Domestic Political Determinants of the Onset of WTO Disputes *

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Abstract

We propose a model in which leader changes and the associated shifts in which domestic interests are represented in a nation's trade policy lead to changes in the levels of protection and patterns of filings of disputes at the World Trade Organization. In particular we find that leader change increases the likelihood of WTO dispute initiation in both plaintiff and defendant states. Political institutions play an important modifying role. Democratic leaders are more likely to initiate WTO disputes than autocrats. Leader turnover in autocratic states greatly increases the risk WTO dispute onset. Yet, leader turnover in a democratic state does not increase, and may even reduce, the rate of dispute onset.

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1 Introduction and Literature Review

Leaders rely on a coalition of supporters in order to remain in office. Those supporters in turn benefit from a set of policies, benefits and rents directed in their favor. This fundamental exchange between supporters and leaders drives political behavior. When governments change, so too does the underlying coalition of supporters. A new coalition of supporters means that new policies are implemented redirecting benefits. Those interests that enter the coalition receive rents and policies in their favor; those interests that have left the coalition see their benefits curtailed.

In the realm of international trade policy, government changes, especially those associated with changes in the underlying coalition of supporters, are likely to generate a shift in the profile of trade policy. Those sectors, interests and lobbies that are now members of the underlying support coalition will, most likely see trade policy shift in their favor. If those interests are firms or industries competing against foreign imports, those sectors are more likely to see trade barriers erected for their protection. If those sectors are exporters, we might see more export or production subsidies. Those sectors that leave the support coalition may see their protection decline, in favor of broader societal interests such as those of consumers and social welfare more generally.

Leadership changes, especially those associated with shifts in the underlying support coalition, lead therefore to changes in a nation's trade policy, and in particular its tariff and subsidy profile. Trade policy-making however is not a unilateral process; policies must be chosen in the light of the international trade regime, most notably that of the World Trade Organization (WTO), and of course other regional and preferential trade agreements (PTAs), which put limits on the permitted levels of protection, and the methods by which barriers may be applied. Political pressures to protect certain industries, sectors or interests may be difficult to avoid even if international agreement restricts such action (Rosendorff, 1996; Rosendorff and Milner, 2001; Rosendorff, 2005). States balance the need to comply with their international obligations with the domestic

political need to protect interests that are members of their supporting coalition.

It is likely, therefore, that leaders, concerned with offering their supporters the protection they desire, enter into the gray area between compliance and abrogation of their international commitments. Subsidies (usually implicit) in favor of export interests are rationalized as a legal response to unfair protection abroad; tariffs at home are rationalized as reasonable and legal responses to dumping or to provide temporary protection while an industry retools, etc. Such trade policy choices may be legal under the WTO or may not be. Aware of this ambiguity, member states strengthened the dispute settlement mechanism of the WTO during the Uruguay Round to more effectively adjudicate these disputes, to clarify obligations and to help states bring their policy profiles back into compliance.

When a trade policy profile - a set of policies across industries or sectors - changes, it is likely that some outstanding disputes are now settled, and other sectors see new disputes initiated. Sectors that see their protection decline are associated with settlement of preexisting disputes; sectors receiving enhanced protection may be associated with new disputes initiated against their government.

Leader change, therefore, and especially those changes in leadership associated with changes in the underlying support coalition, are likely to be associated with changes in the pattern of dispute settlements and filings at the WTO. We argue in this paper that leader changes associated with changes in the underlying support coalitions lead to more new disputes and more settlements of disputes at the WTO than either situations of no leader change, or leader change without a change in the underlying support coalition.

This finding is also conditioned by regime type. Previous literature has argued that democracies trade more freely and are more cooperative when it comes to PTA formation (Rosendorff, 2006; Milner and Rosendorff, 1997; Mansfield, Milner, and Rosendorff, 2000, 2002; Milner, Rosendorff, and Mansfield, 2004; Hollyer and Rosendorff, 2012). There is also a literature on dispute initiation, and regime type - see for example Busch

(2000) who argues the democratic dyads are more likely to escalate their disputes to the panel stage than are other dyads. Davis (2012) suggests that the checks and balances that characterize democracies bias dispute settlement via public lawsuits and away from informal settlements. Davis argues that leaders must be seen by their legislatures to be enforcing international trade obligations abroad. Others (Dixon, 1994) have argued that democracies have a normative commitment to adhere to legal and other peaceful forms of conflict resolution given the their commitment to these norms at the domestic level. Chaudoin (2011) suggests that WTO disputes are more likely when the general public is more supportive of free trade in the run-up to US elections.

We find here that the effect of leader change on dispute initiation is much larger in non-democracies than in democracies. Elections in democracies that bring new leaders to office have a relatively small effect on new dispute initiation; leader changes in autocracies, especially those associated with changes in support coalition have a much larger effect on dispute initiation.

The key explanation here relies once again on the fundamental exchange of politics between a leader and the supporting coalition. A democracy requires a larger supporting coalition; protection for more sectors comes at a greater cost to the individual consumers and voters by way of higher goods prices. Democratic leaders protect a larger set of sectors, but protects each sector less deeply than an autocratic leader. Democracies, needing to offer broader protections to a wider variety of sectors, do so at shallower levels of protection than do autocracies that provide deep but narrow protections.

Since protection for any specific sector is shallower in democracies, the likelihood that the state becomes a *defendant* in a WTO dispute filing in a particular protected sector is lower than the likelihood that an autocrat becomes a defendant in a protected sector – a result of the shallower protection by democrats. Yet, democrats protect more sectors than autocrats and this breadth of protection has a countervailing effect. Whether many cases of shallow protection makes a nation more likely to be a defendant

in a WTO dispute than fewer cases of deep protection is an empirical question and our analyses suggest that on balance democrats are slightly more likely to be defendants in WTO disputes.

The broader-deeper tradeoff also affects the propensity of leaders to initiate WTO disputes as *plaintiffs*. Here both theory and evidence suggest that democrats are considerably more likely to initiate disputes than autocrats.

Leader change, and its interaction with institutions, affects the onset of disputes. As such our study is part of a growing field that finds domestic leader change affects interstate relations (**?**). Autocratic leader change increases the likelihood that a nation will be involved in a WTO dispute as either a plaintiff or a defendant. In contrast, democratic leader change does not increase the onset risk, and many even reduce it. The broader-deeper tradeoff again lies at the heart of our explanation of these results.

Autocratic leaders care deeply about a narrow segment of society. When a new autocratic enters office she wants to enrich her small sector of supporters, rather than her predecessor's supporters. A switch in trade policy to intensely protect her supporters can trigger a trade dispute with the autocrat being the defendant. An incoming autocrat's deep concern for a narrow sector can also trigger her to initiate a WTO dispute as a plaintiff. Trade policies in another state might have been harming the welfare of those in the sector from which she draws her support prior to her accession to power. However, if her predecessor drew support from elsewhere, then he had little interest in expending political capital and resources to help non-supporters. However, the newly installed autocrat wants to promote the interests of her supporters and the change in political will can lead to the initiation of a complaint against a (perhaps long standing) trade policy overseas. The empirical evidence supports these predictions that autocratic leader change can trigger the onset of WTO disputes both as a defendant and a plaintiff.

The impact of leader change in democracies is more subtle. First, because a democratic leader needs supporters from such a large swath of society there is overlap be-

tween the interests represented by predecessor and successor so the change in the coalition of supporters is not as drastic as in autocracy. Second, the extent to which a leader helps her supporters is more moderate; democratic trade policies are broad and shallow. Shifts in trade policy are modest and therefore less likely to trigger the outset of disputes.

In what follows we build a simple general equilibrium political economy model of international trade and policy formation parameterized by the size of the supporting coalition. Leader change in both small coalition and large coalition systems are investigated. Leader change is associated with more dispute initiation in both in terms of being a plaintiff or a defendant. Institutions moderate the impact of leader change. We then explore the quantitative evidence to establish empirical support for these propositions, using two new datasets: one collected by Bobick and Smith (2013) which is an extension of of the data collected by Busch and Reinhardt (2003) on the list of cases filed at the WTO; and the second on leader and coalition change collected by Leeds and Mattes (2013).

1.1 WTO Dispute Resolution Mechanism

The procedures specified in the Dispute Settlement Understanding (DSU) adopted during the Uruguay Round of negotiations at the WTO are consistent with the practice that had developed since the GATT was first implemented in 1947. A contracting party may file a complaint with the WTO regarding a perceived violation of the treaty on the part of another member. If formal, bilateral consultations are unproductive (an attempt at a negotiated resolution), the complainant may request that a panel of independent experts investigate the matter and make a recommendation. We call this step in the process, the "filing" of a WTO dispute. If the panel finds that the offending action is "inconsistent," the offending party (which in WTO-speak is known as the "defendant") is obliged, should the panel so recommend, to terminate the violating

measure and bring its practice back into conformity with its obligations.

We focus in this paper on the decision to file consequent on possible leader and supporting coalition changes. Consequently, we abstract from the further details of the dispute process in the model and empirics below.[1]

2 Theory

When leaders change then so do the interests represented. Patterns of filing at the WTO will reflect these changes in the sources of leader support. Protection (in the form of a tariff on imports, or a subsidy for exports) will benefit the producers (or more precisely the owners of the capital specific in the production) of these goods and harm consumers, by virtue of the higher domestic prices commanded for these protected goods. A change in leadership will be associated with a change in the sectors that get protected, and hence the beneficiaries of that protection.

Our model at first has a single country, D. It has three districts, $1, 2, 3$ indexed by j. Each district produces a good, also labeled $1, 2, 3$ indexed by g and there is a fourth good, y, the numeraire, A tariff (or subsidy) for each good g is denoted t_g.

Individuals in each country are of mass 1 and are distributed uniformly across each of the districts, so that each district has $1/3$ of the population. Each individual owns a unit of labor and the individuals in district 1 own all the (specific) capital needed to produce good 1; those in district 2 own and produce good 2, and similarly, district 3 produces 3 only. Individuals consume all 4 goods.

The numeraire good, y uses only labor in production, and 1 unit of labor produces 1 unit of output, so wage is set at 1. Each (produced) good $g \in \{1, 2, 3\}$ requires labor and a specific factor we call "capital". The return to capital is an increasing and concave function $\Pi(p_g)$ of the domestic price. The slope of the profit function yields

[1]For instance, the finding by the panel can be appealed to the Standing Appellate Body. We similarly abstract from issues of enforcement and compliance with the panel or the appellate body findings.

the supply function $s(p_g)$. That is $s(p_g) = \Pi'(p_g)$ for $g = 1, 2, 3$.

The indirect utility for any individual i in district j is $V_{ij} = I_{ij} + \sum_{g=1}^{3} \Delta_i(p_g)$ where I_{ij} is the individual's income, and $\Delta_i(p_g)$ is the consumer surplus from the consumption of good g. Consumers consume all four goods. Demand for good g is $d(p_g) = -\Delta'(p_g)$. That is higher prices, perhaps due to domestic government protection for that sector, lead to reduced consumer surplus - protection harms the individuals in their capacity as consumers.

Then aggregate income of district j in country H is

$$I_j = \frac{1}{3} + \Pi(p_j) \tag{1}$$

Let π_g is the external/world price of good g which is given and fixed (D is a small open economy). Units are chosen such that $\pi_g = 1$ for all g.

Then the aggregate welfare of district j is

$$V_j = \frac{1}{3} + \Pi(p_j) + \frac{1}{3}\sum_{g=1}^{3} \Delta(p_g) \tag{2}$$

The first term reflect the wage income of one-third of the population; the second term refers to the profits earned by the firm(s) located in the j district. The term under the summation sign refers to the j'th district's share of consumer surplus

Trade policy takes the form of a *specific* tariff (or export subsidy) t_g and the domestic (internal) price in D is $p_g = t_g + \pi_g = t_g + 1$ (where $t_g < 0$ represents an import subsidy or export tax).

