Who Wins The Peace? Elites, Citizens, and the Decision for War*

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Abstract

It is often argued that different groups in society faces different costs and benefits from war. In this paper we consider a theory of bargaining and war where the object of dispute has multiple characteristics, some public good in nature, others private. We build a model of crisis bargaining over mixed goods to explore how regime type and crisis issues interact to influence the probability of war and the distribution of benefits in peace. We show that, in general, democracies get less private benefits but more public goods in peace, a state where the elite capture the median is more conflict prone than a liberalized state, and that taxation of the elite by the citizens as a form executive control can increase the probability of war. If citizens can set different tax rates over peaceful bargains and war spoils, they can endogenously determine the “political bias” of the decision-making class over war and peace.

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Introduction

Issues at stake in international bargaining rarely have uniform implications to all groups within the participating states. Furthermore negotiations often contain multiple elements. Trade deals may increase the overall pie, but negatively impact workers in a specific industry. 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 leaders.

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 share control. This territory was of little interest until the discovery of near by oil fields in 1938.

What followed was an international negotiation over the creation of a definitive administrative boundary between the two states that split the territory and a separate agreement over rights granting exploration rights to the oil found in the region. The elites largely captured and benefits from the oil income while defining territorial control largely had institutional and political benefits for the populations of the two states.

Similar private-public agreements can be found all over the world, from the negation of commercial rights in Trieste after World War II and in Latin America over joint investment and water way access. In order to begin to explore these types of interactions, we develop a model of international bargaining with two new elements. First we model states bargaining over both public goods that benefit all of society and private goods that only elites capture. Second, we consider different regimes by varying the key decision maker in the international bargaining. We vary the decision making regime in the home country in two ways. First we consider a decision making process where elites, who share private goods and consume public goods, decide whether there is war or peace. Next we consider a regime that expands the ruling elite, possibly to be very large. We can think of this as a regime that co-opts large groups of citizens and then distributes, potentially small, fractions of the private good among the in-group. Finally we consider a model of liberalization where the majority citizens, who do not share in the benefits of private spoils, decide whether to accept a peace or go to war.

Our main finding is that 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. We also see that the presence of private goods, interpreted as directed economic resources, makes war more likely between non-democracies but when the target is democratic, it can lead to more peace.

Formally, instead of bargaining over a single object (Fearon 1995), states simultaneously bargain over both public goods, \( x \), and private goods, \( y \). One state, Foreign \((F)\), with known strength makes a take-it-or-leave-it offer to Home \((H)\). Home is modeled as having one of two “types,” either strong or weak, with a known prior probability. Home is composed of two groups, elites \((E)\) and ordinary citizens \((O)\). We consider two institutional forms: a liberalized democracy, where the median voter \((a member of O)\) 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 in an oligarchy can be large and include the median citizen.

The key determinant of conflict in this setting is the attractiveness to Foreign of a risk free (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 the following institutional changes all increase the potential for conflict: (1) decreasing the elite’s cost of war; (2) expanding the size of the elite; and (3) increasing the ability of citizens to capture private goods from the elite (possibly through redistributive taxation).

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. The intuition behind this family of results is that efforts to include more citizens in the decision making process, or to transfer some of the benefits of private goods from elite decision makers to all citizens, frequently encourages the elite decision makers to increase their bargaining demands. This effect is driven by a need to compensate a smaller proportion of the bargaining pie domestically with a larger overall share of the international bargaining pie. Generally, these demands are increasing by a larger proportion for strong types than weak types, increasing the incentive for risky (separating) offers.

We can also obtain three additional results conditional on increasing the amount of private goods. When Home is a full 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. When there are sufficiently high levels of private goods, liberalization (switching from an oligarchy to a democracy) decreases the potential for conflict. These results imply that altering the level of private goods has differing impacts on the potential for conflict for different pairs.
of countries in conflict. 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.

