

## Why Democracies Fight Longer Ethno-Territorial Wars

The civil war duration literature sometimes finds that authoritarianism leads to shorter wars, and sometimes that regime type has no significant impact. Theoretically, the two most commonly emphasized regime-type mechanisms propose that authoritarian regimes are likely to fight wars more effectively, ending wars earlier by military victory; and, by contrast, that authoritarian regimes are likely to be more tolerant of war costs, and thus less likely to negotiate ends to wars. We also investigate a third mechanism—willingness to make substantive concessions to rebels—in which more authoritarian regimes' lesser accountability makes war-ending negotiations more likely. For theoretical and empirical reasons, we limit our universe of cases to the ethno-territorial type of civil war and control for the effect of leadership preferences. For empirical reasons, we present variant results in which cases of intra-war regime change are right-censored. Our results show that highly authoritarian regimes tend to have shorter wars, and democracies longer ones; and that the concessions-constraint mechanism is the strongest, and the war-costs-tolerance mechanism the weakest.

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## Introduction

How does regime type affect duration of civil wars? The civil war duration literature has mixed findings on the impact of regime type—the two most common being that authoritarian regimes have shorter wars (e.g., Buhaug et al. 2009; Cunningham et al. 2009; Thyne 2017) and that there is no significant relationship between regime type and war duration (e.g., Balch-Lindsay et al. 2008; Collier et al. 2004; DeRouen and Sobek 2004; Lyall 2010; Prorok 2018).

Such contradictory results seem rooted largely in different model specifications, which in turn reflect the literature's multiple causal mechanisms associating regime type with civil war duration. In the survey below, we highlight how each mechanism is most strongly associated with a particular type of war termination—either military victory or some form of negotiated ending. We then discuss how the expected impact of each mechanism might vary across civil war types—particularly the ethno-territorial type that is the focus of this paper. Next, we describe how the proposed regime type mechanisms might be correlated with variation in state and rebel leadership preferences. Ideally, measures of such preferences should be included in model specifications, but are only available for ethno-territorial civil wars. Last, we discuss how the typical strategy of how to include regime type in statistical models—lagged one year before war onset to avoid reverse causation—may tend to generate more inconclusive results.

### *Theories of How Regime Type May Affect Civil War Duration*

Probably the most well-known theory predicting that authoritarian regimes have shorter wars expects authoritarians to fight rebels with greater resolve, ruthlessness, and effectiveness—particularly via more effective targeting of rebels' civilian supporters. Statiev (2010, 315-26) argues that authoritarian regimes are more likely to be willing to target civilian supporters; and that a significant share of such regimes are likely to have a coherent plan and the organizational

means to do so selectively and effectively.<sup>1</sup> Merom (2003, 15) similarly argues that democracies are less willing to “escalate the level of violence and brutality to that which can secure victory.”<sup>2</sup> Classical Democratic Peace Theory predicts that democracies should have stronger self-imposed normative constraints against targeting civilians (e.g., Maoz and Russett 1993; Finnemore 1996; and see again Merom 2003, 15). This should apply to civil wars, if anything, even more strongly than to international wars. Thus, authoritarians should be more likely to win military victories.

The dominant theory predicting that democracies have shorter wars is based on democracies’ expected lower tolerance for war costs. Mueller’s (1971) influential early statement has been followed by many refinements, which discuss how various factors may condition cost aversion (e.g., Britton and Jentleson 1998; Gelpi et al. 2005; Jentleson 1992; and again Merom 2003). By contrast, authoritarian regimes are commonly characterized as caring less about war costs (e.g., Statiev 2010, 314, 316). More cost-averse democracies should be more likely to make negotiated deals to end wars.

We also investigate a third mechanism, in which, in contrast to the second, war-cost-tolerance mechanism, authoritarian regimes’ lesser institutional accountability more commonly allows substantive concessions that facilitate negotiated ends to wars. The discussions by Britton and Jentleson (1998), Gelpi et al. (2005), and Jentleson (1992) imply that war costs would be much more acceptable to the mass public if the war goals include protecting vital national interests such as territorial sovereignty.<sup>3</sup> Authoritarian regimes do not face such regularized, effective institutional constraints on making concessions.

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<sup>1</sup> Although Arreguín-Toft (2005) focuses primarily on optimal strategy choices in the conflict between the state and rebels, he periodically discusses how democracies may face political constraints that limit optimization of strategy.

