External Intervention, Identity, and Civil War

Nicholas Sambanis,[1]* Stergios Skaperdas,[2]* and William Wohlforth[3]*

Abstract

We examine how external intervention interacts with ethnic polarization to induce rebellion and civil war. Previous literature views polarization as internally produced — the result of demographic characteristics or inter-group differences made salient by ethnic entrepreneurs. We complement these approaches by showing that polarization is also affected by international politics. We model intervention's effect on civil war via the pathway of ethnic identification – a mechanism not previously identified in the literature. In our model, local actors representing different groups are emboldened by foreign patrons to pursue their objectives violently. This, in turn, makes ethnic identity salient and induces polarization. Without the specter of intervention, polarization is often insufficient to induce war and, in turn, in the absence of polarization, intervention is insufficient to induce war. We illustrate the model with case evidence from Ukraine.

[1]University of Pennsylvania, Philadelphia, PA [2]University of California, Irvine, CA [3]Dartmouth College, Hanover, NH.

*All authors contributed equally to this work; their names are listed alphabetically.

1 Introduction

What is the relationship between ethnic heterogeneity and civil war? Despite decades of scholarly effort, research on this question remains inconclusive. In this article, we show that while the literature has looked for domestic explanations linking conflict to ethnic fractionalization or polarization, the relationship between ethnic differences and conflict is also affected by international politics. We model the international system's effect on civil war via the pathway of ethnic identification – a mechanism that has heretofore not figured prominently in civil war research. In our model, intervention by foreign patrons emboldens local actors to pursue their objectives violently. Mobilization for violence along ethnic lines, in turn, makes ethnic identity more salient and induces polarization. Without the specter of intervention, ethnic polarization is often insufficient to induce war and, in turn, in the absence of polarization intervention is insufficient to induce war. The model serves as a necessary bridge between international relations and comparative political-economy approaches to internal armed conflict and helps identify promising avenues for further study.

Our theory builds on three previous waves of research on ethnicity and intra-state armed conflict (civil war). In the first wave of empirical studies, the most common approach was to look for a direct, usually linear, association between indices of ethno-linguistic fractionalization and civil war onset (Fearon and Laitin, 2003). That wave produced a puzzle: while most theories of violent conflict suggest a positive correlation between ethnic fragmentation and civil war, most empirical studies found no evidence in support of that hypothesis (Hegre and Sambanis, 2006). This could be due to a mismatch between theory and the empirical proxies (Sambanis, 2004), as all first-wave studies used static measures of countries' ethnic makeup, which cannot capture the depth or the political salience of ethnic cleavages (Chandra and Wilkinson, 2008).

A second wave of studies innovated by replacing the commonly used index of ethno-liguistic fractionalization (ELF) with different indices measuring ethnic polarization (a few large groups rather than many small ones) or ethnic dominance (size of the largest group).

These analyses established a positive and statistically significant correlation between ethnic polarization and civil war (Montalvo and Reynal-Querol, 2005). Yet these new measures also suffered from the same key limitations of first-wave studies. Commonly used ethnic polarization and fractionalization indices failed to capture the changing salience of ethnic identity over time. The static property of these measures runs afoul of convincing scholarship arguing that ethnic differences *per se* cannot explain violent conflict (Chandra, 2006); rather, other variables such as shared culture or common history interact with ethnic difference to generate war. We work from that insight to explore the interaction between ethnic polarization and external intervention.[1]

The third wave of studies explores the political context in which ethnicity becomes salient, further underscoring the limitations of static measures of ethnic difference. A key insight from this third wave of studies is that historical patterns of political exclusion are critical in explaining why or how ethnic groups can be mobilized for violence by elites (Cederman, Girardin and Gleditsch, 2009; Cederman, Wimmer and Min, 2010; Wimmer, Cederman and Min, 2009; Wimmer, 2012). Recent theoretical approaches (Sambanis and Shayo, 2013) have shown that countries with similar levels of ethnic fragmentation or polarization could have very different conflict trajectories as violence exposure, status reversals, and inter-group competition all combine in complex ways to shape social identities and conflict behavior. Earlier qualitative literature also demonstrates that violent conflict itself shapes ethnic identities in ways that help perpetuate conflict[2] and this insight is supported by a number of quantitative studies showing that violence exposure hardens ethnic identities and intensifies in-group bias

---

[1]Historical antecedents of our theory include Myron Weiner's study of the effect of inter-state conflict among revisionist states with ethnic kin across the border (Weiner, 1971). The presence of cross-border kin groups is not necessary for intervention in our set-up; or for intervention to induce polarization. However, prior studies on the connection between cross-border ethnic groups and conflict have considered some of the instruments of intervention that we also consider in our paper as mechanisms for the transmission of civil war risk across countries. For the most part, quantitative studies have identified a positive correlation between the presence and size of cross-border kin groups and conflict risk (Salehyan, Gleditsch and Cunningham, 2011; Salehyan, 2007), though some also point to a curvilinear relationship (Van Evera, 1994; Van Houten, 1998; Lars-Erik Cederman and JulianWucherpfennig, 2013).

[2]See, for example, McGarry and O'Leary (1995) and Deng (1995) and a review essay by Fearon and Laitin (2000).

(Grossman, Manekin and Miodownik, 2015; Bauer et al., 2016).

Building on these insights, we reexamine the relationship between polarization and conflict with an eye toward capturing how patterns of external intervention can induce polarization and war among local groups that might otherwise remain at peace. Differences in group size in and of themselves will often be inadequate to produce conflict; and the ideological differences that can produce polarization are often induced by external actors. We develop this argument formally in a model that highlights the importance of considering the domestic political effects of interstate competition. In particular, the model endogenizes polarization to inter-group competition and shows how that competition is, in turn, the result of patterns of external intervention. Our contribution is primarily theoretical, but in the online supplement, we show suggestive cross-country evidence that the established association between ethnic polarization and civil war is contingent on the international environment. Specifically, we show (online supplement, section 1) that the positive correlation between ethnic polarization and civil war identified by Montalvo and Reynal-Querol (2005) *only applies to the Cold War* — a period known for competitive interventions by the great powers. This suggestive result highlights the complex interdependencies between internal and external factors influencing rebellion and civil war.

Competitive interventions are known to make conflict escalation more likely and to prolong civil wars (Anderson, 2016; Regan, 2000), often turning those wars into "quagmires" (Schulhofer-Wohl, forthcoming). The relationship between civil war *onset* and intervention is hard to study empirically, however, because of the paucity of data on interventions *prior to* the onset of violent escalation of internal conflicts. Even if such data could be collected, however, identifying the causal effect of intervention on the onset of violent conflict would be challenging due to pernicious selection effects. We therefore use two *indirect* approaches in the online supplement to provide a suggestive analysis of the intervention — civil war nexus. The first approach consists of demonstrating that the effect of ethnic polarization on civil war is contingent on the international environment. That alone is an interesting finding

that can motivate our theoretical exploration into the ways in which international politics can shape civil wars via the polarization mechanism. The second approach consists of showing that there is a positive correlation between intervention in minor armed conflicts and subsequent escalation of those conflicts into civil wars. While not definitive, these empirical results provide a backdrop to our new theory, which directly explores these questions to show *how* the inter-state security environment could shape the relationship between polarization and civil war.

Our theory takes as its starting point the insight that external intervention shapes the calculus of internal conflict — a premise that most IR scholars would agree with— while highlighting the *identity and polarization mechanism* that extant literature on intervention has left unexamined. A well-developed game-theoretic literature drawing on models of incomplete information has considered strategic mechanisms through which intervention can affect the risk of domestic conflict.[3] Since Wagner (1993), it has been understood that the intractability of domestic armed conflicts is in part due to the looming risk of foreign intervention. We take that insight from IR studies of civil war as a given and use it to enrich the political economy literature on ethnicity and conflict, which has for the most part favored domestic explanations. Our model is quite general and allows for a wide variety of instruments of intervention by sponsors of the government and rebels — ranging from support during the war to promises of assistance conditional on specific outcomes— and takes into account that these promises affect not only fighting, but also the prospects of settlement under the threat of war. We provide an adaptable theoretical architecture to explore how domestic actors' incentives can change as a result of foreign intervention and how their identities complicate that relationship.

---

[3]The central focus of previous studies has been to assess the effect of intervention on relative power calculations. Some studies also consider how the interveners' preferences shape the preferences of local parties. See Amegashie (2014); Amegashie and Kutsoati (2007); Chang, Potter and Sanders (2007); Sawyer, Cunnningham and Reed (2015); Cetinyan (2002); Grigorian (2010); Bas and Schub (2016); Wagner (2007); Powell (2017); Kydd and Straus (2013); Jenne (2004); Thyne (2006). A study more closely related to ours is Mylonas (2013), which considers how state policies toward minority groups are shaped by inter-state competition; in his theory, ethnic minorities are less likely to be accommodated if they are supported by external patrons whose foreign policy interests are antithetical to the interests of the host state.

Specifically, we model the interaction between a government and a group that may seek autonomy, secession, or to overthrow the government. The government represents the interests of a dominant group and the group out of power first has the choice between acquiescing to the status quo or rebelling. Rebellion can lead to either a negotiated settlement or civil war. That is, there are three sets of possible outcomes: status quo, rebellion followed by settlement, and rebellion followed by civil war. This allows for a more nuanced and empirically accurate discussion of civil wars, which typically grow out of a process of gradually escalating conflict. This setting allows for a rich discussion of factors that could lead to rebellion and civil war that involves both external intervention and identity issues.

Intervention emerges as complementary to identity in inducing rebellion or civil war in at least two analytically distinct ways. First, if we follow much of the existing literature in assuming fixed identity differences between the government and potential rebels, our framework could be used to highlight combinations of different instruments that an intervener can use to induce rebellion and civil war. The greater the identity differences between the state and domestic challengers, the easier it is for an intervener to induce conflict. This result is consistent with previous studies of the *independent* effects of intervention and polarization on war. Second, we show how intervention can itself affect identities and *increase polarization* to induce war or rebellion. This effect occurs as intervention on behalf of the government, the rebels, or both induces arming (i.e. increases conflict between groups), which makes ethnic identities more salient and increases polarization modeled as the perceived (social, ideological) distance between minority groups and the state.

This endogeneity of identities to arming can yield counter-intuitive implications if seen through the lens of extant studies of intervention. For example, whereas the expectation based on previous studies is that pro-government intervention will reduce the risk of civil war (Cunningham 2016), our model makes a more nuanced argument by exploring the polarization mechanism. When an outside power bolsters the government, that could make war *more* likely by sharpening identity differences due to arming (preparing for war). Preparing

for war along ethnic lines makes ethnic identities more salient and increases polarization between the government and a minority group. The government's sponsor cannot help deter civil war in the same way that the rebels' sponsor may induce the rebels to engage in war. Thus, by helping the government, a foreign sponsor may be unable to deter war and only increases the government's likelihood of victory in war. Therefore, the net effect of pro-government intervention is likely contingent on underlying conditions, such as the *ex ante* distance between minority groups (potential rebels) and the state as well as the power asymmetry between them.[4]

Following the presentation of the model, we show how our theory can help explain key elements in Ukraine's descent into civil war after 2014. Controversy swirls around aspects of this case, but in-depth studies reveal abundant process-level evidence of the ways in which heightened interventionism after 2013 made existing identity differences more salient and fed the dynamics that ended in civil war.

The major implication of our paper is that patterns of intra-state conflict depend on the salience of ethnic identification; and that, in turn, ethnic identification can be shaped by foreign intervention. This argument is pertinent to policy debates about intervention in domestic conflicts. Even if we assume that major inter-state war will remain unlikely, merely increasing rivalry at the system level threatens to reverse the post-Cold War trend of decreasing prevalence of civil war. The weakening of multilateral institutions since the U.S. invasion of Iraq in 2003 and the apparent success of the pro-government intervention in Syria are likely to encourage more interventions and proxy wars, which could increase ethnic polarization and domestic armed conflict, pushing the world system back toward Cold War-type competitive interventions. This dire potential highlights the need for theories

---

[4]Our general framework could be expanded to incorporate insights from other strands of the civil war literature. For example, Cederman, Wimmer and Min (2010), Wimmer (2002) and Cederman et al. (2015) analyze the effects of ethnic inclusion or regional autonomy concessions on ethnic war onset. In our framework, whether or not these concessions are granted would be endogenous to patterns of external intervention and to the types of instruments available to the interveners. Thus, the government could be less likely to offer inclusion or autonomy to former rebels if the rebels' external backer subsidizes rebellion contingent on victory as opposed to a situation in which the external backer provides unrestricted subsidies to rebels conditional on rebelling independent of the outcome of rebellion (war).

that bridge domestic and inter-state levels, and the model developed here can serve as the springboard for these efforts.

2 The Basic Model: Conflict over Secession

We begin with a model in which a group demands autonomy or secession, a common goal in ethnic conflicts.[5] We consider the interaction between the central government that is associated with a particular group A and a separatist region or group denoted by B. The third parties that we consider are a potential sponsor of B, denoted by B^*, and a potential sponsor for the government, denoted by A^*. B^* could provide support for rebellion and possible guarantees of economic support following secession whereas A^* could provide different types of support to the government. Since we focus on the interaction of external intervention and civil war, we do not examine the third parties' optimizing choices and we consider how changes in support in favor of B or A along with identity would change the likelihood of rebellion and civil war.

A and B come into conflict over both material and non-material concerns. The material source of conflict has a total size of Y; that could consist of natural resource rents, income from public-sector enterprises, or dedicated tax revenue. The main source of non-material payoffs we consider is the possible alienation that members of B might feel when they are under the rule of A. In particular, following the related literature, members of B incur an alienation or distance cost $\Delta > 0$ when ruled by A.[6] We perceive distance Δ as partly a function of how different the minority group's attributes are from the majority group and partly a function of the history of conflict or cultural differences between the groups. This reflects how the concept of polarization has been previously defined in the literature.

---

[5]In the online supplement, we consider conflict over control of the central government.

[6]This is similar to the "heterogeneity costs" in Spolaore (2008). Non-material concerns can include prestige or status payoffs. In turn, such payoffs can depend on the level of conflict between the two groups. We examine such dependence in the next section. There is no symmetric cost for the group that controls the government because it can determine the share of material payoffs and other policies that are important to the group.