2.1 Government and Policy

We now consider the political institutions in D. In a democracy, a leader takes control of the government, and hence policymaking, when it holds a majority of the districts. A government therefore can be made up of members representing any two of the districts

or perhaps all three. In an autocracy, the government represents only one district.

Denote the coalition forming the government in country D by C^D. For example, if the coalition supporting the leader in D (a democracy) is $\{j,k\}$, then $C^D = \{j,k\}$. If D is an autocracy run by representative from the j sector/district, then $C^D = \{j\}$.

We assume that any tariff revenue accrues to (or export subsidy is paid by) the government.

Consider a democracy (in country i) in which the representatives of j,k form a government. Then the support coalition chooses policy to maximize $V_j + V_k$+*tariff revenue/export subsidies*. Alternatively in an autocracy suppose representative j forms the government. It chooses policy to maximize V_j+*tariff revenue/export subsidies*.

2.2 The Leader's Problem

The leader chooses levels of protection for all three sectors based on its support coalition. In a democracy say, at home, the leader (of a coalition that includes districts j and k) chooses tariffs t_g for $g = j,k,l$ to maximize the welfare of the members of the leader's governing coalition,

$$V_j + V_k = \frac{2}{3} + \sum_{g=j,k} \Pi(t_g+1) + \sum_{g=j,k,l} \left[\frac{2}{3}\Delta(t_g+1) + t_g m(t_g+1)\right]$$

While in an autocracy (led say by district j), the leader chooses protection for all three goods in order to maximize

$$V_j = \frac{1}{3} + \Pi(t_j+1) + \sum_{g=j,k,l} \left[\frac{1}{3}\Delta(t_g+1) + t_g m(t_g+1)\right]$$

To keep things simple we assume linear demand and supply: $d(p_g) = d - \delta t_g$ and $s(p_g) = s + \sigma t_g$. Of course $d, s > 0$, which represent supply and demand levels when free trade occurs. The coefficients $\delta, \sigma > 0$.

Lemma 1. *The optimal trade protection profile for a*

1. *democracy with* $C^D = \{j, k\}$ *is* $\left\{\frac{d}{4\delta+3\sigma}, \frac{d}{4\delta+3\sigma}, \frac{d-3s}{4\delta+6\sigma}\right\} \equiv \{x, x, z\}$;

2. *autocracy with* $C^D = \{j\}$ *is* $\left\{\frac{2d}{5\delta+3\sigma}, \frac{2d-3s}{5\delta+6\sigma}, \frac{2d-3s}{5\delta+6\sigma}\right\} \equiv \{X, y, y\}$.

The proofs are in the Appendix. Simplifying notation, we denote these as $\{x, x, z\}$ for the democratic case, and $\{X, y, y\}$ for the autocratic case. Notice that regime type affects both which sectors get protected and the level of protection. A sector in the support coalition receives more protection; but protected sectors in a democracy receive less protection than in an autocracy:

Lemma 2. *Ordering protection:*

1. *The optimal protection for any sector in the winning coalition is smaller in a democracy than in an autocracy; the optimal protection of any good outside the winning coalition is smaller in a democracy than an autocracy. That is* $X > x$ *and* $|y| > |z|$.

2. *Also* $x > z$ *and* $X > y$.

A democratic leader not only cares about protecting the capital owners who are member of the support coalition. The democratic leader must also worry about the consumer surplus, and hence the domestic prices facing two-thirds of the consumers of the country. Since more protection for capital owners invariably means higher prices for consumers, a democratic leader will be constrained in raising protection by the effect on consumer welfare. An autocratic leader, on the other hand, cares only about the capital owners in one sector, and only one-third of the consumers. Since fewer consumers enter the objective function (and the effect of protection on profits is linearly independent), an autocratic government offers deeper protection at the expense of the broader community.

This result, that democracies adopt lower levels of protection across a broader range of industries, has been identified in the prior literature. See for instance Rosendorff (2006); Milner and Rosendorff (1997); Mansfield, Milner, and Rosendorff (2000, 2002);

Milner, Rosendorff, and Mansfield (2004); Hollyer and Rosendorff (2012). However, prior explanations have relied upon arguments related to separation of powers, or electoral accountability or the need for effective transparency. Here the explanation relies solely on the relative sizes of the coalition needed to support the leader in power. A democratic leader relies on the wellbeing of a greater swath of the population and therefore is less inclined to protect special interests at the expense of the broader welfare.

3 Disputes

Now consider a second country, P, the potential plaintiff that trades with D. Country P also produces the same three goods j, k, l, each produced in a sector with the same sector specific capital. Country P therefore has a ruling coalition denoted C^P which, like in D, could be for instance $\{j, k\}$ if P is a democracy, or could be for instance, $\{k\}$ if P is an autocracy. A trade barrier applied by the leader in D harms the corresponding sector in P. And a larger barrier harms the sector in P by more. For example the loss experienced by sector j in P is larger when D applies barrier X compared to barrier x. We ignore the tariff setting process in P. We are concerned instead with P's behavior with respect to the filing of disputes with D as a consequence of D's trade policy behavior.[2]

3.1 Violation

To keep things simple, we denote a country's WTO obligations as requiring an applied tariff (or export subsidy) at or below the bound rates as specified by the agreement. We suggest that a country increases the likelihood that it is in violation of its WTO obligations as it sets a higher level of protection. We assume the probability of a

[2]Of course, there is a symmetric case where D may wish to file a dispute over P's trade policy. For simplicity, and clarity, we focus of the case where D sets policy and P chooses whether or not to file.

violation is rising in the magnitude of the trade barrier:

Assumption 1. *The probability that country D is in violation of its treaty obligations with respect to good g rises with the barrier it erects on good g. That is $Pr(V_g) = f(|t_g^D|)$ with $f' > 0$ where t_g^D is the barrier chosen by country D with respect to good (and sector) $g = j, k, l$.*

3.2 A dispute has three pre-conditions

Three conditions are necessary for P to be inclined to file a dispute against country D. There must (most likely) have been a violation, and it must be politically optimal to file a dispute. The mere presence of a violation is necessary but not sufficient for a filing. The sector that has been harmed by the offending measure applied by D must be member of the governing coalition in P and the P must regard the opportunity costs of filing as worthwhile. Three factors affect whether P complains about D's trade policy in a particular sector, say g :

1. The amount of protection D gives to sector g. As derived above this depends upon whether g is in D's coalition and the size of D's coalition.
2. Whether g is in P's coalition, and hence whether P cares about any harm imposed on sector g.
3. The size of P's coalition and hence whether the welfare of g is P's only concern or whether P needs to balance j's needs against those of other coalition members. The more groups there are in P's coalition, the less P can focus on the needs of each group.

The first factor depends upon D's institutions and the composition of D's coalition. The latter two factors depends upon P's coalition and institutions.

Assumption 2. *Country P files a dispute against D over its barriers in sector g with probability $Pr(Dispute_g) = f(|t_g^D|)h(C^P)I\{g \in C^P\}$, where $I\{g \in C^P\}$ is an indicator*

function that takes the value 1 when g is a member of the winning coalition in P and $h(C^P)$ *is a decreasing function of the number of groups in P's coalition.*

The probability that P (the "Plaintiff") files a dispute against D (the "Defendant") over its barriers in sector g requires that g is a member of the support of the support coalition in P. If that condition is satisfied, then the probability of filing is rising in the level of the protection (which is declining in the size of D's coalition) and decreasing in the size of P's coalition.

4 Plaintiff Institutions and Dispute Incidence

Consider the effect of D's tariff profile on the sector(s) that provide(s) support to the leader in country P. Table 1 examines a situation where the defendant (country D) is autocratic and the columns in the table represent the possible coalitions that support the autocrat in D: $\{j\}, \{k\}, \{l\}$. The rows of the table represent the possible coalitions that can support the leader in the plaintiff nation P, also (for now) an autocracy, $\{j\}, \{k\}, \{l\}$.

The cells of the table show the tariff levels of *ruling coalition* members in nation P face given the trade policy induced by the coalition membership in nation D. For instance, when both states are autocratic and both leaders in P and D build their support around coalitions in sector j (the top left entry of the table), then the supporters of the leader in P suffer highly from D's large protectionist policies in sector j. In particular, the coalition of supporters based on sector j in nation P face a protection level of X due to the policies in D. Since X denotes a large level of protection, and the affected sector is a member of, (and is the only member of) P's ruling coalition, our three parameters determining the dispute probability are all taking on their highest values, suggesting a high probability of a filing by P. We shade the cell to indicate this high likelihood of dispute.

Reading across the top row of the table, if instead, D is supported by sector k,

Table 1: Autocratic Defendant D and Autocratic Plaintiff P: Barriers faced by sectors in, and the probability of filings by, P.

Plaintiff \ Defendant		Autocracy, D		
		$\{j\}$	$\{k\}$	$\{l\}$
Autocracy, P	$\{j\}$	X	y	y
	$\{k\}$	y	X	y
	$\{l\}$	y	y	X

Entries indicate the barriers faced by each sector in P, depending on the support coalition in D. Shading represents cases where the probability of filing is highest: where high barriers erected by D affect the sectors in the support coalition of P. Probability of filing is highest in one-third of the cells.

country P, an autocracy supported by j, sees its core supporters facing tariff of y. Similarly, if D is supported by sector l, country P, an autocracy supported by j, sees its core supporters facing also tariff of y. Since y is lower and the core supporters of P, the j-sector (in the top row of the table) are facing lower barriers (recall $X > y$), the likelihood of a dispute is lower, indicated by the lack of shading of the cells. The shaded cells indicate the cases where there are more likely to be filings by P against D.

When the plaintiff state P is a democracy however, P's willingness to file depends on whether the members of its supporting coalition are affected. Reading across the first row of Table 2, we see that the underlying support coalition in P is $\{j, k\}$. If the support coalition in the autocracy D is j, then the coalition in P is facing tariffs of X for the j firms and y for the k firms. P's coalition member j is harmed, so $I\{j \in C^P\} = 1$; $f(X)$ is large, since the protection applied by D is large; and $0 < h(\{j, k\}$. Hence the probability of P filing is higher, and we color this cell as before.

If instead country D's leader is supported by sector k, the democratic leader in P

Table 2: Autocratic Defendant D, and Democratic Plaintiff P: Barriers faced by sectors in, and the probability of filings by, P.

Plaintiff \ Defendant		Autocracy, D		
		$\{j\}$	$\{k\}$	$\{l\}$
Democracy, P	$\{j,k\}$	X,y	y,X	y,y
	$\{j,l\}$	X,y	y,y	y,X
	$\{k,l\}$	y,y	X,y	y,X

Entries indicate the barriers faced by each sector in P, depending on the support coalition in D. Shading represents cases where the probability of filing is highest: where high barriers erected by D affect at least one of the sectors in the support coalition of P. Probability of filing is highest in two-thirds of the cells.

supported by $\{j,k\}$ would face a tariff of y for j and X for k. Once again a sector supporting the leader in the democracy suffers under the policy profile of D, and it is large enough - P is likely to file. Hence the second yellow cell in the top row.

The third cell in the top row reflects that D applies low barriers to the sectors in P's support coalition. The affected sector that receives the biggest protection, l is not a member of P's coalition, hence $I\{l \in C^P\} = 0$. Then the likelihood of a filing is zero.

We fill in the table in a similar fashion.

The shaded areas of Tables 2 and 1, indicate the political configurations likely to lead to a trade dispute. Given an autocratic potential violator/defendant, when the plaintiff nation (country P) is autocratic, the violator's (country D) trade policies harm the welfare of P's coalition members in one third of cases. In contrast, when the plaintiff is democratic, D's policies harm the coalition members' welfare in two thirds of cases.