The intuition behind these results on increasing the level of private goods is that the decision makers in democracies cannot obtain them and therefore do not care to bargain for them. Hence, the elites in democracies lose out on access to private goods relative to oligarchies. If one of the states is a democracy, but the other is not, then increasing the level of private goods allows the democracy to compensate an oligarchy with private goods without decreasing the utility of the the median voter. Liberalizing from an oligarchy to a democracy can cause Home to increase its demands in public goods, but when the level of private goods is sufficiently high, there always exists enough private goods to compensate a foreign oligarchy. However, if both states are oligarchies, the potential for conflict increases as the level of private goods increases because for each additional unit of total private goods, Foreign keeps a greater proportion of a bargain when facing a known weak type rather than a known strong type. Hence, under private information, the spread between size of a bargain necessary to satisfy both types versus only one type increases, increasing the incentive for a risky offer.

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. Hence, this type of taxation policy provide a microfoundation for the concept of political bias used in some agency models of conflict. Political bias lead 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 2016). Different taxation structures will imply different bias levels for the elites. Increasing (decreasing) the effective bias of the elites will increase (decrease) the proportion of the international bargaining pie captured by Home, but also increase (decrease) the potential for conflict in crisis bargaining.

As a model that takes direct account of the impact of domestic politics 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 2016). 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).

Empirically, our results most clearly 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 Gleditsch 1998; Gleditsch 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. However, shifting fully from an oligarchy to a democracy is often peace enhancing in our model. Since our model plays out in a simple, one-shot setting we see a more fully dynamic extension of our model as the logical next step. Our expectation is that the foreign power experiences a tension between the increased static incentive for conflict with transitional democracies and the desire to wait out the transition period in order to enjoy the more favorable bargaining environment once democracy fully takes root.

In the last section of this paper we take some of these hypotheses to data on international territorial disputes. Our simple analysis provides empirical support for two of our most nuanced results: that democracies bargaining with oligarchies in the presence of natural resources are more peaceful and that transitional targets of a dispute with a high probability of victory in war are more likely to be involved in a conflict with fatalities than either clearly autocratic or clearly democratic regimes. While the data we use is very rough and our empirical methods are quite simple, finding results so consistent with very specific hypotheses suggest that this is a fruitful framework for thinking about bargaining in territorial disputes.

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 the international level as much as possible.

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 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 $O$.

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. 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.

Within a state, public goods are non-rival and non-excludable, 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. Hence, in peace for a given offer $(x, y)$, elites in $Foreign$ receive utility
\[ u_{F,E}(x, y) = \alpha_F (\bar{x} - x) + \frac{y - y_{mF}}{\bar{y}_{mF}}, \]
while $O$ receives
\[ u_{H,O}(x, y) = \alpha_F (\bar{x} - x). \]

$\alpha_i > 0$ is a parameter that measures how members of state $i$ value public goods relative to private goods. Throughout, we normalize $\alpha_H = 1$ and define $\alpha \equiv \alpha_F$ for simplicity. In this case, $\alpha$ represents how $Foreign$ values public goods relative to $Home$. When $\alpha > 1$ ($\alpha < 1$)
Foreign values public goods more (less) than Home. Groups in $H$ receive

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

**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 Foreign makes a take-it-or-leave-it offer of a bundle 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.\(^4\) These assumptions grant the model a great deal of flexibility. For instance, if $m = 1$ and $\gamma = n_H$, then we are back in the unitary actor case.

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

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

\(^4\)Note that costs need not sum to $c_H$ if $\gamma \neq 1$. Altering the level of $\gamma$, alters the total cost faced by $i$. An alternative assumption would be to set elite cost to $\gamma \frac{c_H}{m_H}$ 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 presented here as well as substantively impacting the results of certain possible extensions. 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\(^5\)

\[
w_H = p\bar{x} - \frac{c_H}{n_H}.\]

*Foreign*’s value of war is defined analogously.

**Results**

In any peaceful bargain, *Foreign* seeks to maximize its utility given the constraints described in the model section. Lemma 1 characterizes these values when *Home* is known to be strong.

