Dyadic Conflict: Elites, Citizens, and War*

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July 30, 2018

Abstract

From the democratic peace to the authoritarian peace to the conflict prone behavior of democratizing states, empirical evidence shows that regime types influence the decision to use military force. The only way distinct regimes can behave differently in similar circumstances is if they have different tastes for settlements. Moreover, dyadic negotiation is dependent on the regime types of *both* participants. Here we offer a dyadic theory of conflict where states bargain over a good with different attributes: a public good element and an element of private goods like rents. We show that dyad type has important effects on the potential for conflict. Empirically, we show our new predictions about the dependence of conflict on dyad type – namely, the presence of private goods in a international crisis increases the likelihood of violence when both sides are autocratic, but decreases it when one side is sufficiently democratic.

*We thank participants at the University of Calgary Economics Seminar, 2016 Peace Science Society Annual Conference in South Bend IN, 2016 Annual Meeting of the American Political Science Association in Philadelphia PA, 2017 Annual Meeting of the Southern Political Science Association in New Orleans LA, the University of Rochester, and the NYU Political Economy Seminar for helpful comments. We also thank David Carter and Mehdi Shadmehr for comments as well as Bella Wang for excellent research assistance.

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Introduction

If one were asked what single piece of information they would like to have about a pair of countries before they were required to place a bet on whether the two countries were friends or foes, it would be reasonable to ask if both countries were democracies. A wide ranging literature, from early work on the democratic peace (Maoz and Russett 1993, Russett 1993) to work on the proclivity of different types of autocratic regimes to fight, places the type of regime at the center of their analysis of conflict. The empirical evidence of the importance of the pairing of domestic institutional structures in an international interaction strongly supports the effects of regime types. The data shows that two liberal democracies almost never resort to military violence against each other and that no two personalist or military regimes went to war against each other between 1945 and 1994 (Peceny et al. 2002, Weeks 2012).

A simple revealed preference argument implies that different kinds of regimes behave differently in similar situations because they want different things. Maybe, as is often argued, different regime types face different costs of war. Maybe because of other institutional features different kinds of regimes make choices as if they have different tastes for specific settlements. Claims about some of these differences have been the focus of a wide variety of studies, but few have gone after the implications of these differences for strategic dyadic interactions.

Here we develop a dyadic theory of conflict where states bargain over a good with different attributes: a public good element and a private good like a rent. Regime type *pairs* matter because the strategic incentives around bargaining change along with the interests of the pair of countries in the conflict. When regimes have different preferences over the nature of settlements the type of dyad has important effects on the likelihood of war.

From an international relations perspective, regime type is fundamentally about who is in charge of decision-making. This is relevant because issues at stake in international bargaining rarely have uniform implications to all groups within the participating states. Trade deals

may increase the overall pie but negatively impact workers in a specific industry. Moreover, international negotiations often involve several separate points of contention with consequently distinct ramifications for different domestic groups. Arms reduction agreements, territorial transfers, and government to government cash transfers all lead to a different distribution of benefits in a society and rent to elites.

For example, such a negotiation was central to the establishment of the border between Kuwait and Saudi Arabia in the early 20th century. At the end of World War I the collapse of the Ottoman Empire left the victorious groups to create states out of the desert throughout the Middle East and the Arab Peninsula. In 1922 Kuwait signed the Uqair Convention with the sultanate of Najd, which later became Saudi Arabia in 1932, to define the boundary of the sultanate and the British protectorate of Kuwait. Rather then drawing a distinct border, the agreement created a neutral zone of shared control. This territory was of little interest until the discovery of nearby oil fields in 1938. This discovery resulted in an international negotiation over the creation of a definitive administrative boundary between the two states that split the territory and a separate agreement over granting exploration rights to the oil found in the region. The elites largely captured the benefits from the oil income while territorial control largely had institutional and political benefits for the populations of the two states, closed a security vacuum, allowed for clearer legal right and responsibilities and fostered development on both halves of the territory.

Similar agreements can be found all over the world, from the negation of commercial rights in Trieste after World War II to negotiations in Latin America over joint investment and waterway access. In order to begin to explore these types of interactions, we develop a model of international bargaining with two new elements in the shadow of power.

First, we model states as bargaining over both public goods that benefit all of society and private goods that only elites capture. For clarity we represent public and private elements of the negotiation as two separate pies to be divided. At first on might worry that, because private goods, like oil, are fungible, they can be sold and the revenue used to finance public

goods, and that the assumption that these goods are distinct is problematic. There is a second element to our theory that makes this distinction meaningful. The decision makers in our model care only whether or not the mix of goods they will receive in a peaceful bargain is superior to the war outcome. Once this has been determined, there is no incentive to convert private into public goods.[1] Second, while many goods mix private and public elements depending on the context,[2] we simplify by dealing with these elements separately. In fact, the mixed nature of many goods is a compelling reason to study negotiations over both types of goods.

Second, we consider different institutional setups by varying the key decision makers for international bargaining. We vary the decision making institution in the home country in two ways. First, we consider a decision making process where elites, who share private goods in addition to consuming public goods, decide whether there is war or peace.[3] Next, we consider an institution that expands the ruling elite, possibly to be very large. We can think of this as an institution that co-opts large groups of citizens and then distributes, potentially small, fractions of the private good among the in-group.[4]

We have two main findings. First, while fully liberalized democracies have advantages in obtaining peaceful outcomes in international disputes, transitional or half-measures– such as expanding the size of the elite class or redistributive taxation– can often increase the potential for conflict. Second, the presence of private goods, interpreted as directed economic resources, often makes conflict more likely between non-democracies. However, in mixed dyads with

[1] In fact, in later sections we study the redistribution of private goods through taxation. Whether this is more less efficient than using private goods to buy public goods is a public finance question and beyond the scope of our model

[2] For instance, a city park is a public good except when it gated and requires a tariff to enter.

[3] Elites in this model both receives private goods and decide whether or not to accept or reject bargain. In principle, these two features could be separated. However, in equilibrium, an elite that could receive private goods but was not necessary for decision making over a bargain, would never be granted any private goods. This is because the foreign rival is only negotiating with those with decision making power over war, if an elite member is not central to that decision, the foreign rival has no incentive to provide that member private goods. Moreover, a decisive decision maker who cannot receive private goods is captured by our democracy case.

[4] We focus on the international effects of variations in the inclusiveness of domestic institutions. A large literature discusses why such institutions might change over time to become more inclusive. See Lizzeri and Persico (2004) for an interesting recent model along with an extensive review of the relevant literature.

one democracy and one non-democracy, more private goods can lead to more peace.

A further implication of this type of international bargaining is that states with more democratic domestic institutions have advantages in capturing public goods for its citizens. On the other hand, the elites in less democratic states are frequently paid off with private goods. This outcome identifies an international political channel by which democracies deliver relatively more public goods to their citizens while non-democracies potentially increase domestic inequality through this channel by focusing on acquiring private goods for their elite. Interestingly, the story is somewhat complicated in the case where a foreign state finds it more cost effective to bargain away public goods rather than private goods to a non-democracy. In this case, less democratic institutions give the elites in non-democracies more leverage to demand a greater proportion of public goods since they would be better able to benefit from seizing private goods by force.

In our model, instead of bargaining over a single object (Fearon 1995), states simultaneously bargain over both public goods and private goods. Following recent work modeling domestic bargaining dynamics (Acemoglu and Robinson 2001; Chapman, McDonald, and Moser 2015), *Home* is composed of two groups, *elites* and *ordinary citizens*. Unlike the dynamic regime change model, we do not model how the crisis affects the revolution constraint. In our framework regimes are stable, at least in the short run. We consider two institutional forms: a *liberalized democracy*, where the "median voter" decides whether or not to accept *Foreign*'s offer and an oligarchy, where only members of the elite decide whether or not to accept a peace proposal. In extreme cases, the ruling group could be an individual dictator or large enough to include the median citizen.

The key determinant of conflict in this setting is the attractiveness to *Foreign* of a safe (pooling) offer that both types of *Home* will accept versus a risky (separating) offer that only weak types of *Home* will accept. In our setup, who gets to make this decision within *Home* is critical in determining the relative attractiveness of these two types of offers. When *Home* is an oligarchy, we find that (1) decreasing the elite's cost of war; (2) expanding the size of

the elite; and (3) increasing the ability of ordinary citizens to capture private goods from the elite (possibly through redistributive taxation) all increase the probability of conflict.

Collectively, these results lead to our conclusion that partially transitioning from a small oligarchy to a more inclusive but non-democratic regime frequently increases the potential for conflict.

We can also obtain additional results conditional on increasing the amount of private goods. When *Home* is a relative democracy, then increasing the amount of private goods available decreases the potential for conflict. Alternatively, if *Home* is an oligarchy, then increasing the amount of private goods available increases the potential for conflict. Together, these results imply that altering the level of private goods has differing impacts on the potential for conflict for distinct dyad types. Increasing the level of private goods (1) increases the potential for conflict for two oligarchies, (2) decreases the potential for conflict in mixed dyads, and (3) does not affect the potential for conflict between democracies.

A final implication of our model is that decreasing the ability of citizens to capture private goods specifically in war time (possibly through redistributive taxation), decreases the potential for conflict. Hence, if citizens can set differing tax rates on peaceful bargains and war spoils, then the citizens can directly determine the decision making group's incentives toward or against war. This type of taxation policy provides a microfoundation for the concept of political bias used in some agency models of conflict. Political bias leads to a qualitatively different effect than simply altering the decision maker's cost internalization of war since it can lead to war even in the case of complete information (Jackson and Morelli 2007; Krainin and Slinkman 2017).

In the last section of this paper, we test some of our theoretical results against data on international territorial disputes. Our observational analysis provides preliminary empirical support for two of our most nuanced results: that democracies bargaining with oligarchies in the presence of private goods, like natural resources, are more peaceful and that autocratic regimes with different bases of support will also have different probabilities of war when

natural resources are present.

As a model that takes direct account of the impact of domestic institutions on international bargaining and war outcomes, this paper adds to a literature that began with the introduction of the two-level game in Putnam (1988). Several strands of the literature have taken different approaches to connecting the domestic level to the international level. This paper connects most closely with agency models of war (Jackson and Morelli 2007; Fearon 2008); Krainin and Slinkman 2017).

Lake (1992) provides a classic study of how a state's domestic politics influences its rent seeking incentives and, consequently, whether they are more or less war-prone. Autocracies are less constrained from earning rents than democracies and will have an incentive to expand and earn more rents. Thus, autocracies will be more war-prone and often target low rent democratic states. Democracies, however, will be unlikely to come into conflict with one another. Similarly, in our model, elites in autocracies are able to extract resources from international bargains in the form of private goods.

Other approaches include the selectorate model (Bueno de Mesquita et al 1999) where a leader makes international decisions in order to maintain her ability to remain in power and signaling models that investigate the informational role of internal opposition (Schultz 1998). Selectorate theory is particularly relevant to our model, but the setup and predictions are quite different. Selectorate theory focuses on a single leader's strategic incentives to go to war and when war occurs, the optimal effort level chosen to prosecute the war. These decisions are shaped by the size of the leader's winning coalition and therefore their incentive to provide private or public goods to maintain political survival. Alternatively, our model builds on a growing literature focusing on regimes in comparative politics and follows the setup of Acemoglu and Robinson (2001) where elites and non-elites have different incentive structures and either group may control the state. While selectorate theory often treats the international level in an essentially decision theoretic manner, our fully dyadic model builds on the insights from selectorate theory to produce new results. Proposition 2, which deals

with the cost of war to those in power, is our only prediction that directly speaks to results from selectorate theory and here the two theories agree.