Our first observation is apparent. It is suggestive that since there are more shaded cells in Table 2 than in Table 1, members of a democrat's coalition are more likely to

be adversely affects by D's trade policy than are coalition members in non-democracies (although this effect is partially offset by the democrat's need to split her efforts over two support groups). Before we can make this claim, however, we need to check that the same pattern emerges when the defendant state D is a democracy - so far we have kept the institution in D fixed as an autocracy.

Table 3 repeats the above analysis but now focusing on the situation where the violating, and hence potential defendant, nation D is democratic. In an analogous manner to Tables 1 and 2 the cells in the table indicate the barriers faced by sectors in P as the ruling coalition in D varies. Where the barrier applied by D is larger (recall $x > 0$), and the barrier falls on a member of the ruling coalition in P, we indicate that the conditions for the filing of a dispute have been met by shading the cell.

Table 3: Democratic Defendant D: Barriers faced by sectors in, and the probability of filings by, P.

Plaintiff \ Defendant		Democracy, D		
		$\{j,k\}$	$\{j,l\}$	$\{k,l\}$
Autocracy, P	$\{j\}$	x	x	z
	$\{k\}$	x	z	x
	$\{l\}$	z	x	x
Democracy, P	$\{j,k\}$	x,x	x,z	z,x
	$\{j,l\}$	x,z	x,x	z,x
	$\{k,l\}$	x,z	x,z	x,x

Entries indicate the barriers faced by each sector in P, depending on the support coalition in D. Recall $x > z$ by Lemma 2. Shading represents cases where the probability of filing is highest: where high barriers erected by D affect at least one of the sectors in the support coalition of P. The darker pink shading indicates the cases where both sectors in the support coalition of P are affected severely by the trade policies of D. Probability of filing is highest in two-thirds of the cells when P is autocratic and in all the cells when P is democratic.

An analogous contrast in the incidence of filings exists when the defendant D is democratic. Recall (from Lemma 2) that $x > z$. When P is autocratic, D's policies harm members of P's coalition in 2/3 of cases. When D is democratic, some coalition members are always harmed by P's policies and in 1/3 of cases the welfare of both coalition sectors are adversely affected by D's policies. Irrespective of whether the defendant is autocratic or democratic, the interests of plaintiff's supporters are more likely to be harmed by the defendant's trade policies when the plaintiff is democratic than when the plaintiff is autocratic[3]. This result leads to the following hypothesis:

Hypothesis 1. *Within plaintiff states, democratic political institutions increase the likelihood of dispute onset compared to autocratic institutions.*

We are more circumspect about the impact of D's institutions on the likelihood of dispute. When D is democratic, members of P's coalition are more likely to be adversely affected by D's policies but the extent of the harm is more limited than when D is autocratic. Our empirical analyses suggest that the more harmful effects of an autocrat's policies outweigh the broader spread of a democrat's policy as democratic nations are less likely to be defendant's in WTO disputes that autocrats.

5 Leader Change and Dispute Onset

Next we turn to an assessment of the impact of leader change in the defendant state, D on the incidence of filings in the plaintiff state, P.

5.1 Autocratic Leader Change in the Defendant State

Consider first the thought experiment in which there is leader change in the defendant country, D, an autocracy. Suppose that the underlying support coalition in D shifts

[3]Although we should not completely forget the partial prevailing factor that a democratic P has to split her attention over multiple groups

from sector j to sector k. The tariff profile of country D shifts from $\{X, y, y\}$ to $\{y, X, y\}$. In Table 4 we replicate parts of the earlier Tables 1 and 2, and add arrows indicating the leader change in D, from a leader supported by sector j to one supported by k.

If an autocratic leader in nation P bases her coalition around sector j (top row), then the conjectured political change in nation D leads to a change in the tariffs facing sector j in P from X to y. Since protection facing j has fallen ($y < X$), this leads to a likely settlement of any outstanding dispute over trade policy in sector j. If leader change occurs in D and the support coalition shifts from j to k, then the new leader D has no desire to protect sector j and so is likely to readily settle any outstanding dispute over that sector.

In contrast, if P's coalition is based around sector k (second row), then the shift in D's support coalition from j to k is liable to trigger the onset of a new dispute over sector k. The new leader in D wants to protect sector k, raises the tariff facing j in P from y to X and this harms the supporters of leader P. If P's coalition is based around sector l (third row), then the shift in D's support coalition from j to k has little impact on P as P's supporters are not harmed under either political configuration in D.

In *one out of three* cases, the leader change in D leads to the onset of a new dispute when D is an autocrat.

The lower portion of Table 4 repeats the analysis for the case when the plaintiff is democratic; again the final column assesses the impact of political changes in D's support coalition on the welfare of member's of P's coalition. Consider the shift in D's coalition from j to k. If the democratic plaintiff's coalition is $\{j, k\}$ (top row of the lower panel), then such a shift in D's leader lessens conflict in sector j, as the new leader D reduces the tariffs facing j from X to y. There is however an increase in trade conflict over sector k, which the new leader D now wants to more intensely protect – D raises the tariff facing k from y to X. The other rows in the lower portion

Table 4: Autocratic D: Barriers faced by sectors in, and the probability of filings by, P's after Leader Change in Autocratic D.

Plaintiff \ Defendant		Autocracy, D			D Coalition Change
		$\{j\}$	$\rightarrow$	$\{k\}$	$\{j\} \rightarrow \{k\}$
Autocracy, P	$\{j\}$	X	$\rightarrow$	y	$\downarrow$ settle (j)
	$\{k\}$	y	$\rightarrow$	X	$\uparrow$ onset (k)
	$\{l\}$	y	$\rightarrow$	y	no effect
Democracy, P	$\{j,k\}$	X,y	$\rightarrow$	y,X	$\downarrow$ settle (j), $\uparrow$ onset(k)
	$\{j,l\}$	X,y	$\rightarrow$	y,y	$\downarrow$ settle (j)
	$\{k,l\}$	y,y	$\rightarrow$	X,y	$\uparrow$ onset (k)

Change in the underlying support coalition in country D, an autocracy, leads to changes in the trade policy profile faced by the coalitions in P. Note $X > y$ (Lemma 2). Entries indicate the barriers faced by the coalitions in P; the shaded regions indicate where both barriers are high and the affected industries are members of the leading coalitions in P - hence the cases where P is more likely to file a dispute. New disputes are initiated after leader change in D in one-third of the possible configurations of P's support coalition when P is an autocracy; in two-thirds when P is a democracy.

of Table 4 examine the other possible configurations. When democrat P's coalition is $\{j, l\}$ (second row of lower panel), the conjectured leader change in D from coalitional support of j to k leads to settlement on any outstanding dispute in sector j. When P's coalition is $\{k, l\}$ (third row of lower panel) then the same conjectured political change in nation D leads to the onset of harm to P's coalition members in sector k.

The coalitional shift in autocratic D leads to the onset of harm to supporters of leader P in 2/3 of cases. Further, since D is autocratic and hence intensely protects her supporters (the tariff level is X, the largest), the harm inflicted by the shift in trade policy satisfies our criteria for raising the probability of the onset of a trade dispute.

Shifts in the leadership and coalition support in the defendant lead to shift in trade policy that mean the averse effects of highly protectionist policies affect new groups within the plaintiffs coalition 1/3 of the time if the plaintiff is autocratic and 2/3 of the time if the plaintiff is democratic. This result leads to the following prediction:

Hypothesis 2. *In autocratic defendants, leader change accompanied by changes in the support coalition increase the risk of dispute onset.*

It is worth noting that these same autocratic leadership change also increase the chance of ongoing dispute *settlement* (Bobick and Smith, 2013), however, we do not examine dispute settlement here.

5.2 Democratic Leader Change in the Defendant State

Next we contrast the impact of defendant leader change in democracy with the earlier case of defendant leader change in autocracy. The final column of Table 5 makes an analogous analysis to that performed above and shows how a leader change in D that results in a coalitional shift from $\{j, k\}$ to $\{j, l\}$ leads to the ending of, and onset of, harm to the interests of sectors in P's coalition. For instance, if sector l is represented in the leadership of autocratic P (the third row of the top panel) when the democratic leadership in D switches from $\{j, k\}$ to $\{j, l\}$, sector l in P, which faced low barriers z

prior to the leader change, now faces higher barriers, x.

If instead the plaintiff state is a democracy, say supported by coalition $\{j, l\}$ (the second row of the lower panel of Table 5, the leader change in D to a government also supported by $\{j, l\}$ leads to a rise in the barriers faced by sector l, while the barriers faced by sector j do not change.

Once again the shaded cells indicate where the conditions for a dispute are satisfied - the barriers facing the at least one sector are high, and that sector is a member of P's winning coalition.

In the third column we can read the effect of the leader change on filings by P. Irrespective go whether P is autocratic or democratic, in one out of three possible coalition configurations in P, P initiates a new filing.[4]

Recall the last column of Table 4 – there, where D was autocratic the comparable figures were 1/3 and 2/3 depending upon the regime type in P. The extent of the harm imposed on P's supporters is less when D is an autocracy. Hence both in terms of the frequency with which harm is imposed on P's supporters and the magnitude of such harm, democratic defendant change is less likely to trigger dispute onset than autocratic leader change.

Hypothesis 3. *Leader change accompanied by changes in the support coalition in democratic defendants is less likely to trigger dispute onset than autocratic defendant leader change.*

5.3 Leader Change in the Plaintiff State

Thus far we have looked at leader changes in the defendant state, D. Such leader changes lead to a shift in D's trade policy. Leader change in the plaintiff state P can also lead to dispute onset, not because such change leads to new violations of

[4]In one-third of the case there is no change in the pattern of disputes, and in one-third of the cases, there is settlement.

Table 5: Leadership Change in a Democratic Defendant D

Plaintiff \ Defendant		Democracy, D			D Coalition Change
		$\{j,k\}$	$\rightarrow$	$\{j,l\}$	$\{j,k\} \rightarrow \{j,l\}$
Autocracy, P	$\{j\}$	x	$\rightarrow$	x	no change
	$\{k\}$	x	$\rightarrow$	z	$\downarrow$ settle (k)
	$\{l\}$	z	$\rightarrow$	x	$\uparrow$ onset (l)
Democracy, P	$\{j,k\}$	x,x	$\rightarrow$	x,z	$\downarrow$ settle (k)
	$\{j,l\}$	x,z	$\rightarrow$	x,x	$\uparrow$ onset (l)
	$\{k,l\}$	x,z	$\rightarrow$	x,z	no change

Change in the underlying support coalition in country D, a democracy, leads to changes in the trade policy profile faced by the coalitions in P. Note $x > z$ (Lemma 2). Entries indicate the barriers faced by the coalitions in P; the shaded regions indicate where both barriers are high and the affected industries are members of the leading coalitions in P - hence the cases where P is more likely to file a dispute. New disputes are initiated after leader change in 1/3 of the potential configurations of support coalitions in P when P is an autocracy and when P is a democracy.

trade rules, but rather following leader changes in P the new leader wants to complain about existing policies in D. Unfortunately the analysis of plaintiff leader change is not as crisp as the case of defendant leader change because there are competing effects. Specifically, leader change in a democratic plaintiff has a higher probability of leading to a new group in the coalition being harmed by D's policies than leader change in an autocratic plaintiff. However, the autocratic plaintiff is the more strongly motivated to act on any such incidence. Hence we must leave it to the data to decide whether leader change in autocracy or democracy has the larger impact on the risk of a nation becoming the plaintiff in a WTO dispute. In the appendix we analyze the competing factors that influence P's decision to initiate a WTO dispute.

6 Data

Tests of the theory require data on WTO dispute, change in political leaders, change in the coalition that support leaders and other political and economic data.