**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
   \[
   (x^*, y^*) = \begin{cases} 
   0, 0 & \bar{x} \leq \frac{c_H}{p n_H} \\
   p\bar{x} - \frac{c_H}{n_H}, 0 & \bar{x} > \frac{c_H}{p n_H}
   \end{cases}
   \]

2. If *Home* is an oligarchy and \(x \leq \frac{c_H m_H}{n_H} - \frac{\bar{y}}{m_H}\), then
   \[
   (x^*, y^*) = (0, 0).
   \]

3. If *Home* is an oligarchy and \(x > \frac{c_H m_H}{n_H} - \frac{\bar{y}}{m_H}\), then
   \[
   (x^*, y^*) = \begin{cases} 
   0, p\left[m_H\bar{x} + \frac{\bar{y}}{m_H}\right] - \gamma - \frac{m_H m_F}{n_H} c_H & \frac{m_H m_F}{n_H} \leq \alpha, \frac{\bar{y}}{m_H} \geq \frac{1}{1-p} \left[p m_H \bar{x} - \gamma - \frac{m_H m_F}{n_H} c_H\right] \\
   \bar{x}, (p-1)\frac{\bar{y}}{m_H} - \gamma - \frac{m_H m_F}{n_H} \bar{y} & \frac{m_H m_F}{n_H} \leq \alpha, \frac{\bar{y}}{m_H} < \frac{1}{1-p} \left[p m_H \bar{x} - \gamma - \frac{m_H m_F}{n_H} c_H\right]
   \end{cases}
   \]

A similar characterization follows if *Home* is known to be weak with \(p’s\) instead of \(ps\).

In the democracy setting, *Home* only has a positive war threat when \(\bar{x}\) 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

\(^5\)Note, a potential alternative assumption would be that citizens in *Home* would split the value \(\bar{y}\) in victory. This value will be negligible when \(n_H\) is large which is our general assumption, therefore, we exclude this potential value for simplicity.
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 cases, the total amount of public and private goods are high enough that Home receives a positive portion of the international bargain, but \( \overline{y} \) or \( \bar{x} \) is relatively scarce. In the first two cases, Foreign maximizes by keeping either all of the public goods or all of the private goods for itself and pays Home off entirely in public goods. 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 \( H \). 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.

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 \( \bar{x} \) and \( \overline{y} \), Home must be sufficiently strong.

**Corollary 1.** Foreign makes Home a nonzero offer if and only if

\[
p > \frac{\gamma_{CH}}{n_H \left( \bar{x} + \frac{\overline{y}}{m_H} \right)}
\]

**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 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 in war. Under option 2, Foreign optimizes by offering Home just enough that a strong type will accept. We call this the risk free 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, because if Home is a strong type, war will result.

Let $u^F_F$ be Foreign’s payoff when it makes a risk free proposal that a strong type will just accept. Let $u^F_F$ be Foreign’s payoff when it makes a risky proposal and the weak type accepts. Foreign prefers to make a risky proposal when

$$qu^F_F + (1 - q) [(1 - p) [\alpha \bar{x} + \bar{y}] - c_F] - u^F_F > 0.$$ 

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.

**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 $\frac{m_H}{m_F} \leq \alpha$. Otherwise, $u_F$ is strictly increasing in $m_H$.

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6 Also known as a “pooling” proposal.

7 Also known as a “separating” proposal.
Lemma 2 states that increasing democratic involvement increases \textit{Home}'s demands in a way that is unfavorable to \textit{Foreign} given their marginal rates of substitution between private an public goods. But when \textit{Foreign} prefers the public good, increasing the size of the elite in \textit{Home} makes \textit{Foreign} better off.

The intuition for Lemma 2 is as follows. Increasing the population in \textit{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, \textit{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, \textit{Home} requires higher peace values to avoid war leading to lower utility for \textit{Foreign}. In this case, it is as if the price of paying \textit{Home} off in private goods is increasing, so the cost of the bargain to \textit{Foreign} is increasing ($u_F$ is decreasing). However, eventually the price gets high enough that \textit{Foreign} switches to paying \textit{Home} off in public goods. When paying \textit{Home} with public goods, increasing $m_H$ only serves to lower \textit{Home}'s war value, but does not affect the value of the public goods transfer. Hence, once $m_H$ becomes large enough to satisfy $\frac{m_H}{m_F} > \alpha$, then the amount of public goods transferred to \textit{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 \textit{Foreign} to pay \textit{Home} off in private goods if \textit{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 $\bar{y}$.