Beyond the baseline model, selectorate theory is expanded to include international bargaining in Goemans and Fey (2009) and this model is empirically analyzed in the context of the democratic peace in Debs and Goemans (2010). But here again, the focus is on domestic political survival. Weeks (2008) argues that non-democratic leaders are frequently able to signal as well as democratic leaders while Weeks (2012) suggests that there is significant variation among nondemocratic regimes in their domestic constraints and, consequently, their likelihood of conflict initiation. This work also has implications for dyadic conflict, but does not consider the strategic consequences of regime type pairs.

Our paper also relates to the literature on resource wars. Acemoglu et al (2012) study how the dynamic exploitation of resources may lead to commitment problems that generate war. Caselli, Morelli, and Rohner (2015) seek to demonstrate that the desire to seize natural resources is a source of conflict. Their method for doing this is to investigate how the prevalence of conflict depends on the proximity of oil to the border between potential foes. Since it is more costly to seize oil far away from the border, they reason that if oil is indeed the motivating factor, it will be a more powerful factor the closer it is to the border. Schultz (2015) further analyzes these claims with data from precise digital maps. He finds that this result is driven by false positives since the conflicts that lead to the Caselli et al (2015) result are often over territory that does not contain the oil in question. Our model views conflict over privately exploitable resources such as oil and other issues with a more public good aspect as inextricably linked.

Empirically, our results have implications for the large literature that investigates conflict proneness in authoritarian regimes versus transitional democracies versus full democracies (Mansfield and Snyder 1995; Thompson and Tucker 1997; Ward and Gleditsh 1998; Gleditsh and Ward 2000; Goemans 2000; Narang and Nelson 2009; Baliga, Lucca, and Sjostrom 2011; Colgan 2013). This literature is inconclusive as to the likelihood of conflict in transitional

democracies. Our model indicates a previously unidentified force for the increased conflict potential of transitional democracies.

1 The Model

We describe our model on two levels: the international level and the domestic level. Our focus is on how domestic institutions impact international bargaining and the potential for war. In order to cleanly present these effects, we simplify both levels as much as possible.

1.1 Domestic Level

Two states, $Home$ and $Foreign$ ($i \in \{H,\ F\}$), are characterized by their domestic institutions. These institution dictate how the state values public goods, $x \in [0, \overline{x}]$, relative to private goods, $y \in [0, \overline{y}]$, in international bargains. Each state contains $n_i \geq 1$ actors divided into two groups: E (for elites) and O (for ordinary citizens or outside group). In each state, there are $m_i \geq 1$ members of E, while the rest of the population $(n_i - m_i)$ belongs to the outside group. We generally assume that m_i is small relative to n_i. The only difference between the groups is that members of E receive private goods from an international bargain, while members of O do not.

We consider two institutional settings. We refer to the first setting as an *oligarchy*. In an oligarchy, the members of E possess the power to agree to a bargain or not. While we use the term oligarchy, this first setting captures a number of political structures ranging from a pure dictatorship ($m_i = 1$) to various forms of limited democracy. We refer to the second setting as a *democracy*. In a democracy, we assume that the median voter has the power to agree to a bargain or not. Moreover, we typically assume that m_i is small enough that the median voter is a member of O.[5]

[5]A voter's incentive to agree to a bargain or not is determined by their utility function. Since there are only two groups, the median voter will be either an elite or ordinary citizen depending on which groups is larger.

It is possible to imagine cases where m_i is high enough in the oligarchy setting that the median voter is needed to agree to a deal.[6] In fact, we will think of cases where m_i is higher as cases where a state is more democratic than one with a lower m_i. However, the democracy setting is distinctive in that we cover the case where the median voter has decision making power, but may not have the same incentives as the, possibly quite small, elite that receives private goods in a bargain. Alternatively, a democracy can be thought of as the limit case of democratization where $m_i = n_i$. From this perspective, private goods are dropped from the median voter's utility function because n_i being large implies that private goods are a vanishingly small consideration for the median voter relative to public goods.

Within a state, public goods are non-rival and non-excludable[7], so both groups receive the same amount of public good utility, while private goods must be divided among the elite. We assume that individuals value public and private goods using a linear utility function.[8] Hence, in peace for a given offer $(x,\ y)$, elites in $Foreign$ receive utility[9]

$$u_{F,E}(x,\ y) = \overline{x} - x + \frac{\overline{y} - y}{m_F},$$

while O receives

$$u_{F,O}(x,\ y) = \overline{x} - x.$$

Groups in H receive

$$u_{H,E}(x,\ y) = x + \frac{y}{m_H},\ u_{H,O}(x,\ y) = x.$$

[6] An example might be a society where a minority group is excluded from voting and private goods.

[7] We use the term public good throughout, but our model also applies to common resource goods (non-excludable, but rivalrous). The only modeling difference, which does not qualitatively impact the analysis, is that an individual's value of common resource goods are scaled down to reflect the population size.

[8] Other separable utility functions produce similar results, but the analysis is considerably more complicated. The key force driving our results is that y must be split among elite users while x is shared by all users. Essentially, other utility functions just smooth out some of the effects we produce. Due to this, it's easier to see the intuition of the application studied here under the choice of linear utility functions.

[9] It would be easy to include a parameter, $\alpha_i > 0$, to multiply by the number of public goods received in i (so H would value x as $\alpha_H x$). This parameter would measure how members of state i value public goods relative to private goods. Additionally, the ratio $\frac{\alpha_F}{\alpha_H}$ would measure how the two states value public goods relative to one another. So if $\frac{\alpha_F}{\alpha_H} > 1$ ($\frac{\alpha_F}{\alpha_H} < 1$), then $Foreign$ values public goods more (less) than $Home$. Since it does not qualitatively affect our result, we set $\alpha_H = \alpha_F = 1$ to lessen the burden of notation.

1.2 International Level

On the international level, *Home* and *Foreign* bargain over the public good, x, and private good, y. The presence of more than one type of good is the only aspect of the international level that is qualitatively distinctive from previous crisis bargaining models featuring asymmetric information.

At the beginning of the game, *Foreign* makes a take-it-or-leave-it offer of a bundle of public and private goods (x, y) to *Home*. *Home* can then accept the offer, leading to peace, or reject the offer and fight a war to obtain the goods.

Home has a probability of victory in war dependent on *Home*'s type. With probability $q \in (0, 1)$, *Home* is a weak type (l) and with probability $1 - q$, *Home* is a strong type (s). When *Home* is type s, then *Home* wins with probability $p \in (0, 1)$, while when *Home* is type l, *Home* wins with probability $0 < p' < p$. *Foreign* then wins a war with probability $1 - p$ against a strong type and $1 - p'$ against a weak type.

We assume that the costs of war are potentially borne differently between groups. All n players divide the cost, however, a deciding member's cost is modified by $\gamma > 0$ to reflect that they may pay a proportionally different amount of costs.[10] These assumptions grant the model a great deal of flexibility. For instance, if $m_H = 1$ and $\gamma = n_H$, then we are back in the standard unitary actor case.

When *Home* is a strong type and an oligarchy, war gives a decision maker in *Home* the value

$$w_H = p\left[\overline{x} + \frac{\overline{y}}{m_H}\right] - \gamma\frac{c_H}{n_H}.$$

[10]Note that costs need not sum to c_H if $\gamma \neq 1$. Altering the level of γ, alters the total cost faced by H. An alternative assumption would be to set elite cost to $\gamma\frac{c_H}{n_H}$ and citizen cost to $(1-\gamma)\frac{c_H}{n_H}$. This change would not qualitatively impact any of our results in this paper, but may quantitatively impact the results. These alternative ways of formulating costs have different real world implications. Our assumption is that the institutional structure of government affects how elites are impacted by war, but it does not directly affect ordinary citizens. So, for instance, election outcomes may be affected by war decisions. The alternative assumption is that there is a direct trade-off in the costs paid by elites and those borne by citizens. In this case, costs are the literal payment for war.

When $Home$ is a strong type and a democracy, gives a decision maker in $Home$ the value[11]

$$w_H = p\overline{x} - \frac{c_H}{n_H}.$$

$Foreign$'s value of war is defined analogously.

2 Results

In any peaceful bargain, $Foreign$ seeks to maximize its utility given the constraints described in the model section. Lemma 1, in the appendix, characterizes these values when $Home$ is known to be strong. A similar characterization follows if $Home$ is known to be weak with p's replacing ps.

In the democracy setting, $Home$ only has a positive war threat when $\overline{x}$ is high relative to the population weighted cost of war, modified by the probability of victory. Therefore, $Home$ only receives positive amounts of the public good when this threshold is reached. As seems natural, when $Home$'s bargain value is positive, it is increasing in $Home$'s probability of victory and the total amount of public goods available, while declining in war costs. Democracies never receive any private goods since the median voter does not value them, hence $Foreign$ optimizes by setting $y = 0$.

In the oligarchy setting, bargain values are more complex. Similarly to the democracy case, if the total amount of public and private goods per recipient is not high enough relative to a modification of war costs, then $Home$ does not receive any portion of the international bargain.

There are four other cases. In all these cases, the total amount of public and private goods are high enough that $Home$ receives a positive portion of the international bargain. In two of the cases, $Foreign$ maximizes by keeping either all of the public goods or all of the

[11]Note, a potential alternative assumption would be that citizens in $Home$ would split the value $\overline{y}$ in victory when $Home$ is a democracy. This value will be negligible when n_H is large, which is our general assumption. Therefore, we exclude this potential value for simplicity.

private goods for itself and pays *Home* off entirely in the other type of good. In the other two cases, *Foreign* would prefer, on the margin, to substitute more private goods (public goods) for less public goods (private goods) in the bargain offer *Foreign* makes to *Home*. However, *Foreign* is constrained from making this substitution by the resource constraint on y (x). In these cases, *Foreign* gives *Home* all of one type of good and the minimum amount of the other type of good to maintain peace.

Foreign determines whether to pay *Home* off in public goods or private goods by calculating a value akin to the "bang-per-buck" of these goods. In this context, the bang-per-buck value determines how much utility is lost to *Foreign* by providing one additional unit of utility to *Home* through either private or public goods. So, here, bang-per-buck of public (private) goods is the marginal utility to *Foreign* with respect to public (private) goods divided by the marginal utility to *Home* with respect to public (private) goods. The marginal utility to *Home* functions like a "price" to *Foreign* for relaxing *Home*'s constraint.

In this context, the parameters m_H and m_F are the key drivers of bang-per-buck and consequently whether *Foreign* prefers to pay *Home* with private or public goods. When the ratio m_H/m_F is less than or equal to 1, *Foreign* prefers to pay *Home* in private goods. The value 1 represents the utility loss to *Foreign* of using public goods to increase *Home*'s utility by 1 in a peaceful bargain.[12] Similarly, m_H/m_F represents the utility loss for *Foreign* from paying *Home* off in private goods. If there are $10,000$ elites in *Home* and $20,000$ elites in *Foreign*, a transfer of private goods that increases *Home*'s peaceful payoff by 1 causes the utility for *Foreign*'s decision makers to drop by $1/2$. In this case, it is cheaper in terms of utility for *Foreign* to pay *Home* in private goods rather than public goods. Hence, the optimal bargain bundle is determined by a combination of how *Foreign* and *Home* value public goods relative to to one another and the relative level of democracy (inclusiveness of the elite) in the two states (m_H/m_F).