The share of the population belonging to group A is $\alpha \in (0,1)$, with $1 - \alpha$ being the share of B. Given the population shares of the two groups and their distance Δ, the quantity $\alpha^2(1-\alpha)\Delta + (1-\alpha)^2\alpha\Delta = \alpha(1-\alpha)\Delta$ represents the most common measure of *polarization* (see equation 4 in Esteban and Ray 2011). The closer is α to $1/2$ (that is, the more equal are the two groups) and the higher is the distance measure Δ, the higher is the polarization of the country. The intuition is that societies become more polarized the smaller the number of equal-sized groups with ideological or other (social) distance between them.

2.1 Payoffs

The elites of A and B, reflecting the wishes of their respective groups, maximize their groups' total payoff. The first decision that the leaders of group B make is whether to choose the *status quo* or prepare for *rebellion.* Under the *status quo* the payoffs of the two groups are:

$$
\begin{aligned}
U_a^q &= \gamma Y \text{ where } \gamma \in [0,1] \\
U_b^q &= (1-\gamma)Y - (1-\alpha)\Delta
\end{aligned}
\tag{1}
$$

Under a *status quo* arrangement, A receives a $\gamma \in (0,1)$ share of Y with the remainder $1 - \gamma$ share retained by B. This division of the economic surplus could be the result of a previous agreement between the two groups or fixed by the government. The asymmetry in non-material payoffs is due to the fact that members of A do not incur alienation costs because they are in government. (In the online supplement we examine the case in which there is a risk of being out of government and A incurs an alienation cost.)

The elites of the region can prepare for a rebellion that can result in war, in which case victory and defeat occur with the probability of each outcome depending on the relative military capabilities of the insurgents and the government. Let m_a and m_b denote the military efforts of the Government and the rebels. We suppose that the probabilities of the

Government and the rebels winning in the event of War are:

$$p_a = \frac{m_a}{m_b + m_a}, \ p_b = 1 - p_a = \frac{m_b}{m_b + m_a} \tag{2}$$

If B chooses the path of rebellion, the sequence of moves is as follows:

1. A and B choose simultaneously m_a and m_b military efforts.

2. A makes a Settlement offer to B which consists of a division of Y.

3. B either accepts or rejects the offer made by A. If they accept, the payoffs of A and B are in accordance with the offer. If they reject the offer, War takes place with the probabilities of winning described in (2).

In case of War, then, the expected payoffs of the two sides are:

$$\begin{aligned} U_a^w &= p_a Y + (1 - p_a)0 - F - c_a m_a \\ U_b^w &= p_a(-(1 - \alpha)\Delta) + (1 - p_a)(Y + S_b^*) - F - c_b m_b \end{aligned} \tag{3}$$

When the Government wins (with probability p_a) it receives the whole contested economic payoff Y, while when it loses (with probability $1 - p_a$) it receives nothing.[7] From these expected gains, there are two terms that are subtracted. First, both sides pay costs of war $F(> 0)$ that could include destruction, collateral damage, and additional military expenditures due to conflict. Second, there are the costs expended on military resources with marginal (and average) costs of c_a and c_b.

The expected payoff for the rebels, in addition to the cost elements just described, leads to $-(1 - \alpha)\Delta$ when they lose (with probability p_a). When they win (with probability $1 - p_a$) they obtain the full contested material payoff Y, they avoid $-(1 - \alpha)\Delta$ due to secession,

---

[7]The government does receive other payoffs but, because they are constant and the two sides are risk neutral, there is no reason to take them into account here as they would merely add notational burden without bringing about any difference in the results.

and they could also expect S_b^* economic benefits from their sponsor. These benefits are only available given secession as we explain below.

We postpone the specification of the payoff functions under Settlement (conditional on rebellion) until later, as it requires some additional details.

2.2 Instruments of External Intervention

Third parties B^* and A^* can affect the interaction of A and B via several instruments.

First, B^* could make promises and even commitments of economic assistance in the event that B manages to secede. Direct grants, investment, loan facilities, technical assistance, trade deals and preferential access to $B^{*'}s$ markets on the part of an autonomous B could all be part of such economic benefits.[8] We represent these expected economic benefits by S_b^*.[9]

Second, third parties could directly finance part of the variable military expenditures of their respective clients in the event of rebellion. That is, B^* could subsidize m_b and A^* could subsidize m_a. It is known, however, that the equilibrium choices of m_a and m_b are independent of the subsidies as long as the subsidies do not exceed their equilibrium levels. Yet, whereas the marginal conditions do not change, the effects of such subsidies on the two sides are different: they do not affect the incentives of the Government side A (because it is not the goverment that chooses to rebel), but they could change the incentives of side B in moving into rebellion and civil war. In such a case, the effect could be similar to the unrestricted subsidies discussed below.

The third instrument that third parties could use to intervene involves changing the capital or organizational military capacity of their respective clients by changing the marginal

---

[8]A related study that considers the effect of different instruments of intervention is Thyne (2006). The key argument is based on a distinction between "credible" and "cheap" signals; cheap signals are shown to have a larger effect on domestic conflict escalation due to inserting more uncertainty in the process.

[9]Whereas A^* could also make such commitments to similarly help A, the effects are not symmetric. Since A represents a sovereign government it would be hard for A^* to condition such help only on victory in the event of civil war. Without such conditions, the effect of general economic subsidies of A^* to A would not affect the incentives of A or B on whether or not we have the status quo, rebellion with settlement or rebellion with war as an equilibrium outcome.

costs c_a and c_b. As we will show, changing these marginal costs does change the incentive of the clients to invest in military resources themselves and it changes the overall equilibrium outcome (see Chang, Potter and Sanders (2007) for such an analysis).[10] In "capital" we include weapons, technical, organizational and other assistance that the third parties can provide to their allies.

Finally, a fourth instrument could be unrestricted subsidies directly provided by B^* as long as B is fighting regardless of the probability of winning or the outcome of the conflict. This has the same effect as military subsidies and can induce rebellion and civil war. A^* can offer a similar subsidy to A conditional on reaching the stage of war (but it is B that has the choice to rebel).

2.3 War or Settlement?

We now examine the possible subgame perfect equilibrium outcomes, starting with stage 3 of the sequence of moves described above. At that stage, B will have already paid its military expenditures that are not included in the cost of conflict F (that is, $c_b m_b$ will have already been sunk[11]) and therefore it will accept any share $1 - \eta$ of Y if and only if:

$$(1 - \eta)Y - (1 - \alpha)\Delta \geq U_b^w + c_b m_b \tag{4}$$

Otherwise, War will take place. Then, in stage 2, A would only make an offer that satisfies (4) as an equality and the resulting Settlement payoff for A is at least as great as $U_a^w + c_a m_a$.

---

[10]To see how c_a and c_b can be related to capital investments, consider total military capacity could be modeled as a function of two inputs, a fixed input K (representing capital and organizational capacity) and a variable input L. To see how c_i $(i = a, b)$ can reflect the marginal cost of variable inputs suppose that military capacity is determined by the production function $m_i = K_i^\beta L_i$ where $\beta > 0$. Then the variable cost function (with capital K_i fixed and its cost sunk) is obtained by solving the following problem (with w representing the cost of L_i): $\min_{L_i} wL_i$ subject to $m_i = K_i^\beta L_i$, which readily yields: $c(m_i) = \frac{w}{K_i^\beta} m_i$. We can then define $c_i \equiv \frac{w}{K_i^\beta}$. Note that the greater the amount of capital and organizational capacity (K_i), the lower is the marginal cost of production. Note that, effectively, the subsidies to capital by the third parties make the contest function in (2) asymmetric since $m_i = K_i^\beta L_i$.

[11]Because of risk neurality the results do not change if we don't consider these costs sunk.

That is, denoting by η^* the η that satisfies (4) as an equality, A will make an offer that B will accept only if:

$$\eta^* Y \geq U_a^w + c_a m_a \tag{5}$$

Given (3), and adding (4) and (5), Settlement is thus assured if:

$$2F \geq (1 - p_a)(S_b^* + (1 - \alpha)\Delta) \tag{6}$$

Settlement is possible if the costs of conflict $(2F)$ are sufficiently high. How high they need to be to avoid War depends on the probability of the rebel group B winning $(1-p_a)$, the subsidy expected from the foreign sponsor (S_b^*), and the distance the rebel group has from the government-controlling group (Δ) as well as the size of the group $(1 - \alpha)$. Conversely, the higher are these values, the higher is the chance of War. Note that War is possible in this setting without incomplete information, misperceptions, optimism, or commitment problems on the part of either party. Moreover, even in the absence of the distance parameter Δ, War could still occur under a sufficiently high expected subsidy from the foreign sponsor.

Whereas the parameters F, α, Δ, and S_b^* are exogenous, the probabilities of winning, p_a and $1 - p_a$ are endogenous. In the online Appendix we derive the following probabilities of winning under War:

$$\begin{aligned} p_a^w &= \frac{c_b Y}{c_b Y + c_a(Y + S_b^* + (1 - \alpha)\Delta)} \quad \text{and} \\ p_b^w &= 1 - p_a^w = \frac{c_a(Y + S_b^* + (1 - \alpha)\Delta)}{c_b Y + c_a(Y + S_b^* + (1 - \alpha)\Delta)} \end{aligned} \tag{7}$$

Each side's probability of winning depends (i) positively on its own "prize" and negatively on the opponent's one; (ii) positively on own size and negative on opponent's size; and (iii) negatively on own marginal cost of military resources and positively on that of one's opponent. The higher "prize" for B (due to the subsidy S_b^* and avoiding the distance cost of $(1 - \alpha)\Delta$ in case of a win) is thus a force counteracting the disadvantage that comes from

smaller group size and, presumably, higher marginal cost c_b relative to the government.

By substituting (7) into (6), we obtain that War would ensue only if the following inequality were to be satisfied:[12]

$$2F < \frac{c_a(Y + S_b^* + (1-\alpha)\Delta)}{c_b Y + c_a(Y + S_b^* + (1-\alpha)\Delta)}(S_b^* + (1-\alpha)\Delta) \tag{8}$$

This inequality includes the combinations of solely exogenous parameter values for which War could occur. We summarize its implications as a Proposition.

Proposition 1 *Conditional on B choosing to rebel, War can occur only if inequality (8) were to hold. Then War is more likely:*

(i) the higher is the external subsidy S_b^*;

(ii) the higher is the distance Δ felt by group B;

(iii) the lower is the cost of War F;

(iv) the higher is the population of B (the lower is α); and

(v) for $a > 1/2$ the higher is the polarization index $\alpha(1-\alpha)\Delta$.

Moreover, provided that either Δ or S_b^* is positive, War is more likely the lower is group $B's$ marginal cost parameter c_b (and the more this parameter is lowered by subsidies from B^*) and the higher is the cost parameter c_a.

(For the proof, please see the online supplement.)

Empirically, this Proposition implies that ethnic or other type of polarization is neither necessary nor sufficient for civil war if polarization is understood only in terms of demographic sizes of groups. However, higher cultural or ideological distance or external intervention can increase the risk of civil war in a country with two large ethnic groups (high polarization). This proposition is consistent with the empirical results alluded to earlier, where a purely demographic measure of polarization is only associated with civil war during the Cold War

---

[12]Whereas this inequality is necessary for War to occur, Settlement might still be theoretically possible if the government could find a best response to m_b^w in stage 1 that would induce a Settlement offer by the government in stage 2 that would be accepted by B in stage 3 of the game.

period when interventions and proxy wars were more frequent. Furthermore, whereas large enough S_b^* or Δ (external subsidies or ethnic distance) can induce War by themselves, an organizational subsidy (such as the lowering of c_b) cannot do so without complementing at least one of S_b^* or Δ. Thus external intervention complements identity to induce civil war (the next section examines how intervention can change Δ). Finally, note that it would be cheaper for B^* to intervene in a country with a higher Δ since it could induce war with a lower subsidy S_b^*.

2.4   To Rebel or Not?

We next turn to the incentives for rebellion and the possibility of Settlement. Let M_b^* denote a direct subsidy that B receives from B^* as long as B engages in rebellion. Then, for future reference, the equilibrium payoff of B under War equals:

$$
\begin{aligned}
V_b^w &= p_a^w(-(1-\alpha)\Delta) + (1-p_a^w)(Y + S_b^*) - c_b m_b^w - F + M_b^* \\
&= p_a^w(2 - p_a^w)(-(1-\alpha)\Delta) + (1-p_a^w)^2(Y + S_b^*) - F + M_b^* \tag{9}
\end{aligned}
$$

If (8) were to be reversed, then Settlement under the threat of War would be feasible and an acceptable offer by A could be found that would be consistent with a subgame perfect equilibrium. In that case, however, whereas $B's$ payoff function would be the same as in (3) (because A receives all the possible surplus as he makes a take-it-or-leave-it offer),[13] A's payoff functions should equal $\eta^* Y$ where η^* is the η that satisfied (4) as an equality. It turns

---

[13]Under bargaining protocols different than the "ultimatum" bargaining that we have here, the payoff of B under Settlement would not be identical to the payoff under War. Alternative bargaining protocols include a more complex alternating-offers game or the adoption of a bargaining solution such as the Nash solution. However, especially because utility is transferable in our game, the qualitative results would be the same as the one we adopt here. For an overview of bargaining under the threat of fighting, see Skaperdas (2006). On how different bargaining solutions may affect arming when utility is non-transferable, see Anbarci, Skaperdas and Syropoulos (2002).

out, then, that the payoff functions under Settlement are the following:

$$U_a^s = p_a(Y + S_b^* + (1-\alpha)\Delta) - (S_b^* + (1-\alpha)\Delta) + F - c_a m_a$$

$$U_b^s = p_a(-(1-\alpha)\Delta) + (1-p_a)(Y + S_b^*) - F - c_b m_b \qquad (10)$$

Note that even under Settlement the payoffs of the two sides ultimately depend on their probabilities of winning, which depend in turn on the military efforts chosen by each side. This is so because the *disagreement* payoffs are the ones driving bargaining and these payoffs are the War payoffs. In the online supplement we derive the equilibrium military efforts and winning probabilities under Settlement. We can then derive the equilibrium payoffunder Settlement by substituting the equilibrum military efforts and probabilities of winning in (10) and adding M_b^* :

$$V_b^s = p_a^s(2 - p_a^s)(-(1-\alpha)\Delta) + (1 - p_a^s)^2(Y + S_b^*) - F + M_b^* \qquad (11)$$

where $p_a^s(= \frac{c_b}{c_b + c_a})$ is $A's$ probability of winning under Settlement. For rebellion to occur, it is necessary that either V_b^w or V_b^s is greater than the status quo payoff $U_b^q = (1-\gamma)Y - (1-\alpha)\Delta$. In the online supplement we also provide conditions under which different types of subgame perfect equilibria can occur.