<sup>2</sup> See also Valentino et al. (2004).

<sup>3</sup> Jentleson (1992, 49) explains that “variations in public support are best explained by differences in principal policy objectives.” Mack (1975) famously argued that metropolitan powers cared less about territories not considered to be parts of core homelands, and thus more readily made concessions to end colonial wars.

Finally, there is a debate about how regime type would be expected to influence civil war duration indirectly via its impact on expected turnover of leaders. Prorok (2018) argues that leaders who start wars should be less likely to end wars when wars go poorly, because such leaders in such situations are more likely to face punishment if the war ends. Logically, the mechanism would apply not only to leaders who start wars, but to all long-lasting leaders. Hence, other things equal, faster leadership turnover ought to lead to shorter wars. At least on the state side of civil wars, democracies have the fastest rate of leadership turnover, and highly authoritarianism regimes the slowest rate. In contrast, Thyne (2012) argues that longer-tenured leaders should have greater credibility, thus making war-ending agreements more likely. Thus, authoritarianisms, which tend to have longer-tenured leaders, should have shorter wars. Uzonyi and Wells (2016) make an argument based, not on institutional turnover of leaders, but on ideological turnover. If a war is ongoing, incumbent leaders are more likely to have preferences that make agreements more difficult to reach. Hence, authoritarianisms, which are most likely to keep such leaders in power, are expected to have the longest wars.

The various mechanisms postulate effects of regime type on war duration via either victory- or negotiation-based modes of termination. This implies that additional relevant evidence may be gleaned by supplementing general estimates of their impact of war duration with more targeted estimated of their impact on war duration via the two more specific modes of termination. Below, in addition to estimating general impacts on duration with Cox proportional hazard models, we also estimate more specific impacts on military victory and negotiated endings via competing risks models.

### *Expectations May Vary for Different Civil War Types*

Theoretically, following Sambanis (2001), we would not necessarily expect the main proposed causal mechanisms to have equal impacts across different civil war types. Consider the ethno-territorial civil war type. Here state leaders associated with one or more dominant ethnic groups fight rebels claiming to represent the collective interests of a different, territorial concentrated ethnic group on some proper subset of state territory—which proper subset is viewed by both sides as all or part of their core homeland territories. This type may be contrasted most sharply with ideological civil wars for control over the state, in which the dominant ethnic group or groups associated with state power are internally divided and lead rival civil war factions.<sup>4</sup>

Potential war-fighting advantages of more authoritarian regimes over more democratic ones may be watered down in ethno-territorial civil wars, as compared to ideological civil wars. Ethno-territorial rebels may be harder to defeat militarily because they would be expected to have greater intra-group ethnic solidarity and greater territorial compactness. These characteristics would facilitate consolidation of significant rebel base areas where state-led forces would be at a greater organizational and intelligence disadvantage. The potential advantage of more authoritarian regimes via greater willingness to target rebels' civilian supporters would be correspondingly weakened.

In ethno-territorial civil wars, as compared to ideological ones, more democratic governments may have greater tolerance for the ongoing costs of war. Ethno-territorial wars are more predominantly contested between rival ethnic groups in ethnic minority-dominated regions.

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<sup>4</sup> Two additional types are often distinguished. There is an intermediate type where the fight for control over the state and all of its territory is fought on ethnic lines—possibly alongside ideological lines. Here the initially dominant ethnic group or groups fight overwhelmingly on one side. Wars of self-determination, in which a metropolitan state does not consider a given peripheral region to be a core part of the homeland, are typically classified as colonial wars. Similar pairwise comparisons could be made among any of these four types, in which different impacts of the regime-type-related mechanisms might be expected.

Destruction is more likely to be confined to the rebel ethnic group's region of predominant settlement, and civilian casualties are likely to be highest among the rebel ethnic group. Thus, more democratic governments should have less aversion to ethno-territorial war costs. By contrast, more authoritarian regimes would be expected to have more similar tolerance for war costs across the two types of civil war.

Last, concessions likely to end ethno-territorial wars must often involve steps toward territorial self-determination. This threatens sovereignty over core homeland territories in a way that concessions likely to end ideological civil wars usually do not. Public opinion might be more opposed to such concessions, and, therefore, for more democratic states, the concession-constraint mechanism may be even stronger in ethno-territorial wars. By contrast, more authoritarian regimes would not be expected to face a comparable increase in constraints on making concessions to help end ethno-territorial wars.