[12]Generally, it is easy to include a parameters (α_H and α_F) that would alter this trade-off to values other than 1. See Footnote 4. When this is the case, the cut-off value for *Foreign* wanting to switch from paying in private goods to public goods may happen at a point other than when $m_H/m_F > 1$ (in fact, this value would be $m_H/m_F > \alpha_F/\alpha_H$).

Lemma 1 allows us to compare the welfare implications of peaceful bargains for citizens in a democracy versus an oligarchy. When $Home$ is an oligarchy, but relatively more democratic than $Foreign$, $Home$ always receives more public goods than when relatively less democratic than $Foreign$.[13] However, once this threshold is reached, increasing the inclusiveness of $Home$'s institutions only serves to reduce the amount of public goods received. The intuition is that more the more democratic $Home$ becomes, the less $Home$'s elite can leverage the amount of private goods it could win in a war to get more public goods for everyone. At the extreme, in a full democracy, the decision maker in $Home$ no longer values private goods at all, so the level of private goods provides no leverage at all. Finally, when $Home$ has more inclusive institutions than $Foreign$, elites and citizens benefit equally from international bargaining. However, when $Home$ has less inclusive institutions than $Foreign$, only elites receive benefits from international bargaining.

An implication of Lemma 1, that will be important in later results, is that in order for $Foreign$ to make a nonzero offer for a given level of $\overline{x}$ and $\overline{y}$, $Home$ must be sufficiently strong.

Corollary 1. *When Home is an oligarchy, Foreign makes Home a nonzero offer if and only if*

$$p > \frac{\gamma c_H}{n_H\left(\overline{x} + \frac{\overline{y}}{m_H}\right)} \tag{1}$$

2.1 The Potential for Conflict

When $Home$'s strength level is known, $Foreign$ can safely make an offer that $Home$ is just willing to accept. However, $Home$'s strength level is unknown and may be strong (type s) with probability $1-q$ or weak (type l) with probability q. $Home$ cannot credibly

[13]Of course, since the overall population of countries may be different, countries may have the same sized elite, but different elite percentages of the overall population. Since we are generally assuming the elites are a small number and the populations are large, we ignore this. Regardless if absolute value or percentages are considered, the directional effects are the same.

communicate its strength level to *Foreign* before bargaining since whenever *Home* is weak, it has the incentive to misrepresent its strength level as strong. *Foreign* then has three options: (1) make an offer that neither type of *Home* will accept; (2) make an offer that both strength types will accept; or (3) make an offer that *Home* will only accept if it is a weak type.

In the (Perfect Bayesian) equilibrium of the baseline model, *Foreign* never takes option 1 since the cost of war implies that there exists bargains where both players do better than war. Under option 2, *Foreign* optimizes by offering *Home* just enough that a strong type will accept. We call this the risk free proposal (pooling proposal). With this option, *Foreign* avoids risking war, but possibly pays too much to a weak type. Under option 3, *Foreign* optimizes by offering *Home* just enough that a weak type will accept. We call this a risky proposal (separating proposal), because if *Home* is a strong type, war will result.

Let u_F^s be *Foreign*'s payoff when it makes a risk free proposal that a strong type will just accept. Let u_F^l be *Foreign*'s payoff when it makes a risky proposal and the weak type accepts. *Foreign* prefers to make a risky proposal when

$$qu_F^l + (1-q)\left[(1-p)\left[\overline{x} + \frac{\overline{y}}{m_F}\right] - \frac{c_F}{n_F}\right] - u_F^s > 0.$$

The second term on the left hand side is *Foreign*'s war value multiplied by the probability of war. In our simple model, either this inequality is not satisfied and the probability of war is zero or it is and war occurs with probability $1-q$. Since this inequality separates cases where war never occurs from cases where it occurs with positive probability, we will refer to it as the war risk inequality. Therefore, holding all other parameters constant, any change in a single parameter that causes the left hand side of the war risk inequality to increase in value increases the space of parameters for which the war risk inequality is satisfied. When increasing a parameter increases (decreases) the value of the left hand side of the war risk inequality, we say that the *potential for conflict* is increasing (decreasing) in that parameter.

2.2 Expanding the Elite

In the oligarchy setting, the elite expands as m_i increases. This may be viewed as a limited type of democratization. As m_i increases, a greater percentage of society is involved in the decision making process over international bargains and conflict. As a first step toward understanding the effects of democratization, Lemma 2 demonstrates how $Foreign$'s utility is affected by increases in the number of elites in $Home$.

Lemma 2. *Assume Home and Foreign are oligarchies and Home is known to be type s. Assume that inequality 1 holds. u_F is strictly decreasing in m_H if and only if $\frac{m_H}{m_F} \leq 1$. Otherwise, u_F is strictly increasing in m_H.*

Lemma 2 states that increasing democratic involvement increases $Home$'s demands in a way that is unfavorable to $Foreign$ given their marginal rates of substitution between private and public goods. But when $Foreign$ prefers the public good, increasing the size of the elite in $Home$ makes $Foreign$ better off.

The intuition for Lemma 2 is as follows. Increasing the population in $Home$ (m_H) receiving private goods decreases the payoff for each member of the elite in peacetime since private goods received in a bargain are spread over greater numbers of elites. For the same reason, H's war payoffs are also lowered when m_H increases. However, these payoffs are modified by the probability of victory and costs. When the probability of victory is high and costs are low, then war payoffs drop more slowly than peacetime payoffs as m_H increases. Thus, $Home$ requires higher peace values to avoid war leading to lower utility for $Foreign$. In this case, it is as if the price of paying $Home$ off in private goods is increasing, so the cost of the bargain to $Foreign$ is increasing (u_F is decreasing). However, eventually the price gets high enough that $Foreign$ switches to paying $Home$ off in public goods. When paying $Home$ with public goods, increasing m_H only serves to lower $Home$'s war value, but does not affect the value of the public goods transfer. Hence, once m_H becomes large enough to satisfy $m_H/m_F > 1$, then the amount of public goods transferred to $Home$ is decreasing in

m_H (u_F is then increasing).

Before proceeding to Proposition 1, we must define a condition on the size of private goods that ensures that the amount of private goods is sufficient for $Foreign$ to pay $Home$ off in private goods if $Foreign$ so desires. In other words, the amount of private goods is high enough that our current model does not effectively reduce to a one good model. Condition 1 presents this restriction $\overline{y}$.

Condition 1. $\overline{y} \geq \frac{1}{1-p}\left[pm_H\overline{x} - \gamma\frac{m_H}{n_H}c_H\right]$

Utilizing Lemma 1 and Lemma 2, Proposition 1 demonstrates a sufficient condition for the potential for conflict to be increasing in m_H.

Proposition 1. *Suppose Home and Foreign are oligarchies. If inequality 1 holds for p (sufficient strength), Condition 1 holds (sufficient private goods), and* $\frac{m_H}{m_F} \leq 1$ *(relative oligarchy/transitional democracy), then the potential for conflict is strictly increasing in* m_H.

The key implication of Proposition 1 is that, on its own, expanding the elite has an ambiguous direct effect on the potential for conflict in crisis bargaining.[14] While the expansion of the elite can alleviate the potential for conflict when m_H is high relative to m_F, Proposition 1 demonstrates that it is also possible that democratization actually increases the potential for conflict. In particular, this is the case when $Home$ is sufficiently strong so as to get nonzero offers, the amount of private goods is nontrivial, and $Home$ starts out relatively less democratic than $Foreign$.

The intuition is that when these conditions are satisfied, increasing the size of the elite increases $Home$'s demands when $Home$ is a strong type while increasing them by less when $Home$ is a weak type. Moreover, m_H does not factor into $Foreign$'s utility in the event that $Foreign$ wins a war. These factors combine to imply that when $Home$ is initially less democratic, increasing the size of the elite causes a decrease in the value of the risk free proposal for $Foreign$ while weakly increasing the value of the risky proposal.

[14]Proposition 6 in Appendix A characterizes cases with large (non-marginal) jumps in elite size or full liberalization to democracy.

2.3 Oligarchy versus Democracy

In this section we compare the potential for conflict in oligarchies versus democracies. An immediate implication of comparing the two institutional setting is that as γ shrinks, the potential for conflict in oligarchies is increasing while the potential for conflict in democracies is static. Hence, oligarchies with institutions implying a low γ, will have a potential for conflict that is high relative to a state that is similar in every way, except that it has democratic institutions. This type of effect is a very old idea going back to Kant (2006). Moreover, this results connects to selectorate theory in that it confirms that outside of pure democracies, in our more reduced-form setup for institutional costs, increasing the political cost to elite decision makers decreases their incentive to risk war.

Proposition 2 states this formally.

Proposition 2. *If inequality 1 holds for p, then decreasing γ strictly increases the potential for conflict for oligarchies. Democracies are unaffected by changes in γ.*

Besides differing costs, oligarchies and democracies also differ in their valuation of public versus private goods. The major difference being that the median voter values public goods, but not private goods while decision makers in oligarchies care about both goods. As Proposition 2 implies, the total amount of private goods relative to the total amount of public goods to be determined by international bargaining is potentially critical in determining whether oligarchies or democracies are more conflict prone. In order to elucidate this effect, Proposition 3 characterizes the impact of increasing the amount of private goods relative to public goods on the potential for conflict in democracies and oligarchies.

Proposition 3. *Suppose Foreign is an oligarchy, then*

1. *Increasing the amount of private goods, $\overline{y}$, decreases the potential for conflict when Home is a democracy.*

2. *If inequality 1 holds for p (sufficient strength), Condition 1 holds (sufficient private goods), and $\frac{m_H}{m_F} \leq 1$ (relative oligarchy/transitional democracy), then increasing the*

amount of private goods, $\overline{y}$, increases the potential for conflict when Home is an oligarchy.

3. *If inequality 1 holds for p (sufficient strength) and $\overline{x} \geq \frac{1}{1-p}\left[p\frac{\overline{y}}{m_H} - \gamma\frac{c_H}{n_H}\right]$ (sufficient public goods), then there exists an $\eta > 1$ such that for all $\frac{m_H}{m_F} > \eta$, increasing the amount of private goods, $\overline{y}$, decreases the potential for conflict when Home is an oligarchy.*

Proposition 3 states that as the amount of private goods, $\overline{y}$, increases, democracies become less conflict prone while oligarchies often become more prone to conflict. Hence, when private goods are a relatively large proportion of what is being bargained over, democracies are more peaceful than oligarchies. Alternatively, as private goods decrease relative to public goods, democracies become relatively more conflict prone.

War values act as constraints on peaceful bargains in all of these scenarios. A unit increase in private goods tightens these constraints in proportion to a state's probability of winning and the size of the elite within the state. That is, the increase of private goods carries distinct shadow values on these war constraints for distinct regime and strength types. Consequently, the value of the peaceful risk-free offer versus the risky offer changes as the amount of private goods increases. The direction of this change is contingent on the nature of the dyad.