We next turn to the the factors that determine the thresholds that would bring about a rebellion, with or without War. To more clearly see the conditions necessary for either type of rebellion, it can be shown using (1) and (9) or (11) that $V_b^i > U_b^q$ (for either $i = s, w$) is equivalent to:

$$(1 - p_a^i)^2(Y + S_b^* + (1-\alpha)\Delta) + M_b^* - (1-\gamma)Y > F \qquad (12)$$

The first term of the left-hand side of this inequality reflects the net gains from rebellion. In case of secession the rebels receive all contested income Y plus the expected subsidy from their sponsor S_b^* and they avoid the distance cost Δ that direct rule under A brings in all

other circumstances. These net gains are multiplied by $(1 - p_a^i)^2$, a term that reflects their probability of winning as well as incorporating (in its derivation) the costs of arming. We summarize this and other implications of (12) below.

Proposition 2 *A rebellion by B is more likely*

(i) the higher is the distance cost Δ;

(ii) the higher are the subsidies by B^* to B (S_b^*, M_b^*, and those that lower c_b);

(iii) the lower is the share of $A's$ population $\alpha(> 1/2)$;

(iv) the lower is the share of contested income $(1 - \gamma)$ received by B under the status quo;

(v) the lower is the subsidy given by A^* to A to lower c_a;

(vi) the lower is the cost of War F;

(viii) the higher is the polarization measure $\alpha(1 - \alpha)\Delta$.

The factors that induce rebellion are thus qualitatively similar to those that induce War, except that the sponsor of the rebels has additional instruments at its disposal. In the online supplement we modify the model so that the potential rebels (possibly a social class rather than a region or ethnic group) are engaged in a center-seeking rebellion. The conditions that can induce rebellion by group B are qualitatively similar as in the secession model, but the conditions that induce war are slightly different when we consider the role of distance between groups.

3 Endogenous distance of identities

Thus far we have assumed the distance between the two groups (Δ) to be exogenous to the actions undertaken by all parties. Rebellion and war, however, typically exacerbate differences between groups and the perceived distance between groups increases. If the two sides were to foresee such a possibility, they might hold back on inducing rebellion and war. Once, however, there is rebellion in the presence of the various instruments of external intervention the greater cleavage that has already been created between the two groups may

well increase the chance of outright war. If the foreign sponsor of the rebels could foresee such a possibility, it might then induce their client to arm so as to increase polarization and destabilize the host state. To allow for such possibilities, we now relax the assumption of exogenous Δ by following Sambanis and Shayo (2013) who model the perceived distance between the two groups as a function of conflict intensity. In our model, this is captured by the level of arming.[14] In particular, we have:

$$\Delta = \Delta' + \delta(m_a + m_b) \text{ where } \Delta' > 0 \text{ and } \delta \geq 0 \tag{13}$$

That is, group distance has a fixed component Δ' and a variable component that depends on the total level of military expenditures of the two sides, with the parameter δ indicating the strength of this dependence on military expenditures.[15]

Thus, once rebellion takes place and the two sides choose positive levels of military expenditures, whether in order to gain bargaining advantage in a prospective Settlement or to prepare for War, the perceived distance between the two groups increases. We examine how endogenizing the distance of group identities affects the chance of War and the chance of rebellion in light of the different forms of external intervention that are possible. Given the endogeneity of Δ, the payoff functions under War in (3) are now modified as follows:

$$
\begin{aligned}
U_a^{w'} &= p_a Y + (1 - p_a)0 - F - c_a m_a \\
U_b^{w'} &= p_a[-(1 - \alpha)(\Delta' + \delta(m_a + m_b)] + (1 - p_a)(Y + S_b^*) - F - c_b m_b
\end{aligned}
\tag{14}
$$

Since only group B bears the distance cost, it is only B's payoff function that differs from (3). Using (2), in the online supplement we derive military expenditures under the expectation of

---

[14]Distance can also depend on the conflict outcome such as whether there is Settlement, victory in War or loss in War or on investments in nation-building that a state might undertake. Our qualitative results would be similar under suitable assumptions on the effects that different outcomes have on group distance, whereas investments in nation-building would obviously reduce the chance of rebellion and war.

[15]The sensitivity δ of perceived distance to arming could be thought of as a measure of the intensity of the ethnic security dilemma (Posen, 1993) that characterizes relations between A and B.

War (denoted $m_a^{w'}$ and $m_b^{w'}$) and the endogenously determined distance between the groups can be shown to equal:

$$\Delta(m_a^{w'} + m_b^{w'}) = \Delta' + \delta \frac{Y(Y + S_b^* + (1-\alpha)\Delta')}{c_b Y + c_a(Y + S_b^* + (1-\alpha)\Delta')} \tag{15}$$

which is increasing in δ, Δ', and S_b^* and decreasing in c_a and c_b.

Under the expectation of Settlement the payoff functions of the two parties are as in (10) except $\Delta = \Delta' + \delta(m_a + m_b)$. Following the same method as for the case of War, we can show that the equilibrium distance is the following:

$$\Delta(m_a^{s'} + m_b^{s'}) = \Delta' + \delta \frac{(Y + S_b^* + (1-\alpha)\Delta')}{c_b + c_a} \tag{16}$$

By substituting $\Delta(m_a^{w'} + m_b^{w'})$ in (8) and either $\Delta(m_a^{w'} + m_b^{w'})$ or $\Delta(m_a^{s'} + m_b^{s'})$ in (12) we can obtain, respectively, the effect of the endogenous distance cost in the likelihood of war conditional on rebellion (for the case of (8) and the likelihood of rebellion for the case of (12)). The effects of the variables $\delta, \Delta', S_b^*, c_a$, and c_b are straightfoward and identical on both $\Delta(m_a^{w'} + m_b^{w'})$ and $\Delta(m_a^{s'} + m_b^{s'})$ and are summarized in the following Proposition.

Proposition 3 *The endogenous distance cost whether there is War or Settlement under the threat of War is*

(i) increasing in the expected external subsidy S_b^*;

(ii) decreasing in the marginal costs of military efforts c_a and c_b;

(iii) increasing in the constant term of the distance cost Δ' and the sensitivity of the distance cost to military efforts (δ).

By (8) and (12) it then follows that the same variables increase the chance of War and Rebellion.

These results show that the instruments of intervention that the foreign sponsor of the rebels has at its disposal (S_b^*, M_b^*, and c_b) can be used to affect the chance of War and Rebellion by influencing the perceived distance between rebels and government. By increasing the

expected subsidy to the rebels in the event of secession or by decreasing the rebels' marginal cost of military expenditures, total military expenditures increase which, in turn, make rebels and government feel that they are further apart. In turn, this increase in perceived distance makes War and Rebellion more likely, beyond what is contributed independently by the factors identified in Propositions 1 and 2.

In other words, actual or expected intervention does not just shape the bargaining calculations of Karabagh Armenians, Abkhaz, Ossetians, Turkish Cypriots, Kosovo Albanians, or any other minority group considering rebellion and secession; it also shapes their identity because arming due to actual or realized external support highlights incompatibilities with the state and makes their ethnic identity more salient, increasing the group's distance from the group that controls the state. When the effect of intervention on distance is taken into account, this changes the way the government's external sponsor will think about intervention. That sponsor's intervention to reduce the marginal costs for the state (c_a) is not the same as when Δ is fixed. Because a subsidy that decreases this marginal cost increases military expenditures and, through this channel increases distance and the likelihood of War and Rebellion, the sponsors of the government who have an interest in avoiding war might have a reason to moderate the capital and organizational subsidies they provide to the government.[16]

4   Case Illustration: Ukraine's Civil War

The upshot of the theory and evidence presented thus far is that heightened interventionism at the international system level can influence social identification and polarization inside states in ways that increase the risk of war. Ukraine is a salient example. Until 2013 scholars saw Ukraine as a case study of how a country with many key preconditions for civil

---

[16] In other words, the endogenous identity channel reveals a mechanism through which external support for governments increases the risk of rebellion whereas the extant literature posits a strictly negative effect of pro-government intervention on war risk (Cunningham, 2016). The net effect will depend on the overall balance of power. It is possible that the distance effect (increasing the risk of war) will be overshadowed by the deterrent effect of arming the government if power asymmetry reduces the chances of rebel victory.

war could nonetheless preserve peace (Snyder, 1993; Laitin, 2001; Roeder, 2007; Charap and Colton, 2017). Comprised of the borderlands of four great multiethnic empires (the Polish-Lithuanian, Habsburg, Russian-Soviet, and Ottoman), modern Ukraine contended with separatist sentiment in key regions, a weak, corrupt state and underperforming economy, a history rich with episodes waiting to be used by political entrepreneurs to feed group grievance narratives, and a neighboring great power with political elements nurturing irredentism. Yet as of the fall of 2013, there had been no violence for control of the government or secession. Why did peace last until then; and why did war break out in 2014? The external environment figures crucially in the answer, and in ways consistent with the model presented here.

Indeed, increased great power rivalry and competitive intervention brought about the crucial initial condition of our model that the government is associated with a particular group in the first place. Ukraine's identity cleavages map on to a regional diversity rooted in a mixture of ethnic, linguistic, socioeconomic, historical, and geopolitical factors that cannot be reduced to static measures of ethnicity and language (Arel, 2018). Identification, polarization and perceived distance between key groups are sensitive to context, including at the inter-state level. At each step after 2012, major power competition pushed these variables toward war. Before 2013, governments in Kyiv understood the dangers of polarization and so balanced between Russia and the West at the systemic level and between western and eastern regional identities (very roughly speaking) at the domestic level (Kuzio 2015). For reasons external to developments within Ukraine, Moscow and Brussels/Washington increasingly framed their approaches to Kyiv in zero-sum, east-west terms that played directly into domestic inter-group cleavages. Heightened competitive expectations of subsidies and other forms of external support from the EU and Russia undermined the government's ability to reduce perceived distance from key regional identity groups, thus effectively contributing to Ukraine's growing polarization.

Once this key condition was in play, the ensuing crisis experienced two phases: a mass

protest movement ultimately seeking to overthrow the government followed by a violent autonomy/secession seeking rebellion against the new regime. Our model covers both generic types of intra-state conflict, with the model of conflict over control of the central government presented in the online appendix. The first phase began in the the summer and fall of 2013, as the government of Viktor Yanukovych was considering a formal association with the EU that featured a deep and comprehensive trade agreement [DCTA] even as he was under pressure from Moscow to join its Customs Union. Each of these agreements came to represent a vision for the Ukrainian state that was attractive to one group and alienating to the other. Each, moreover, would have differential material effects in different regions where these groups were concentrated. Ukrainian industry was heavily dependent on Russian trade and subsidies[17] and much of that industry was located in the South and East, Yanukovych's base. Not only would association with the EU almost certainly spell the end of those subsidies, but officials in Brussels also made clear that it was not compatible with current and prospective trade arrangements between Russia and Ukraine. Russia meanwhile, deployed tough sanctions and reduced subsidies to impose costs on Ukraine as it seemed close to accepting the EU-sponsored agreement. Fearing continued losses and presented with an attractive package of subsidies and $15 billion in aid from Putin, in late November Yanukovych decided not to pursue the EU trade agreement. In terms of the model, these developments represent offers of subsidies by external interveners to bolster the government. (As in the model, these offers of subsidies were not conditioned on victory in war and therefore did not affect the incentives of the government or its challengers in the conflict.) Rather than dampen the risk of rebellion, these subsidies increased it by increasing polarization.

In the competitive great power setting, Yanukovych's embrace of Moscow seemed to mark the government's decisive association with its base regional identities in the east and south, which invoked a second effect identified in the model: attempts to bolster the government

---

[17]See Barry Ickes and Clifford Gaddy, 2014. "Ukraine: A Prize neither Russia not the West can Afford to Win." Brookings, May 22. https://www.brookings.edu/articles/ukraine-a-prize-neither-russia-nor-the-west-can-afford-to-win/ [Accessed May 16, 2018].

effectively incentivized rather than deterred rebellion. The subsidies increased polarization via the endogenous identity channel modeled here, overwhelming their strengthening effect on the regime. Now the recipient of Moscow's largesse, the government and its base supporters seemed more distant from Ukrainians in the center and west, who now could look to the EU and US for major subsidies were they to rebel successfully. This effectively increased the country's polarization and provided the spark for the Maidan movement, which emanated from regions with majorities that not only had identity-based reasons for favoring a western orientation and had less economically to lose from reduced economic relations with Russia but also had reason to believe that association with the EU would yield direct and indirect material benefit over the long term (S_b^* in the model). Abundant evidence of prospective western support fed strong expectations for meaningful intervention ultimately involving full inclusion in the economic and security institutions of the west (Menon and Rumer, 2015; Charap and Colton, 2017).

Intervention and associated increased polarization are thus both implicated in the Maidan rebellion, which sparked the collapse of the Yanukovich government. The hastily assembled successor was quickly backed by the EU and the US, which simply flipped the terms of our model. Now the government was associated with the formerly rebelling Maidan group whose understanding of Ukrainian identity was bound up with Europe, while people concentrated in the south and west who felt Russian or who identified with a larger "Russian world" were potential rebels. Consistent with the model, we thus have a contest over autonomy in a polarized environment but, in contrast to all previous post-1991 crises, Moscow determined not to seek to win over the government but to support alienated groups in Crimea and the Donetsk coal basin ("Donbas"). In late February and early March 2014, Russian special forces facilitated the annexation of Crimea. By April, Russian intelligence and logistical support for various rebel formations in Donbas quickly materialized (International Criminal Court 2016, 37).[18]

---

[18]International Criminal Court, Office of the Prosecutor, 2016, "Report on Preliminary Examination Activities," 14 November. [Accessed 1/24/2018].

Russia's decision to intervene on behalf of disaffected identity groups in Ukraine, invokes the secession case of our model discussed above. Russian support, captured in the model by parameter S_b^* in the form of subsidies to reduce the costs m_b, fed the third key intervention effect: increasing the salience of the regional identity and thus the perceived distance from the government and emboldening insurgents in eastern Ukraine to ramp up demands and take armed actions that would otherwise have been unlikely. Scholars debate the relative weight of indigenous causes (especially the breakdown in state authority in the region) versus the external factor (Sakwa, 2016; Wilson, 2016). But even accounts meant to highlight domestic causes cast doubt on the counterfactual that the conflict would have escalated to war in the absence of increased intervention (Driscoll, 2015; Kudhelia, 2016). As Wilson (2016, 632) concludes "Local actors would not have acted as they did without Russian support." Once Crimea was in play, Russian official statements highlighting the "Novorossiya" concept received wide coverage. Russian military maneuvers on Ukraine's border added urgency to the message. Potential rebels were presented with overwhelming evidence that the old equilibrium in which Moscow officials eschewed support for separatism was over.