Table 1 summarizes these expected differences. In ethno-territorial civil wars, the third, concession-constraint mechanism for regime type-driven differences in duration, would be expected to be stronger relative to the other two mechanisms, as compared to what would be expected in ideological civil wars.

#### *Regime Type and Leadership Preferences Are Related but Distinct*

Variation in substantive nationalist leadership preferences might be expected to be correlated with regime type, and theoretically, might also be expected to have independent effects on the three mechanisms taken to influence war duration.<sup>5</sup> If so, then omitting leadership preferences from the model specifications would tend to bias the results for regime type.

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<sup>5</sup> Following standard conflict bargaining models (Rubinstein 1982), we define nationalist leadership preferences in terms of how highly ideal goals are valued relative to downside risks and war costs, as well as relative to status quo conditions. Relative to more moderate nationalist leaders, more extreme nationalist leaders more highly value ideal goals—defined as the payoff to total victory in war. In addition to such direct, intrinsic goals of war, there are also

First, prewar regime type might be expected to influence nationalist leadership preferences. The most obvious expectation is that more democratic regimes may produce state leaders with more moderate nationalist preferences. This might also be true for rebel leaders. But that seems more uncertain, because rebel leaders do not necessarily emerge from within the ordinary, institutionalized political arena.

Second, variation in nationalist leadership preferences might also influence the three regime-type-related mechanisms expected to affect duration. More extreme nationalist state leaders might be more willing and able to fight wars more effectively by targeting rebels' civilian support bases. Also, more moderate nationalist state leaders would be expected to be less tolerant of war costs. Next, more moderate nationalist state leaders might themselves be more likely to share the preferences of the broad voting base and to accept the principle of mass political accountability—making them more accountable to public opinion regardless of regime type and thus less like to make concessions sufficient to end wars.

One reason why measures of nationalist leadership preferences are omitted from most studies of civil war duration is that no such measures are available for all civil war types. The Minorities at Risk dataset grievance measure (2006; 2009) is appropriate for ethnic civil wars, but only describes rebel goals and is not updated beyond 2008. Below we utilize a more recently compiled measure (Horowitz 2021), which describes both rebel and state nationalist leadership preferences and is updated through 2019. The lack of such measures for non-ethnic civil wars is another reason why we limit our study of regime-type effects on civil war duration to ethno-territorial civil wars.

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indirect, extrinsic goals related to political power-seeking. Variation in this dimension of preferences is both more difficult to measure and more dependent on situational political factors (e.g., Oakes 2012). Below, we leave efforts at direct measurement of the power-seeking dimension for future research.

### *Regime Type Is Measured before War Onset, but Often Changes in Wartime*

To avoid endogeneity-causing reverse influence of war duration on regime type, empirical studies of civil war duration typically measure regime type in the year before war onset. At the same time, cases are retained in the sample even if regime type changes during wars.

Consider the following examples, in which regime-type in a given war-year is measured with a one-year lag. In the Burma-Karens war, lagged democracy persists from 1949 to 1962, and is succeeded by lagged authoritarianism for most of the period from 1963 to war termination in 2012. In the Philippines-Moros war, there is lagged anocracy in the war onset year of 1972, followed by lagged authoritarianism in 1973-85, lagged anocracy again in 1986, and lagged democracy from 1987 to 2019, when the ongoing war is right-censored after the terminal year of our dataset. The Indonesia-Acehnese war has lagged authoritarianism in 1990-8, lagged anocracy in 1999, and lagged democracy in 2000-5.<sup>6</sup>

Such intra-war regime change cases, when included in the sample after regime change occurs, attribute regime-based outcomes following regime change to the prewar regime type. This would be expected to introduce noise into the results, weakening the estimated impact of regime type. To check on the influence of this noise, we present variant results in which the data is right-censored beginning in the year of any change in the prewar regime type.

In the next section, we lay out the theory behind the three main causal mechanisms and state corresponding hypotheses. The following sections then explain methods and data; describe results; and offer some conclusions. Our results indicate that authoritarian regimes fight significantly shorter ethno-territorial wars than anocracies; and that both of these regime types,

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<sup>6</sup> Regime type classifications are based on Polity II scores, which range from -10 to 10. We follow the longstanding convention that codes as authoritarian regimes with scores from -10 to -6, as anocratic scores from -5 to 5, and as democratic scores from 6 to 10. See below.



especially authoritarianisms, fight significantly shorter such wars than democracies. We find evidence to support two of the three main causal mechanisms: Authoritarian regimes win military victories more quickly, while both authoritarian and anocratic regimes more flexibly use concessions to make war-ending agreements. Of the two mechanisms, the concessions-constraint one is the stronger.

