account for the non-linear impact of the absolute trade volume, the square of the total trade between the states is used to absolute levels of trade. The total trade for the state was squared and the result was divided by 100,000 to make the resulting coefficients easier to interpret.

To account for the additive effects of democracy and economic wealth, an interaction term was created by multiplying the democracy score for each state with its real GDP for the given year. The resulting value was divided by one million to bring make interpretation of coefficients more convenient.

Since 1958 the European Union has acted as a single entity in trade disputes at the GATT and WTO. This creates a concern for study of trade disputes under the GATT and WTO regimes. The EU is an intergovernmental organization that represents the economic interests of its member states. Its actions represent the interest of a group of states that are committed to engaging in multilateral disputes as a collective. For the purposes of this study, the EU is considered to be a group of states acting collectively. EU disputes are treated in the same manner as all other multilateral disputes.

Six models are estimated. Three models estimate the impact of scaled democracy with three models estimating the impact of dichotomous democracy. The models for each type of

democracy estimate the impact first for the entire period under observation and then for the GATT and WTO years separately.

Results

While there is strong support for the hypotheses in the models using scaled democracy, the estimates using dichotomous democracy are mixed.

< Table 2 about here >

Table 2 shows the estimates from the first three models. These models estimate the impact of scaled democracy on dispute duration accounting for the controls outlined above. Model 1 includes all dispute years and incorporates a dummy variable for the WTO (1 = WTO dispute settlement mechanism, 0 = GATT settlement mechanism). Model 2 includes only disputes initiated under the GATT settlement mechanism. Model 3 includes only the disputes initiated under the WTO dispute settlement mechanism. These models test hypotheses 1 and 1a across the periods under study as well as hypothesis 2 through the inclusion of the joint democracy term.

The results of these three models are mixed. In the full model (Model 1) there is clear support for hypothesis 2 in that the joint democracy variable is negatively signed and significant. The negative coefficient in the Cox model indicates that the hazard rate declines as one moves from a score of 0 to 1 on the joint democracy measure. This implies that the risk of failure at any given t_i is lower when the dyad is jointly democratic. This suggests that jointly democratic disputes will be of longer duration when controlling for the other factors included in the model.

The other two democracy variables are positively signed and significant. This implies that when joint democracy is controlled for, the effect of the institutions of the individual states is the opposite of that predicted in hypotheses 1a. The individual democracy scores indicate a rising hazard rate as the Polity score rises. This implies that the impact of the individual states' democracy scores is to shorten the dispute.

These estimates support hypothesis 2, but tend to contradict hypothesis 1a. When joint democracy is controlled for, the impact of democracy is in the opposite of the predicted direction.

The control variables also contain some interesting and potentially important results. In no model is the trade dependence of the initiator significant. This implies that the dyadic trade dependence does not have an impact on the duration of the dispute. In the full model, trade asymmetry is also not significant. These results suggest that the duration of the dispute is not significantly driven by the relative economic importance of the two countries' mutual trade.

Initiator GDP and target GDP are both significant in Models 1 and 3, but are signed in the opposite direction in both models. The initiator GDP is positively signed, indicating that the richer the initiator, the shorter the dispute. The target GDP is negatively signed, indicating that rising target GDP predicts longer dispute duration. This finding is interesting as it implies that while the target GDP estimates are as expected, the initiator GDP impact is not. Likewise, the GDP asymmetry variable is negatively signed and significant, indicating that the larger the initiator's GDP relative to the target, the longer the dispute. This is also contrary to prediction in that it appears to imply that the weaker the target, the longer the dispute.

The WTO dummy variable was significant and positively signed. This is in line with predictions. Most importantly, this implies that the institutional change from the GATT to the WTO had a significant impact on dispute duration.

Of perhaps most interest are the results from model 2: Not a single one of the variables in the model was significant. This implies that the expected variables do not perform as predicted during the disputes initiated under the GATT regime. While this is an interesting finding in and of itself, it should also be noted that Model 2 (GATT) and Model 3 (WTO) yield very different results for the impact of the variables on dispute duration. This implies that there is a significant difference between the process that determined the duration of GATT disputes as opposed to what determines the duration of WTO disputes. This is a significant result in and of itself and has potential ramifications that will be discussed further in the conclusion.