6.1 WTO data

The WTO provides comprehensive data on disputes.[5] These data provide a list of disputants, the dates of dispute onset and a summary of the issues involved and the progress of the dispute through the WTO. We refer to a nation that initiates a complaint as the plaintiff, or nation P, and the target of the complaint as the defendant, nation D .

Between 1995 and 2008, the WTO lists 388 disputes. However, this number of disputes need to be adjusted. First, several of the disputes involve multiple participants, usually this is in the form of multiple complainants, but there are several cases where multiple defendants are named. Multiple participants increases the number of dyadic disputes to 421. However many disputes occur between the same participants in the

[5]http://www.wto.org/english/tratop_e/dispu_e/dispu_status_e.htm" accessed 7/14/2013.

same year. For instance, in 2000, the EU initiates 6 complaints against the US. Our dependent variable is the occurrence of a dispute filed by P against D in a particular year. Allowing for the presence of multiple disputes there are 334 dyad years in which a dispute occurs between 1995 and 2008. We refer to this list of dyad-dispute years as the **long** list of disputes.

It is reasonable to argue that the long list of disputes involves considerable double counting. For instance, in Dispute 16 in September 1995, Ecuador, Guatemala, Honduras, Mexico and the United States complain about the EU's importation, sale and distribution of bananas. These nations then again request consultation on the same issue in February 1996, Dispute 27. In the long list of disputes taken from the WTO's list these disputes are treated as separate events. They are after all important political statements in which governments complain about the policies of another government. However, the second complaint is inherently the same as the first. Following the lead of others, we create a **short** list of dyad years with disputes by collapsing related disputes into a single event. Between 1995 and 2008, the Bobick and Smith (2013) extension (following the procedures of Hudec (1993)) of the Busch and Reinhardt (2003) data contains 321 dyadic disputes which results in 268 dyadic years in which WTO disputes occur - remember there are instances of multiple disputes between the same pair of nations in a particular year. The maximum number of dyads involved in disputes is 38 in 1996 and the minimum of dyads involved in disputes is 10 in 2007.

Whether the long- or short list of disputes is appropriate is debatable. On the one hand, the long list contains complaints in which the issues are unchanged from an earlier complaint. However, in political terms the subsequent complaint is an important political act in which the leadership of one nation expresses its displeasure with the policies in another nation. There are arguments to focus analyses on the substantive issue raised (the short list) but there are also reasons why, in political terms, any complaint is an important signal of support for a particular domestic group (the long list). Fortunately, the empirical conclusions of this paper do not hang on whether the

focus is on underlying substantive issue or the expression of political support. The analyses generate similar results whether we use the long or short list of disputes. We present results using the short list in the main text and show analogous analyses for the long list in Appendix 2.

The relevant domain of potential disputes is all directed dyads of WTO members. We discuss the special case of the European Union below in detail. To create such a database, we create a list of all WTO member states for each year between 1995 and 2008. We then match each member nation with every other WTO nation for each year. We create a WTO Dispute variable which takes the value one in a particular year if and only if nation P initiates a dispute against nation D in that year (as discussed above, there could be multiple disputes in a particular year). In all other cases, WTO Dispute is coded as 0. The data contain 230,127 directed dyad-year observations in which, using the short list, 268 directed dyad years experience actual dispute onset. The dependent variable in the tests is the onset of disputes. Given their comparative rarity, approximately on 1 in a 1000 cases, we use rare event logit procedures from Tomz, King, and Zeng (2003). These techniques adjust the standard logit model to take into account the relative rarity of events. We use STATA implementation of these procedures which conveniently incorporate *Clarify*, a simulation-based approach that provides a convenient means for assessing the substantive impact of changes in variables (King, Tomz, and Wittenberg, 2000). *Clarify* works by drawing random samples of parameter values based upon the parameter estimates and then comparing predicted outcomes under different values for the independent variable settings.

Within the data, the European Union (EU) requires special consideration. Although not a member of the WTO in its own right, since EU policies regulate trade for all EU members, the EU typically represents the interests of its members. In the data the EU is the complainant in 35 disputes. There are no instances in which individual EU member states initiate a dispute in the role of complainant. The EU, rather than an individual EU member state, is typically named as a defendant. There are 44 such

cases in the data. However there are exceptions and cases occur when an individual EU member state is the defendant. For instance, in Disputes 67 and 68 (14 February 1997) the US complained about the classification of computer products by Ireland and the UK. In these disputes, individual EU member states were the named defendants rather than the EU itself. There are 13 similar cases in the data. The EU's role in WTO disputes creates something of a quandary with respect to creating the domain of valid cases. Since the EU is involved in 79 disputes and its individual members are named as defendants in a further 13 cases, the EU's role in the WTO cannot be ignored.

We take a pragmatic approach to handling observations involving the EU. We create a pseudo-nation we call "EU". With respect to economic indicators such as population and GDP we treat the EU as the sum of its constituent member states. We include the EU as a WTO member with respect to creating directed dyads. We exclude any dyad involving the EU in one role and an individual EU-member state in the other.

In the analyses we exclude all dyads in which an EU member state is nation P, the plaintiff. However, since individual EU states are named as defendants, we include directed dyads that include EU member states as nation D, that is in the role of potential defendant.[6] As a robustness test, we repeat analyses excluding all dyads involving the EU or EU member states.

6.2 Leader and Coalition Change

Leaders have increasingly become important units of analyses in international relations. To test our hypotheses we require data on the turnover of leaders and when the support coalition changes. We use the Change in Source of Leader Support (Leeds and Mattes, 2013) data that was kindly provided by Ashley Leeds and Michaela Mattes. These data provide the date of each national leader change for most nations from 1919 to 2008.

[6]It is this asymmetric inclusion of individual EU states as defendants but not plaintiffs that results in an odd number of directed dyads.

Not all leader change result in a realignment of the support coalition. For instance, in a parliamentary government a turnover in the Prime Minister is not associated with a change in support coalition if the party composition of the cabinet remains unchanged. For instance, the CHISOLS data would not code the replacement of Tony Blair by Gordon Brown as British Prime Minister in 2007 as a coalition change because the government remained a Labour Party majority government. However, a support coalition change took place in 2010 when Brown was replaced by Conservative Party leader David Cameron following electoral defeat for Labour.

For each nation in the directed dyad pair, we know the dates of leader and support coalition changes. We examine three principle variables for each pair in the dyad.

1. $\Delta \mathrm{L}_D$ is coded one if any national leader change occurred in nation D, the defendant country, in the current or previous year, and is coded zero otherwise.

2. $\Delta \mathrm{SC}_D$ is a dummy variable coding whether any leader change in nation D, the defendant state, occurred in the current or previous year was accompanied by a shift in the support coalition.

3. $\Delta \mathrm{nonSC}_D$ is a dummy variable for any leader change in the current or previous year that was not associated with a change in support coalition. If there are multiple leader changes in the current or previous year then this variable is coded 1 only when none of the changes were associated with changes in the support coalition.

There is a certain amount of redundancy in these definitions since any two of the change variables are sufficient to create the third. However, for presentation reasons it is useful to break leader changes into different classes. Our hypotheses emphasize the importance of political institutions in moderating the impact of political change and it is these data that we now turn.

6.3 Political Institutions

The theory emphasizes how institutions affect the breadth of support that a leader needs to secure in order to survive. We use the Bueno de Mesquita et al. (2003) measure of winning coalition size to capture institutions on exactly this dimension. W_P and W_D refer the coalition size for the plaintiff and defendant in each directed dyad.[7] [8] As a robustness check, we also use Polity's Democracy minus Autocracy score. We rescale this 21 point scale to range between 0 and 1, with 0 indicating the most autocratic nations and 1 indicating fully-fledged democracy.

6.4 Economic and Other Data

Economic data on population size, GDP and trade as a percentage of GDP are obtained from the World Bank's World Development Indicators (World Bank, 2010). Additional variables including bilateral import data, distance and colonial connections were obtained from EUGENE (Bennett and Stam, 2000). The analyses include the year of dispute initiation to control for temporal trends. There is substantial temporal

[7]The coalition size variable is a five-point scale created using data from Polity IV (Marshall, Jaggers, and Gurr, 2000) and Banks (1979). The index of coalition size contains four components that reflect the inclusiveness or non-inclusiveness of the system: REGTYPE, XRCOMP, XROPEN, and PARCOMP. The variable REGTYPE refers to regime type and is coded as 2 for military regimes and coded as 3 for military/civilian regimes. Since coalitions in military regimes are formed around a small group of military elites, a military regime is indicative of a small coalition. W receives one point if REGTYPE is not coded as 2 or 3. The variable XRCOMP measures the competitiveness of executive recruitment. This variable is coded as one when the chief executive is selected by heredity or in rigged, unopposed elections. Such rules are indicative of leaders being dependent upon only a small number of supporters. In contrast, higher values (2 or 3) of XRCOMP indicate a dependence on a greater number of supporters. When XRCOMP equals 2 or 3, W receives an additional point. The openness of executive recruitment, XROPEN, contributes an additional point to W if the executive is recruited in a more open setting than heredity (that is, the variable's value is greater than 2). Executives who are recruited in an open political process are more likely to depend on a larger coalition than are those recruited through heredity or through the military. Finally, one more point can be contributed to the index of W if PARCOMP, competitiveness of participation, is coded as a 5, meaning that there are relatively stable and enduring political groups which regularly compete for political influence at the national level (Polity II, p. 18). This variable is used to indicate a larger coalition on the supposition that stable and enduring political groups would not persist unless they believed they had an opportunity to influence incumbent leaders; that is, they have a possibility of being part of a winning coalition. The indicator of W is then divided by 4 to create a five-point scale for W taking the possible values 0, .25, .5, .75, and 1.

[8]We treat the EU as a large coalition system without any instances of leader change.

variation in dispute initiation. To account for this we include the variable Year, which is the calendar year minus 2000, in each specification. In addition to treating time as a linear effect we have used cubic specification and year dummies, which lead to similar results.

In our robustness tests we also include a measure of prior dispute involvement as a measure of capacity. Nations that have already been involved in previous WTO disputes have already developed the legal and bureaucratic expertise to shepherd a complaint through the WTO. We include the log of number of prior disputes as a measure of the plaintiff's capacity to initiate a dispute (based on our long list of disputes). If both nations in a dyad are members of a preferential trade agreement, then they might settle trade disagreements under the auspices of that PTA rather than through the WTO. We code mutual PTA membership using Dur et al.'s (2013) DESTA data (Dür, Baccini, and Elsig, 2013). Table 6 provides summary statistics of the core variables in the analyses.

7 Results

The theory emphasizes the importance of leader change in triggering the onset of WTO disputes. Table 7 provides a simple first look at the relationship between leader change and dispute initiation (based on the short list of disputes). The columns in the table represent different contingent circumstances with respect to whether or not leader change occurred in either of the nations in each dyad. The first column represents instances where no leader changes have occurred. The second column corresponds to observations in which leader change occur in the current or previous year in nation P, but no leader change occurred in nation D. Observations in which leader change occurred in nation D in the current or previous year but leader change did not occur in nation P are in the third column. The final column corresponds to observations where both nations experienced leader change. The table is divided into two rows.

The top row corresponds to dyads that have not experienced a recent prior dispute. Observations in which a prior WTO dispute has occurred between P and D within the previous two years are in the lower row. The table does not distinguish between whether nation P or D was the initiator of the prior dispute. Each cell contains two numbers. The latter is the number of observations that meet the leader change and prior dispute contingencies. The former number corresponds to the rate of dispute onset in terms of disputes per ten thousand observations.