### **Theory: Ways Regime Type May Influence War Duration**

*Mechanism 1 (War-Fighting Effectiveness):* Ethno-territorial rebels do not usually rely on conventional warfare as the predominant military strategy throughout the war.<sup>7</sup> Both initially and for most of their duration, a large proportion of ethno-territorial rebellions rely on guerrilla warfare, with some transitioning predominantly to conventional warfare once they attain sufficient strength. Such guerrilla-style insurgencies—whether or not cross-border safe havens are available—attempt to build their strength following the Maoist maxim of hiding among civilian populations like fish in water (Mao 2015, 28, 37, 40, 61, 73). Hence, defeating ethno-territorial rebels must usually involve conducting effective counter-guerrilla warfare amidst civilian populations of rebel ethnicity.

Would highly authoritarian regimes be expected to enjoy advantages in fighting rebels using a guerrilla strategy? Compared to democracies, highly authoritarian regimes might be expected, not only to be willing to use war strategies that are more ruthless, but also to be able to implement such ruthless strategies more effectively. In particular, highly authoritarian regimes may be more likely to have the capacity to target rebels and their civilian support bases more

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<sup>7</sup> Within the sample below of 51 ethno-territorial conflicts, there are 12 cases in which rebels used conventional warfare as the predominant strategy throughout the war.

effectively—first, by more intensively, though still selectively, targeting existing rebel supporters and, second, by better preempting or defeating any resulting, backlash-induced increases in rebel support.

This in turn is best done by building state-controlled political as well as military organizations within rebel kin communities. Rebel co-ethnics are offered a protected place within the state-led political order, and in return, are expected to cooperate with the state in defeating the rebels. Both carrots and sticks are used to split the rebel ethnic group and to mobilize an increasing share of it on the state’s side of the political and military struggle.

The post-World War II Soviet counterinsurgencies in the Baltic States and Ukraine are a classic example of this approach:

“The correct proportion of stick, carrot, and pro-government propaganda should pull guerrilla fish from the water in which they swim, attract the passive part of the local population, and intimidate rebel supporters into neutrality. The state ought to offer amnesty combined with relentless pressure so as to make most insurgents feel that surrender offers less risk than continuing the resistance. It also should raise paramilitary forces from beneficiaries of its policy to perform routine defensive missions.... The militia also helps the authorities to internalize the conflict by involving local people in the fight on the government side” (Statiev 2010, 5).<sup>8</sup>

Democracies, with their normative and institutional constraints, may not usually be able either to apply the optimal scale and level of force to penalize and intimidate rebel supporters or to compel and incentivize support and participation among broader civilian populations. Highly authoritarian regimes would also be expected to be more effective counterinsurgents than

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<sup>8</sup> Merom (2003, 38-46) has a similar analysis. See also Petraeus and Amos (2006).

anocracies. Compared to democracies, anocracies may not be as constrained normatively and institutionally from attempting more optimal counterinsurgency strategies. But anocracies might still be less likely than authoritarian regimes to have the organizational resources and competence necessary to target rebel supporters and to mobilize rebel co-ethnics behind the state.

What about anocracies compared to democracies? While anocracies may be more willing than democracies to target civilian supporters of rebels, it is not clear that they would typically have the competence to do so more effectively. Nor would anocracies be expected to be superior to democracies in integrating co-ethnics into the state-led political order. Hence, as compared to democracies, anocracies targeting civilian rebel supporters more intensively might more commonly backfire by increasing support for the rebels. Moreover, any attempt by anocracies at compelling rebel co-ethnics into the state-led political order would not necessarily be expected to be more effective than the more voluntary efforts of democracies. Hence, we make no prediction about whether anocracies are expected to fight rebels more effectively than democracies.

*Hypothesis 1.* Compared to democracies and anocracies, highly authoritarian regimes are expected to achieve more rapid military victories in ethno-territorial wars.

*Mechanism 2 (Tolerance of War Costs):* Public opinion in democracies is usually expected to have lower tolerance of war costs than in either anocracies or authoritarian regimes. Freedoms of the press and association make it harder to governments to conceal and justify setbacks and costs, which are expected to reduce public support for wars. Democratic leaders are also more institutionally accountable to public opinion. If that is all correct, then democracies, as compared to both highly authoritarian regimes and anocracies, would be expected to be more willing to

make concessions tending to end wars. For the same reasons, highly authoritarian regimes would be expected to have greater tolerance for war costs than anocracies.