Roughly, as the amount of private goods increases, *Foreign* is more and more willing to pay a democracy off in public goods since *Foreign* is able to keep a greater amount of private goods for itself (Proposition 3.1). A similar effect holds when *Home* is not a true democracy, but is sufficiently more democratic than *Foreign* (Proposition 3.3). On the other hand, when *Home* is a relative oligarchy, the risky proposal becomes more attractive as the amount of private goods increases (Proposition 3.2). This is because for each additional unit of total private goods, *Foreign* keeps a greater proportion when facing a weak type than a strong type. Hence, as the amount of private goods increases, *Foreign* becomes more and more willing to gamble on the risky proposal.

The results in Proposition 3 are contingent on *Foreign* valuing private goods. If *Foreign*

does not value private goods (perhaps because $Foreign$ is also a democracy), the potential for conflict will be invariant in the level of private goods when $Home$ is a democracy. In this case, our model is qualitatively the same as a standard crisis bargaining model (Fearon 1995). When $Foreign$ is a democracy, but $Home$ is an oligarchy, increasing the amount of private goods will actually decrease the potential for conflict. The general implication being that mixed dyads are relatively peaceful when there are sufficient private goods to pay off elites within the oligarchy while allowing the democracy to retain a consequently higher proportion of the public good. When oligarchies bargain with other oligarchies, increasing the amount of private goods only exacerbates the situation, while the amount of private goods is irrelevant for two democracies bargaining with one another.

3 Taxation

In this section, we expand on the baseline model to allow for redistributive taxation. Consider the oligarchy case where E has the power to accept or reject bargains. However, members of the out group, O, have a limited amount of power to demand some percentage of the private goods offered to $Home$ through a redistributive tax rate $\tau \in [0,\ 1]$. This ability to tax is meant to represent various ways political institutions can allow out groups to constrain the decision making of the elite. The larger the tax rate, the more power O has to impact policy. Furthermore, this extension allows us to capture the case where private goods are large enough relative to the state's population that they would have a non-negligible effect even when spread over the entire population.[15]

In this case, a member of E in $Home$ has the following utility in peace for a bargain $(x,\ y)$

$$u_E\left(x,\ y\right) = x + \frac{y(1-\tau)}{m_H}$$

[15]An example may be the use of oil income to fund the Government Pension Fund of Norway.

while a member of O's utility for the same bargain is

$$u_O(x,\ y) = x + \tfrac{y\tau}{n_H - m_H}.$$

As seems natural, we assume that $n_H - m_H > m_H$.

In war, when $Home$ is strong, E receives

$$w_E = p\left(x + \frac{\overline{y}(1-\tau)}{m_H}\right) - \gamma\frac{c_H}{n_H},$$

while O receives

$$w_O = p\left(x + \frac{\overline{y}\tau}{n_H - m_H}\right) - \frac{c_H}{n_H}.$$

Under this setup we derive the following results

Proposition 4. *If inequality 1 holds for p, Condition 1 holds , and* $\frac{m_H}{m_F} \leq 1 - \tau$*, then*

1. *In peace,* y^* *and hence* u_O *is increasing in* τ*.*

2. *The potential for conflict is increasing in* τ*.*

Proposition 4 demonstrates the effects of increasing the tax rate, τ. The first effect is that y^* is increasing in τ as the elites are forced to bargain harder in order to get the same amount of utility. Hence, the out group benefits in two ways from taxation. Increased taxation directly increases the proportion of private goods the out group receives while also incentivizing the elites to demand a higher portion of the private good pie.

The second effect demonstrates the darker side of increased taxation power. As τ increases E may bargain too hard, inducing conflict more frequently as τ increases. Hence, the out group may wind up losing out if their taxation power becomes too high and induces conflict. When this is the case, the out group would counterintuitively prefer institutions that put greater limits on their ability to redistribute private goods.

Finally, the third effect is that increasing τ decreases the range for which the potential for conflict is increasing in τ. That is, once τ reaches a high enough level, the price of paying

Home in private goods gets too high and *Foreign* switches to public goods. From that point on, further increases in τ only serve to reduce the elite's war value. Therefore, the potential for conflict may begin to decrease in τ once it reaches a high enough level. This mirrors the effect of increasing m_H in the baseline model.[16] Initial increases in democratization increase the potential for conflict, but once some threshold is reached, more democratization decreases the potential for conflict.

4 Political Bias and War

Building on the taxation section, we are able to extend our model in a way that provides a microfoundation for the concept of political bias in Jackson and Morelli (2007). In that paper, a leader (or more generally here, the elite) makes a decision over whether or not to accept a bargain or go to war with some bias over how the acquisition of resources are valued in peace and war. For instance, a leader (or elite member) who is biased toward war is able to capture a higher percentage of resources after a successful war than from a peaceful bargain. In our model, it is easy to incorporate this notion as the out group having different taxation technologies available in peace versus war. In this case, everything is the same as in the taxation section, except that in war, a different tax rate, $\tau' \in [0,1]$ is applied so that war utilities become

$$w_E = p\left(x + \tfrac{\overline{y}(1-\tau')}{m_H}\right) - \gamma\tfrac{c_H}{n_H}$$

and

$$w_O = p\left(x + \tfrac{\overline{y}\tau'}{n_H - m_H}\right) - \tfrac{c_H}{n_H}.$$

[16] In fact, from a mathematical perspective, the effect of τ can be captured by defining "effective m_H" as $m_H/(1-\tau)$. In the baseline model, increasing m_H increased the potential for conflict when $m_H/m_F \leq 1$. Now, increasing τ increases "effective m_H" so long as $m_H/m_F \leq 1-\tau$.

It follows immediately from Jackson and Morelli (2007) that, under this setup, war is possible even when *Home*'s strength type is known for certain. This war result holds for certain parameters when τ' becomes small. When τ' is low, members of E have a strong incentive to go to war since they can keep a higher percentage of the private goods pie gained through war than of those gained through peaceful bargaining. When τ' is low enough, it is possible that E's incentive to capture goods through war eliminates the peaceful bargaining space, inducing war with certainty. An important point to note is that this effect is qualitatively different from changes in γ. While low γ levels can increase the potential for war when *Home*'s type is unknown, they never induce war when *Home*'s type is known since there always exists a non-empty bargaining space.

Going beyond the Jackson and Morelli (2007) result, we can derive results on how τ' effects the potential for conflict in the incomplete information game.

Proposition 5. *If inequality 1 holds for p and Condition 1 holds, then*

1. *In peace, u_O is decreasing in τ'.*

2. *The potential for conflict is decreasing in τ'.*

In this case, lowering the out groups ability to capture rents in war (which is analogous to increasing E's war bias) causes E to bargain harder, increasing O's utility. However, as E begins to bargain too hard as τ' becomes small, the potential for conflict increases. Note that these effects are potentially the opposite of the tax described in the previous section, which was not contingent on whether the tax was collected in peace or after a war.

Taken together, Propositions 4 and 5 are quite striking. Institutions that increase the level of redistribution in peacetime, but decrease it during a war, increase a state's bargaining power. However, these kinds of institutions also maximize the potential for conflict. Propositions 4 and 5 also demonstrate exactly which aspects of redistributive institutions increase the potential for peace. Namely, allowing elites to retain high levels of private goods in peacetime, but depriving them of the spoils of war, minimizes the potential for conflict.

5 Empirical Implications: Resources and Conflict

Although our model is very simple, it does generate some specific predictions about how a dyad's political institutions influences the outcomes of international bargaining. In this section, we explore three specific hypotheses of our model that can be tested on observable data on territorial disputes. We focus on the implications from Proposition 3, that changes in the amount of private goods can influence the probability of conflict as the institutional composition of the dyad varies. Specifically, we test whether the presence of natural resources negatively correlates with the probability of violent military action between democracies and autocratic regimes and how differences in the elite size for autocratic leaders relates to the probability of military fatalities between these pairs of countries. Though there are many results from our analysis we could consider, we focus on these particular predictions as a first check of the model's explanatory power because they are unique to our model.

We draw our observations from the *Issues Correlates of War Database* on territorial disputes between 1816 and 2001 (Frederick et. al 2017). The data is in the form of dyadic territorial claim panels. A territorial claim occurs when: there is an explicit competing claims to territorial sovereignty, the competing claims concern specific territory, and the claim is made by official government representatives who are authorized to make foreign policy.[17]

Each territorial claim identifies a parcel of land and a relationship between two countries, called the challenger and target, where the challenger has made a claim on some territory currently under the administrative control of the target. A single territory may be involved in multiple dyadic disputes because of competing claims, as in the South China Sea. Each year of our data has an indicator marking that a particular dispute has a militarized conflict that leads to casualties. In the total dataset, of the 13,673 conflict years, about 2% (296) have fatalities.

The database also records a number of factors relating to the territory. We can know if the

[17]For a detailed description of the ICOW database see Frederick et. al. (2017) "The Issues Correlates of War Territorial Claims Data, 1816-2001" *Journal of Peace Research.*

claimed territory is known or believed to have valuable natural resources, if it is strategically located, if it is populated or uninhabited, if it is "homeland territory", if the territory is ethnically tied to a claiming country, or if there has been a historical transfer of the territory from one challenger to the target in the last 200 years. In our analysis we are interested in the effect of private goods because, in many cases, it is the rights to monetize and share in these kinds of resources that makes up the *private* component of the international negotiations in territorial disputes.[18]

We exclude from our data set the years of the two world wars and the Cold War period. During the world wars, the forces behind these massive multilateral conflicts often subsumed the effect of a particular dyadic claim. During the Cold War, democratic and autocratic states mostly fell under one of two superpower blocs whose superpower ally's concerns often dominated individual state claims within those blocs. We get some empirical traction testing our model during the Cold War by looking only at autocratic dyads, which we discuss below.

To measure institutions we use two sources. For the first prediction of Proposition 3, that democratic targets of oligarchic or autocratic challengers will have more peaceful territorial disputes, we use the *Polity IV* database democracy index. This covers over the same time series and allows us to distinguish between democracies, intermediate regimes, and autocratic oligarchies. The *Polity IV* data is widely used in the study of political regimes. Here, we use the standard cut of a *composite polity score* of 7 to separate democracies from non-democracies.[19]

Our first analysis goes after the implication that, for foreign autocracies, the probability of a conflict between it and a democratic target is lower if resources are present. To test this prediction we analyze the subsample of territorial disputes where the challenger is a non-democratic and compare outcomes across groups. We run a series of regression of the presence of fatalities from militarized violence on interacted indicator variables for the democratic

[18]Though these are not the only sources of private benefit. Sometimes it can be about investment, commercial, or transportation rights.

[19]Results are robust to considering different cut offs for democracy and intermediate regimes.