Evidence from surveys conducted over the 2012-17 period document the shifting salience of identities. In the western and central regions, "The Euromaidan protests of 2013-2014 and the subsequent Russian military intervention in Crimea and the Donbas brought about a perceptible change in ethno-national identities, as many people felt both stronger attachment to Ukraine and stronger alienation from Russia" (Kulyk (2018), p. 120; see also Pop-Eleches and Robertson (2018)). Donbas and Crimea remain a "black box" to researchers (Arel 2018, 189), but telephone polls at least suggest that Donbas moved in the opposite direction (Sasse and Lackner (2018)), which is consistent with reportage from the area.

Experts' accounts of the case also highlight other aspects of the model. Zhukov (2015) presents strong evidence that, more than any other Ukrainian region, Donbas confronted a "perfect economic storm" if Kyïv opted for the DCTA. Indeed, the storm had already hit in July 2013 as Russia responded to Yanukovich's negotiations with the EU by imposing trade

restrictions— felt acutely in Donbas by late fall—and promising much worse to come. All this evidence is consistent with the model's prediction that war risk is higher the lower the marginal costs (c_b) of rebellion (due to lower wages in the rebel region), and the lower is the share of contested income ($1 - \gamma$) received by the rebels under the status quo.

In the end, direct Russian intervention probably saved the Donbas rebels from being defeated by government forces. But the overwhelming majority of the combatants were Ukrainians, and they were very unlikely to have been killing each other had competitive external actors not made latent polarization of identities more salient. Process-tracing evidence details how intervention increased perceived distance from the government and fed actions that led to war. A key escalatory move was the lightning strike to seize government buildings in Slavyans'k by the former Russian FSB officer Igor Girkin (aka "Strelkov") and his volunteers from Crimea. Delegates from eastern regions who were organizing rebellions swarmed to Crimea, Girkin testified, and "all were fully convinced that if the rebellion developed, Russia would come to its aid" (Prokhanov 2014). His actions were initially successful and met with local elite and popular support in part because of widespread expectations that his vision for Donbas would be backed by Russia. Girkin himself stressed that he was well aware of the effect of imitating the actions of the Russian special forces in Crimea. According to him, the locals "openly expressed their sympathies for us" because they believed that "everything would be repeated as in Crimea" (Prokhanov 2014).

In sum, domestic peace was preserved until great power "contestation over the lands between Russia and the West . . . led to the explosion in Ukraine . . ." (Charap and Colton, 2017). Mechanisms identified in the model advanced here play a central role in explaining the links between major power competition and the descent to civil war. An increasingly competitive international systemic setting undermined a domestic strategic equilibrium in which the state was not seen as indelibly associated with a given identity grouping. Once that equilibrium was upset, key events played out as anticipated in the model's sequential logic with the West and Russia taking turns intervening in ways that raised risks of civil

strife until Moscow, seeing the potential for intervention to destabilize the Ukranian state via increased polarization, made the fateful decision to intervene, with dire results.

5   Conclusion

Our analysis suggests that, as expectations or the reality of external intervention grow, so does the global problem of civil war. This is particularly true in ethnically divided countries where intervention can foster polarization. Not only can major powers funnel resources into ongoing intra-state conflicts and thereby prolong them, as is well understood in the previous literature, but, through a variety of mechanisms that we identify, the mere presence of increased interventionism in the international system can cause disputes within states to morph into violent conflicts. In a systemic setting conducive to high incidence of intervention, ethnic groups will be more likely to frame their understanding of social identity in ways that increase polarization, escalate demands for autonomy or control of the center, and fail to find war-avoiding bargains.

Our model has important implications for both the theoretical and empirical study of civil war. Intervention may shape the types of conflicts that we observe: whether groups seek secession or capture of the center and whether they use violence in pursuit of their aims may depend on the types of incentives offered by foreign sponsors. The significance of ethnic cleavages for domestic political conflicts could itself be endogenous to patterns of foreign intervention and great-power politics. The implications of these arguments for the empirical study of conflict have not yet been explored, but neglecting the role of external intervention in likely to skew our understanding of the process of escalation of domestic armed conflicts.

Indeed, the pernicious interaction between international and domestic conflict we examine here may help account for much of the blood shed in regional conflicts during the Cold War (Westad 2006). Consistent with our model and discussion of the Ukraine case, accounts of these conflicts suggest that the competitive global environment shaped how domestic groups

within states framed their political and social identities in the first place.

For example, a non-violent bargain on transferring power after Portugal's exit from Angola was frustrated by the increased polarization between the contending parties, caused in part by competing external sponsors offering rival groups various kinds of support (Telepneva 2014). Similar interactions characterized other so-called proxy wars during the Cold War from Lebanon and Afghanistan to Nicaragua and Vietnam, but they are hardly unique to the mid-20th century. In nearly any period in the modern history of international politics when great powers were at odds, there was the potential for intervention to exacerbate inter-group polarization. No one can understand 19th century geopolitics, for example, without such staples as the Irish Question (perennial fears in Whitehall that external powers might take a page from Napoleons book and intervene on behalf of Irish independence), the Polish question (fears in Berlin, Vienna and especially St Petersburg concerning external support for Polish independence), the Great Game (fears in London that the encroachment of Russian power in Central Asia would catalyze fissiparous tendencies in British India) and perhaps most fatefully the Eastern Question (fears in Constantinople and the great European capitals that Russian support for fellow Slavs or Orthodox believers in the Balkans could topple the Ottoman Empire in Europe and facilitate the expansion of the Tsars sway to the Black Sea straits). Analogous dynamics may be becoming more prominent now as factors explaining separatism in places as disparate as Ukraine, the Democratic Republic of the Congo, Yemen, Somalia, or Syria.

From the perspective of theory, we propose a new approach to modeling civil war that puts inter-state politics at center stage. Our model can serve as a springboard for more elaborate theories that connect intra-state and inter-state conflict. Material interests and psychological affinities connecting domestic groups and potential foreign sponsors could be modeled in a more complex framework that endogenizes the probability of intervention. The outcomes of civil war and their effects on competition over power between potential interveners could also be modeled in a framework that explores the inter-relationships of

inter-state rivalries and domestic armed conflict. Indeed, the type of intervention and the identity of the intervener might even explain which social cleavage will become politically salient in post-intervention politics in the target country. The key lesson of our model is that international politics can shape the structure of domestic conflict. Just as sectarian war in Iraq (and Syria) was defined by the institutions that were built by the American occupation, so could interventions elsewhere determine whether groups will organize along ethnicity, sect, or political ideology. Our model therefore supports the key constructivist insight that the relationship between ethnicity and conflict is contingent on the political context.

Substantively, the model's upshot is that even if we assume that major inter-state war will remain unlikely, merely increasing rivalry at the systemic level threatens to reverse the post-Cold War trend of decreasing the prevalence of civil war. This dire potential highlights the need to integrate theory across the domestic and inter-state levels. In order to isolate intervention's effects on domestic settings, we treated the international system as exogenous, which allows us to highlight the strategic considerations of domestic actors. The crucial next task is to go beyond this approach. To do so, we would need to revivify systemic theory—which is central to other social sciences and once was much more central to international relations research than it is now—but do so in a way that allows scholars to model interactions across the systemic, domestic-institutional, and individual levels of analysis. The resurgence of ethno-nationalism around the world is at least partly the result of intervention in political conflicts by major powers. The outcomes of those interventions are increasingly bad – state failure in Libya, a failed occupation in Iraq, an Islamic proto-state temporarily carved out of Syria before being beaten back violently, zones of lawlessness and constant war in Central Asia, and waves of migrants from poor and war-ravaged countries in the Middle East, South Asia, and Sub-Saharan Africa perceived to be threatening the tenuous liberal-democratic balance in the West. A crucial task is to identify the conditions under which states might inculcate mutual restraint regarding intervention in third-party conflicts. The superpowers failed to do this in the Cold War, with baleful consequences. Today's major powers should try

harder. To provide knowledge relevant to that task, scholars need to develop theories better suited to understanding system-domestic interactions than the rigidly segmented theories of the 20th century.

References

Amegashie, J.A. 2014. "Asymmetric Information and Third-Party Intervention in Civil Wars." *Defence and Peace Economics* 25:1143–1174.

Amegashie, J.A. and E. Kutsoati. 2007. "(Non)intervention in Intra-State Conflicts." *Defence and Peace Economics* 23:754–767.

Anbarci, Nejat, Stergios Skaperdas and Constantinos Syropoulos. 2002. "Comparing Bargaining Solutions in the Shadow of Conflict: How Norms against Threats Can Have Real Effects." *Journal of Economic Theory* 106:1–16.

Anderson, Noel Thomas. 2016. *Competitive intervention and its consequences for civil wars*. PhD Dissertation, MIT.

Arel, Dominique. 2018. "How Ukraine has become more Ukrainian." *Post-Soviet Affairs* 34:186–189.

Bas, Muhammet A. and Robert J. Schub. 2016. "How Uncertainty About War Outcomes Affects War Onset." *Journal of Conflict Resolution* 60:1099–1128.

Bauer, M, C Blattman, J Henrich, E Miguel and T Mitts. 2016. "Can War Foster Cooperation?" *Journal of Economic Perspectives* 30:249274.

Cederman, Lars-Erik, Andreas Wimmer and Brian Min. 2010. "Why Do Ethnic Groups Rebel? New Data and Analysis." *World Politics* 62(1):87–119.

Cederman, Lars-Erik, Luc Girardin and Kristian Gleditsch. 2009. "Ethnonationalist Triads: Assessing the Influence of Kin Groups on Civil Wars." *World Politics* 61(3):403–437.

Cederman, Lars-Erik, Simon Hug, Andreas Schadel and Julian Wucherpfennig. 2015. "Territorial Autonomy in the Shadow of Conflict: Too Little Too Late?" *American Political Science Review* 109(2):354–370.

Cetinyan, Rupen. 2002. "Ethnic Bargaining in the Shadow of Third-Party Intervention." *International Organization* 56:645–677.

Chandra, Kanchan. 2006. "What Is Ethnic Identity and Does It Matter?" *Annual Review of Political Science* 9:397–424.

Chandra, Kanchan and Steven Wilkinson. 2008. "Measuring the Effect of Ethnicity." *Comparative Political Studies* 41(4-5):515–563.

Chang, Y.M., J. Potter and S. Sanders. 2007. "War and Peace: Third-party Intervention in Conflict." *European Journal of Political Economy* 23:954–974.

Charap, Samuel and Timothy Colton. 2017. *Everyone Loses: The Ukraine Crisis and the Ruinous Contest for Post-Soviet Eurasia*. London: Routledge.

Cunningham, David E. 2016. "Preventing Civil War: How the Potential for International Intervention Can Deter Conflict Onset." *World Politics* 68(2):307–340.

Deng, Francis M. 1995. *War of Visions: Conflict of Identities in the Sudan.* Washington, DC: Smithsonian Institution Press.

Driscoll, Jesse. 2015. *Warlords and Coalition Politics in Post-Soviet States.* Cambridge: Cambridge University Press.

Fearon, James D. and David D. Laitin. 2003. "Ethnicity, insurgency, and civil war." *American Political Science Review* 97(1):75–90.

Fearon, James and David Laitin. 2000. "Violence and the Social Construction of Identity." *International Organization* 54:845–877.

Grigorian, Arman. 2010. "Third-Party Intervention and the Escalation of State-Minority Conflicts." *International Studies Quarterly* 54:1143–1174.

Grossman, Guy, Devorah Manekin and Dan Miodownik. 2015. "The political legacies of combat: Attitudes toward war and peace among Israeli ex-combatants." *International Organization* 69(4):981–1009.

Hegre, Havard and Nicholas Sambanis. 2006. "Sensitivity Analysis of Empirical Results on Civil War Onset." *Journal of Conflict Resolution* 50:508–535.

Jenne, Erin. 2004. "A Bargaining Theory of Minority Demands: Explaining the Dog that Did not Bite in 1990s Yugoslavia." *International Studies Quarterly* 48:729–754.

Kudhelia, Serhiy. 2016. "The Donbas Rift." *Russian Politics and Law* 54:5–27.

Kulyk, Volodymyr. 2018. "Shedding Russianness, recasting Ukrainianness: the post-Euromaidan dynamics of ethnonational identifications in Ukraine." *Post-Soviet Affairs* 34:119–138.

Kydd, Andew and Scott Straus. 2013. "The Road to Hell? Third-Party Intervention to Prevent Atrocities." *American Journal of Political Science* 57:673–684.

Laitin, David D. 2001. "Secessionist Rebellion in the Former Soviet Union." *Comparative Political Studies* 34:839–861.

Lars-Erik Cederman, Kristian Skrede Gleditsch, Idean Salehyan and JulianWucherpfennig. 2013. "Transborder Ethnic Kin and Civil War." *International Organization* 67:389–410.

McGarry, John and Brendan O'Leary. 1995. *Explaining Northern Ireland: Broken Images.* Oxford: Blackwell.

Menon, Rajan and Eugene Rumer. 2015. *Conflict in Ukraine: the Unwinding of the Post-Cold War Order.* MIT.

Montalvo, Jose G. and Marta Reynal-Querol. 2005. "Ethnic Polarization, Potential Conflict, and Civil Wars." *American Economic Review* 95:796–816.

Mylonas, Harris. 2013. *The Politics of Nation-Building: Making Co-Nationals, Refugees, and Minorities.* Cambridge University Press.

Pop-Eleches, Grigore and Graeme B. Robertson. 2018. "Identity and political preferences in Ukraine before and after the Euromaidan." *Post-Soviet Affairs* 34:107–118.

Posen, Barry R. 1993. "The Security Dilemma and Ethnic Conflict." *Survival* 35:27–47.

Powell, Robert. 2017. "Taking Sides in Wars of Attrition." *American Political Science Review* 111:219–236.

Regan, Patrick. 2000. *Civil Wars and Foreign Powers.* University of Michigan Press.

Roeder, P. 2007. *Where Nation-States Come From: Institutional Change in the Age of Nationalism.* Princeton University Press.