*Hypothesis 2.* Compared to highly authoritarian regimes and anocracies, democracies are expected to make more frequent, larger concessions to minimize war costs, tending to end wars sooner by agreement.

*Hypothesis 3.* Compared to highly authoritarian regimes, anocracies are expected to make more frequent, larger concessions to minimize war costs, tending to end wars sooner by agreement.

*Mechanism 3 (Constraints on Concessions):* When ethno-territorial wars are not going well—whether in terms of their outcomes or their domestic political effects—leaders may seek to end wars more quickly by making concessions. Compared to highly authoritarian and anocratic leaders, democratic leaders may be more constrained from doing so by political accountability. Making such concessions might impose higher “audience costs” (Fearon 1994), leading to declining popularity and poorer leader performance in upcoming elections. Compared to anocratic leaders, highly authoritarian leaders—because they are even more insulated from public accountability—should be less constrained in making war-ending concessions.

*Hypothesis 4:* Compared to democracies and anocracies, highly authoritarian regimes are expected to be less constrained from making more frequent, larger concessions, tending to end wars sooner by agreement.

*Hypothesis 5:* Compared to democracies, anocracies are expected to be less constrained from making more frequent, larger concessions, tending to end wars sooner by agreement.

Some leaders may be more or less likely to make concessions based on their own nationalist ideologies. In particular, leaders with more extreme nationalist preferences should be less likely to make significant concessions. Such variation in leaders' preferences may be correlated with regime type. As discussed, it seems most likely that democracies would tend to select more moderate leaders, who are more willing to make war-ending concessions. Similarly, it is possible that more highly authoritarian regimes may tend to produce leaders with more extreme nationalist preferences, who are less willing to make war-ending concessions. Therefore, it is desirable to control for the independent impact of nationalist leadership preferences. Failing to control for leadership preferences might obscure the expected tendency of democracy to impose greater accountability constraints on war-ending concessions, or of highly authoritarian regimes to impose lesser constraints. Similar points can be made for potential relations between variation in nationalist leadership preferences and the war-fighting and cost-tolerance mechanisms.

*Mechanism 4 (Leadership Turnover):* Leadership turnover might be expected to be produce more changes to the status quo, including termination of ongoing wars. Democracies are expected to have the highest rate of turnover, followed by anocracies. This is expected to increase the likelihood of termination by agreement, but not of victory by either side. On the other hand, longer-tenured leaders should be more likely to have credibility in negotiating war-ending agreements. This implies that authoritarianisms, followed by anocracies, should be likely to have

the shortest wars. Given such contradictory theories about the effects of leadership turnover, it is difficult to make a hypothesis either way about how regime type influences war duration via this mechanism.

Both of these theories, though having opposite implications for war duration, view leadership turnover as mattering only in institutional terms—based purely on the time in power of any given leader. But there is also ideological turnover of leaders. Here the impact is conditional on whether new leaders have more moderate or more extreme nationalist preferences than their predecessors. Nevertheless, if a war is already ongoing, ideological change in leaders would tend to make war-ending agreements more likely. This ideological turnover mechanism is best captured by controlling directly for leadership preferences—including changes in such preferences.

Looking at all hypothesized regime-related sources of variation in duration, the war-fighting capacity and concession-constraint mechanisms, taken together, imply that highly authoritarian regimes, followed by anocracies, should have the shortest ethno-territorial wars. On the other hand, the war-costs tolerance mechanism implies that democracies should have the shortest ethno-territorial wars—followed by anocracies.

## **Method and Data**

We want to account for the length of time or duration of ethno-territorial civil wars to failure by all causes, as well as the duration of such wars to termination either by negotiated endings or endings due to military victory. Thus, we use the Cox proportional hazard model to estimate effects of democracy and other covariates on ethno-territorial war duration, along with the

related, competing risks model to estimate effects of the independent variables on the particular sub-hazards of either negotiated endings or military victory.