Table 1: Effect of Resources and Democracy on MID Fatalities

	(1) Model 1	(2) Model 2	(3) Model 3	(4) Model 4	(5) Model 5	(6) Model 6
Resources	0.015***	0.013***	0.014***	0.014*	0.011*	0.011†
	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)	(0.006)
Democratic	-0.007**	-0.011***	-0.012***	-0.012*	-0.011**	-0.011*
Target	(0.002)	(0.003)	(0.004)	(0.005)	(0.003)	(0.004)
Democratic	-0.015***	-0.015***	-0.016***	-0.016**	-0.012*	-0.012
Target × Resources	(0.004)	(0.004)	(0.005)	(0.006)	(0.005)	(0.008)
CINC Score			-0.010	-0.010	-0.012	-0.012
Target			(0.013)	(0.015)	(0.019)	(0.021)
CINC Score			-0.018	-0.018	-0.153	-0.153
Challenger			(0.014)	(0.021)	(0.127)	(0.168)
Contiguity			-0.005	-0.005	-0.009†	-0.009
			(0.004)	(0.005)	(0.005)	(0.006)
Constant	0.008***	-0.005	-0.001	-0.001	0.007	0.007
	(0.002)	(0.003)	(0.005)	(0.006)	(0.015)	(0.015)
Year FE	N	Y	Y	Y	Y	Y
Challenger FE	N	N	N	N	Y	Y
SE Clustered(Claim)	N	N	N	Y	N	Y
N	5832	5832	5830	5830	5830	5830

Robust standard errors in parentheses. 249 claims with an average of 23.41 observations per claim.
† $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

nature of the target and the presence of natural resources, where we then interact the presence of natural resources and the target's institutional type to estimate the difference effect.

Table 1 presents a series of models. Of the 13,673 observations in the database, 5831 are observations where the challenger is non-democratic and the observation of the territorial dispute falls in our time period.[20] Interpreting the findings in the table across columns is straightforward because our measures are indicator variables. When the target is non-democratic and natural resources are present, the two countries are more likely to have a conflict with fatalities than when resources are present. When the target is democratic and there are resources, our theoretical result predicts a decrease in conflict and empirically we

[20]The there are two fewer observations in the last four columns because of missing CINC scores for Afghanistan in 1919 and Morocco in 1912. In each case there is an ICOW dispute that identifies this country but the country either gained or lost independence in that year, so their CINC scores are missing. Since it is only 2 observations we chose to leave them out, but it does not matter whether you update the scores by filing in the protectorate's score or the first or last score under independence.

Table 2: Effect of Resources on MID Fatalities Personalist vs. Machine ($m_F < m_H$)

	(1) Model 1	(2) Model 2	(3) Model 3
Resources	-0.051*	-0.065*	-0.071*
	(0.023)	(0.027)	(0.035)
CINC Score Challenger			-0.509
			(0.334)
CINC Score Target			0.347†
			(0.209)
Contiguity			0.012
			(0.026)
Constant	0.059**	0.065*	0.145
	(0.022)	(0.027)	(0.094)
	(0.022)	(0.027)	(0.084)
Year FE	N	Y	Y
N	245	245	245

Robust standard errors in parentheses

† $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

find this decrease to be substantial. Our results also show a consistent pacifying effect of democracy in the absence of a resource, which is consistent with Proposition 2 if one believes elites in autocracies pay a lower share of the cost of war in this time period than citizens.

Columns (2)-(6) then explore the robustness of the results. Column two adds year fixed effect and then we control for other covariates known to be robustly associated with conflict, such as the military capabilities of the challenger and the target and whether the states are contiguous.[21] Finally we include fixed effects for the challenger and cluster the standard errors on claims. The hypothesized effects of resources across the specifications are robust.[22]

Because of other strong political forces we acknowledge during the Cold War and the World Wars, we try a second analysis that looks at the predictions of our theory regarding the availability of private goods and conflict between different types of autocratic regimes

[21] Here we use the definition that less then 24 miles of water separate countries, though other measures also work.

[22] Analysis with target and claim fixed effects are in Table 9 in the appendix.

Table 3: Effect of Resources on MID Fatalities Machine vs. Personalist ($m_F > m_H$)

	(1) Model 1	(2) Model 2	(3) Model 3
Resources	0.124*	0.107*	0.019
	(0.048)	(0.042)	(0.057)
CINC Score Challenger			22.084* (10.516)
CINC Score Target			-3.131† (1.680)
Contiguity			-0.047 (0.075)
Constant	0.036	-0.053	0.032
	(0.025)	(0.052)	(0.094)
Year FE	N	Y	Y
N	136	136	136

Robust standard errors in parentheses

† $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

during the Cold War. Here we choose cases that reduce the strong effect of the Cold War forces present in conflicts between democracies and non-democracies.

To test the other two empirical implications from Proposition 3, that oligarchic regimes with different bases of support will be more or less conflict prone, we use Week's (2012) data on autocratic regimes. We measure autocratic regimes as either personalistic (small m_i) or machine (larger m_i). This data runs from 1946-2001.

Personalistic regimes may be civilian or military, but are always autocratic regimes where one individual controls the instruments of government. Examples would be the Kim Jong Il, Stalin, or Idi Amin. Machine systems, on the other hand, are non-democracies that have a wider elite base. The elite may be civilian, like in a single party system, or it may be a military elite, as in a junta. Examples of the former might be the PRI in Mexico or the while the later are like the Junta led by Jorge Rafael Videla, Emilio Eduardo Massera, and Orlando Ramon Agosti in Argentina.

Proposition 3 parts 2 and 3 imply that if the challenger has a larger elite among whom private benefits must be shared and is facing a regime that is more personalistic, then the probability of war is increasing in the presence of private goods, here natural resources. If, however, the challenger is a personalist regime, and therefore has a smaller base of elite support that shares in the private good, but the target is a political machine, then the probability of conflict should decrease when private goods (natural resources) are available.

Tables 2 and 3 shows the results on these two subsets of the *ICOW* database. There are 245 territorial claims with personsalist challengers of machine targets and 136 with machine challengers of personalist targets. The result presented in Table 2 and 3 are consistent with our empirical implications. The results show that the probability of conflict decrease when the claim comes from a personalistic autocracy but increases by 0.124 in the presence of resources when the territorial claim originates with an autocratic machine. These effects are large given that the rate of militarized fatalities between all pairs of oligarchies with conflicting territorial claims from 1946-2001 is 0.033.

These smaller sample results are not as robust as the previous analysis. The entire model fails when including challenger fixed effects and the number of clusters is too small for reliable estimates of robust standard errors clustered on claims (26 and 13 respectively).[23] But then again, there were other strong political forces influencing Cold War disputes, the data here is quite sparse, and there are still other open hypotheses from the model that have yet to be tested. Given all these other conditions finding these results in encouraging.

6 Conclusion

In many instances, the nature of the goods at the center of international disputes have mixed elements. Some of the components are public goods like state territory, national security, or policy adjustments. Others are private goods that elites can consume if offered. In such

[23]Cameron and Miller (2015) "A Practitioner's Guide to Cluster- Robust Inference" *The Journal of Human Resources.*

a world the nature of domestic politics can be important for both determining a country's incentives to go to war and who really benefits from peace. Similarly in such situations, who pays the cost of war is also important.

In this paper, we modified the standard incomplete information crisis bargaining model in two ways to explore the implications of the these facts. We allowed for countries to bargain over these mixed goods and we allowed the countries to be made up of two groups (elites and citizens). Both groups benefited from public goods, while only the elites had access to the private goods. This led to a series of results on how the internal institutional makeup of *Home* impacts the potential for conflict. Counterintuitively, while the full liberalization of a oligarchy (limited democracy) can reduce the potential for conflict, half-measures often exacerbate the potential for conflict. For instance, expanding the decision making class (the elite) and increasing the redistributive powers of the citizens (out group) often increases the potential for conflict.

There are three immediate extensions of the model. First, it is easy to imagine that the two countries are bargaining over not just public and private goods, but a variety of goods that impact the utility of a country's internal divisions differently. This is especially relevant when bargaining over the gains from trade. Second, the internal structure of *Home* presented here is quite reduced form. A more sophisticated model of internal voting and taxation might capture additional subtleties. In particular, when the level of strength is endogenous to taxation (as in Chapman, McDonald, and Moser 2015), the redistributive and strength increasing properties of taxation may combine to interesting effect. Third, a dynamic extension where an oligarchy expanded the elite or liberalized over time would likely demonstrate that such a process induces conflict in a limited commitment environment.

Finally, we note that our model may be applied to situations beyond international conflict bargaining. On August 24, 2016, the Colombian government signed an accord with FARC (Revolutionary Armed Forces of Colombia) to end a conflict that had endured for over 50 years. Less than two months later, the Colombian people voted down a referendum

supporting the accord. Even in a civil conflict, the groups that make up each side may have sharply different interests in a peace deal. Beyond conflict, the United Kingdom's June 2016 vote to leave the European Union demonstrated how the political divergences of groups within a state can lead to the costly breakdown of international agreements. While such explicit cases may be infrequent, our study suggests that the interaction between mixed goods and domestic institutions may be a critical force in determining the success or failure of international bargaining in a wide variety of circumstances.

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Appendix A (For online publication)

Lemma 1

Let $Foreign$ be an oligarchy and assume $Home$ is known to be strong. In the unique subgame perfect equilibrium, bargains are set as follows

(1) If $Home$ is a democracy, then

$$(x^*,\ y^*) = \begin{cases} 0,\ 0 & \overline{x} \leq \frac{c_H}{pn_H} \\ p\overline{x} - \frac{c_H}{n_H},\ 0 & \overline{x} > \frac{c_H}{pn_H} \end{cases}$$

(2) If $Home$ is an oligarchy and $\overline{x} \leq \frac{\gamma c_H}{n_H p} - \frac{\overline{y}}{m_H}$, then

$$(x^*,\ y^*) = (0,\ 0)\,.$$

(3) If $Home$ is an oligarchy and $\overline{x} > \frac{\gamma c_H}{n_H p} - \frac{\overline{y}}{m_H}$, then

$$(x^*,\ y^*) = \begin{cases} 0,\ p\left[m_H\overline{x} + \overline{y}\right] - \gamma\frac{m_H}{n_H}c_H & \frac{m_H}{m_F} \leq 1,\ \overline{y} \geq \frac{1}{1-p}\left[pm_H\overline{x} - \gamma\frac{m_H}{n_H}c_H\right] \\ p\overline{x} + (p-1)\,\frac{\overline{y}}{m_H} - \gamma\frac{c_H}{n_H},\ \overline{y} & \frac{m_H}{m_F} \leq 1,\ \overline{y} < \frac{1}{1-p}\left[pm_H\overline{x} - \gamma\frac{m_H}{n_H}c_H\right] \\ p\left[\overline{x} + \frac{\overline{y}}{m_H}\right] - \gamma\frac{c_H}{n_H},\ 0 & \frac{m_H}{m_F} > 1,\ \overline{x} \geq \frac{1}{1-p}\left[p\frac{\overline{y}}{m_H} - \gamma\frac{c_H}{n_H}\right] \\ \overline{x},\ \ (p-1)\,m_H\overline{x} + p\overline{y} - \gamma\frac{m_H}{n_H}c_H & \frac{m_H}{m_F} > 1,\ \overline{x} < \frac{1}{1-p}\left[p\frac{\overline{y}}{m_H} - \gamma\frac{c_H}{n_H}\right] \end{cases}$$

Proof. First consider the case where $Home$ is a democracy. When this is the case, $Foreign$ chooses $(x^*,\ y^*)$ as the solution to the following programming problem

$$\begin{aligned} & \max_{x,y}\,(\overline{x} - x) + \left(\tfrac{\overline{y}-y}{m_F}\right) \\ \text{subject to} \quad & x \geq p\overline{x} - \tfrac{c_H}{n_H} \\ & x \geq 0,\ y \geq 0 \end{aligned}$$