Sakwa, Richard. 2016. *Frontline Ukraine: Crisis in the Borderlands.* I.B. Tauris.

Salehyan, Idean. 2007. "Transnational Rebels: Neighboring States as Sanctuary for Rebel Groups." *World Politics* 59:217–242.

Salehyan, Idean, Kristian Skrede Gleditsch and David Cunningham. 2011. "Explaining External Support for Insurgent Groups." *International Organization* 65:709–44.

Sambanis, Nicholas. 2004. "Expanding Economic Models of Civil War Using Case Studies." *Perspectives on Politics* 2:259–280.

Sambanis, Nicholas and Moses Shayo. 2013. "Social Identification and Ethnic Conflict." *American Political Science Review* 107:294–325.

Sasse, Gwendolyn and Alice Lackner. 2018. "War and identity: the case of the Donbas in Ukraine." *Post-Soviet Affairs* 34:139–157.

Sawyer, Katherine, Kathleen Gallagher Cunnningham and William Reed. 2015. "The Role of External Support in Civil War Termination." *Journal of Conflict Resolution* xxx:1–29.

Schulhofer-Wohl, Jonah. forthcoming. *Quagmire in Civil War.* Cambridge University.

Skaperdas, Stergios. 2006. "Bargaining versus Fighting." *Defense and Peace Economics* 17:657–676.

Snyder, Jack L. 1993. "Nationalism and the Crisis of the Post-Soviet State." *Survival* 35:5–26.

Spolaore, Enrico. 2008. "Civil Conflict and Secession." *Economics of Governance* 9:45–63.

Thyne, Clayton L. 2006. "Cheap Signals with Costly Consequences: The Effect of Interstate Relations on Civil War." *Journal of Conflict Resolution* 50:937–961.

Van Evera, Stephen. 1994. "Hypotheses on Nationalism and War." *International Security* 18:5–39.

Van Houten, Pieter. 1998. "The Role of a Minority's Reference State in Ethnic Relations." *Archives Europennes de Sociologie* 39:110–146.

Wagner, Harrison. 1993. The Causes of Peace. In *Stopping the Killing: How Civil Wars End*, ed. Roy Licklider. New York: New York University Press pp. 235–268.

Wagner, Harrison. 2007. *The Theory of International Politics: War and the State.* University of Michigan Press.

Weiner, Myron. 1971. "The Macedonian Syndrome: An Historical Model of International Relations and Political Development." *World Politics* 23:665–683.

Wilson, Andrew. 2016. "The Donbas in 2014: Explaining Civil Conflict Perhaps, but not Civil War." *Europe-Asia Studies* 68:631–652.

Wimmer, Andreas. 2002. *Nationalist Exclusion and Ethnic Conflict.* Cambridge University Press.

Wimmer, Andreas. 2012. *Waves of War: Nationalism, State Formation, and Ethnic Exclusion in the Modern World.* Cambridge University Press.

Wimmer, Andreas, Lars-Erik Cederman and Brian Min. 2009. "Ethnic Politics and Armed Conflict: A Configurational Analysis of a New Global Data Set." *American Sociological Review* 74:316–337.

Online Supplement for

External Intervention, Identity, and Civil War

Nicholas Sambanis,[1]* Stergios Skaperdas,[2]* and William Wohlforth[3]*

Abstract

This supplement includes two sections: section 1 provides suggestive evidence of our main argument that external intervention influences the risk of civil war onset and that the effect of ethnic polarization on conflict is conditional on intervention. Section 2 presents proofs and extentions of the model presented in the main text of the paper. We discuss the classification of equilibria in the main model and present a variation of the model in which the rebels seek to overthrow the government (center-seeking rebellion). We also show the details of the derivation of military expenditures under endogenous identities and in the case of War.

---

[1]University of Pennsylvania, Philadelphia, PA [2]University of California, Irvine, CA [3]Dartmouth College, Hanover, NH.

1 Suggestive Evidence on the External Intervention – Civil War Nexus

Although many civil wars are internationalized, no prior quantitative study has explored the effect of actual or anticipated intervention on civil war *onset*. This is primarily due to the lack of data on external intervention prior to the onset of civil war. Even if we had data on interventions prior to the onset of internal armed conflict, identifying the causal effect of these interventions on conflict escalation would be difficult since intervention is often endogenous to characteristics of the domestic conflict. In light of these data limitations, we provide new theory rather than empirical tests of the effects of intervention on conflict escalation. However, there is suggestive, indirect evidence on the relationship between intervention and civil war that we present in this section.

We begin by replicating the econometric study that first established the positive association between ethnic polarization and civil war (Montalvo and Reynal-Querol, 2005). We add to that model a plausibly exogenous proxy for external intervention that allows us to test whether the effect of polarization is conditional on the intervention environment. Montalvo and Reynal-Querol (2005) (MRQ) show a positive correlation (and assume a causal relationship) between ethnic polarization and civil war, though for reasons outlined in our introduction that relationship is likely to be historically contingent. In line with our hypotheses about the polarizing effect of external intervention, we explore whether the relationship between ethnic polarization and conflict in the MRQ model is contingent on the international environment. We proxy differences in the likelihood of external intervention with a binary indicator for the Cold War.

The fact that interventions in internal armed conflicts were more frequent during the Cold War has been established by scholars of "competitive interventions" and proxy wars (Anderson, 2016). Regional hegemons coordinated their actions with their superpower sponsors, which resulted in an environment where actual or anticipated intervention in internal

armed conflicts was high. Though we can't measure intervention directly, using the Cold War as a proxy for increased risk of intervention has the benefit that the proxy is *exogenous* to the details of each case. We focus on the interaction between the Cold War variable and the index of ethnic polarization. Our theory, to be developed in the next section, would lead us to expect a stronger effect of polarization on civil war onset in a high-intervention environment. Foreign backers can strengthen domestic groups, thereby escalating conflicts and making them more intractable (Schulhofer-Wohl, forthcoming). Ethnic polarization plays into this dynamic because countries with a small number of large groups lend themselves to competitive intervention by major powers who can easily identify potential allies and targets. By supporting one large group, this could push the other to the hands of a different intervener, increasing polarization (and this is more likely when the risk of competitive intervention is high). The logic of this argument leads us to expect the effect of polarization on civil war to be greater during the Cold War as compared to the post-Cold War period. Indeed, polarization —measured simply in terms of the relative size of ethnic groups— need not be a significant correlate of civil war in the absence of intervention or other political catalyst.

The correlation between ethnic polarization and civil war in MRQ lacks theoretical justification. Other studies, notably Esteban and Ray (2011) provide a theoretical justification that is focused exclusively on the domestic political economy of the conflict-affected country. We use a concept of polarization that is similar to Esteban and Ray (2011) and propose a complementary approach that focuses instead on external conditions. In our theory, power competition at the systemic level influences whether ethnic polarization is associated with conflict. We can test the plausibility of our theory by revisiting the MRQ model and testing if their results on the effects of polarization are conditional on external conditions—differences in the risk of competitive intervention, proxied by the Cold War. Our theory leads us to expect that polarization becomes a less significant determinant of civil war in the post-Cold War period, when the risk of external intervention declines. Such a pattern would be consis-

tent with our claim that external intervention "activates" latent ethnic cleavages that might otherwise lay dormant, an argument that we model formally in the next section.

We replicate the MRQ model in Table 1, column 1. Their data is organized in country five-year periods from 1960-1999. The dependent variable — "civil war" — is coded 1 for each period when a civil war is coded in the PRIO/UCDP dataset (we use the same coding of civil war as in MRQ to facilitate a direct comparison of our results). We add to the model an indicator variable for the Cold War (*coldwar*), coded 1 for the first 6 five-year periods and 0 for the last 2 periods. There are 274 observations with 57 periods of war after the Cold War and 822 observations with 102 periods of war during the Cold War. We see (column 2) that the Cold War variable is weakly significant and negative and the results of the baseline model do not change significantly as a result of this specification change. In column 3, we add an interaction between ethnic polarization and the Cold War (*CW*P*). We find that the linear polarization term is no longer significant; the positive association between polarization and civil war is only statistically significant during the Cold War period. We do not observe a similar pattern for the index of ethnic fractionalization, which is consistently non-significant whether independently or in interaction with the Cold War variable (column 4).

Insert Table 1 here

Next, we update MRQ's data to include the period from 2000 to 2015 and we improve the quality of the data for a number of explanatory variables (data improvements are described in Author). These updates reduce the number of missing observations and give us many more post-Cold War periods of war to analyze. We now have 102 country five-year periods of war after the Cold War and 93 periods of war during the Cold War. Results are reported in column 5 and we again see a similar pattern with polarization being statistically significant only during the Cold War. Using our new data we obtain significant results for per capita income, population, and resource-dependence (these variables were not significant using MRQ's data, but they are robust correlates of civil war in most other studies). As a

4

further robustness test, we confirmed that our substantive conclusions do not change when we use a differently coded polarization measure based on the Ethnic Power Relations (EPR) dataset (Cederman, Wimmer and Min, 2010; Wimmer, Cederman and Min, 2009).[1]

We view these correlations as providing suggestive evidence consistent with our hypothesis that interventions increase the risk of civil war via the ethnic polarization mechanism. These tests are not conclusive since the Cold War period might have differed in several ways from the post-Cold War period. Nonetheless, this analysis makes it clear that the effect of ethnic polarization on conflict is contingent on conditions that characterized the Cold War; and the Cold War was a period characterized by competitive interventions and proxy wars. Additionally, this variable is plausibly exogenous to patterns of ethnic polarization. While data limitations preclude a more definitive test, in the next section we take a more direct approach by using country-year data to explore the effect of intervention on conflict escalation.

1.1   Intervention and Conflict Escalation

Having established that the effect of polarization on conflict is potentially contingent on patterns of external intervention, we now take a complementary approach to test whether intervention leads to conflict escalation. As mentioned earlier, data on military intervention is only available for active conflicts, so we use data on third-party troop deployments in active minor conflicts and explore whether these interventions are correlated with an escalation into civil war. Whereas previously we used an indirect albeit plausibly exogenous proxy for intervention, we now use a direct measure of intervention – troop deployments – during country-years with active minor conflict. This allows a direct test of the hypothesis that interventions are correlated with conflict escalation, though any such analysis will not be causal in light of the possibly endogeneity of this measure. We show that interventions are

---

[1]The new measure yields very different polarization scores for some countries (the correlation with the original measure is just .55) since the raw data now include only groups that the EPR dataset considers "politically relevant" rather than all linguistic groups in each country.

indeed correlated with conflict escalation and this correlation is robust to changes in model specification (controlling for known correlates of a country's conflict proneness) and to the inclusion of country-level fixed effects to capture unobserved sources of country heterogeneity.

The analysis is restricted to country-years with at least minor-level armed conflict (25 battle-deaths in a given year). We test whether intervention is a statistically significant predictor of *escalation* from minor conflict to full-blown civil war.[2] We use data on minor conflicts from the UCDP dataset and code new data for civil war onset with coverage extended to 2012. Conflicts that eventually accumulate 1,000 deaths and meet other criteria (e.g. reciprocal violence and continuous violent activity) are classified as civil wars. Out of 296 conflict onsets in the UCDP data, 171 cases correspond to civil war onsets in our data and 94 of these cases correspond to conflicts that started out as minor and escalated to civil war.[3] Using the UCDP classification of conflicts into ethnic and non-ethnic types, we can test the escalation effects of intervention in ethnic conflicts separately. Ethnic conflicts are usually over territorial autonomy or secession, rather than control over the central government.

Intervention data comes from the UCDP database, which defines interventions narrowly to include only third party troop deployments. These actions represent a subset of the ways in which a third party may affect the interaction between a government and domestic challengers. While in the model that we develop later we consider alternative modes of intervention, the UCDP data offer a good starting point for a baseline empirical analysis. The data also allow us to distinguish between pro-government and pro-rebel interventions. We expect these to have different effects on escalation. Given the power asymmetry between government and rebels, it is reasonable to expect that pro-government intervention will reduce

---

[2]We do not believe that intervention is a necessary condition for minor conflict outbreak. Organizational challenges to rebellion and resource constraints can be overcome without intervention to produce minor conflict.

[3]All except 22 civil war onsets occur during periods when the UCDP dataset codes an ongoing conflict. These 22 cases of coding disagreement are not included in the analysis, since we only focus on periods of ongoing minor conflict. We also identify a number of ambiguous cases of civil war, where one or more of the coding criteria might not be satisfied and we drop these to check robustness.

the risk of conflict escalation.[4] By contrast, intervention on behalf of rebel organizations or small ethnic groups should increase the risk of civil war by increasing the capabilities of those groups, making it harder for the state to suppress the rebellion.

Results from logistic regressions models are presented in Table 2. Standard errors are clustered at the country level in all models with the exception of models 3 and 4, where we also include country-level fixed effects to capture unobserved sources of country heterogeneity in the data. The first two columns of Table 2 include only the intervention variables and a year trend. Intervention on behalf of the rebels clearly increases the risk of conflict escalation, as anticipated. The effect of pro-government intervention is the opposite, though it is less robust (not statistically significant if we use data from all wars, though the effect is strong with respect to ethnic wars).

Insert Table 2 here

The models in columns 3 and 4 include country-level fixed effects to capture unobserved sources of heterogeneity that could be correlated with intervention. The conditional (fixed effects) logit model exploits within-cluster variation to identify the effect of intervention. Any selection effects that operate at the country level should therefore be addressed in these regressions. Results are very strong for both types of intervention, which increases our confidence in our findings. Finally, in models 5 and 6 we add a number of controls drawing from the large literature on civil wars. We include per capita income (lagged one year), population size (lagged one year), oil dependence, elevation difference, ethnic and religious fractionalization. As these are all standard controls in studies of civil war, we do not expand on the reasons for including them in our model.[5]

While this analysis establishes a plausible connection between conflict escalation and intervention, it also has limitations as the causal effect of intervention cannot be identified in

---

[4]Cunningham (2016) offers supportive evidence for this claim, showing that countries with significant military-political support from the United States are less likely to experience violent challenges.