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

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

\textbf{Proposition 1.} Suppose \textit{Home} and \textit{Foreign} are oligarchies. If inequality 1 holds for $p$ (sufficient strength), Condition 1 holds (sufficient private goods), and $\frac{m_H}{m_F} \leq \alpha$ (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. 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 \textit{Home} is sufficiently strong to get nonzero offers,
the amount of private goods is nontrivial, and Home starts out relatively less democratic than Foreign modified by the states’ taste in public versus private goods ($\alpha$).

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.

**Oligarchy versus Democracy**

In this section we compare the potential for conflict in oligarchies versus democracies. We have already noted that as $\gamma$ 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 $\gamma$, 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. Proposition 2 states this formally.

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

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. Hence, 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, $\bar{y}$, decreases the potential for conflict when Home is a democracy.

2. There exists $\bar{y}$ such that for $\bar{y} > \bar{y}$, increasing the amount of private goods, $\bar{y}$, increases the potential for conflict when Home is a oligarchy.
Proposition 3 states that as the amount of private goods, $y$, increases, democracies become less conflict prone while oligarchies 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.

The intuition behind the result is straightforward. 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. On the other hand, when Home is a oligarchy, the risky proposal becomes more attractive as the amount if private goods increases. 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.

This result is 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. 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.

As a final point of comparison between oligarchies and democracies, Proposition 4 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.\(^8\)

**Proposition 4.** (1) There exists a $\bar{y}^*$, such that for all $\bar{y} > \bar{y}^*$, liberalization decreases the potential for conflict. (2) If inequality 1 holds for $p$ and Condition 1 holds, there exists a $\hat{m}_F$ such that for all $m_F > \hat{m}_F$, expanding the elite to capture the median increases the potential for conflict.

Intuitively, Proposition 4 demonstrates that while certain types of democratization,
namely the full liberalization of the state from an oligarchy to a democracy, may decrease the potential for conflict, limited democratization in the form of an expanding the decision making class, can increase the potential for conflict.

That part (2) of Proposition 4 holds is an immediate consequence of Proposition 1. *Home* captures the median when \( m_H \) increased to \( m'_H \) where \( m'_H \geq \frac{n_H}{2} \). 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 \( \frac{n_H}{m_F} \leq \alpha \) dominate the conflict reducing effects that occur when \( \frac{n_H}{m_F} > \alpha \).

Part (1) of Proposition 4 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.

### 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.

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

\[
u_E(x, y) = x + \frac{y(1-\tau)}{m_H}
\]

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

\[
u_O(x, y) = x + \frac{y\tau}{n_H-m_H}.
\]

As seems natural, we assume that \( n - m > m \).
In war when \textit{Home} is strong \( E \) receives

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

while \( O \) receives

\[
w_O = p \left( x + \frac{\gamma \tau}{n_H - m_H} \right) - \frac{c_H}{n_H}.
\]

Under this setup we derive the following results

\textbf{Proposition 5.} If inequality 1 holds for \( p \), Condition 1 holds, and \( \frac{m_H}{m_F} \leq \alpha (1 - \tau) \), then

1. In peace, \( y^* \) and hence \( u_O \) is increasing in \( \tau \).

2. The potential for conflict is increasing in \( \tau \).

Proposition 5 demonstrates the effects of increasing the tax rate, \( \tau \). The first effect is that \( y^* \) is increasing in \( \tau \) 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 \( \tau \) increases \( E \) may bargain too hard, inducing conflict more frequently as \( \tau \) 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 \( \tau \) decreases the range for which the potential for conflict is increasing in \( \tau \). That is, once \( \tau \) reaches a high enough level, the price of paying \textit{Home} in private goods gets too high and \textit{Foreign} switches to public goods. From that point on, further increases in \( \tau \) only serve to reduce the elite’s war value. Therefore, the potential for conflict may begin to decrease in \( \tau \) once it reaches a high enough level.