As discussed, civil wars are defined to be ethno-territorial in kind when the state fights rebels claiming to represent the collective interests of a specific, territorially concentrated ethnic group. Rebels must define their homeland territory to be a proper subset of state territory and must retain independent political and military agency. Thus, civil wars in which rebels seek control over the entire state territory are excluded. Wars are also excluded, for being international, when participating external state armies either entirely control internal rebels, or so dominate war-fighting and decision-making that internal rebels play no significant role in war onset and duration.<sup>9</sup>

Following Fearon and Laitin (2003, 76), ethno-territorial war is defined to occur when total casualties, both of combatants and non-combatants, reach 1000, when each side has at least 100 such casualties, and when both sides average at least 100 yearly deaths. Such wars are defined to begin when 25 battle-deaths first occur in a given year, and to end either when there is no combat for two years or when there are less than 25 yearly battle-deaths for five years.<sup>10</sup> The data begin in 1944 and end in 2019. Wars not ending by 2019 are included and right-censored in that year.

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<sup>9</sup> Consider the contrasting examples of the Cyprus (1974) and Azerbaijan-Karabakh Armenian (1991-4) wars. The Cyprus war is not included as an ethno-territorial civil war, because the war was fought between the Turkish military and the armed forces of the Cypriot state. Turkish Cypriot fighters were few and poorly organized, and neither drove the war to the onset threshold nor played any significant role in its duration and outcome. Karabakh Armenian fighters were many and well organized; were entirely responsible for driving the war to the onset threshold; and continued to exercise independent political and military agency throughout the war, despite receiving significant military assistance from Armenia and conducting military operations jointly with the Armenian armed forces. Thus, the Azerbaijan-Karabakh Armenian war is included in the category of ethno-territorial civil wars.

<sup>10</sup> Yearly 25-battle-death and cumulative 1000-death thresholds were verified using the UCDP-PRIO Armed Conflict Dataset (Pettersson 2020), the Dynamic Analysis of Dispute Management Project's Intrastate Dispute Narratives (Mullenbach 2022), and conflict-specific secondary sources.

The sub-hazards are termination by military victory or by formal or informal agreement. Military victories are cases where the losing side—almost always the rebels—no longer has the ability to fight at a level that meets the definition of ongoing war: if fighting is ongoing at all, it yields less than 25 yearly battle-deaths for five years or more. Cases that end with both sides capable of continuing to fight, but choosing to stop—whether by formal or informal agreement—are classified as ending by agreement.<sup>11</sup>

To measure the three regime types—authoritarianism, anocracy, and democracy—we use the Polity II score, lagged one year before war onset. We follow the longstanding convention that Polity II scores from -10 to -6 are classified as authoritarian regimes, those from 6 to 10 as democracies, and the remainder as anocracies.<sup>12</sup> As mentioned, particularly in ethno-territorial civil wars of longer duration, it is common for regime types to change. Results that include all conflict years mix in many years in which states' initial regime type has changed. Thus, we also examine variant results in which data are right-censored going forward starting in the year when the prewar regime type changes. For example, in the Burma-Karen War of 1949-2012, initial democracy lasted only until 1962, so, in the variant results, the case is right-censored beginning in 1963.

We also include a number of control variables that measure the three main theoretical variables associated with the conflict bargaining model of leadership decision-making: leadership preferences, relative power, and status quo conditions. To capture leadership

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<sup>11</sup> Appendix Table A3 shows which wars ended by military victory and which ended by formal or informal agreement. Classifications are based on Balcells and Kalyvas (2014), Cunningham, Gleditsch, and Salehyan (2009), DeRouen and Sobek (2004), Lyall and Wilson (2009), and conflict-specific secondary sources.

<sup>12</sup> We also examined variant codings for regime type, looking at both narrower and broader definitions of authoritarianism and democracy. More narrowly, we looked at defining authoritarianism as running from Policy II scores of -7 to -10 and democracy as running from 7 to 10. More broadly, we defined authoritarianisms as running from -10 to 0 and democracies from 1 to 10, while dropping the intermediate category of anocracy. Results are similar to those reported below and available upon request.



preferences, we use four-level measures of minimum nationalist demands for both state and rebel leaders. Minimum nationalist demands are leaders' publicly stated, minimum goals, which, if satisfied, would be sufficient for them to agree to end the war. For rebel leaders, the demands escalate from equal treatment under the existing political system; to autonomy; to secession; and finally, to secession along with forced assimilation, expulsion, or mass killing of the state-associated, dominant ethnic group from the rebel-claimed homeland territory. For state leaders, the goals escalate from acceptance of rebel group secession; to acceptance of rebel group autonomy; to equal treatment under the existing political system; and finally, to forced assimilation, expulsion, or mass killing of the rebel-associated ethnic group from the rebel-claimed homeland territory. This measure is taken from Horowitz (2021).<sup>13</sup>