[5]Different model specifications with more controls produce similar results. Robustness tests conducted include models with controls for political discrimination of ethnic groups and different measures of ethnic polarization and regime type.

these models. Domestic policy imperatives and foreign policy interests in the intervening country are likely to influence intervention decisions, so intervention could be partly exogenous to the domestic armed conflict. However, in most cases we would expect intervention decisions to also reflect assessments of the intervention's likely outcome, which in turn depends on conflict dynamics in the target country. Thus intervention could be endogenous to variables that our models have not considered. We are not aware of any empirical study that has identified the causal effect of intervention, hence the analysis in Table 2 shares the limitations of the extant literature. Plausibly exogenous, albeit indirect, estimates of the effects of intervention on conflict were presented in Table 1, where we proxied intervention by the Cold War. By switching to a more direct approach to study conflict escalation in Table 2, we are able to show for the first time in the empirical literature that there is a strong correlation between intervention and conflict escalation.[6]

While this empirical analysis is not conclusive, it does establish a plausible connection between intervention and violence escalation. The models in Table 2 deliberately do not include a measure of ethnic polarization since, as we show in the theoretical model we develop next, polarization should be endogenous to intervention. Polarization deepens as the ideological distance between groups grows and as these groups experience conflict. As we explain in our model, ideological or psychological "distance" can be a function of history, politics, past conflict and a number of other variables that shape the salience of social identities. While that complex, dynamic concept of polarization is hard to measure and cannot yet be included in cross-country regressions, we capture it in our model by combining the demographic sizes of groups with a measure of psychological distance that divides those groups. Because available cross-country measures of polarization do not correspond to the theoretical concept of polarization we model next, we refrain from relying too heavily on

---

[6]A related approach is Schulhofer-Wohl (forthcoming) who studies the effect of intervention on conflict duration and violence intensity in civil war including fighting among "on-side" (i.e. allied) groups. He shows that intervention can lead to ritualistic fighting that is not aimed at winning. Fighting serves to destabilize the government to benefit external sponsors and it lasts as long as domestic groups receive subsidies. This is consistent with our argument since escalation or de-escalation can result from changes in the level of subsidies from foreign sponsors.

existing empirical proxies for polarization and instead explore our argument using a new theory and then apply the theory to explore a historical case-study.

2 Proofs and Extensions of the Model

To derive the equilibrium winning probabilities under War in (7) we first need to derive the equilibrium efforts (denoted by m_a^w and m_b^w), by taking account of (2) and simultaneously solve the following two derivatives of (3):

$$
\begin{aligned}
\frac{\partial U_a^w(m_a^w, m_b^w)}{\partial m_a} &= \frac{m_b^w}{(m_a^w + m_b^w)^2}Y - c_a = 0 \\
\frac{\partial U_b^w(m_a^w, m_b^w)}{\partial m_b} &= \frac{m_a^w}{(m_a^w + m_b^w)^2}(Y + S_b^* + (1 - \alpha)\Delta) - c_b = 0
\end{aligned}
\tag{1}
$$

Note how these first-order conditions indicate that the "prize" of the war-contest for A is the disputed material payoff Y, but for B the prize is $Y + S_b^* + (1 - \alpha)\Delta$, because B by winning, does not only gain Y but also gains the expected subsidy from its sponsor (S_b^*) and avoids the distance cost $(1 - \alpha)\Delta$. This is a source of asymmetry in the War contest, in addition to the other asymmetries of the model that can be expected to have an effect on the choices of military efforts. Solving for m_a^w and m_b^w we obtain:

$$
\begin{aligned}
m_a^w &= \frac{c_b(Y + S_b^* + (1 - \alpha)\Delta)Y^2}{[c_bY + c_a(Y + S_b^* + (1 - \alpha)\Delta)]^2} \\
m_b^w &= \frac{c_aY(Y + S_b^* + (1 - \alpha)\Delta)^2}{[c_bY + c_a(Y + S_b^* + (1 - \alpha)\Delta)]^2}
\end{aligned}
\tag{2}
$$

The military effort of A is (i) increasing in A's "prize" Y; (ii) increasing in the opponent's marginal cost c_b and (iii) decreasing in own marginal cost c_a. The symmetric properties hold for the military effort chosen by B. To obtain the probabilities of winning in (7) we substitute the military efforts in (2).

Proof of Proposition 1:

(i) Taking the derivative of the right-hand-side of (8), we obtain:

$$\frac{\partial\{\frac{c_a(Y+S_b^*+(1-\alpha)\Delta)}{c_bY+c_a(Y+S_b^*+(1-\alpha)\Delta)}(S_b^*+(1-\alpha)\Delta)\}}{\partial S_b^*} = \frac{c_a(Y+S_b^*+(1-\alpha)\Delta)}{c_bY+c_a(Y+S_b^*+(1-\alpha)\Delta)}+$$

$$+\{\frac{c_a}{c_bY+c_a(Y+S_b^*+(1-\alpha)\Delta)} - \frac{c_a^2(Y+S_b^*+(1-\alpha)\Delta)}{[c_bY+c_a(Y+S_b^*+(1-\alpha)\Delta)]^2}\}(S_b^*+(1-\alpha)\Delta) =$$

$$=\frac{c_a(Y+S_b^*+(1-\alpha)\Delta)}{c_bY+c_a(Y+S_b^*+(1-\alpha)\Delta)} + \frac{c_ac_bY}{[c_bY+c_a(Y+S_b^*+(1-\alpha)\Delta)]^2}(S_b^*+(1-\alpha)\Delta) > 0$$

(ii) Same steps as in *(i)* yield the result.

(iii) Since F is the sole term on the left-hand-side of (8), the lower is F the more likely

is that (8) will be satisfied.

$$(iv)\frac{\partial\{\frac{c_a(Y+S_b^*+(1-\alpha)\Delta)}{c_bY+c_a(Y+S_b^*+(1-\alpha)\Delta)}(S_b^*+(1-\alpha)\Delta)\}}{\partial\alpha} = -\frac{c_a(Y+S_b^*+(1-\alpha)\Delta)}{c_bY+c_a(Y+S_b^*+(1-\alpha)\Delta)}\Delta+$$

$$+\{\frac{-c_a\Delta}{c_bY+c_a(Y+S_b^*+(1-\alpha)\Delta)} - \frac{c_a(Y+S_b^*+(1-\alpha)\Delta)(-c_a\Delta)}{[c_bY+c_a(Y+S_b^*+(1-\alpha)\Delta)]^2}\}(S_b^*+(1-\alpha)\Delta) =$$

$$=-\frac{c_a(Y+S_b^*+(1-\alpha)\Delta)}{c_bY+c_a(Y+S_b^*+(1-\alpha)\Delta)}\Delta - \frac{c_a\Delta c_bY}{[c_bY+c_a(Y+S_b^*+(1-\alpha)\Delta)]^2}(S_b^*+(1-\alpha)\Delta) < 0 \text{ (for } \alpha > 1/2)$$

(v) The higher Δ is and the lower α (for $\alpha > 1/2$), the higher is the polarization index

$\alpha(1-\alpha)\Delta$. Therefore, by (ii) and (iv), anything that increases polarization also increases

the right-hand-side of (8) and, thus, the likelihood of War.

Next consider the right–hand-side of (8) for a positive S_b^* or Δ

$$\frac{\partial\{\frac{c_a(Y+S_b^*+(1-\alpha)\Delta)}{c_bY+c_a(Y+S_b^*+(1-\alpha)\Delta)}(S_b^*+(1-\alpha)\Delta)\}}{\partial c_b} = -\frac{c_a(Y+S_b^*+(1-\alpha)\Delta)Y}{[c_bY+c_a(Y+S_b^*+(1-\alpha)\Delta)]^2}(S_b^*+(1-\alpha)\Delta)\} < 0$$

$$\frac{\partial\{\frac{c_a(Y+S_b^*+(1-\alpha)\Delta)}{c_bY+c_a(Y+S_b^*+(1-\alpha)\Delta)}(S_b^*+(1-\alpha)\Delta)\}}{\partial c_a} =$$

$$=\{\frac{(Y+S_b^*+(1-\alpha)\Delta)}{c_bY+c_a(Y+S_b^*+(1-\alpha)\Delta)} - \frac{c_a(Y+S_b^*+(1-\alpha)\Delta)^2}{[c_bY+c_a(Y+S_b^*+(1-\alpha)\Delta)]^2}\}(S_b^*+(1-\alpha)\Delta) =$$

$$=\frac{c_aY(Y+S_b^*+(1-\alpha)\Delta)}{[c_bY+c_a(Y+S_b^*+(1-\alpha)\Delta)]^2}(S_b^*+(1-\alpha)\Delta) > 0$$

Equilibrium under Settlement

The equilibrium choices of military efforts are determined by first taking the own deriva-

tives of the payoff functions in (10) with respect to the own strategies of each side:

$$\frac{\partial U_a^s(m^s, m^s)}{\partial m_a} = \frac{m_b^s}{(m_a^s + m_b^s)^2}(Y + S_b^* + (1-\alpha)\Delta) - c_a = 0$$

$$\frac{\partial U_b^s(m^s, m^s)}{\partial m_b} = \frac{m_a^s}{(m_a^s + m_b^s)^2}(Y + S_b^* + (1-\alpha)\Delta) - c_b = 0 \tag{3}$$

Solving this system yields the following equilibrium choices of military efforts:

$$
\begin{aligned}
m_a^s &= \frac{c_b(Y + S_b^* + (1-\alpha)\Delta)}{(c_b + c_a)^2} \\
m_b^s &= \frac{c_a(Y + S_b^* + (1-\alpha)\Delta)}{(c_b + c_a)^2}
\end{aligned}
\tag{4}
$$

It can be shown that $m_a^s > m_a^w$ for all parameter values and $m_b^s > m_b^w$ provided that $S_b^* + (1-\alpha)\Delta$ relative to Y (specifically, $\frac{Y + S_b^* + (1-\alpha)\Delta}{Y} > \frac{c_b^2}{c_a^2}$). The associated implied probabilities of winning in the event of War (but when Settlement is the outcome) are:

$$
\begin{aligned}
p_a^s &= \frac{c_b}{c_b + c_a} \\
p_b^s &= 1 - p_a^s = \frac{c_a}{c_b + c_a}
\end{aligned}
\tag{5}
$$

Unambiguously, $p_a^s > p_a^w$ and $p_b^s = 1 - p_a^s < 1 - p_a^w = p_b^w$, and the probability of winning for the rebels when War is expected (and is an equilibrium) is higher than when Settlement is expected (and is the equilibrium). Given these inequalities, and following the comparisons under which we derived (10), War cannot occur and Settlement can occur (provided there is rebellion) when $2F \geq (1 - p_a^w)(S_b^* + (1-\alpha)\Delta) > (1 - p_a^s)(S_b^* + (1-\alpha)\Delta)$, whereas War becomes possible when $(1 - p_a^w)(S_b^* + (1-\alpha)\Delta) > 2F > (1 - p_a^s)(S_b^* + (1-\alpha)\Delta)$ or $(1 - p_a^w)(S_b^* + (1-\alpha)\Delta) > (1 - p_a^s)(S_b^* + (1-\alpha)\Delta) \geq 2F$ hold.

Classification of Equilibria

For rebellion to occur, it is necessary that either V_b^w or V_b^s is greater than the status quo payoff $U_b^q = (1 - \gamma)Y - (1-\alpha)\Delta$. Because $p_a^s > p_a^w$ it can be shown that $V_b^w > V_b^s$ always holds. Thus if it were to pay to rebel and settle (i.e., if $V_b^s > U_b^q$), then it would also pay to rebel and engage in War provided that (8) satisfied.

There are three types of equilibria that can occur in our model: One in which B acquiesces to the *status quo;* another in which B *rebels* that is followed by *Settlement;* and the third

one in which *rebellion* by B is followed by *War*. Which equilibrium occurs depends, first, on the relationship between V_b^w, V_b^s, and U_b^q and, second, on whether inequalities such (8) are satisfied or not. Let $D^i \equiv (1 - p_a^i)(S_b^* + (1 - \alpha)\Delta)$, where $i = w, s$ and is the right-hand sides of (6) and (8) under War and Settlement, and it provides with a short-hand in characterizing the conditions under which each of the three types of equilibrium may exist in the next Proposition. (Note that, because $p_a^s > p_a^w$, we always have $D^w > D^s$.)

Lemma: *(i) If $U_b^q > V_b^w(> V_b^s)$, regardless of the relationship between $2F$ to the $D^i s$, there is a unique equilibrium that involves B choosing the status quo. (ii) If $V_b^w > U_b^q$ and $D^w > D^s > 2F$, then rebellion followed by War is a possible equilibrium but rebellion followed by Settlement is not possible as an equilibrium; (iii) If $(V_b^w >)V_b^s > U_b^q$ and $2F > D^w(> D^s)$ then rebellion followed by Settlement is a possible equilibrium but rebellion followed by War is not possible as an equilibrium; (iv) If $V_b^w > V_b^s > U_b^q$ and $D^w > 2F > D^s$, then both rebellion with War and rebellion with Settlement are possible equilibria.[7]*

Part (i) of this Lemma is obvious. For part (ii), first note that for B to choose rebellion with War we must have $V_b^w > U_b^q$. Second, $D^s > 2F$ implies that, under the military effort choices m_a^s and m_b^s, there is no possible division of the total surplus that could avoid War and, therefore, rebellion followed by Settlement cannot be an equlibrium. Third, $D^w > 2F$, also implies that, under the military effort choices m_a^w and m_b^w, Settlement is not possible but rebellion followed by War is. Thus, under the condition of part (ii) only rebellion followed by War is possible as an equilibrium. Parts (iii) and (iv) of the Lemma follow the same logic as that of part (ii).

The Model When the Rebels Seek to Overthrow the Government

This part of the appendix develops the model in which the goal of rebellion is to overthrow of the central government. The interaction is between the central government of the country that is associated with a particular group or class A and a group or class, denoted by B,

---

[7]When the inequalities in this Proposition hold as equalities, then there is the possibility of multiple equilibria as well. We do not explicitly mention these cases for brevity of exposition.

that may seek to violently overthrow the government or seek concessions and settle under the threat of a violent overthrow. The sole difference from the secession model is that when the government loses in the event of war, it incurs a cost of $\alpha\Delta$. To avoid pathological cases, we maintain that contestable income Y is larger than the alienation cost Δ and the expected subsidy S_b^*. The fact that the government now incurs losses $a\Delta$ when B wins implies that, under majority rule ($a > 1/2$), the government has more to lose from war than the rebels have to gain from war. In that case, the greater the distance Δ between government and rebels, the greater the social losses from war and the greater is the incentive to avoid war (and both sides will have greater incentives to settle). In the presence of a large enough external intervention that provides the rebels with subsidies S_b^* war can still occur. If the government were to lose foreign subsidies in the event of war, then that would be an additional reason for the government to avoid war. If there is minority government ($a < 1/2$) then greater distance has the usual effect we found in the case of the secession model, increasing the expected social surplus from war, making war more likely to occur.