It is then immediate to calculate the solution as

$$x^* = p\overline{x} - \tfrac{c_H}{n_H}.$$

Clearly, $x^* < \overline{x}$. So x^* is always feasible when the right hand side of the equation is positive. However, $Foreign$ cannot transfer a negative amount of x to H, so there is a corner case where $x^* = 0$ whenever

$$p\overline{x} - \tfrac{c_H}{H} \leq 0$$
$$\overline{x} \leq \tfrac{c_H}{pn_H}$$

Therefore, when $Home$ is a democracy, we can summarize equilibrium bargains as

$$(x^*,\ y^*) = \begin{cases} 0,\ 0 & \overline{x} \leq \frac{c_H}{pn_H} \\ p\overline{x} - \frac{c_H}{n_H},\ 0 & \overline{x} > \frac{c_H}{pn_H} \end{cases}$$

Now consider the case where $Home$ is an oligarchy. $Foreign$ chooses $(x^*,\ y^*)$ as the solution to the following programming problem

$$\max_{x,y} (\overline{x} - x) + \left(\tfrac{\overline{y}-y}{m_F}\right)$$
$$\text{subject to} \quad x + \tfrac{y}{m_H} \geq p\left[\overline{x} + \tfrac{\overline{y}}{m_H}\right] - \gamma\tfrac{c_H}{n_H}$$
$$x \geq 0,\ y \geq 0$$

Generically, there is no interior solution. $Foreign$ maximizes its utility by calculating a value akin to the "bang-per-buck" of paying $Home$ off in public goods versus private goods. Or, how much utility is lost to $Foreign$ by providing one additional unit of utility to $Home$ through either private or public goods. So, here, bang-per-buck of public (private) goods is the marginal utility to $Foreign$ with respect to public (private) goods divided by the

marginal utility to *Home* with respect to public (private) goods. The marginal utility to *Home* functions like a "price" to *Foreign* for relaxing *Home*'s constraint.

The bang-per-buck for x to F is -1. For y, the bang-per-buck to F is

$$\frac{\frac{-1}{m_F}}{\frac{1}{m_H}}$$

or rearranging

$$-\frac{m_H}{m_F}.$$

F should therefore only give the good that minimizes its loss of utility. So, F gives H all x when

$$\frac{m_H}{m_F} > 1.$$

This leaves us with five cases:

Case 1: $x = 0$, $y = 0$

Similarly to the democracy case, it may be that the optimal offer to H is 0. This occurs when the RHS of the constraint function is less than or equal to 0. Or,

$$p\left[\overline{x} + \frac{\overline{y}}{m_H}\right] - \gamma\frac{c_H}{n_H} \leq 0$$
$$\overline{x} \leq \frac{\gamma c_H}{p n_H} - \frac{\overline{y}}{m_H}$$

Otherwise, we must be in one of the other four cases.

Case 2: $x = 0$, $y > 0$

$$\frac{y}{m_H} = p\left[\overline{x} + \frac{\overline{y}}{m_H}\right] - \gamma\frac{c_H}{n_H}$$
$$y* = p\left[m_H\overline{x} + \overline{y}\right] - \gamma\frac{m_H}{n_H}c_H$$

So, in this case, y is increasing in m_H when $p\overline{x} > \gamma\frac{c_H}{n_H}$ or $\overline{x} > \frac{\gamma c_H}{n_H p}$. But this is always holds in this case, otherwise, we are in Case 1. This case occurs when $m_H \leq m_F$, $\overline{x} > \frac{\gamma c_H}{p n_H} - \frac{\overline{y}}{m_H}$, and there is sufficient y so that $y^* \leq \overline{y}$. This last condition holds when

$$\overline{y} \geq p\left[m_H\overline{x} + \overline{y}\right] - \gamma\frac{m_H}{n_H}c_H$$
$$\overline{y} \geq \frac{1}{1-p}\left[pm_H\overline{x} - \gamma\frac{m_H}{n_H}c_H\right].$$

Case 3: $x > 0$, $y = 0$:

$$x^* = p\left[\overline{x} + \frac{\overline{y}}{m_H}\right] - \gamma\frac{c_H}{n_H}$$

So x is always decreasing in m_H. This case occurs when $m_H > m_F$, $\overline{x} > \frac{\gamma c_H}{p n_H} - \frac{\overline{y}}{m_H}$, and there is sufficient x so that $x* \leq \overline{x}$. This last condition holds when

$$\overline{x} \geq p\left[\overline{x} + \frac{\overline{y}}{m_H}\right] - \gamma\frac{c_H}{n_H}$$
$$\overline{x} \geq \frac{1}{1-p}\left[p\frac{\overline{y}}{m_H} - \gamma\frac{c_H}{n_H}\right].$$

Case 4: $x > 0$, $y = \overline{y}$

$$x + \frac{\overline{y}}{m_H} = p\left[\overline{x} + \frac{\overline{y}}{m_H}\right] - \gamma\frac{c_H}{n_H}$$
$$x^* = p\overline{x} + (p-1)\frac{\overline{y}}{m_H} - \gamma\frac{c_H}{n_H}$$

So, always increasing in m_H since $p < 1$. This case occurs when $m_H \leq m_F$, $\overline{x} > \frac{\gamma c_H}{p n_H} - \frac{\overline{y}}{m_H}$, and there is not sufficient y so that $y^* \leq \overline{y}$, or $\overline{y} < \frac{1}{1-p}\left[pm_H\overline{x} - \gamma\frac{m_H}{n_H}c_H\right]$.

Case 5: $x = \overline{x},\ y > 0$

$$\overline{x} + \tfrac{y}{m_H} = p\left[\overline{x} + \tfrac{\overline{y}}{m_H}\right] - \gamma\tfrac{c_H}{n_H}$$
$$y^* = (p-1)\, m_H \overline{x} + p\overline{y} - \gamma\tfrac{m_H}{n_H} c_H$$

So, non-increasing in m_H when $(p-1)\,\overline{x} - \gamma\frac{c_H}{n_H} \geq 0 \implies p \geq \frac{\gamma c_H}{n_H \overline{x}} + 1$, but this is impossible since $p \leq 1$, therefore, this case is always decreasing in m_H.

Therefore, when $Home$ is a oligarchy, we can summarize equilibrium bargains as

$$(x^*,\ y^*) = \begin{cases} 0,\ 0 & \overline{x} \leq \frac{\gamma c_H}{n_H p} - \frac{\overline{y}}{m_H} \\ 0,\ p\left[m_H\overline{x} + \overline{y}\right] - \gamma\frac{m_H}{n_H}c_H & \overline{x} > \frac{\gamma c_H}{n_H p} - \frac{\overline{y}}{m_H},\ \overline{y} \geq \frac{1}{1-p}\left[p m_H \overline{x} - \gamma\frac{m_H}{n_H}c_H\right], \\ & m_H \leq m_F \\ p\overline{x} + (p-1)\frac{\overline{y}}{m_H} - \gamma\frac{c_H}{n_H},\ \overline{y} & \overline{x} > \frac{\gamma c_H}{n_H p} - \frac{\overline{y}}{m_H},\ \overline{y} < \frac{1}{1-p}\left[p m_H \overline{x} - \gamma\frac{m_H}{n_H}c_H\right], \\ & m_H \leq m_F \\ p\left[\overline{x} + \frac{\overline{y}}{m_H}\right] - \gamma\frac{c_H}{n_H},\ 0 & \overline{x} > \frac{\gamma c_H}{n_H p} - \frac{\overline{y}}{m_H},\ \overline{x} \geq \frac{1}{1-p}\left[p\frac{\overline{y}}{m_H} - \gamma\frac{c_H}{n_H}\right], \\ & m_H > m_F \\ \overline{x},\ \ (p-1)\, m_H\overline{x} + p\overline{y} - \gamma\frac{m_H}{n_H}c_H & \overline{x} > \frac{\gamma c_H}{n_H p} - \frac{\overline{y}}{m_H},\ \overline{x} < \frac{1}{1-p}\left[p\frac{\overline{y}}{m_H} - \gamma\frac{c_H}{n_H}\right], \\ & m_H > m_F \end{cases}$$

Finally, since war is costly, we need not worry about violating F's constraints at the same time as $Home$'s constraints. □

Lemma 2

Proof. u_F is strictly decreasing (increasing) in m_H when the size of the offer to $Home$ is strictly increasing (decreasing) in m_H. The assumption that inequality 1 holds, eliminates the case of nonzero offers (Case 1 from Lemma 1). From Lemma 1, $\frac{m_H}{m_F} \leq 1$ in cases 2 and

4. In these cases, *Foreign*'s offer value is strictly increasing in m_H. Therefore, u_F is strictly decreasing in these cases. Additionally, from Lemma 1, $\frac{m_H}{m_F} > 1$ in cases 3 and 5. In these cases, *Foreign*'s offer value is strictly decreasing in m_H. Therefore, u_F is strictly increasing in these cases. This exhausts all cases. □

Proposition 1

Proof. Consider the case where the weak type of *Home* receives a nonzero offer. The risk free proposal gives the elites in *Foreign* a payoff of

$$\overline{x} + \frac{\overline{y} - \left[p[m_H\overline{x} + \overline{y}] - \gamma\frac{m_H}{n_H}c_H\right]}{m_F}$$

while the risky proposal gives a payoff of

$$q\left[\overline{x} + \frac{\overline{y} - \left[p'[m_H\overline{x} + \overline{y}] - \gamma\frac{m_H}{n_H}c_H\right]}{m_F}\right] + (1-q)\left[(1-p)\left(\overline{x} + \frac{\overline{y}}{m_F}\right) - \frac{c_F}{n_F}\right].$$

Subtracting the risk free proposal from the risky proposal and then taking the derivative with respect to m_H gives

$$q\frac{-\left(p'\overline{x} - \frac{\gamma c_H}{n_H}\right)}{m_F} - \frac{-\left(p\overline{x} - \frac{\gamma c_H}{n_H}\right)}{m_F}$$
$$\frac{p\overline{x} - \frac{\gamma c_H}{n_H}}{m_F} - q\frac{p'\overline{x} - \frac{\gamma c_H}{n_H}}{m_F}.$$

This value is always positive by the nonzero offer condition for the strong type and since $q < 1$ and $p > p'$.

When the weak type of *Home* receives a zero offer, m_H no longer appears in the risky proposal payoff. So, subtracting the risk free proposal from the risky proposal and then taking the derivative with respect to m_H gives

$$\frac{p\overline{x} - \frac{\gamma c_H}{n_H}}{m_F}$$

which is positive by the nonzero offer condition for the strong type. □

Proposition 2

Proof. Regardless of the case, so long as $Home$ receives a nonzero offer when a strong, the derivative with respect to γ of the risk-free proposal is

$$\frac{m_H}{n_H m_F} c_H.$$

In the case that $Home$ receives a zero offer in the risky proposal, then subtracting the the risk free proposal from the risky proposal and then taking the derivative with respect to γ always gives a negative value.