< Table 3 about here >

Whereas the models estimating the impact of scaled democracy offer mixed support for the hypotheses, the models estimating the impact of dichotomous democracy offer very little support for any of the hypotheses. In Model 4 (all years) none of the democracy variables are significant, although the WTO dummy remains significant and positive as in Model 1. The Initiator GDP result is consistent with the result in Model 1. Model 2 indicates that target democracy is marginally significant and negatively signed, which is consistent with the predictions but no other variables are significant in this model. Model 6 (WTO) is interesting in that many of the control variables are significant, but none of the democracy variables are significant in this model.

From these results there is no consistent evidence to support hypotheses 1 or 1a. Hypothesis 2 has strong support in the models using a scaled measure of democracy, but was not supported by the models using the dichotomous measure of democracy. While hypothesis 1a was not supported, there was a significant relationship between the scaled democracy score and dispute initiation. This would indicate that democracy does affect the duration of trade disputes, but that it is in the opposite of the predicted direction once the dyadic effect is accounted for.

Conclusions:

This paper began by arguing that the WTO serves as a rule enforcer for the international trade system. It provides a means of resolving conflicts of interest through an agreed upon process. It is important to understand how wider trends in international relations potentially affect such institutions in order to understand how such organizations may function in the future. The theoretical argument discussed in this paper argued that democratic states will have longer disputes than non-democratic states. This paper ends with an admission that the evidence presented herein does not support that argument. What is clear is that more research needs to be done before a clear understanding of the mechanisms that determine trade dispute behavior are understood.

The analysis presented here cannot definitively state that democracy affects trade dispute duration in ways that are consistent with the impact of democracy on initiation and targeting of trade disputes. The theory presented in this paper suggested that democracy impacts trade dispute duration through the same mechanisms as observed in trade dispute initiation and targeting. This analysis would seem to indicate that the mechanism for determining duration in

trade disputes differs significantly from that which governs initiation. Further research along these lines is necessary to explore the factors that contribute to trade dispute duration.

The results of the statistical estimates in this paper, while not supporting the theory presented do offer some important insights. First and foremost the GATT and WTO processes are different. The process that determines the duration of GATT disputes is not the same as that for the WTO. The institutional changes from the GATT to the WTO have created different processes to determine duration. The one consistency across both scaled and dichotomous measures of democracy was that the GATT dispute results were very different from those of the WTO. Future research must account for these differences and treat the processes as separate groups of observations.

It is also possible that factors not related to initiation and targeting play a major role in determining duration. Further research is necessary examining the dispute process in greater detail. Given the detail provided by the WTO regarding disputes, this should be possible as the WTO information base grows.

There is a great deal more research that needs to be done to explore the mechanisms through which economic conflict is resolved. This is of particular importance as international organizations increasingly seek to include dispute settlement mechanisms in their charters. It is also significant as states call for reform of the WTO dispute settlement mechanism. For meaningful and productive changes to be made, it is important that we understand how previous changes have affected the workings of the system and how the institutions of global governance interact with the institutions of national governance.

Table 1: Summary Statistics

Variable	Number of Observations	Mean	Standard Deviation	Minimum	Maximum
Duration	3041	584.2574	486.4907	4	3170
Initiator Scaled Democracy	3072	8.437174	3.664712	-8	10
Initiator Dichotomous Democracy	3072	.8717448	.3344282	0	1
Target Scaled Democracy	3073	9.031565	2.92027	-7	10
Target Dichotomous Democracy	3073	.9300358	.2551282	0	1
Joint Dyadic Democracy	3012	.08041169	.3969449	0	1
Initiator Trade as Percentage	3120	.3686139	.2941351	.0062749	2.44959
Target Trade as Percentage	3120	.4057288	.3292367	.0062749	1.410264
GDP Asymmetry	3120	.8361425	.710865	.0010984	1.997311
Trade Asymmetry	3120	.9777306	.5361201	.0495371	1.953566
Initiator Logged GDP	3120	19.47405	1.918669	13.7121	22.77908
Target Logged GDP	3120	20.03577	1.669391	15.46819	22.77908
Initiator Scaled Democracy / Trade Interaction Term	3059	12385.15	21548.98	-2943.681	78132.08
Target Scaled Democracy / Trade Interaction Term	3059	14418.02	22175.57	-40922.62	78132.08
Initiator Dichotomous Democracy / Trade Interaction Term	3059	1246.111	2153.649	0	7813.208
Target Dichotomous Democracy / Trade Interaction Term	3059	1545.739	2293.785	0	7813.208
Initiator Trade Squared	3130	1604524	3862418	.2737039	1.86e+07
Target Trade Squared	3130	2003933	4352540	1.715699	1.86e+07
WTO Dummy Variable	3134	.5871091	.4924321	0	1