Table 7 shows several clear patterns. First, and most notably, dyads that have had recent disputes (defined as a dispute within the dyad in either of the two previous years) are far more likely to have future disputes than dyads without a recent history of disputes.[9] In particular, the rate of WTO dispute onset is about 7.3 per 10,000 observations for dyads without a recent history of disputes. When there is a prior history of disputes, then the rate of dispute onset jumps to about 50 per 10,000 dyad years. As our subsequent analyses will show, the elevated rate of onset occurs for two reasons. WTO disputes tend to occur between economic heavyweights so a relatively small subset of nations are responsible to a disproportionate number of the WTO disputes. Nations in this subset are both more likely to be involved in past and future disputes. However beyond this compositional effect, past disputes beget new disputes.

The second pattern that emerges from Table 7 is how leader change affects the rate of dispute onset. Absent prior recent disputes, the rate of dispute onset is about 6 per 10,000 without leader change. This rate jumps to about 8 per 10,000 if either leader P or leader D changed and up to about 10 per 10,000 if both leaders change. Leader changes elevates the rate of WTO dispute onset, although in the full sample these differences are not statistically significant. This lack of significance is perhaps unsurprising since the vast majority of dyads experience no dispute activity. The lower

[9]Davis and Bermeo (2009) makes a similar finding: past experience in trade adjudication, as either a complainant or a defendant, increases the likelihood that a developing country will initiate disputes. States that frequently file GATT/WTO complaints are however, less likely to be targeted in U.S. anti-dumping decisions (Blonigen and Bown, 2003; Bown, 2001).

row in the table looks at contingencies where nation P and D have engaged in prior dispute activity in the previous two years. Given prior recent quarrels, leader change can diminish the risk of WTO dispute onset.

Table 8, which examines leader change only in terms of changes in the underlying support coalition, exhibits similar patterns. Dyads with prior dispute history are the more likely to become involved in additional disputes. Changes in the support coalition slightly elevates the risk of dispute onset in the absence of prior disputes, but reduces the likelihood of dispute onset if leader change occurs. Tables 7 and 8 present only raw effects and fail to consider the underlying likelihood of dispute between a pair of nations and neither do they consider the institutional context in which leader change occurred. In Appendix 2, Tables 15 and 16 replicate these tables with the long list of disputes and these tables exhibit similar patterns. We now turn to a systematic investigation of the impact of leader change on the onset of WTO disputes.

Table 9 shows rare event logit regressions using the short list of disputes. The models contain a basic specification that examines the impact of institutions and leader change in the presence of simple economic and demographic controls. Subsequent tables elaborate on the impact of other control variables. Unfortunately, inclusion of additional controls reduces the number of available observations. Before examining the impact of leader change, it is useful to discuss the role of economic variables in affecting the onset of disputes.

WTO disputes occur between large economically powerful nations, as can be seen by the large and significant coefficients on the population size and GDP variables for both complainant ($\ln GDP_P, \ln POP_P$) and defendant ($\ln GDP_D, \ln POP_D$). To gauge the prominence of economic factors, we compare the likelihood of dispute onset when the GDP and population variables at the 75th percentile level with the likelihood of disputes when they are at the 95th percentile level. In making these comparisons we set the institutions to $W_P = 0$, $W_D = 0$, suppose no leader change and assume the year to be 2000. In Model 1, when the economic and demographic variables are

set the 75th percentile level, the predicted probability that P initiates a dispute is a mere 0.00007, less than one dispute per 10,000 dyad years. However, in larger nations (GDP and population at the 95th percentile) the rate of dispute onset is substantially higher: approximately 20 disputes per 10,000 dyad years.[10] Given the relative rarity of WTO disputes under most circumstances, it more convenient to discuss the effect of institutions and leader change in terms of their relative impact on the likelihood of disputes rather than in absolute terms.

Table 9 examines the impact of any leader change (ΔL, Model 1) and leader changes accompanied by change in the support coalition (ΔSC, Model 2). Model 3 separates leader change into those accompanied by change in the support coalition (ΔSC) and leader changes without a change in the support coalition (ΔnonSC). Table 17, in Appendix 2, replicates these analyses using the long list of disputes. We examine the impact of leader change in both the plaintiff (shown by the suffix $_P$) and the defendant (shown by the suffix $_D$). In addition to having a direct effect, political institutions also moderate the impact of leader change.

Nations with large winning coalitions are much more likely to initiate WTO crises than those with small coalitions. The coefficient estimate on the W_P variable is highly significant in all models and the substantive impact is large. For instance, in Model 1, moving from the small to largest coalition systems increases the relative risk of dispute onset by about 18-fold. Table 10 reports the 95% confidence intervals for the relative risk of changing from small to large coalitions and the impact of leader change under different institutional arrangements. The table also report the 95% confidence intervals for analogous analyses using the long list of disputes. As seen in Table 10 the 95% confidence for Model 1 indicates that the most democratic nations are between 6.5 and 50 times more likely to initiate a WTO dispute compared to the most autocratic

[10]The 95% confidence intervals for these two cases are 0.00002 to .00021753 and 0.00057 to .00725788 respectively. To obtain these, and all subsequent, substantive effects, we used *Clarify*, a simulation based procedure(King, Tomz, and Wittenberg, 2000). These procedures work by drawing random samples for the parameters based upon rare event logit estimates and simulating the probability of dispute initiation.

nations. The impact of W_P on the WTO dispute onset is a consistent and robust finding. In some specifications, the defendant coalition size also appears to affect the likelihood of dispute onset, with larger coalition systems being more likely to be targeted in WTO disputes. However, the impact of W_D is much smaller and less consistent across specification than the impact of plaintiff institutions. Beyond affecting dispute onset directly, institutions moderate the impact of leader change.

The impact of leader change on the risk of WTO dispute onset is contingent on political institutions. Generally we find that in small coalition systems, leader change increases the likelihood of WTO dispute onset. However, in large coalition systems, leader change either has little impact of the onset of WTO disputes or slightly decreases the risk of WTO dispute. Model 1 in Table 9 illustrates these patterns well. Consider first leader change in the complainant nation.

The coefficient estimate on the $\Delta \mathrm{L}_P$ is positive and significant. In contrast, the estimate of the interaction variable of coalition size and leader change is negative. Leader change in a small coalition plaintiff increases the likelihood of WTO dispute initiation. Simulation of the size of the substantive effect suggests leader change in a small coalition increases the risk of dispute onset about 8-fold.

Figure 1 provides a convenient means to visualize the effect of leader change. The figure provides a kernel density plot of the relative risk of WTO dispute onset associated with leader change under different contingencies. The figure is plotted on a logarithmic scale so the lines on the right appear to have a smaller area under them. The predicted density of the relative risk associated with changes in a small coalition complainant leader is show by the solid blue line. The predicted distribution of relative risk of associated with leader change in a large coalition complainant is shown by the dotted red line. The figure clearly shows that large coalition leader change is likely to reduce the risk of WTO dispute onset, by on average about one half. Leader change increases the risk of dispute onset in small coalition systems, but not in large coalition systems. Of course, the absolute risk of dispute onset is still higher in a democracy than a non-

democracy because the effect of a large coalition system is greater than the effect of leader change in a small coalition.

The relative risks associated with leader change in defendant states is also shown in Figure 1. The dashed green line shows that in small coalitions the effect of defendant leader change is to make WTO disputes more likely. The orange dash-dotted line corresponds to predicted distribution of relative risks associated with leader change in large coalition defendants. Much of the density falls around the vertical line that corresponds to a relative risk of 1; meaning that large coalition defendant leader change has little impact on the onset of WTO disputes.

The patterns seen in Figure 1 are reflected in other specifications. Large coalition systems are more likely to initiate disputes compared to small coalition states. However, leader change in a small coalition complainant increases the risk of dispute onset; leader change in a large coalition plaintiff either has little discernible effect on dispute onset or slightly reduces the risk. Similarly in defendant states, leader change increase the small coalition systems increase the risk of WTO dispute onset, but large coalition leader change has little effect.

The theory emphasizes the importance of shifts in the industrial sectors that leaders want to assist. Changes in the underlying support coalition, rather than simply changes in the nominal representative of the support coalition, are more likely to result in shifts in trade policy. The CHISOL data provide a means to test these distinctions because it provides dates for leader change (ΔL) and whether this leader change is associated with a change in the underlying coalition (ΔSC) or the leader change leaves the underlying support coalition unchanged (ΔnonSC). Model 2 (in Table 9) is similar to Model 1 but looks at only leader change associated with changes in support coalition. Model 3 examines the impact of both ΔSC and ΔnonSC in the same model.

The effects of change in the support coalition observed in Model 2 exhibit a similar pattern to that observed for leader change in Model 1: small coalition (autocratic) leader change raises the risk of dispute onset but the effect does not persist with leader

change in large coalition systems. However, overall the effects are smaller and less significant in Model 2 than in Model 1. Model 3 examines both support coalition changes and leader change without an associated coalitional change. Again, the patterns are similar to those seen in Model 1. Both forms of leader change increase the risk of WTO dispute onset in small coalition systems. In large coalition systems, complainant leader change slightly reduces the risk of dispute onset and large coalition defendant leader change has little impact on the risk of WTO dispute onset. Carroll, Leeds, and Mattes (2012) and Leeds, Mattes, and Vogel (2009) show that with respect to United Nations voting and alliance abrogation that changes in the support coalition have greater impact than leader changes without coalitional change. In terms of WTO dispute onset these distinctions are not present. In none of our models can we reject the null hypotheses that support coalition leader changes and leader change without coalition change are the same.

Figure 2 is a series of box plots that graphically shows the impact of complainant leader change on the relative risk of WTO dispute onset under different contingencies. The vertical axis is relative risk associated with leader change, on a logarithmic scale. The first two box plots correspond to any complainant leader change based on the estimates from Model 1 (of Table 9) for small coalition ($W_P = 0$) leaders and large coalition ($W_P = 1$) leaders. The second and third box plots corresponds to coalition support changes and the final two box plots examine the relative risk associated with leader changes absent coalitional changes; in each case looking at small and large coalition systems. Figure 3 has an analogous structure but focuses on leader changes in the defendant rather than plaintiff state.

Figure 2 clearly shows that leader change in small coalitions increases the likelihood of dispute onset, in plots 1, 3 and 5. Further the magnitudes of the effects are similar whether the change involves shifts in the support coalition or not, with most of the simulations suggesting increases on the order of 5 to 15 fold. In large coalition systems, plaintiff leader change reduces the risk of WTO dispute onset, approximately halving

the risk. Again the figure clearly shows the magnitude of the effect of leader change on dispute onset is similar which ever form of complainant leader change is considered. Large coalition complainant leader change approximately halves the risk of dispute onset.

The pattern exhibited in Figure 3, that examines defendant leader change, is similar to that seen when considering complainant leader changes. Small coalition defendant leader changes increases the risk of WTO disputes by roughly an average of three-fold and the effect is similar for all forms of leader change. In large coalition systems, the impact of defendant leader change is small. Indeed as seen in Figure 3, the solid line at relative risk of one (i.e. no effect) is close to the center of the box plots when looking at all three types of leader changes. However, leader changes absent support coalition change appear to slightly reduce the rate of dispute onset in large coalition defendants.

7.1 Robustness

The results in Table 9 provide a clear pattern. For both complainants and defendants, leader change in small coalition systems increases the risk of WTO dispute onset. In large coalition systems the effects of leader change are muted with either no significant effect or a slight reduction in the risk of WTO dispute onset. These patterns are robust, as we demonstrate in this section.

Table 17 replicates Table 9 using the long list of all dispute filings rather than eliminating disputes that are reiterations of prior filings. The results are extremely similar. Table 11 also examines similar analyses to those in Table 17 but with two distinctions. First Table 11 excludes the EU and all EU member states. Second, the institutional measure is replaced with Polity's democracy-autocracy, although rescaled to between 0 and 1. Although similar, the results differ slightly from those discussed above. First the level of democracy in the defendant state appears positively related to an onset on WTO disputes. Second, leader change in defendant states appears to

have little significant effect, although complainant leader change has similar effects to those described above.