In the other case where $Home$ receives a nonzero offer under the risky proposal, then taking the derivative with respect to γ of the risky proposal always gives a value of

$$q\frac{m_H}{n_H m_F} c_H.$$

(Note: γ does not appear in the $Foreign$'s cost function. We could imagine that $Foreign$ does in fact have a variable similar to γ in its cost function, so γ_F for instance. However, this simply adds a parameter that does not affect the analysis here.) Finally, this implies that subtracting the risk free proposal from the risky proposal and then taking the derivative with respect to γ gives a negative value if

$$q\frac{m_H}{n_H m_F} c_H - \frac{m_H}{n_H m_F} c_H$$

which is always negative since $q < 1$. Hence, increasing γ increases the potential for conflict.

□

Proposition 3

Proof. Part 1:

War can occur when $Home$ is a democracy only when $Foreign$ has to make a nonzero offer and the risky proposal is more attractive than the risk-free proposal. The risk- proposal gives $Foreign$ a value of

$$\left[\overline{x} - \left(p\overline{x} - \frac{c_H}{n_H}\right)\right] + \frac{\overline{y}}{m_F}$$

while the risky proposal gives a payoff of

$$q\left[\left[\overline{x} - \left(p'\overline{x} - \frac{c_H}{n_H}\right)\right] + \frac{\overline{y}}{m_F}\right] + (1-q)\left[(1-p)\left(\overline{x} + \frac{\overline{y}}{m_F}\right) - \frac{c_F}{n_F}\right].$$

Subtracting the risk free proposal from the risky proposal and then taking the derivative with respect to $\overline{y}$ gives a negative value if

$$q\frac{1}{m_F} + (1-q)(1-p)\frac{1}{m_F} - \frac{1}{m_F} < 0.$$

The value on the LHS is strictly less than

$$q\frac{1}{m_F} + (1-q)\frac{1}{m_F} - \frac{1}{m_F},$$

which equals zero. Therefore, the effect of increasing $\overline{y}$ is to always make war less attractive.

Part 2:

When the conditions of the proposition are met, the risk free proposal gives the elites in $Foreign$ a payoff of

$$\overline{x} + \frac{\overline{y} - \left[p[m_H\overline{x} + \overline{y}] - \gamma\frac{m_H}{n_H}c_H\right]}{m_F}$$

while the risky proposal gives a payoff of

$$q\left[\overline{x}+\frac{\overline{y}-\left[p'[m_H\overline{x}+\overline{y}]-\gamma\frac{m_H}{n_H}c_H\right]}{m_F}\right]+(1-q)\left[(1-p)\left(\overline{x}+\frac{\overline{y}}{m_F}\right)-\frac{c_F}{n_F}\right].$$

Subtracting the risk free proposal from the risky proposal and then taking the derivative with respect to $\overline{y}$ gives a positive value if

$$\begin{gathered}\frac{q}{m_F}-q\left[\frac{p'}{m_F}\right]+(1-q)\frac{1-p}{m_F}-\frac{1}{m_F}+\frac{p}{m_F}>0\\ \frac{q-1}{m_F}-q\frac{p'}{m_F}-q\frac{1-p}{m_F}+\frac{1}{m_F}>0\\ \frac{q}{m_F}-q\left(\frac{p'}{m_F}+\frac{1-p}{m_F}\right)>\frac{q}{m_F}-q\frac{1}{m_F}=0\end{gathered}$$

Therefore, the effect of increasing $\overline{y}$ is to always make war more attractive.

Part 3:

When the conditions of the proposition are met, the risk free proposal gives the elites in *Foreign* a payoff of

$$\overline{x}-\left[p\left(\overline{x}+\frac{\overline{y}}{m_H}\right)-\gamma\frac{c_H}{n_H}\right]+\frac{\overline{y}}{m_F}$$

while the risky proposal gives a payoff of

$$q\left[\overline{x}-\left[p'\left(\overline{x}+\frac{\overline{y}}{m_H}\right)-\gamma\frac{c_H}{n_H}\right]+\frac{\overline{y}}{m_F}\right]+(1-q)\left[(1-p)\left(\overline{x}+\frac{\overline{y}}{m_F}\right)-\frac{c_F}{n_F}\right].$$

Subtracting the risk free proposal from the risky proposal and then taking the derivative with respect to $\overline{y}$ gives a negative value if

$$\begin{gathered}-\frac{qp'}{m_H}+\frac{q}{m_F}+\frac{(1-q)(1-p)}{m_F}+\frac{p}{m_H}-\frac{1}{m_F}<0\\ \frac{p-qp'}{m_H}+\frac{qp-p}{m_F}<0\\ \frac{m_H}{m_F}>\frac{p-qp'}{p-qp}\end{gathered}$$

Note that the RHS is greater than 1 since $p > p'$. Set $\eta \equiv \frac{p-qp'}{p-qp}$. □

Proposition 4

Proof. *Foreign* chooses $(x^*,\ y^*)$ as the solution to the following programming problem

$$\begin{gathered} \max_{x,y} (\overline{x} - x) + \left(\frac{\overline{y}-y}{m_F}\right) \\ \text{subject to} \quad x + \frac{y(1-\tau)}{m_H} \geq p\left[\overline{x} + \frac{\overline{y}(1-\tau)}{m_H}\right] - \gamma\frac{c_H}{n_H} \\ x \geq 0,\ y \geq 0 \end{gathered}$$

This changes the calculation for bang-per-buck of y for F to

$$\begin{gathered} \frac{\frac{-1}{m_F}}{\frac{1-\tau}{m_H}} \\ -\frac{m_H}{m_F(1-\tau)} \end{gathered}$$

Therefore, F prefers to pay with private goods when $m_H \leq (1-\tau)\, m_F$.

Given our assumption, then $x^* = 0$ and $y^* = \frac{1}{1-\tau}\left[p\left[m_H\overline{x} + \overline{y}\,(1-\tau)\right] - \gamma\frac{m_H}{n_H}c_H\right]$

Hence, y^* is increasing in τ. Therefore, u_O is increasing in τ.

The risk free proposal gives the elites in *Foreign* a payoff of

$$\overline{x} + \frac{\overline{y} - \frac{1}{1-\tau}\left[p[m_H\overline{x} + \overline{y}(1-\tau)] - \gamma\frac{m_H}{n_H}c_H\right]}{m_F}$$

while the risky proposal gives a payoff of

$$q\left[\overline{x} + \frac{\overline{y} - \frac{1}{1-\tau}\left[p'[m_H\overline{x} + \overline{y}(1-\tau)] - \gamma\frac{m_H}{n_H}c_H\right]}{m_F}\right] + (1-q)\left[(1-p)\left(\overline{x} + \frac{\overline{y}}{m_F}\right) - \frac{c_F}{n_F}\right].$$

Taking the difference and then the derivative with respect to τ, we find that the potential

for conflict is increasing when

$$-\frac{q}{(1-\tau)^2 m_F}\left[p' m_H \overline{x} - \gamma \frac{m_H}{n_H} c_H\right] + \frac{1}{(1-\tau)^2 m_F}\left[p m_H \overline{x} - \gamma \frac{m_H}{n_H} c_H\right] > 0$$

which is always true since $p > p'$ and $q < 1$. Therefore, the potential for conflict is always increasing in τ. □

Proposition 5

Proof. *Foreign* chooses $(x^*,\ y^*)$ as the solution to the following programming problem

$$\begin{gathered} \max_{x,y} (\overline{x} - x) + \left(\frac{\overline{y} - y}{m_F}\right) \\ \text{subject to} \quad x + \frac{y(1-\tau)}{m_H} \geq p\left[\overline{x} + \frac{\overline{y}(1-\tau')}{m_H}\right] - \gamma \frac{c_H}{n_H} \\ x \geq 0,\ y \geq 0 \end{gathered}$$

This changes the calculation for bang-per-buck of y for F to

$$\begin{gathered} \frac{\frac{-1}{m_F}}{\frac{1-\tau}{m_H}} \\ -\frac{m_H}{m_F(1-\tau)} \end{gathered}$$

Therefore, F prefers to pay with private goods when $m_H \leq (1-\tau)\, m_F$.

Given our assumption, then $x^* = 0$ and $y^* = \frac{1}{1-\tau}\left[p\left[m_H \overline{x} + \overline{y}\,(1-\tau')\right] - \gamma \frac{m_H}{n_H} c_H\right]$

Hence, y^* is decreasing in τ'. Therefore, u_O is decreasing in τ'.

The risk free proposal gives the elites in *Foreign* a payoff of

$$\overline{x} + \frac{\overline{y} - \frac{1}{1-\tau}\left[p[m_H \overline{x} + \overline{y}(1-\tau')] - \gamma \frac{m_H}{n_H} c_H\right]}{m_F}$$

while the risky proposal gives a payoff of

$$q\left[\overline{x}+\frac{\overline{y}-\frac{1}{1-\tau}\left[p'[m_H\overline{x}+\overline{y}(1-\tau')]-\gamma\frac{m_H}{n_H}c_H\right]}{m_F}\right]+(1-q)\left[(1-p)\left(\overline{x}+\frac{\overline{y}}{m_F}\right)-\frac{c_F}{n_F}\right].$$

Taking the difference and then the derivative with respect to τ', we find that the potential for conflict is decreasing when

$$q\frac{p'\overline{y}}{m_F(1-\tau)}-\frac{p\overline{y}}{m_F(1-\tau)}<0$$

which is always true since $p>p'$ and $q<1$. Therefore, the potential for conflict is always decreasing in τ'. □

Liberalization and Large Shifts in Elite Size

Proposition 6 considers how shifting from an oligarchy to a democracy (what we call liberalization) affects the potential for conflict in comparison to how expanding the elite to capture the median affects the potential for conflict.[24]

Proposition 6. *Suppose Foreign is an oligarchy, then*

1. *There exists a $\overline{y}^*$, such that for all $\overline{y}>\overline{y}^*$, full liberalization in Home decreases the potential for conflict.*

2. *If inequality 1 holds for p, Condition 1 holds, and $n_F>\frac{n_H}{2}$, then there exists a $\hat{m}_F$ such that for all $m_F>\hat{m}_F$, expanding the elite in Home to capture the median increases the potential for conflict.*

Intuitively, Proposition 6 demonstrates that while certain types of democratizations, namely the full liberalization of the state from an oligarchy to a democracy, may decrease

[24] An example of expanding the elite to capture the median might be as follows. Consider a society with three ethnic groups that is initially controlled by a single group. In some cases, the elite group may be able to capture the median by expanding elite status to one group, but not the other.

the potential for conflict, limited democratization, even when the decision making class is expanded greatly, can increase the potential for conflict.

That part 2 of Proposition 6 holds is a consequence of Proposition 1. *Home* captures the median when m_H increased to m'_H where $m'_H \geq n_H/2$. If m_F is sufficiently large, then m_H will be increasing the potential for conflict for this entire range or a significant portion of it. When this is the case, the conflict inducing effects of expanding the elite when $m_H/m_F \leq 1$ dominate the conflict reducing effects that occur when $m_H/m_F > 1$.

Part 1 of Proposition 6 follows from allowing private goods to be sufficiently large. When liberalization occurs, *Foreign* gets to keep the private goods that it previously used to pay off the elite in *Home*. It is possible that this comes at the cost of paying more public goods to *Home*. However, if the total amount of private goods is sufficiently large, then the loss of some public goods is outweighed by the gain in private goods. Again, note that this is contingent on *Foreign* being an institutional type whose decision makers value private goods.