Table 2: Duration Models of GATT/WTO Dispute Duration Scaled Democracy Measure

	Model 1 (All years)	Model 2 (GATT years)	Model 3 (WTO Years)
Initiator Democracy	.084*** (.015)	.055 (.034)	.138*** (.024)
Target Democracy	.072*** (.015)	-.005 (.043)	.092*** (.018)
Joint Democracy	-.585*** (.138)	-.657 (.480)	-.673*** (.157)
Initiator log GDP	.308*** (.075)	.128 (.202)	.309*** (.085)
Target log GDP	-.170* (.077)	.017 .196	-.189* (.091)
GDP Asymmetry	-.525* (.223)	.198 (.574)	-.592* (.256)
Initiator Democracy / GDP Interaction	-.00002* (.000001)	.00004 (.00003)	-.00004** (.00001)
Target Democracy / GDP Interaction	.00001** (.000001)	-.000007 (.00001)	.00003*** (.000009)
Initiator Trade Percentage	-.332 (.240)	.306 (.665)	-.313 (.277)
Target Trade Percentage	-.528* (.247)	.671 (.660)	-.959** (.291)
Trade Dependence Asymmetry	-.240 (.212)	1.027 (.543)	-.761** (.256)
Initiator Trade Squared	.000000008 (.000000004)	-.0000004 .0000002	.0000001** (.00000005)
Target Trade Squared	-.000000002 (.000000002)	.00000004 .00000009	-.00000007* (.00000003)
WTO Dispute	.475*** (.107)	N/A	N/A
Number of Observations	732	149	583
Log Likelihood	-2680.52	-401.60	-1905.12
χ^2	157.3***	33.84**	149.46***

* significant at .05 level

** significant at .01 level

*** significant at .001 level

Results are Cox regression coefficients with standard errors in parentheses

**Table 3: Duration Models of GATT/WTO Dispute Duration
Dichotomous Democracy Measure**

	Model 4 (All years)	Model 5 (GATT years)	Model 6 (WTO Years)
Initiator Democracy	-1.223 (.770)	-.1772 (1.191)	-1.148 (1.136)
Target Democracy	-1.426 (.767)	-2.426* (1.228)	-1.432 (1.134)
Joint Democracy	1.505 (.780)	1.800 (1.224)	1.516 (1.146)
Initiator log GDP	.302*** (.075)	.122 (.204)	.278** (.087)
Target log GDP	-.140 (.078)	.012 (.204)	-.110 (.092)
GDP Asymmetry	-.399 (.223)	.196 (.572)	-.371 (.260)
Initiator Democracy / GDP Interaction	-.00002 (.00001)	.0005 (.0003)	-.0003** (.0001)
Target Democracy / GDP Interaction	.00013* (.00006)	-.00002 (.00020)	.0003** (.0001)
Initiator Trade Percentage	-.269 (.232)	.427 (.676)	-.159 (.277)
Target Trade Percentage	-.434 (.245)	.511 (.644)	-.792** (.289)
Trade Dependence Asymmetry	-.214 (.210)	1.016 (.558)	-.718** (.258)
Initiator Trade Squared	.00000005 (.000004)	-.0000004 (.0000002)	.0000001* (.00000005)
Target Trade Squared	-.00000002 (.00000003)	.00000002 (.00000020)	-.00000008* (.00000004)
WTO Dispute	.608*** (.110)	N/A	N/A
Number of Observations	732	149	583
Log Likelihood	-2703.74	-401.94	-1935.50
χ^2	110.86***	33.16**	88.68***