Table 12 re-examines our results in the light of additional control variables. In addition to the variables described already, Models 4, 5, 6 and 7 include measures of the number of prior disputes the plaintiff nation has been involved in. Nations lacking the expertise and bureaucratic capacity find it administratively hard to file WTO disputes. Prior dispute involvement, as either plaintiff or defendant, increases capacity that lowers the cost of future dispute initiation. We use a logarithmic version of the prior dispute count. The PTA variable measures whether the pair of nations in a dyad are both members of the same PTA. The specifications in Table 12 include cubic year variables to more elaborately capture temporal patterns in the data. In addition to these common additions, Model 6 includes measures of trade as a percentage of GDP for both nation P and D. Model 7 includes variables indicating the logarithm of distance between states, whether states are contiguous and dyadic trade flows, measured as the logarithm of the value (in constant 2000 US$) of imports into P from D ($\log(\text{Imports}_P D)$) and the corresponding flow of imports into D from P. Unfortunately, the inclusion of these latter variables greatly reduces sample size.

Reassuringly, the inclusion of these additional controls does not alter the patterns discussed above. In each of the models, WTO dispute onset becomes more likely as coalition size increases in the plaintiff state and a leader change occurs in small coalition systems. Leader change in large coalition systems is less likely to initiate WTO dispute onset.

Prior dispute involvement by the plaintiff increases the likelihood of WTO dispute onset. Nations with more experience in WTO disputes are more likely to ask for consultation. Contrary to expectations that PTAs offer a substitute for the WTO, they appear to be complements. In Models 4, 5 and 6 there is a significant positive coefficient estimate on the PTA variable. The PTA variable reflects competing influences. PTAs (often) offer an alternative means through which to resolve disputes without the WTO.

However, the estimates suggest a PTA is a complement rather than a substitute for the WTO. Additionally, nations form PTAs with active trading partners. Therefore, PTA membership also serves as a proxy for active trade partner. Interestingly, when dyadic trade flows are controlled for in Model 7, the PTA variable is no longer significant.

P nation's overall level of trade (measured a trade over GDP) has little effect on WTO dispute onset. Neither does the distance between states. However, the level of imports into the defendant from the complainant state appears to increase the likelihood of dispute onset. This is perhaps unsurprising; potential complainants are more likely to complain about the trade policies in nations that serve as markets for their exports.

8 Conclusion

Autocrats have fewer constraints on the choice of tariff levels, for they are responsive to a narrower fraction of the polity. They protect the firms that support their leadership; they collect tariff revenues and redistribute them back only to their core supporters if at all. And since their supporters make up only a fraction of the polity, they put little weight on the higher prices trade protection generates. Autocrats have incentives to offer high levels of protection to narrow a set of industries. In their capacity as a plaintiff, autocrats also care about a narrow segment of society. However, should that suffer as a result of another nation's trade policy, the autocrat is highly motivated to seek remediation for their aggrieved supporters.

Democratic leaders are accountable to broader swathe of the polity. They protect more industries, but because they are concerned also about the aggregate effect of protection on prices, they provide relatively low levels of protection.

When leadership changes, the effects differ across regime type. Autocrats substitute one narrow interest group with another, resulting in new, high tariffs for the newly privileged group, and settlement (and concession) of any outstanding cases for the

groups previously privileged, but now no longer protected. In democracies, on the other hand, some new sectors will enter and others will exit the ruling coalition. Some previously lower tariffs get removed as that sector's influence wanes, and new protection emerges as new sectors enter the ruling coalition. But since the new tariff levels are not too high (democrats are constrained), the chance that they are filed against after a leader change is in fact lower.

Using a new datasets of disputes and changes in leadership and support coalitions, we offer evidence to show that indeed the impact of leader change on the initiation of disputes at the WTO is greater in non-democracies than in democracies.

9 Tables and Figures

Table 6: Summary Statistics

	N	mean	sd	min	max
Dispute (short)	232581	.0011523	.0339259	0	1
Dispute (long)	232581	.0014361	.0378682	0	1
W_P	226837	.6561187	.2509101	0	1
$\Delta \mathrm{L}_P$	203440	.2942047	.4556855	0	1
$\Delta \mathrm{SC}_P$	203440	.2003244	.4002441	0	1
$log(GDP_P)$	221356	23.22461	2.268812	19.04084	30.07615
$log(POP_P)$	227634	15.67661	2.023009	10.34016	21.00442
$Trade_D/GDP$	216733	85.34387	46.44373	.3088029	438.0917
Disputes in previous year	209820	.0014489	.0464938	0	5
PTA	232581	.3065255	.4610515	0	1
$\mathrm{PriorDisputes}_P$	230127	3.770218	16.21139	0	205

Table 7: Leader Change and the Rate of WTO Dispute Onset (per 10,000 obs.)

Rate Obs.	Leader Change None	Change in P	Change in D	Change in Both
No Recent Dispute	6.16	7.71	8.49	9.58
	71,428	31,122	31,799	13,568
Recent Dispute	51.94	46.39	59.06	26.00
	17,328	5,820	6,096	2,308

- Country P refers to a complainant country, D refers to a defendant.
- The first column represents no leader changes. The second column represents leader change in the current or previous year in nation P, but no leader change occurred in nation D. Observations in which leader change occurred in nation D in the current or previous year but leader change did not occur in nation P are in the third column. The final column corresponds to observations where both nations experienced leader change.
- The top row corresponds to dyads that have not experienced a recent prior dispute. Observations in which a prior WTO dispute has occurred between P and D within the previous two years are in the lower row.
- Each cell contains two numbers. The latter is the number of observations. The former number corresponds to the rate of dispute onset in terms of disputes per ten thousand observations.

Table 8: Support Coalition Change and the Rate of WTO Dispute Onset (per 10,000 obs.)

Rate Obs.	Support Coalition Change None	Change in P	Change in D	Change in Both
No Recent Dispute	6.51 95,253	7.02 22,787	10.73 24,221	7.07 5,656
Recent Dispute	52.21 18,196	43.91 5,694	59.75 5,858	22.17 1,804

- The first column represents no leader changes. The second column represents leader change in the current or previous year in nation P, but no leader change occurred in nation D. Observations in which leader change occurred in nation D in the current or previous year but leader change did not occur in nation P are in the third column. The final column corresponds to observations where both nations experienced leader change.
- The top row corresponds to dyads that have not experienced a recent prior dispute. Observations in which a prior WTO dispute has occurred between P and D within the previous two years are in the lower row.
- Each cell contains two numbers. The latter is the number of observations. The former number corresponds to the rate of dispute onset in terms of disputes per ten thousand observations.

Table 9: WTO Dispute Onset and Changes in Leaders and Support Coalitions (Short List)

	Model 1 ΔL b/se	Model 2 ΔSC b/se	Model 3 ΔSC and $\Delta nonSC$ b/se
W_P	2.9413***	2.3974***	2.9816***
	(0.527)	(0.481)	(0.534)
W_D	0.5630	0.2216	0.3733
	(0.540)	(0.498)	(0.537)
ΔL_P	2.1094***		
	(0.607)		
$W_P \times \Delta L_P$	-2.8499***		
	(0.696)		
ΔL_D	1.1514**		
	(0.513)		
$W_D \times \Delta L_D$	-1.2958**		
	(0.575)		
$\log GDP_P$	0.5233***	0.5126***	0.5335***
	(0.056)	(0.058)	(0.059)
$\ln POP_P$	0.1956***	0.2336***	0.1833***
	(0.065)	(0.066)	(0.067)
$\log GDP_D$	0.6389***	0.6620***	0.6812***
	(0.066)	(0.067)	(0.069)
$\ln POP_D$	0.3458***	0.3349***	0.3045***
	(0.062)	(0.061)	(0.062)
year	-0.1258***	-0.1266***	-0.1191***
	(0.016)	(0.017)	(0.017)
ΔSC_P		1.2720	1.8244**
		(0.881)	(0.881)
$W_P \times \Delta \text{SC}_P$		-1.7198*	-2.4419**
		(1.035)	(1.033)
ΔSC_D		1.2197**	1.3481**
		(0.554)	(0.578)
$W_D \times \Delta \text{SC}_D$		-1.0511*	-1.2597*
		(0.619)	(0.648)
ΔnonSC_P			2.6643***
			(0.682)
$W_P \times \Delta \text{nonSC}_P$			-3.6517***
			(0.749)
ΔnonSC_D			0.9906
			(0.703)
$W_D \times \Delta \text{nonSC}_D$			-1.7800**
			(0.770)
intercept	-48.3517***	-48.5427***	-48.6691***
	(1.670)	(1.714)	(1.715)
N	167728	167728	167728
Dispute Years	267	267	267

$*p < 0.10, **p < 0.05, ***p < 0.01$

Table 10: 95% Confidence Intervals for Relative Impact of Change in Leaders, Support Coalition and Institutions on WTO Dispute Onset

	Model 1		Model 2		Model 3	
	Short	Long	Short	Long	Short	Long
W_P	[6.5,50]*	[10.6,82]*	[4.1,27]*	[11,97]*	[6.6,53]*	[8.8,77]*
W_D	[.61,5.0]	[1.0,8.4]*	[.46,3.3]	[.76,5.0]	[.50,4.0]	[.87,7.3]
$\Delta \mathrm{L}_P$ (W_P=0)	[2.5,27]*	[2.7,32]*				
$\Delta \mathrm{L}_P$ (W_P=1)	[.35,.69]	[.37,.71]*				
$\Delta \mathrm{L}_D$ (W_D=0)	[1.1,8.5]*	[1.7,12]*				
$\Delta \mathrm{L}_D$ (W_D=1)	[.63,1.2]	[.60,1.1]				
$\Delta \mathrm{SC}_P$ (W_P=0)			[.62,19]	[1.5,56]*	[1.1,32]*	[1.3,50]*
$\Delta \mathrm{SC}_P$ (W_P=1)			[.40,1.1]	[.88,6.1]	[.34,.88]*	[.37,9.2]
$\Delta \mathrm{SC}_D$ (W_D=0)			[1.4,10]*	[2.0,16]*	[1.2,12]*	[2.0,20]*
$\Delta \mathrm{SC}_D$ (W_D=1)			[.84,1.7]	[.69,1.3]	[.80,1.6]	[.72,1.4]
$\Delta \mathrm{nonSC}_P$ (W_P=0)					[4.1,46]*	[3.6,54]*
$\Delta \mathrm{nonSC}_P$ (W_P=1)					[.24,.63]*	[.27,.62]*
$\Delta \mathrm{nonSC}_D$ (W_D=0)					[.71,12]	[1.2,15]*
$\Delta \mathrm{nonSC}_D$ (W_D=1)					[.23,.62]*	[.26,.80]*

* indicates the 95% confidence interval excludes 1. "Short" and "Long" refer to the list of disputes in the data; the short list excludes the subsequent filings on the basis of the same underlying dispute. See the text for more details.