As with the secession model, the main external party that we consider is a potential sponsor of B, denoted by B^*, who might provide support for a rebellion and possible guarantees of economic support following a government takeover by B. We can also consider the effects of a potential external sponsor for the government, denoted by A^*, on the likelihood of war and rebellion as well.

The first decision that the leaders of group B make is whether to choose the *status quo* or prepare for *rebellion*. Under the *status quo* the payoffs of the two groups are as they are under the autonomy model:

$$
\begin{aligned}
U_a^q &= \gamma Y \\
U_b^q &= (1-\gamma)Y - (1-\alpha)\Delta
\end{aligned}
\tag{6}
$$

B can prepare for a rebellion that can have three possible outcomes. In case war takes place, two possible outcomes are victory and defeat, with the probability of each outcome depending on the relative military capabilities of the insurgents and the central government of the country. Victory for the rebels would lead to government takeover whereas defeat would lead to continued rule under the central government as well as loss of material income $(1 - \gamma)Y$. The third possible outcome after rebellion is for the two parties to negotiate for a settlement that takes place under the threat of war. In that case the rebels would still remain under the central government's rule but might receive a high enough share of material income so as to prevent War.

As before, letting m_a and m_b denote levels of military efforts incurred by the two sides, we suppose that the probabilities of the Government and the rebels winning in the event of War are:

$$p_a = \frac{m_a}{m_b + m_a}, \ p_b = 1 - p_a = \frac{m_b}{m_b + m_a} \tag{7}$$

The sequence of moves in case B chooses the path of *rebellion* are as follows:

1. A and B choose simultaneously m_a and m_b military efforts.

2. A makes a Settlement offer to B which consists of a division of Y.

3. B either accepts or rejects the offer made by A. If they accept, the payoffs of A and B are in accordance with the offer. If they reject the offer, War takes place with the probabilities of winning described above.

In case of War, the expected payoffs of the two sides are:

$$
\begin{aligned}
U_a^w &= p_a Y + (1 - p_a)(-\alpha\Delta) - F - c_a m_a \\
U_b^w &= p_a(-(1 - \alpha)\Delta) + (1 - p_a)(Y + S_b^*) - F - c_b m_b
\end{aligned}
\tag{8}
$$

Again, the difference from the War payoffs under the autonomy model is that the Government receives a negative payoff $-\alpha\Delta$ when they lose a War.

Starting with last stage 3 of the sequence of moves described above, B will have already paid its military expenditures (that is, $c_b m_b$ will have already been sunk) and therefore it will accept any share $1 - \eta$ of Y if and only if:

$$(1 - \eta)Y - (1 - \alpha)\Delta \geq U_b^w + c_b m_b \tag{9}$$

Otherwise, War will take place. Then, in stage 2 A would only make an offer that satisfies (25) as an equality and the resulting Settlement payoff for A is at least as great as $U_a^w + c_a m_a$. That is, denoting by η^* the η that satisfies (25) as an equality, A will make an offer that B will accept only if

$$\eta^* Y \geq U_a^w + c_a m_a \tag{10}$$

But adding the two equations above, Settlement is thus possible only if

$$2F \geq (1 - p_a)(S_b^* + (1 - 2\alpha)\Delta) \tag{11}$$

Otherwise, War will occur. Since the costs of War are positive ($F > 0$), for War to occur the right-hand-side of would have to be positive and large enough. Note that the right-hand-side of (27) differs from that in (6) by having an additional negative term $-\alpha\Delta$, so that the whole term $(1 - 2\alpha)\Delta$ is negative when the government represents the majority ($\alpha > 1/2$). This implies that with majority government it is more difficult to have War when group B seeks to take over the government than when it seeks autonomy or secession. A minority government ($\alpha < 1/2$), however, is more vulnerable to the outbreak of War and a higher expected subsidy S_b^* to the rebels could tip the rebellion into war.

We next turn to determining these probabilties by considering the equilibrium choices of military resources under War with the payoff functions under war. Taking (2) into account, the equilibrium choices, denoted by m_a^w and m_b^w, are determined by simultaneously solving

the following two derivatives of (24):

$$\frac{\partial U_a^w(m_a^w, m_b^w)}{\partial m_a} = \frac{m_b^w}{(m_a^w + m_b^w)^2}(Y + \alpha\Delta) - c_a = 0$$

$$\frac{\partial U_b^w(m_a^w, m_b^w)}{\partial m_b} = \frac{m_a^w}{(m_a^w + m_b^w)^2}(Y + S_b^* + (1 - \alpha)\Delta) - c_b = 0 \qquad (12)$$

Note how these first-order conditions indicate that the "prize" of the war-contest for A is the disputed material payoff Y plus the alienation cost in the case of a loss, whereas for B the prize is $Y + S_b^* + (1 - \alpha)\Delta$, because A, by winning, does not only gain Y but also gains the expected subsidy from its sponsor (S_b^*) and avoids the alienation cost for its group. This is a source of asymmetry in the War contest, in addition to the other asymmetries of the model that can be expected to have an effect on the choices of military resources. Solving for m_a^w and m_b^w we obtain:

$$m_a^w = \frac{c_b(Y + S_b^* + (1 - \alpha)\Delta)(Y + \alpha\Delta)^2}{[c_b(Y + \alpha\Delta) + (1 - \alpha)c_a(Y + S_b^* + (1 - \alpha)\Delta)]^2}$$

$$m_b^w = \frac{c_a(Y + \alpha\Delta)(Y + S_b^* + (1 - \alpha)\Delta)^2}{[c_b(Y + \alpha\Delta) + (1 - \alpha)c_a(Y + S_b^* + (1 - \alpha)\Delta)]^2} \qquad (13)$$

It can be shown that the military effort of A is (i) increasing in A's "prize" $Y + \alpha\Delta$; (ii) decreasing in $B's$ prize $Y + S_b^* + (1 - \alpha)\Delta$ (iii) increasing in the opponent's marginal cost c_b; (iii) decreasing in own marginal cost c_b; (iv) increasing in own size α and decreasing in the opponent's size $1 - \alpha$. The symmetric properties hold for the military efforts chosen by B. By substituting (29) into (22) we obtain the probabilities of winning under War:

$$p_a^w = \frac{c_b(Y + \alpha\Delta)}{c_b(Y + \alpha\Delta) + c_a(Y + S_b^* + (1 - \alpha)\Delta)} \quad \text{and}$$

$$p_b^w = 1 - p_a^w = \frac{c_a(Y + S_b^* + (1 - \alpha)\Delta)}{c_b(Y + \alpha\Delta) + c_a(Y + S_b^* + (1 - \alpha)\Delta)} \qquad (14)$$

Each side's probability of winning (i) positively on own "prize" and negatively on the opponent's one; (iii) positively on own size and negative on opponent's size; and (iii) negatively

16

on own marginal cost of military resources and positively on that of one's opponent. The higher "prize" for B (due to the subsidy S_b^* and avoiding the distance cost of Δ in case of a win) is thus a force counteracting the disadvantage that come from a lower size and, presumably, higher marginal cost c_b relative to the govenrment's.

By substituting (30) into (27), we obtain that War would ensue only if the following inequality were to be satisfied:

$$2F < \frac{c_a(Y + S_b^* + (1-\alpha)\Delta)}{c_b(Y + \alpha\Delta) + c_a(Y + S_b^* + (1-\alpha)\Delta)}(S_b^* + (1-2\alpha)\Delta) \tag{15}$$

This inequality includes the combinations of solely exogenous parameter values for which War could occur. We summarize its implications as a Proposition.

Proposition A1: *Conditional on B choosing to rebel, War can occur only if inequality (31) were to hold. Then War is more likely, (i) the lower is the size of the group A supporting the government and the larger is the size of group B (i.e., the smaller α is) (ii) the higher is the external subsidy S_b^*;(iii) the lower is the cost of War F; (iv) the higher is group A's marginal cost parameter c_a ; (v) the lower is the cost parameter c_b of B (and the more this parameter is lowered by subsidies from B^*); (vi) when $a < 1/2$, the higher is the distance Δ.*

Proof: For brevity denote the right-hand-side of (31) by D. Then, the comparative static results in the Proposition follow by differentiating D with respect to the variables in question. Because parts (ii) to (iv) are relatively straightforward, we derive below parts (i) and (vi) only.

(i) $\frac{\partial D}{\partial \alpha} = \{\dfrac{-c_a\Delta}{c_b(Y+\alpha\Delta)+c_a(Y+S_b^*+(1-\alpha)\Delta)} - \dfrac{c_a(Y+S_b^*+(1-\alpha)\Delta)(c_b\Delta-c_a\Delta)}{[c_b(Y+\alpha\Delta)+c_a(Y+S_b^*+(1-\alpha)\Delta)]^2}\}(S_b^*+(1-2\alpha)\Delta)$

$\qquad - 2\Delta\dfrac{c_a(Y+S_b^*+(1-\alpha)\Delta)}{c_b(Y+\alpha\Delta)+c_a(Y+S_b^*+(1-\alpha)\Delta)}$

$= -\dfrac{c_a\Delta[c_b(Y+\alpha\Delta)+c_a(Y+S_b^*+(1-\alpha)\Delta)]+c_a(Y+S_b^*+(1-\alpha)\Delta)(c_b\Delta-c_a\Delta)}{[c_b(Y+\alpha\Delta)+c_a(Y+S_b^*+(1-\alpha)\Delta)]^2}(S_b^*+(1-2\alpha)\Delta)$

$\qquad - 2\Delta\dfrac{c_a(Y+S_b^*+(1-\alpha)\Delta)}{c_b(Y+\alpha\Delta)+c_a(Y+S_b^*+(1-\alpha)\Delta)}$

$= -\dfrac{c_a\Delta c_b(2Y+S_b^*+\Delta)}{[c_b(Y+\alpha\Delta)+c_a(Y+S_b^*+(1-\alpha)\Delta)]^2}(S_b^*+(1-2\alpha)\Delta) - 2\Delta\dfrac{c_a(Y+S_b^*+(1-\alpha)\Delta)}{c_b(Y+\alpha\Delta)+c_a(Y+S_b^*+(1-\alpha)\Delta)}$

$= -\dfrac{c_a\Delta c_b(2Y+S_b^*+\Delta)}{[c_b(Y+\alpha\Delta)+c_a(Y+S_b^*+(1-\alpha)\Delta)]^2}(S_b^*+(1-2\alpha)\Delta) - 2\Delta\dfrac{c_a(Y+S_b^*+(1-\alpha)\Delta)}{c_b(Y+\alpha\Delta)+c_a(Y+S_b^*+(1-\alpha)\Delta)}$

$= -\dfrac{c_a\Delta c_b(2Y+S_b^*+\Delta)(S_b^*+(1-2\alpha)\Delta)+2\Delta c_a(Y+S_b^*+(1-\alpha)\Delta)[c_b(Y+\alpha\Delta)+c_a(Y+S_b^*+(1-\alpha)\Delta)]}{[c_b(Y+\alpha\Delta)+c_a(Y+S_b^*+(1-\alpha)\Delta)]^2}$

$= -\dfrac{c_a\Delta c_b(2Y+S_b^*+\Delta)(S_b^*+(1-2\alpha)\Delta)+2\Delta c_a(Y+S_b^*+(1-\alpha)\Delta)c_b(Y+\alpha\Delta)+2\Delta c_a(Y+S_b^*+(1-\alpha)\Delta)c_a(Y+S_b^*+(1-\alpha)\Delta)}{[c_b(Y+\alpha\Delta)+c_a(Y+S_b^*+(1-\alpha)\Delta)]^2}$

$= -\dfrac{c_a\Delta c_b[(2Y+S_b^*+\Delta)(S_b^*+(1-\alpha)\Delta-\alpha\Delta)+2(Y+S_b^*+(1-\alpha)\Delta)(Y+\alpha\Delta)]+2\Delta c_a(Y+S_b^*+(1-\alpha)\Delta)c_a(Y+S_b^*+(1-\alpha)\Delta)}{[c_b(Y+\alpha\Delta)+c_a(Y+S_b^*+(1-\alpha)\Delta)]^2}$

$= -\dfrac{c_a\Delta c_b\{(2Y+S_b^*+\Delta)(S_b^*+(1-\alpha)\Delta)-\alpha\Delta[(2Y+S_b^*+\Delta)-2(Y+S_b^*+(1-\alpha)\Delta)]+2(Y+S_b^*+(1-\alpha)\Delta)Y\}}{[c_b(Y+\alpha\Delta)+c_a(Y+S_b^*+(1-\alpha)\Delta)]^2}$

$\qquad - \dfrac{2\Delta c_a(Y+S_b^*+(1-\alpha)\Delta)c_a(Y+S_b^*+(1-\alpha)\Delta)}{[c_b(Y+\alpha\Delta)+c_a(Y+S_b^*+(1-\alpha)\Delta)]^2}$

$= -\dfrac{c_a\Delta c_b[(2Y+S_b^*+\Delta)(S_b^*+(1-\alpha)\Delta)-\alpha\Delta[-S_b^*-(1-\alpha)\Delta+\alpha\Delta]+2(Y+S_b^*+(1-\alpha)\Delta)Y]+2\Delta c_a(Y+S_b^*+(1-\alpha)\Delta)c_a(Y+S_b^*+(1-\alpha)\Delta)}{[c_b(Y+\alpha\Delta)+c_a(Y+S_b^*+(1-\alpha)\Delta)]^2}$

$= -\dfrac{c_a\Delta c_b[(2Y+S_b^*+\Delta)(S_b^*+(1-\alpha)\Delta)+\alpha\Delta[S_b^*+(1-\alpha)\Delta]-\alpha^2\Delta^2+2(Y+S_b^*+(1-\alpha)\Delta)Y]+2\Delta c_a(Y+S_b^*+(1-\alpha)\Delta)c_a(Y+S_b^*+(1-\alpha)\Delta)}{[c_b(Y+\alpha\Delta)+c_a(Y+S_b^*+(1-\alpha)\Delta)]^2}$

Note that sole negative term in the numerator is $-\alpha^2\Delta^2$. Since $Y > \Delta$ and the term immediately next to $-\alpha^2\Delta^2$, $2(Y+S_b^*+(1-\alpha)\Delta)Y > 2Y^2 > \alpha^2\Delta^2$, the numerator of the expression is always positive. Given that the denominator is positive and the negative sign in front of the fraction, we must then have $\frac{\partial D}{\partial\alpha} < 0$, as stated in the Proposition.