We also include measures of various aspects of relative power. First, we have the natural logarithm of the rebel ethnic group's population share. This is taken from Fearon and Laitin (2003) and various secondary sources. Then, also taken from Fearon and Laitin (2003), we have the natural log of the share of territory that is mountainous. Next, we have a dummy variable for direct external state intervention on the rebel side, using some combination of ground or air forces. This is taken from Collier, Hoeffler, and Söderbom (2004) and secondary sources. Last, we have a measure of more limited external state support, in which rebels are provided with material support (possibly including weapons) or safe haven. One of these types of support is coded as a 1, and both as a 2. This measure is taken from Lyall (2010), Lyall and Wilson III

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<sup>13</sup> Following Cunningham (2006), we also constructed a control variable for the number of non-state rebel groups with the demonstrated capacity to produce 25 or more battle deaths per year. The data were taken from Pettersson (2020) and checked against conflict-specific secondary sources. The measure can be taken as a potential substitute for rebel minimum demands, because more rebel leaderships would be expected to be associated with a greater maximum of minimum rebel demands. This measure did not have a statistically significant impact. Results are available upon request.

(2009), and secondary sources; Lyall and Wilson's measure is in turn based largely on Record (2007) and Regan (2002).<sup>14</sup>

To capture status quo conditions, we used the Minorities at Risk (2009) political discrimination variable, which ranges from 0 (least discrimination) to 4 (most discrimination).<sup>15</sup>

Summary statistics are given in Appendix Table A2.

## Results

Models 1A-1B of Table 2 show results for Cox proportional hazard models. In Model 1A, for authoritarian regimes, war termination is 6.82 times as likely as for the baseline category of democracies; while for anocratic regimes, statistical significance is weaker, and termination is 2.65 times as likely as for democracies. Model 1B controls for rebel and state minimum acceptable demands. This considerably increases the model's overall explanatory power, as well as the estimated impact of the regime type variables. Here, compared to democracies, authoritarian regimes are over nine times as likely to see war termination, and anocracies over five times as likely.

[Table 2 about here]

Turning to the control variables, external military intervention on the rebel side, along with rebel and state minimum demands, have high statistical and substantive significance.

Political discrimination is statistically significant, but has more muted substantive significance.<sup>16</sup>

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<sup>14</sup> We also examined a measure of state militaries' level of mechanization, developed by Lyall (2010) and Lyall and Wilson III (2009). This variable is only available through 2005. In the model specifications below, the variable is sometimes statistically significant, but does not dramatically alter the estimates for the other variables. Results are available upon request.

<sup>15</sup> For wars beginning after the Minorities at Risk dataset ends, we use the value for the last available year.

<sup>16</sup> It can be argued that the rebel and state minimum demand variables may be influenced by the changing expected likelihood of wars ending by military victory. (The same point can be made for related measures, such as the number

Models 2A-3B show results for competing risks proportional sub-hazard models. In Models 2A-2B, the cause-specific hazard potentially leading to termination is formal or informal agreement to end the fighting, while termination via the cause-specific hazards of state or rebel military victory are competing events that have not occurred through a given time-period (Cleves et al. 2016, 400). In Models 3A-3B, military victory by the state is the cause-specific hazard potentially leading to termination, while the competing events are termination via agreement or rebel military victory.<sup>17</sup>

In the Model 2A-2B results for failure by agreement, regime type has a weaker influence than in Models 1A-1B. Only authoritarianism reaches a low level of statistical significance in Model 2B, and is estimated to half roughly half the substantive impact as in the analogous Model 1B. Rebel and state minimum demands and international intervention on the rebel side have broadly similar levels of statistical and substantive significance, as compared to Models 1A-1B—although state minimum demands have even stronger substantive significance. Political discrimination loses significance.