* significant at .05 level

** significant at .01 level

*** significant at .001 level

Results are Cox regression coefficients with standard errors in parentheses

- Alesina, A. and H. Rosenthal (1995). Partisan Politics, Divided Government, and the Economy. New York, Cambridge University Press.
- Alesina, A., N. Roubini, et al. (1999). Political Cycles and the Macroeconomy. Cambridge, MA, The MIT Press.
- Barbieri, K. and G. Schneider (1999). "Globalization and Peace: Assessing New Directions in the Study of Trade and Conflict." Journal of Peace Research **36**(4): 387-404.
- Bearce, D. H. and E. O. N. Fisher (2002). "Economic Geography, Trade, and War." Journal of Conflict Resolution **46**(3): 365-393.
- Bennett, D. S. (1999). "Parametric Models, Duration Dependence, and Time-Varying Data Revisited." American Journal of Political Science **43**(1): 256-270.
- Bueno de Mesquita, B., J. D. Morrow, et al. (1999). "Policy Failure and Political Survival." Journal of Conflict Resolution **43**(2): 147-161.
- Bueno de Mesquita, B. (2002). "Domestic Politics and International Relations." International Studies Quarterly **46**: 1-9.
- Busch, M. (2000). "Democracy, Consultation, and the Paneling of Disputes under GATT." Journal of Conflict Resolution **44**(4): 425-446.
- Dixon, G. C. (2002). Democracy and the Initiation and Targeting of International Trade Disputes. International Studies Association Annual Meeting, New Orleans, LA.
- Dixon, W. J. (1994). "Democracy and the Peaceful Settlement of International Conflict." American Political Science Review **88**(1): 14-32.
- Dixon, W. J. (1998). Dyads, Disputes, and the Democratic Peace. The Political Economy of War and Peace. M. Wolfson. Boston, Kluwer Academic Publishers: 103-126.
- Dixon, W. J. and P. D. Senese (2002). "Democracy, Disputes, and Negotiated Settlements." Journal of Conflict Resolution **46**(4): 547-571.
- Drucker, P. (1997). "The Global Economy and the Nation-State." Foreign Affairs **76**(5): 159-171.
- Esserman, S. and R. Howse (2003). "The WTO On Trial." Foreign Affairs **82**(1): 130 - 140.
- Fearon, J. D. (1994). "Domestic Political Audiences and the Escalation of International Disputes." American Political Science Review **88**(3): 577-592.
- Ferroni, M. and A. Mody, Eds. (2002). International Public Goods: Incentives, Measurement, Financing. Boston, Kluwer Academic Publishers.
- Gleditsch, K. (2002). "Expanded Trade and GDP Data." Journal of Conflict Resolution **46**(5): 712-724.
- Grossman, G. M. and E. Helpman (1997). Trade Wars and Trade Talks. Trade and Tax Policy, Inflation and Exchange Rates. A. Razin and H.-J. Vosgerau. Berlin, Springer-Verlag: 171-214.
- Hiscox, M. J. (2002). International trade and political conflict : commerce, coalitions, and mobility. Princeton, N.J. ; Oxford, Princeton University Press.
- Hoekman, B., A. Mattoo, et al., Eds. (2002). Development, Trade, and the WTO: A Handbook. Washington, D.C., World Bank Publishers.
- Kelemen, R. D. (2001). "The Limits of Judicial Power: Trade-Environment Disputes in the GATT/WTO and the EU." Comparative Political Studies **34**(6): 622-650.
- Pescatore, P. and World Trade Organization. (1997). WTO/GATT dispute settlement : Digest with key words & summaries. Irvington-on-Hudson, NY, Transnational Publishers Inc.
- Reinhardt, E. (2001). "Adjudication without Enforcement in GATT Disputes." Journal of Conflict Resolution **45**(2): 174-195.
- Rogowski, R. (1989). Commerce and coalitions : how trade affects domestic political alignments. Princeton, N.J., Princeton University Press.
- Sherman, R. (2001). "Democracy and Trade Conflict." International Interactions **27**(1): 1-28.
- Stolper, W. F. and P. A. Samuelson (1941). "Protection and Real Wages." The Review of Economic Studies **9**(1): 58-73.
- World Bank (2002). Globalization, Growth, and Poverty. New York, Oxford University Press.
- World Trade Organization (2003). Dispute Settlement Gateway, World Trade Organization. **2003**.