\textbf{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

\[
\begin{align*}
w_E &= p \left( x + \frac{\pi(1-\tau')}{m_H} \right) - \gamma \frac{c_H}{n_H} \\
w_O &= p \left( x + \frac{\pi'}{n_H-m_H} \right) - \frac{c_H}{n_H}.
\end{align*}
\]

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 \( \tau' \) becomes small. When \( \tau' \) 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 \( \tau' \) 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 \( \gamma \). While low \( \gamma \) 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 \( \tau' \) effects the potential for conflict in the incomplete information game.

**Proposition 6.** If inequality 1 holds for \( p \) and Condition 1 holds, then

1. In peace, \( u_O \) is decreasing in \( \tau' \).

2. The potential for conflict is decreasing in \( \tau' \).

In this case, lowering the out group’s ability to capture rents in war (which is analogous to increasing \( E \)’s war bias) causes \( E \) to bargain harder, increasing \( O \) utility. However, as \( E \) begins to bargain too hard as \( \tau' \) becomes small, the potential for conflict increases. Note that these effects are the 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 5 and 6 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 5 and 6 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.

Empirical Evidence

Two very specific predictions of our model can be tested on existing data on territorial disputes. Here we focus on the claims that natural resources can influence the probability of war differently across different pairs of countries in a territorial dispute and that for disputes where the target has high military capabilities, transitional democracies are more war prone than either consolidated oligarchies or liberal democracies.

Below we will show that correlations in the empirical data on territorial disputes are consistent with these specific implications.

Data

We draw our observations from the Issues Correlates of War Database on territorial disputes between 1816 and 2001. Each observation is a dispute year between two countries. So two countries with multiple disputes can have multiple observations per year and disputes may drag out over many years.

Each year the ICOW database indicates whether a particular dispute has a conflict that leads to casualties in that year. We use this as our dependent variable, measuring whether a particular dispute broke-down into violence that year. In the data, of the 13,673 conflict years, about 2% (296) have fatalities.

The database also records if the territory in dispute contains natural resources. This is important 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.\(^9\)

For measures of regime type we use the Polity IV database. This data gives coverage over the same basic time frame and allows us to distinguish between democracies, intermediate regimes, and autocratic oligarchies. Here, we use the standard cut of of a combined polity score of 7 to separate democracies from non-democracies. Where we consider transitional or intermediate regimes, we count those countries whose composite polity2 score falls between -2 and 7.\(^10\)

\(^9\)Thought these are not the only sources of private benefit. Sometimes it can be about investment, commercial, or transportation rights.

\(^10\)Results are robust to considering different cut offs for democracy and intermediate regimes.
Finally we use *Correlates of War* measures of national capabilities to construct a measure to try to capture \( p \), the probability of victory of one side in war. Though clearly a crude measure, we take the target's composite national capabilities score divided by the sum of both sides scores as an estimate of this value.

**Results**

Our first simple analysis goes after the implication that, for foreign oligarchies, the probability of a conflict between it and an oligarchic target increases with more private goods–here measured by natural resources—is equally likely to fight with a democracy in the absence of private goods, but is more likely to avoid conflict with a democratic target if resources are present.

To test this prediction analyze the subsample of territorial disputes where the challenger is a non-democratic. Here, we run a regression where we interact the presence of natural resources and the target’s regime type.

Table 1 presents our results. Of the 13,673 observations in the database, 10,229 are ones where the challenger is non-democratic. Interpreting these results is straightforward because our measures are indicator variables. So when the target is non-democratic and natural resources are present, the two countries are more likely to have a conflict with fatalities when resources are present. When there are no resources present, then there is no effect of the target’s regime type on the likelihood of fatalities. However, when the target is democratic and there are resources, the effect of resources is decreased substantially.

Our second simple analysis of the territorial dispute data looks at the prediction that when the probability that the target wins a conflict is sufficiently high, oligarchies with large numbers of members in the elite group will be more conflict prone than either democracies or autocracies.

Table 2 shows the results on the subset of the *ICOW* database’s 6,179 dispute year observations where the share of the dyad’s composite \( cinc \) score of the target is “high,” where high is greater than 0.7. The coefficient on the indicator variable shows that the group of “transitional democracies” are more likely to end up in a dispute with casualties.