18

$(vi)\ \dfrac{\partial D}{\partial \Delta} = \dfrac{c_a(Y + S_b^* + (1-\alpha)\Delta)}{c_b(Y + \alpha\Delta) + c_a(Y + S_b^* + (1-\alpha)\Delta)}(1 - 2\alpha) + \left\{\dfrac{c_a(1-\alpha)}{c_b(Y + \alpha\Delta) + c_a(Y + S_b^* + (1-\alpha)\Delta)}\right.$

$\left. - \dfrac{c_a(Y + S_b^* + (1-\alpha)\Delta)(c_a(1-\alpha) + c_b\alpha)}{[c_b(Y + \alpha\Delta) + c_a(Y + S_b^* + (1-\alpha)\Delta)]^2}\right\}(S_b^* + (1-2\alpha)\Delta)$

$= \dfrac{c_a(Y + S_b^* + (1-\alpha)\Delta)}{c_b(Y + \alpha\Delta) + c_a(Y + S_b^* + (1-\alpha)\Delta)}(1 - 2\alpha) + \left\{\dfrac{c_a(1-\alpha)c_b(Y + \alpha\Delta) - c_a(Y + S_b^* + (1-\alpha)\Delta)c_b\alpha}{[c_b(Y + \alpha\Delta) + c_a(Y + S_b^* + (1-\alpha)\Delta)]^2}\right\}$

$\text{x }(S_b^* + (1-2\alpha)\Delta)$

$= \dfrac{c_a(Y + S_b^* + (1-\alpha)\Delta)}{c_b(Y + \alpha\Delta) + c_a(Y + S_b^* + (1-\alpha)\Delta)}(1 - 2\alpha) + \left\{\dfrac{c_a c_b[(1-\alpha)Y + (1-\alpha)\alpha\Delta - \alpha Y - \alpha S_b^* - \alpha(1-\alpha)\Delta]}{[c_b(Y + \alpha\Delta) + c_a(Y + S_b^* + (1-\alpha)\Delta)]^2}\right\}$

$\text{x }(S_b^* + (1-2\alpha)\Delta)$

$= \dfrac{c_a(Y + S_b^* + (1-\alpha)\Delta)}{c_b(Y + \alpha\Delta) + c_a(Y + S_b^* + (1-\alpha)\Delta)}(1 - 2\alpha) + \left\{\dfrac{c_a c_b((1-2\alpha)Y - \alpha S_b^*)}{[c_b(Y + \alpha\Delta) + c_a(Y + S_b^* + (1-\alpha)\Delta)]^2}\right\}(S_b^* + (1-2\alpha)\Delta)$

$= \dfrac{c_a c_b(Y + S_b^* + (1-\alpha)\Delta)(Y + \alpha\Delta)(1-2\alpha) + c_a c_b((1-2\alpha)Y - \alpha S_b^*)(S_b^* + (1-2\alpha)\Delta) + c_a^2(Y + S_b^* + (1-\alpha)\Delta)^2(1-2\alpha)}{[c_b(Y + \alpha\Delta) + c_a(Y + S_b^* + (1-\alpha)\Delta)]^2}$

$= \dfrac{c_a c_b[(Y + S_b^* + (1-\alpha)\Delta)(Y + \alpha\Delta) + ((1-2\alpha)Y - \alpha S_b^*)\Delta](1-2\alpha) + c_a c_b((1-2\alpha)Y - \alpha S_b^*)S_b^* + c_a^2(Y + S_b^* + (1-\alpha)\Delta)^2(1-2\alpha)}{[c_b(Y + \alpha\Delta) + c_a(Y + S_b^* + (1-\alpha)\Delta)]^2}$

$= \dfrac{c_a c_b[(Y + S_b^* + (1-\alpha)\Delta)Y + \alpha Y\Delta + \alpha S_b^*\Delta + (1-\alpha)\alpha\Delta^2 + (1-2\alpha)Y\Delta - \alpha S_b^*\Delta](1-2\alpha) + c_a c_b((1-2\alpha)Y - \alpha S_b^*)S_b^* + c_a^2(Y + S_b^* + (1-\alpha)\Delta)^2(1-2\alpha)}{[c_b(Y + \alpha\Delta) + c_a(Y + S_b^* + (1-\alpha)\Delta)]^2}$

$= \dfrac{c_a c_b[(Y + S_b^* + (1-\alpha)\Delta)Y + \alpha Y\Delta + (1-\alpha)\alpha\Delta^2 + (1-2\alpha)Y\Delta](1-2\alpha) + c_a c_b((1-2\alpha)Y - \alpha S_b^*)S_b^* + c_a^2(Y + S_b^* + (1-\alpha)\Delta)^2(1-2\alpha)}{[c_b(Y + \alpha\Delta) + c_a(Y + S_b^* + (1-\alpha)\Delta)]^2}$

For $\alpha < 1/2$, all the terms in the numerator except for $-\alpha S_b^*$ (multiplied by $c_a c_b S_b^*$). Since $Y > S_b^*$, we can easily find other positive terms that overwhelm that negative term. Given that the denominator is positive, then $\frac{\partial D}{\partial \Delta} > 0$ for $a < 1/2$ as stated in the Proposition.

Whereas the effect of the relative size of the two groups (α) is the same as when the rebels seek autonomy or secession, in this case the effect of the distance cost Δ is assured to hold when the government is a minority one ($\alpha < 1/2$). When the government is a majority one ($\alpha > 1/2$), the effect of Δ is ambiguous because an increase in Δ makes War ever less attractive to the government because it loses more under War.

We next consider the outcome that involves rebellion followed by Settlement. Under such an outcome, in stage 2 the Government makes an offer of η^* (η satisfies (25) as an equality) and that offer is accepted provided (27) is satisfied under the ensuing probability of winning. It can be shown that the payoff functions under such an outcome are the following:

$$U_a^s \;=\; p_a(Y + S_b^* + (1-\alpha)\Delta) - (S_b^* + (1-\alpha)\Delta) + F - c_a m_a$$

$$U_b^s \;=\; p_a(-(1-\alpha)\Delta) + (1-p_a)(Y + S_b^*) - F - c_b m_b \qquad (16)$$

It turns out that these two payoff functions under Settlement are the same as those under Settlement in the Autonomy model of the main text (same as in equation (10). This is true because the Government is assumed to have all the bargaining power in bargaining over Settlement which implies that the loss of $-\alpha\Delta$ if the government were to lose in the event of War (the sole difference in the two models) does not present a disadvantage in bargaining.

Therefore, the equilibrium under rebellion followed by Settlement is identical to that in the Autonomy model. Then, the equilibrium payoffs for the rebels under rebellion followed by War or by Settlement are also described by those in, respectively, (9) and (11). Consequently, inequality (13) is the one that would determine whether rebellion occurs and the results of Proposition 3 follow for the case of the rebels seeking the overthrow the government and not just, as in the main text, of the rebels seeking autonomy or secession.

Deriving military expenditures under endogenous identities and in the case of War

The payoff functions under War in (3) are modified as follows:

$$U_a^{w'} \;=\; p_a Y + (1-p_a)0 - F - c_a m_a$$

$$U_b^{w'} \;=\; p_a[-(1-\alpha)(\Delta' + \delta(m_a + m_b)] + (1-p_a)(Y + S_b^*) - F - c_b m_b$$

Using (2), the first-order conditions for an equilibrium are then the following:

$$\frac{\partial U_a^{w'}(m_a^{w'}, m_b^{w'})}{\partial m_a} = \frac{m_b^{w'}}{(m_a^{w'} + m_b^{w'})^2} Y - c_a = 0$$

$$\frac{\partial U_b^{w'}(m_a^{w'}, m_b^{w'})}{\partial m_b} = \frac{m_a^{w'}}{(m_a^{w'} + m_b^{w'})^2}(Y + S_b^* + (1-\alpha)\Delta') + \frac{m_a^{w'}}{(m_a^{w'} + m_b^{w'})^2}(1-\alpha)\delta(m_a^{w'} + m_b^{w'})$$

$$- \frac{m_a^{w'}}{(m_a^{w'} + m_b^{w'})}(1-\alpha)\delta - c_b = 0$$

Note that the second and third terms of $\frac{\partial U_b^{w'}(m_a^{w'}, m_b^{w'})}{\partial m_b}$ cancel each other out, eventually yielding the same terms as in (7) except that the originally exogenous Δ is replaced by the constant Δ'. This implies that the military expenditures are similar to (8) with the original Δ replaced by the constant Δ' or

$$m_a^{w'} = \frac{c_b(Y + S_b^* + (1-\alpha)\Delta')Y^2}{[c_b Y + c_a(Y + S_b^* + (1-\alpha)\Delta')]^2}$$

$$m_b^{w'} = \frac{c_a Y(Y + S_b^* + (1-\alpha)\Delta')^2}{[c_b Y + c_a(Y + S_b^* + (1-\alpha)\Delta')]^2}$$

Under the expectation of Settlement the payoff functions of the two parties are as in (10) except $\Delta = \Delta' + \delta(m_a + m_b)$. Following the same method as for the case of War, we can show that the equilibrium choices of military expenditures are the following (from which we can derive the endogenous distance in (16) as a function of the exogenous parameters):

$$m_a^{s'} = \frac{c_b(Y + S_b^* + (1-\alpha)\Delta')}{(c_b + c_a)^2}$$

$$m_b^{s'} = \frac{c_a(Y + S_b^* + (1-\alpha)\Delta')}{(c_b + c_a)^2} \tag{17}$$

21

References

Anderson, Noel Thomas. 2016. *Competitive intervention and its consequences for civil wars.* PhD Dissertation, MIT.

Cederman, Lars-Erik, Andreas Wimmer and Brian Min. 2010. "Why Do Ethnic Groups Rebel? New Data and Analysis." *World Politics* 62(1):87–119.

Cunningham, David E. 2016. "Preventing Civil War: How the Potential for International Intervention Can Deter Conflict Onset." *World Politics* 68(2):307–340.

Montalvo, Jose G. and Marta Reynal-Querol. 2005. "Ethnic Polarization, Potential Conflict, and Civil Wars." *American Economic Review* 95:796–816.

Schulhofer-Wohl, Jonah. forthcoming. *Quagmire in Civil War.* Cambridge University.

Wimmer, Andreas, Lars-Erik Cederman and Brian Min. 2009. "Ethnic Politics and Armed Conflict: A Configurational Analysis of a New Global Data Set." *American Sociological Review* 74:316–337.

Table 1: Core Results of Montalvo & Reynal-Querol (2005) and Extensions to Assess the Effect of the Cold War

	1. PRIOcw	2. PRIOcw	3. PRIOcw	4. PRIOcw	5. PRIOcw (to 2015)
Polarization	2.29*	2.33*	1.20	0.81	1.42
	[1.06]	[1.03]	[1.17]	[1.27]	[1.10]
Fractionalization	0.18	0.12	0.16	0.90	0.06
	[0.92]	[0.92]	[0.93]	[1.14]	[0.98]
Cold War		-0.45+	-1.48**	-1.16*	-0.74
		[0.25]	[0.50]	[0.58]	[0.59]
CW*P			1.74*	2.26*	1.91*
			[0.71]	[0.89]	[0.88]
CW*F				-1.11	-0.75
				[1.00]	[0.88]
Income	-0.42+	-0.43+	-0.44+	-0.43+	-0.62**
(LGDPC)	[0.23]	[0.24]	[0.24]	[0.24]	[0.20]
Population	0.40*	0.38*	0.38*	0.38*	0.4**
(LPOP)	[0.18]	[0.18]	[0.18]	[0.18]	[0.14]
Resource dependence	-1.07	-1.13	-1.15	-1.18	0.88*
(PRIMEXP)	[1.87]	[1.85]	[1.86]	[1.88]	[0.44]
Terrain	-0.002	-0.002	-0.002	-0.002	-0.004
(MOUNTAINS)	[0.009]	[0.009]	[0.009]	[0.009]	[0.008]
Contiguity	0.29	0.37	0.39	0.39	0.76
(NONCONT)	[0.60]	[0.61]	[0.61]	[0.61]	[0.50]
Regime type	-0.03	-0.05	-0.04	-0.02	-0.02
(DEMOCRACY)	[0.37]	[0.37]	[0.37]	[0.37]	[0.02]
Constant	-6.30*	-5.58+	-4.92	-5.12	-1.78
	[3.14]	[3.21]	[3.21]	[3.22]	[1.86]
Observations	846	846	846	846	1225
Pseudo R-squared	0.1220	0.1274	0.1312	0.1330	0.1538

Robust standard errors in brackets.
NOTE: Column 5 uses different data: wars are coded until 2015 and different sources of data are used for several explanatory variables. See supplement for details. In column 5, resource dependence is measured by a binary variable identifying countries with oil exports greater than 1/3 of GDP. Regime type of measured using the Polity index with interpolated missing values during periods of instability.

+ significant at 10%; * significant at 5%; ** significant at 1%

Table 2: Effects of Intervention on Civil War Onset

	1. All wars	2. Ethnic Wars	3. All Wars	4. Ethnic Wars	5. All Wars	6. Ethnic Wars
Pro-government intervention	-0.233 (0.32)	-1.347** (0.56)	-0.724** (0.37)	-1.099** (0.55)	-0.517 (0.33)	-1.604** (0.63)
Pro-rebel intervention	1.100*** (0.37)	1.536*** (0.5)	1.023** (0.43)	1.401** (0.59)	0.935** (0.39)	1.540*** (0.52)
Year trend	-0.0156** (0.01)	-0.0016 (0.01)	-0.0318*** (0.01)	-0.0187** (0.01)	-0.0149** (0.01)	-0.00528 (0.01)
Per capita income					-0.195 (0.12)	-0.144 (0.12)
Population size					-0.0686 (0.1)	0.13 (0.09)
Oil dependence					0.391* (0.22)	0.370* (0.21)
Elevation difference					-0.028 (0.25)	0.014 (0.28)
Ethnic Fractionalization					-0.397 (0.54)	0.14 (0.41)
Religious Fractional.					1.344** (0.65)	2.046*** (0.65)
Fixed Effects	No	No	Yes	Yes	No	No
N	1353	1353	1261	978	1338	1338

Standard errors in parentheses; constant omitted
* p<.10, ** p<.05, *** p<.01