Proof of Proposition 6

Proof. Statement (1):

First, note that the there is no potential for conflict when *Foreign* optimally makes a zero offer to a strong type democracy. Second, note that there exists a $\overline{y}$ high enough that inequality 1 and Condition 1 hold. Combining these two observations, we need only examine two cases. In both cases *Foreign* makes a nonzero offer both before and after liberalization. In the first case, *Foreign* offers *Home* exclusively private goods before liberalization. In the second case, *Foreign* offers *Home* exclusively public goods before liberalization.

Case 1:

Before liberalization, the risk free proposal gives the elites in *Foreign* a payoff of

$$\overline{x} + \frac{\overline{y} - \left[p[m_H\overline{x}+\overline{y}] - \gamma\frac{m_H}{n_H}c_H\right]}{m_F}.$$

Call this value $1A$. The risky proposal gives a payoff of

$$q\left[\overline{x}+\frac{\overline{y}-\left[p'[m_H\overline{x}+\overline{y}]-\gamma\frac{m_H}{n_H}c_H\right]}{m_F}\right]+(1-q)\left[(1-p)\left(\overline{x}+\frac{\overline{y}}{m_F}\right)-\frac{c_F}{n_F}\right].$$

Call this value $1B$.

After liberalization, the risk free proposal gives *Foreign* a value of

$$\left[\overline{x}-\left(p\overline{x}-\frac{c_H}{n_H}\right)\right]+\frac{\overline{y}}{m_F}.$$

Call this value $1C$. The risky proposal gives a payoff of

$$q\left[\left[\overline{x}-\left(p'\overline{x}-\frac{c_H}{n_H}\right)\right]+\frac{\overline{y}}{m_F}\right]+(1-q)\left[(1-p)\left(\overline{x}+\frac{\overline{y}}{m_F}\right)-\frac{c_F}{n_F}\right].$$

Call this value $1D$. The potential for conflict before liberalization is $1B-1A$ while the potential for conflict after liberalization is $1D-1C$. Therefore, the difference in the potential for conflict is $(1B-1A)-(1D-1C)$. Rearranging gives $(1B-1D)+(1C-1A)$. This value is

$$q\left[\left(p'\overline{x}-\frac{c_H}{n_H}\right)-\frac{\left[p'[m_H\overline{x}+\overline{y}]-\gamma\frac{m_H}{n_H}c_H\right]}{m_F}\right]+\left[-\left(p\overline{x}-\frac{c_H}{n_H}\right)+\frac{\left[p[m_H\overline{x}+\overline{y}]-\gamma\frac{m_H}{n_H}c_H\right]}{m_F}\right].$$

we can divide this value into two terms,

$$q\left(p'\overline{x}-\frac{c_H}{n_H}\right)-\left(p\overline{x}-\frac{c_H}{n_H}\right)$$

which is not positive and is constant in $\overline{y}$, while

$$\frac{\left[p[m_H\overline{x}+\overline{y}]-\gamma\frac{m_H}{n_H}c_H\right]}{m_F}-q\frac{\left[p'[m_H\overline{x}+\overline{y}]-\gamma\frac{m_H}{n_H}c_H\right]}{m_F}$$

is positive and increasing in $\overline{y}$. Therefore, there exists a $\overline{y}'$ such that

$$\frac{\left[p[m_H\overline{x}+\overline{y}']-\gamma\frac{m_H}{n_H}c_H\right]}{m_F}-q\frac{\left[p'[m_H\overline{x}+\overline{y}]'-\gamma\frac{m_H}{n_H}c_H\right]}{m_F}>q\left(p'\overline{x}-\frac{c_H}{n_H}\right)-\left(p\overline{x}-\frac{c_H}{n_H}\right).$$

Therefore, the potential for conflict is greater before liberalization when this holds in this case. Define $\overline{y}^*$ to be greater than or equal to the maximum of $\overline{y}'$ and the values for $\overline{y}$ such that inequality 1 and Condition 1 hold.

Case 2:

Before liberalization, the risk free proposal gives the elites in $Foreign$ a payoff of

$$\left(\overline{x}-\left[p\left[\overline{x}+\frac{\overline{y}}{m_H}\right]-\gamma\frac{c_H}{n_H}\right]\right)+\frac{\overline{y}}{m_F}.$$

Call this value $2A$. The risky proposal gives a payoff of

$$q\left[\left(\overline{x}-\left[p'\left[\overline{x}+\frac{\overline{y}}{m_H}\right]-\gamma\frac{c_H}{n_H}\right]\right)+\frac{\overline{y}}{m_F}\right]+(1-q)\left[(1-p)\left(\overline{x}+\frac{\overline{y}}{m_F}\right)-\frac{c_F}{n_F}\right].$$

Call this value $2B$.

After liberalization, the risk- proposal gives $Foreign$ a value of

$$\left[\overline{x}-\left(p\overline{x}-\frac{c_H}{n_H}\right)\right]+\frac{\overline{y}}{m_F}.$$

Call this value $2C$. The risky proposal gives a payoff of

$$q\left[\left[\overline{x}-\left(p'\overline{x}-\frac{c_H}{n_H}\right)\right]+\frac{\overline{y}}{m_F}\right]+(1-q)\left[(1-p)\left(\overline{x}+\frac{\overline{y}}{m_F}\right)-\frac{c_F}{n_F}\right].$$

Call this value $2D$. The potential for conflict before liberalization is $1B-1A$ while the potential for conflict after liberalization is $1D-1C$. Therefore, the difference in the potential for conflict is $(2B-2A)-(2D-2C)$. Rearranging gives $(2B-2D)+(2C-2A)$. This value

is

$$q\left[-p'\frac{\bar{y}}{m_H}+(\gamma-1)\frac{c_H}{n_H}\right]+\left[p\frac{\bar{y}}{m_H}+(1-\gamma)\frac{c_H}{n_H}\right]$$

which is always positive since $p > p'$ and $q < 1$. Therefore, the potential for conflict is greater before liberalization in this case.

Statement (2):

From Proposition 1, when the conditions states in this proposition are met, than the potential for conflict is increasing when $\frac{m_H}{m_F} < 1$. Let $m'_H = \left\lceil \frac{n_H}{2} \right\rceil$. Set $\hat{m}_F = m'_H$. □

Appendix B (For online publication)

This appendix contains some descriptive facts about the *ICOW* data and out samples. We also present a regression where we look only at the Pre-World War I data. This is intersting as the per-World War period may be the more appropriate analogy to the current system than the Cold War, immediate post-Cold War or the inter-war period.

The first table we present breaks down the distribution of territorial claims by region. Over the entire time period Europe has had the most claims, with Asia a close second. At the end of the time period, Asia has the most ongoing disputes, followed bu Africa and the Western Hemisphere.

Table 4: Territorial claims by region

Region	Total Claims	Ongoing at End of 2001	Ongoing at End of 2001 per State
Western Hemisphere	128	19	0.54
Europe	236	9	0.20
Africa	161	22	0.47
Middle East	101	6	0.30
Asia & Oceania	217	51	1.19
Total	*843*	*107*	

Table from Frederick et. al. (2017) "The Issues Correlates of War Territorial Claims Data, 1816-2001" Journal of Peace Research.

Table 5: Salient issues of claimed territories

Salience Indicator	Claims with Indicator Present
Tangible Salience	
Resources	395 (46.9%)
Strategic location	523 (62.0%)
Permanent population	728 (86.4%)
Intangible Salience	
Homeland territory:	
For challenger	652 (77.3%)
For target	567 (67.3%)
Identity connection with territory:	
For challenger	292 (34.6%)
For target	311 (36.9%)
Historical sovereignty:	
For challenger	340 (40.3%)
For target	815 (96.7%)

Table from Frederick et. al. (2017) "The Issues Correlates of War Territorial Claims Data, 1816-2001" Journal of Peace Research.

Table 5 gives the breakdown of salience in these territorial disputes.

Table 6: Descriptive Statistics for All Dyadic *ICOW* Data and the Sample for Table 1

	All ICOW		*Sample*	
	mean	sd	mean	sd
Share of claims with Resources	.481	.50	.441	.497
Share Democratic Targets	.354	.478	.293	.455
Share Democratic Targets w/ Resources	.159	.365	.125	.331
CINC Score: Target	.055	.081	.066	.093
CINC Score: Challenger	.033	.057	.033	.062
Contiguity	.564	.50	.563	.50
N	13673		5970	

Table 6 give the summary statistics for the entire Dyadic ICOW data set and those that are in the sample of automatic challengers and outside the two world wars and the Cold War. The analyzed sample is similar in make up to the sample of all claims from 1815-2001, though there are fewer democratic targets in the sample we analyze.

Table 7 presents the summary statistics for the observations using Week's regime classification.

Table 7: Descriptive Statistics for Cold War Autocracies

	Personalist vs. Machine		*Machine vs. Personalist*	
	mean	sd	mean	sd
Share of Claims with Resources	.514	.501	.596	.4932
CINC Score: Target	.033	.061	.007	.024
CINC Score: Challenger	.033	.0489	.005	.004
Contiguity	.763	.426	.949	.222
N	245		136	

Table 8: Effect of Resources and Democracy on MID Fatalities Pre-World War I

	(1) Model 1	(2) Model 2	(3) Model 3	(4) Model 4	(5) Model 5	(6) Model 6
Resources	0.015***	0.014***	0.014***	0.014***	0.013**	0.013**
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)
Democratic	-0.002*	-0.001	0.000	0.000	0.002	0.002
Target	(0.001)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)
Democratic	-0.015***	-0.016***	-0.017***	-0.017***	-0.013**	-0.013**
Target × Resources	(0.004)	(0.004)	(0.004)	(0.005)	(0.004)	(0.005)
CINC Score			-0.026	-0.026	-0.038	-0.038
Target			(0.019)	(0.020)	(0.024)	(0.023)
CINC Score			-0.020	-0.020	-0.026	-0.026
Challenger			(0.017)	(0.019)	(0.145)	(0.128)
Contiguity			-0.003	-0.003	-0.010	-0.010†
			(0.006)	(0.006)	(0.007)	(0.006)
Constant	0.002*	-0.006	0.002	0.002	0.001	0.001
	(0.001)	(0.004)	(0.008)	(0.008)	(0.011)	(0.012)
Year FE	N	Y	Y	Y	Y	Y
Challenger FE	N	N	N	N	Y	Y
SE Clustered(Claim)	N	N	N	Y	N	Y
N	3809	3809	3808	3808	3808	3808

Standard errors in parentheses
† $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 9: Effect of Resources and Democracy on MID Fatalities

	(1)	(2)
	Model 1	Model 2
Resources	0.029†	0.013**
	(0.015)	(0.004)
Democratic	-0.004	0.005
Target	(0.005)	(0.004)
Democratic	-0.015*	-0.017**
Target × Resources	(0.007)	(0.005)
CINC Score	0.030	0.092**
Target	(0.025)	(0.033)
CINC Score	-0.071	-0.005
Challenger	(0.090)	(0.014)
Contiguity	-0.016	-0.013†
	(0.021)	(0.008)
Constant	-0.008	-0.040*
	(0.011)	(0.018)
Year FE	Y	Y
Target FE	Y	N
Claim FE	N	Y
N	5830	5830

Robust standard errors in parentheses

† $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$