Table 11: WTO Dispute Onset and Changes in Leaders and Support Coalitions: Polity and No EU Members

	Model 1b ΔL b/se	Model 2b ΔSC b/se	Model 3b ΔSC and $\Delta nonSC$ b/se
demaut$_P$	2.5755***	2.1101***	2.5927***
	(0.634)	(0.518)	(0.641)
demaut$_D$	0.9260**	0.7884*	0.8256*
	(0.460)	(0.419)	(0.459)
ΔL$_P$	1.9170**		
	(0.806)		
demautΔL$_P$	-2.4771***		
	(0.877)		
ΔL$_D$	-0.1178		
	(0.693)		
demautΔL$_D$	0.1755		
	(0.758)		
$logGDP_P$	0.5338***	0.5255***	0.5453***
	(0.053)	(0.055)	(0.059)
$lnPOP_P$	0.2024***	0.2327***	0.1935***
	(0.068)	(0.069)	(0.072)
$logGDP_D$	0.6118***	0.6315***	0.6553***
	(0.052)	(0.054)	(0.057)
$lnPOP_D$	0.2702***	0.2440***	0.2108***
	(0.058)	(0.055)	(0.059)
year	-0.1257***	-0.1231***	-0.1166***
	(0.020)	(0.021)	(0.021)
ΔSC$_P$		1.9082	2.3952*
		(1.356)	(1.353)
demautΔSC$_P$		-2.3699	-2.9671**
		(1.470)	(1.468)
ΔSC$_D$		-0.0096	0.1211
		(1.116)	(1.101)
demautΔSC$_D$		0.4082	0.1841
		(1.179)	(1.171)
ΔnonSC$_P$			1.9795**
			(0.876)
demautΔnonSC$_P$			-2.5834***
			(0.938)
ΔnonSC$_D$			0.0102
			(0.863)
demautΔnonSC$_D$			-0.6744
			(0.944)
intercept	-46.4722***	-46.4574***	-46.6325***
	(1.928)	(1.964)	(1.949)
N	132932	132932	132932
DisputeYears	175	175	175

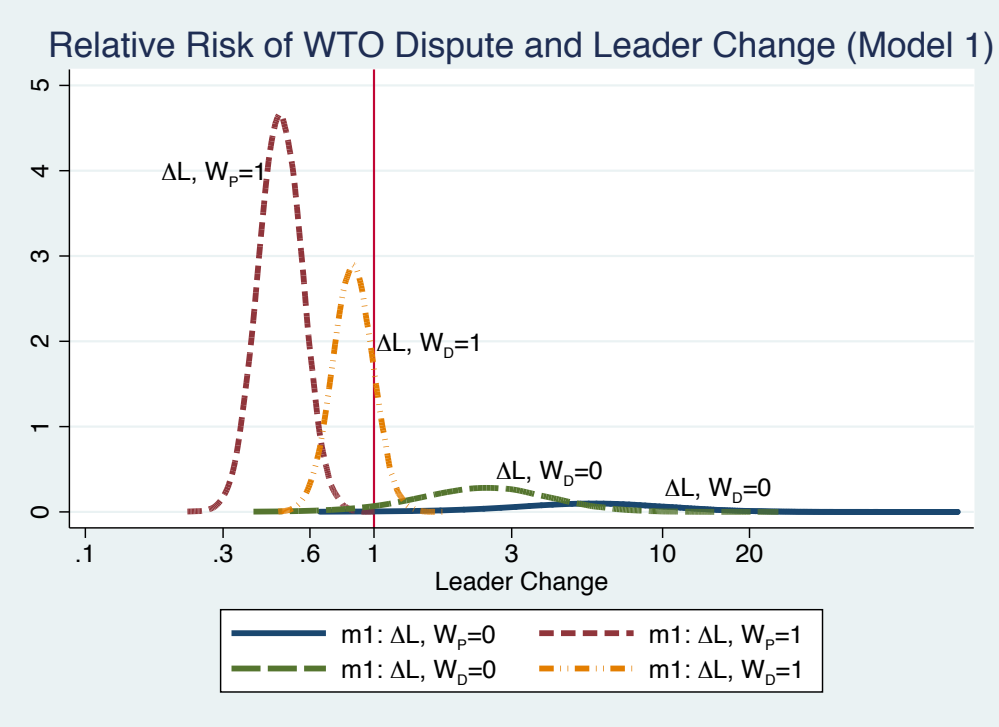
$*p < 0.10, **p < 0.05, ***p < 0.01$

Table 12: Robustness: WTO Dispute Onset and Changes in Leaders

	Model 4 b/se	Model 5 b/se	Model 6 b/se	Model 7 b/se
W_P	2.4109***	2.4109***	2.6154***	2.3002***
	(0.582)	(0.582)	(0.591)	(0.673)
W_D	0.6621	0.6621	0.8114	1.2515*
	(0.575)	(0.575)	(0.605)	(0.757)
ΔL_P	1.8691***	1.8691***	1.8709***	1.9640***
	(0.647)	(0.647)	(0.658)	(0.731)
$W\Delta L_P$	-2.4684***	-2.4684***	-2.4870***	-2.6435***
	(0.743)	(0.743)	(0.753)	(0.839)
ΔL_D	1.1360**	1.1360**	1.2801**	1.4177**
	(0.543)	(0.543)	(0.559)	(0.664)
$W\Delta L_D$	-1.3237**	-1.3237**	-1.4902**	-1.3507*
	(0.616)	(0.616)	(0.637)	(0.755)
$logGDP_P$	0.3656***	0.3656***	0.3550***	-0.0519
	(0.067)	(0.067)	(0.067)	(0.098)
$lnPOP_P$	0.1407**	0.1407**	0.1415*	0.2221***
	(0.070)	(0.070)	(0.075)	(0.082)
$logGDP_D$	0.6788***	0.6788***	0.6634***	0.1274
	(0.069)	(0.069)	(0.070)	(0.100)
$lnPOP_D$	0.3442***	0.3442***	0.3081***	0.3643***
	(0.063)	(0.063)	(0.069)	(0.078)
yr	-0.2153***	-0.2153***	-0.2147***	-0.1817***
	(0.039)	(0.039)	(0.042)	(0.061)
yr2	0.0169**	0.0169**	0.0160**	0.0082
	(0.007)	(0.007)	(0.007)	(0.009)
yr3	-0.0013	-0.0013	-0.0010	-0.0022
	(0.001)	(0.001)	(0.001)	(0.003)
$logPriorDispute_P$	0.4736***	0.4736***	0.4742***	0.4169***
	(0.091)	(0.091)	(0.093)	(0.104)
PTA	0.7464***	0.7464***	0.7675***	-0.1165
	(0.145)	(0.145)	(0.146)	(0.214)
tradeGDP_P			0.0001	
			(0.002)	
tradeGDP_D			-0.0032	
			(0.003)	
logdistance				-0.1206
				(0.102)
CONTIG				-0.0336
				(0.173)
lnImports_{PD}				-0.0454
				(0.076)
lnImports_{DP}				0.4479***
				(0.091)
intercept	-45.2110***	-45.2110***	-43.9778***	-22.5943***
	(1.973)	(1.973)	(2.120)	(3.631)
N	167728	167728	158984	79730
DisputeYears	267	267	259	172

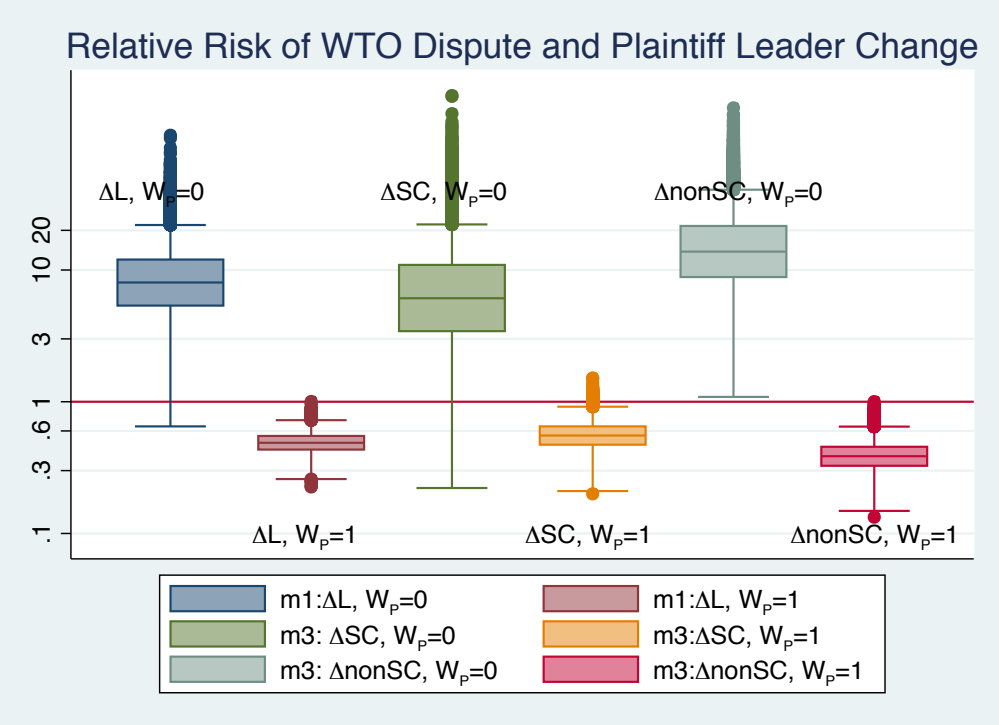
$*p < 0.10, **p < 0.05, ***p < 0.01$

Figure 1: Relative Risk of WTO Dispute Initiation for Leader Change (Model 1 of Table 9).



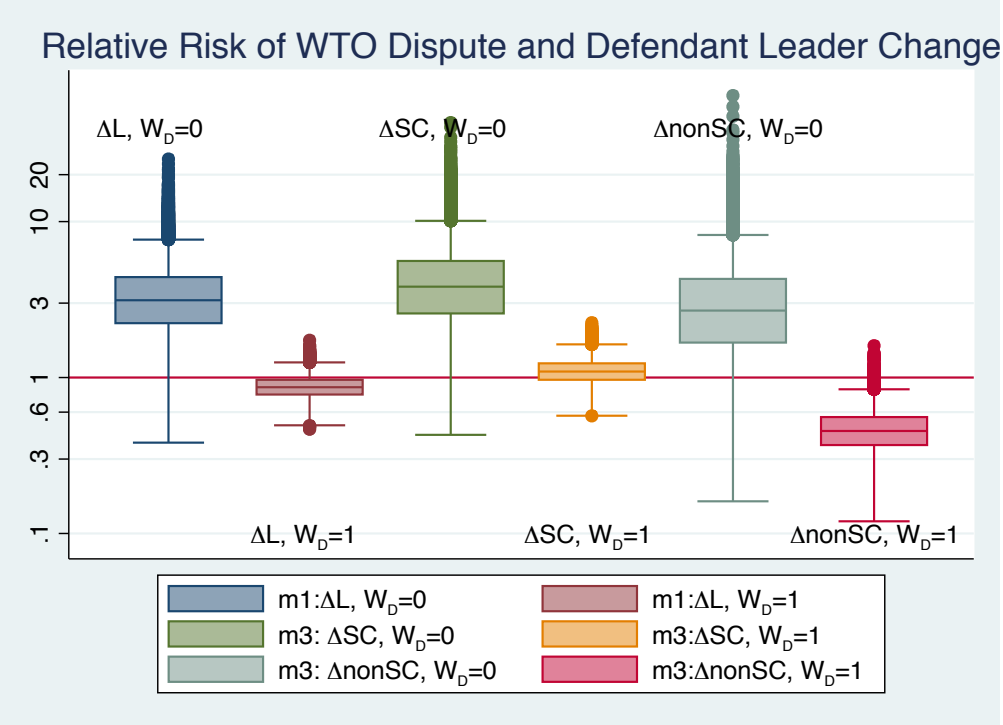
Red: democratic complainants; Blue: autocratic complainants; Orange: democratic defendants; Green: autocratic defendants. The figure shows the effect on the predicted relative probabilities of dispute onset after leader change. Leader change in democratic complainant countries reduces the probability of dispute onset by about 0.5; leader change in autocratic complainant states increases the probability of dispute onset. Similarly, leader change in autocratic defendants increases dispute onset; the effect of leader change on dispute onset in democratic defendants appears to be very small - the orange graph lies close to 1.

Figure 2: Relative Risk of WTO Dispute Initiation for Complainant Leader Change (Model 3 of Table 9).