**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
Table 1: Conflict in Territorial Disputes

<table>
<thead>
<tr>
<th></th>
<th>Dispute Fatalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Resources</td>
<td>0.009** (0.003)</td>
</tr>
<tr>
<td>Democratic Target</td>
<td>-0.002 (0.004)</td>
</tr>
<tr>
<td>Democratic target × Natural Resources</td>
<td>-0.013** (0.006)</td>
</tr>
<tr>
<td>Constant</td>
<td>0.019*** (0.002)</td>
</tr>
</tbody>
</table>

Observations 10,229
R² 0.001
Residual Std. Error 0.142 (df = 10225)
F Statistic 4.544*** (df = 3; 10225)

Note: *p<0.1; **p<0.05; ***p<0.01

In 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 one of the countries, Home, 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.
Table 2: Elite Capture and Transitional Democracy

<table>
<thead>
<tr>
<th></th>
<th>Dispute Fatalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transitional Democracies</td>
<td>0.009***</td>
</tr>
<tr>
<td></td>
<td>(0.003)</td>
</tr>
<tr>
<td>Constant</td>
<td>0.012***</td>
</tr>
<tr>
<td></td>
<td>(0.002)</td>
</tr>
</tbody>
</table>

Observations 6,179  
R² 0.001  
Adjusted R² 0.001  
Residual Std. Error 0.126 (df = 6177)  
F Statistic 7.301*** (df = 1; 6177)

Note: *p<0.1; **p<0.05; ***p<0.01

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 subtleties missed here. 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 through the commitment problem mechanism.
References


Appendix

Proofs or Proof Sketches

Lemma 1

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

\[
\begin{align*}
\max_{x,y} \alpha_F (\pi - x) + \left( \frac{\pi - y}{m_F} \right) \\
\text{subject to} & \quad x \geq p\pi - \frac{c_H}{n_H} \\
& \quad x \geq 0, \ y \geq 0
\end{align*}
\]

It is then immediate to calculate the solution as

\[ x^* = p\pi - \frac{c_H}{n_H}. \]

Clearly, \(x^* < \pi\). 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

\[
\begin{align*}
p\pi - \frac{c_H}{H} &\leq 0 \\
\pi &\leq \frac{c_H}{pn_H}
\end{align*}
\]

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

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

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

\[
\begin{align*}
\max_{x,y} \alpha (\pi - x) + \left( \frac{\pi - y}{m_F} \right) \\
\text{subject to} & \quad x + \frac{y}{m_H} \geq p\left[\pi + \frac{\pi}{m_H}\right] - \gamma \frac{c_H}{n_H} \\
& \quad x \geq 0, \ y \geq 0
\end{align*}
\]
The “bang-per-buck” for $x$ to $F$ is $-\alpha$. For $y$, the bang-per-buck to $F$ is

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

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

$$\alpha < \frac{m_H}{m_F} \quad \text{and} \quad m_H > \alpha m_F$$

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,

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

$$\bar{x} \leq \frac{\gamma c_H}{m_H} - \frac{\bar{y}}{m_H}$$

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

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

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

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

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

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

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

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

$$x^* = p \left[ \bar{x} + \frac{\bar{y}}{m_H} \right] - \gamma \frac{c_H}{n_H}$$
So \( x \) is always decreasing in \( m_H \). This case occurs when \( m_H > \alpha m_F, \bar{x} > \frac{\gamma_{CH}}{pm_H} - \frac{\bar{y}}{m_H} \), and there is sufficient \( x \) that \( x^* \leq \bar{x} \). This holds when

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

Case 4: \( x > 0, y = \bar{y} \)

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

So, always increasing in \( m_H \) since \( p < 1 \). This case occurs when \( m_H \leq \alpha m_F, \bar{x} > \frac{\gamma_{CH}}{pm_H} - \frac{\bar{y}}{m_H} \), and there is not sufficient \( y \) that \( y^* \leq \bar{y} \), or \( \bar{y} < \frac{1}{1-p} \left( pm_H \bar{x} - \gamma \frac{m_H}{n_H} c_H \right) \).