Plots 1, 3 and 5 show that leader change (alone, with a change in the support coalition and without a change in the support coalition) in small coalition complainant states increases the likelihood of dispute onset. Leader change in large coalition complainant states appears to have little effect on the probability of dispute onset, irrespective of the type of leader change - plots 2, 4 and 6.

Figure 3: Relative Risk of WTO Dispute Initiation for Defendant Leader Change (Model 3 in Table 9).



Plots 1, 3 and 5 show that leader change (alone, with a change in the support coalition and without a change in the support coalition) in small coalition defendant states increases the likelihood of dispute onset. Leader change in large coalition defendant states appears to have little effect on the probability of dispute onset, irrespective of the type of leader change - plots 2, 4 and 6.

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10 Appendix 1

Proof of Lemma 1

Proof. The first order condition to the **democratic** government's problem (with arguments suppressed) for a sector $g \in \{j,k\}$ in the winning coalition is $s(t_g)+\frac{2}{3}(-d(t_g))+m(t_g)+t_g m'(t_g)=0$. Recognizing that $m(t_g)=d(t_g)-s(t_g)$ the first order condition is $s(t_g)-\frac{2}{3}d(t_g)+d(t_g)-s(t_g)+t_g m'(t_g)=0$. This simplifies to $d(t_g)-3t_g(\sigma_g+\delta_g)=0$. Substituting the demand and supply functions, we have $d-\delta t_g-3t_g(\sigma+\delta)=0$ which reduces to

$$\frac{d_g}{4\delta_g+3\sigma_g} = \tilde{t}_g \text{ for } g=j,k.$$

For a sector (l) that is not in the winning coalition, the first order condition is $-\frac{2}{3}d(t_l)+m(t_l)+t_l m'(t_l)=0$ which reduces to (after substituting in the demand and supply functions)

$$\frac{d-3s}{4\delta+6\sigma} = \tilde{t}_l$$

The first order condition to the **autocratic** government's problem for a sector (j) in the winning coalition is $s(t_j)+\frac{1}{3}(-d(t_j))+m(t_j)+t_j m'(t_j)=0$. The same substitutions as above lead to

$$\frac{2d}{5\delta+3\sigma} = \tilde{t}_j$$

For a sector $(g=k,l)$ that is not in the winning coalition, the first order condition is$-\frac{1}{3}d(t_g)+m(t_g)+t_g m'(t_g)=0$ which leads to

$$\frac{2d-3s}{5\delta+6\sigma} = \tilde{t}_g \text{ for } g=j,k.$$

□

Proof of Lemma 2

Proof. The tariff for a protected sector in a democracy is lower than the tariff for a protected sector in an autocracy

$$\begin{array}{rcl} \frac{d}{4\delta+3\sigma} & \leq & \frac{2d}{5\delta+3\sigma} \text{iff} \\ 5\delta+3\sigma & \leq & 8\delta+6\sigma \end{array}$$

which is always true, since $d, \delta, \sigma > 0$. Hence $X > x$. Similarly

$$\begin{aligned}
\frac{2d-3s}{5\delta+6\sigma} &\geq \frac{d-3s}{4\delta+6\sigma} \text{iff} \\
(2d-3s)(4\delta+6\sigma) &\geq (d-3s)(5\delta+6\sigma) \\
8d\delta-12s\delta+12d\sigma-18s\sigma &\geq 5d\delta-15s\delta+6d\sigma-18s\sigma \\
8d\delta-12s\delta+12d\sigma &\geq 5d\delta-15s\delta+6d\sigma \\
3d\delta+3s\delta+6d\sigma &\geq 0
\end{aligned}$$

which is always true, since $d, \delta, \sigma, s > 0$. Hence $y > z$. Also $X > y$ since $s > 0$ and $x > z$ since $s > 0$ □

10.1 Analysis of the impact of plaintiff leader change

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We consider the effect of leader changes in the plaintiff state, P. Such changes do not lead to a shift in D's trade policy, but they can result in the plaintiff now wishing to complain about pre-existing policies. Tables 13 and 14 are similar in structure to tables 4 and 5. Each table characterizes the level of protection leveled against members of P's coalition under different configurations on political coalitions in P and D. However, instead of examining the impact of leader change in D, these tables each add rows to show the impact of leader change in P. While leader change in nation P does not alter D's trade policy, it does however shift the interests that are represented in nation P and hence affects whether the new leader in P chooses to now protest against the pre-existing policies in D.

Referring to the first column of Table 13 in which autocratic leader D's coalition is composed of j, we see that the supporters of autocrat P are only harmed when these supporters are also based around sector j. If leader change occurs in nation P and the new coalition forms around sector k (shown in the second row of the top panel of the table), then any preexisting dispute on issue j is likely to be resolved as nation P no longer cares about this issue. In contrast, if D's coalition is built around sector k, then the shift in P from coalition j to coalition k is likely to lead to the onset of dispute over sector k. Such a dispute does not arise because of a change in the offending policy, but because political change means the defendant now wants to complain about D's pre-existing policy. On average 1/3 of autocratic leader changes lead to new interests in the plaintiff's coalition being harmed by D's policies and the extent of this harm is high as D provide high tariffs, X.

The lower panel of Table 13 considers the effect of leader change when P is democratic. In parallel to the upper panel, 1/3 of leader transitions in democratic P lead to members of the new coalition being subject to the adverse effects of the D's trade, and again D's policies are maximally painful to those groups harmed. However, in contrast to the upper panel, a democratic P has multiple groups to worry about and so her response might be more muted compared to an autocratic P (hence the lighter shading in the lower panel of the table).

If D is autocratic, then leader change in P means that 1/3 of cases result in the

onset of harm to P's coalition members. Further, the extent of harm is high. These two effects are constant whether P is autocratic or democratic. However, because P must concern herself with the welfare of multiple groups when she is democratic, rather than a single group when she is autocratic her response to members of her coalition being harmed by D's policies might be muted.

Table 14 examines the impact of leader change in P when D is democratic. The structure of the table is analogous to those considered above. Since D is democratic its trade policies are low intensity and so less likely to trigger dispute onset than when D was autocratic. In the upper panel, where P is autocratic, leader change leads to new coalition interests being harmed in 1/3 of cases. The comparable number when P is democratic (lower panel) is 2/3. A comparison of these rates at which new interests are harmed suggests that against a democratic defendant, leader change in a democratic plaintiff is more likely to lead to dispute onset than leader change in an autocratic plaintiff. However, this prediction is offset by the democratic leader having split attention as a result of having multiple groups in her coalition. While against an autocratic defendant we predicted that autocratic leader change in a plaintiff was more likely to lead to dispute onset than democratic leader change, in the case of a democratic defendant the results are more ambiguous.

Table 13: Autocratic Defendant: P's Policy Disagreements with D and the Impact of Leader Change in P

Plaintiff \ Defendant		Autocracy, D		
		$\{j\}$	$\{k\}$	$\{l\}$
Autocracy, P	$\{j\}$	X	y	y
	$\downarrow$	$\downarrow$	$\downarrow$	$\downarrow$
	$\{k\}$	y	X	y
	$\{l\}$	y	y	X
P's Coalition Change, $\{j\} \rightarrow \{k\}$		$\Downarrow$ settle (j)	$\Uparrow$ onset (k)	
Democracy, P	$\{j,k\}$	X,y	y,X	y,y
	$\downarrow$	$\downarrow$	$\downarrow$	$\downarrow$
	$\{j,l\}$	X,y	y,y	y,X
	$\{k,l\}$	y,y	X,y	y,X
P's Coalition Change, $\{j,k\} \rightarrow \{j,l\}$			$\Downarrow$ settle (k)	$\Uparrow$ onset (l)

Table 14: Autocratic Defendant: P's Policy Disagreements with D and the Impact of Leader Change in P

Plaintiff \ Defendant		Democracy, D		
		$\{j,k\}$	$\{j,l\}$	$\{k,l\}$
Autocracy, P	$\{j\}$	x	x	z
	$\downarrow$	$\downarrow$	$\downarrow$	$\downarrow$
	$\{k\}$	x	0	x
	$\{l\}$	z	x	x
P's Coalition Change, $\{j\} \rightarrow \{k\}$			$\downarrow$ settle (j)	$\uparrow$ onset (k)
Democracy, P	$\{j,k\}$	x,x	x,z	z,x
	$\downarrow$	$\downarrow$	$\downarrow$	$\downarrow$
	$\{j,l\}$	x,z	x,x	z,x
	$\{k,l\}$	x,z	x,z	x,x
P's Coalition Change, $\{j,k\} \rightarrow \{j,l\}$		$\downarrow$ settle (k)	$\uparrow$ onset (l)	$\downarrow$ settle (k), $\uparrow$ onset (l)

11 Appendix 2

Table 15: Leader Change and WTO Dispute Onset (per 10,000 obs.) – Long List

Rate Obs.	Leader Change None	Change in P	Change in D	Change in Both
No Recent Dispute	6.87	9.33	9.76	11.81
	71,375	31,097	31,769	13,550
Recent Dispute	67.31	59.88	73.46	47.29
	17,381	5,845	6,126	2,326

Table 16: Support Coalition Change and WTO Dispute Onset (per 10,000 obs.) – Long List

Rate	Support Coalition Change			
Obs.	None	Change in P	Change in D	Change in Both
No Recent Dispute	7.25	8.79	12.40	10.62
	95,178	22,766	24,199	5,648
Recent Dispute	68.96	57.74	73.13	33.11
	18,271	5,715	5,880	1,812

Table 17: WTO Dispute Onset (Long list) and Changes in Leaders and Support Coalitions

	Model 1a b/se	Model 2a b/se	Model 3a b/se
W_P	3.4031***	2.8984***	3.4637***
	(0.519)	(0.483)	(0.533)
W_D	0.9824*	0.5916	0.8456*
	(0.512)	(0.460)	(0.512)
$\Delta \mathrm{L}_P$	2.2354***		
	(0.637)		
$W\Delta \mathrm{L}_P$	-2.9248***		
	(0.731)		
$\Delta \mathrm{L}_D$	1.5450***		
	(0.479)		
$W\Delta \mathrm{L}_D$	-1.7599***		
	(0.532)		
$logGDP_P$	0.5279***	0.5192***	0.5415***
	(0.054)	(0.056)	(0.057)
$lnPOP_P$	0.2021***	0.2355***	0.1851***
	(0.060)	(0.061)	(0.063)
$logGDP_D$	0.6458***	0.6635***	0.6803***
	(0.060)	(0.060)	(0.063)
$lnPOP_D$	0.3248***	0.3183***	0.2889***
	(0.056)	(0.055)	(0.056)
yr	-0.1402***	-0.1421***	-0.1352***
	(0.015)	(0.016)	(0.016)
$\Delta \mathrm{SC}_P$		1.6951*	2.2383**
		(0.920)	(0.914)
$\mathrm{W}\Delta \mathrm{SC}_P$		-2.1550**	-2.8592***
		(1.086)	(1.076)
$\Delta \mathrm{SC}_D$		1.4910***	1.7101***
		(0.508)	(0.538)
$\mathrm{W}\Delta \mathrm{SC}_D$		-1.4570**	-1.7599***
		(0.568)	(0.602)
$\Delta \mathrm{nonSC}_P$			2.6485***
			(0.687)
$\mathrm{W}\Delta \mathrm{nonSC}_P$			-3.5839***
			(0.748)
$\Delta \mathrm{nonSC}_D$			1.4391**
			(0.636)
$\mathrm{W}\Delta \mathrm{nonSC}_D$			-2.2003***
			(0.682)
intercept	-48.9390***	-48.9995***	-49.1996***
	(1.571)	(1.604)	(1.602)
N	167728	167728	167728
Fixed	330	330	330
$*p < 0.10, **p < 0.05, ***p < 0.01$	57		