Case 5: \( x = \bar{x}, y > 0 \)

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

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

Therefore, when \textit{Home} is a oligarchy, we can summarize equilibrium bargains as

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

Finally, since war is costly, we need not worry about violating \( F \)'s constraints at the same time as \textit{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, $\frac{m_H}{m_F} \leq \alpha$ 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, $\frac{m_H}{m_F} > \alpha$ 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

$$\alpha \bar{x} + \frac{\bar{y} - [p|m_H x + \bar{y}| - \gamma \frac{m_H}{m_F} c_H]}{m_F}$$

while the risky proposal gives a payoff of

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

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

$$q \frac{-p' \frac{\gamma c_H}{m_H}}{m_F} - \frac{-p \frac{\gamma c_H}{m_F}}{m_F}$$

$$\frac{-p' \frac{\gamma c_H}{m_H}}{m_F} - \frac{-p \frac{\gamma c_H}{m_H}}{m_F}.$$

This value is always positive by the nonzero offer condition 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

$$\frac{p' \gamma c_H}{m_F}$$

which is positive by the nonzero offer condition. □
Proposition 2

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

\[ \alpha \overline{x} + \frac{\overline{y} - \frac{p(m_H \overline{x} + \overline{y}) - \gamma m_H}{p m} c_H}{m_F} \]

while the risky proposal gives a payoff of

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

Subtracting the risk free proposal from the risky proposal and then taking the derivative with respect to \( \gamma \) gives a negative value if

\[ q \frac{m_H}{n_H} c_H - \frac{m_H}{n_H} c_H < 0 \]

which is always true since \( q < 1 \). Hence, increasing \( \gamma \) increases the potential for conflict. \( \square \)

Proposition 3

Proof. For (2).

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

\[ \alpha \overline{x} + \frac{\overline{y} - \frac{p(m_H \overline{x} + \overline{y}) - \gamma m_H}{p m} c_H}{m_F} \]

while the risky proposal gives a payoff of

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

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

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

\( \square \)
Proposition 5

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

\[
\max_{x,y} \alpha (\bar{x} - x) + \left( \frac{\bar{y} - y}{m_F} \right)
\]
subject to \(x + \frac{y(1-\tau)}{m_H} \geq p \left( \frac{\bar{x} + \bar{y}(1-\tau)}{m_H} \right) - \gamma \frac{c_H}{n_H} \)
\(x \geq 0, \ y \geq 0\)

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

\[
\frac{-\frac{1}{m_F} \bar{y}}{\frac{m_H}{m_F(1-\tau)}} - \frac{\frac{y}{m_H}}{m_F(1-\tau)}
\]

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

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

Hence, \(y^*\) is increasing in \(\tau\). Therefore, \(u_O\) is increasing in \(\tau\).

The risk free proposal gives the elites in \textit{Foreign} a payoff of

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

while the risky proposal gives a payoff of

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

Taking the difference and then the derivative with respect to \(\tau\), we find that the potential for conflict is increasing when

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

which is always true since \(p > p'\) and \(q < 1\). Therefore, the potential for conflict is always increasing in \(\tau\). \(\square\)

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Proposition 6

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

\[
\max_{x,y} \alpha (\bar{x} - x) + \left( \frac{\bar{y} - y}{m_F} \right)
\]

subject to \( x + \frac{y(1-\tau)}{m_H} \geq p \left[ \bar{x} + \frac{\bar{y}(1-\tau')}{m_H} \right] - \gamma \frac{c_H}{n_H} \)
\( x \geq 0, \ y \geq 0 \)

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

\[
- \frac{1}{m_F} - \frac{1}{m_H} \frac{m_H}{m_H (1-\tau)}
\]

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

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

Hence, \( y^* \) is decreasing in \( \tau' \). Therefore, \( u_O \) is decreasing in \( \tau' \).

The risk free proposal gives the elites in \textit{Foreign} a payoff of

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

while the risky proposal gives a payoff of

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

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

\[
q \frac{p' \bar{y}}{m_F (1-\tau)} - \frac{p \bar{y}}{m_F (1-\tau)} < 0
\]

which is always true since \( p > p' \) and \( q < 1 \). Therefore, the potential for conflict is always decreasing in \( \tau' \). \qed