In Models 3A-3B for termination by state military victory, only state minimum acceptable demands reach statistical significance, but with a *reversed* directional impact. That is, while states with one-unit more extreme minimum demands are only 36% as likely to terminate

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of rebel-side veto players.) To some extent, we control for this possibility by including control variables capturing relative power—particularly direct external military intervention on the rebel side. We also note that there is little change over time in minimum demands. When such change does occur, the correlation between changes in four-level rebel- and state-side preferences is near zero (-0.0036)—contrary to what would be expected if leaderships commonly vary their minimum demands in response to wartime expected changes in the probability of military victory. Nevertheless, such endogeneity cannot be excluded. In Appendix Table A3, Models A2A-A2C, we show results for a simultaneous equations probit model (see Roodman 2011), in which each equation also includes dummy variables for years elapsed since war onset, year elapsed squared, and years elapsed cubed (see Carter and Signorino 2010). The results (Model A2A) are quite close to those for the benchmark probit model (Model A1) and the analogous Model 1B of Table 1.

<sup>17</sup> The results for any (state or rebel) military victory as the cause-specific hazard leading to failure are virtually identical, since there are only two cases of rebel victory. We do not present these results (available upon request) because our theory focuses on explaining state victory, rather than victory by either side.

wars by agreement, such state demands are 330% as likely to terminate wars by state military victory.

The competing risks results make two additional points. First, the entire Models 3A-3B fall short of statistical significance. This indicates that state military victory, and military victory generally, is a poorly explained outcome in ethno-territorial conflicts—much less well explained than termination via agreement. Second, the impact of authoritarianism and anocracy on war-ending agreements (Models 2A-2B) is weaker than their general impact on duration (Models 1A-1B). Comparing the results for the three types of model, one reason seems to be that the association of more extreme state demands with state victory (Model 3B) is to some extent, in the general duration model (Model 1A), picked up by the authoritarianism variable when the average effect of state minimum demands is to significantly lengthen wars. Hence, the regime type coefficients in Model 1A-1B reflects the greater probabilities of ending wars by *some combination* of agreement and state victory—though the average effects of regime type are less reliable in predicting failure by agreement and state victory taken separately. For both types of endings taken together, again, the probability of failure is even greater for authoritarianisms than for anocracies.<sup>18</sup>

We now turn to the Table 3 results, where cases are censored beginning in any year when the prewar regime type changes. The results overall are quite similar to the Table 1 results, with the notable exception of the much stronger regime type results. In particular, the results for authoritarianism and anocracy are much stronger in Models 4A, 4B, and 5B. This makes sense, because the Table 1 results for regime type include long periods of time in which the regime type was different from the prewar regime type: the authoritarianism dummies often include long

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<sup>18</sup> To take a notable example, Mao Zedong's China succeeded in ending both Tibetan wars quickly, but by different means—the first by an autonomy agreement and the second by military victory.

periods of anocracy and democracy; the anocracy dummies often include long periods of authoritarianism and democracy; and the reference category of democracy often includes long periods of authoritarianism and anocracy.

[Table 3 about here]

## **Discussion and Conclusions**

In general terms, the results provide the strongest support for Hypotheses 4-5, and the weakest support for Hypotheses 2-3. Authoritarian regimes are significantly more likely to end ethno-territorial wars in a given time-period than anocracies, which in turn are significantly more likely to terminate them than democracies. The competing risks results are consistent with the concessions-constraint mechanism, but not with the tolerance-of-war-costs mechanism. The results for the war-fighting-effectiveness mechanism are more ambiguous. Model 2B shows that authoritarian regimes are significantly more likely to end wars by agreement, as compared to both anocracies and democracies, although it does not show a marked difference between anocracies and democracies. Model 3B may seem difficult to interpret at first glance, but this becomes easier when one realizes that states with leaders making the most extreme nationalist demands are also frequently highly authoritarian states that combine organizational prowess with high levels of repression. Examples include Mao Zedong in the China-Tibetans conflicts, Josef Stalin in the USSR-Lithuanians and USSR-Ukrainians conflicts, and the Ayatollah Khomeini in the Iran-Kurds conflict. This indicates that the war-fighting-effectiveness mechanism should be reformulated to focus, not on authoritarian regimes generally, but on authoritarian regimes with

strong states, and maybe, strong ideological commitment (Statiev 2010, 315-38).<sup>19</sup> High levels of authoritarianism per se do not seem sufficient to provide the organizational capacity to outperform rebel organizations in areas of rebel group ethnicity.

The results also support the need to control for rebel and state leadership preferences where they seem likely to be correlated with other variables of interest. The results for the authoritarianism and anocracy dummy variables are considerably strengthened by controlling for rebel and state minimum demands.

Results are also considerably strengthened in the Table 3 models, which right-censor cases when intra-war regime change occurs. Relative to the Table 2 models, the estimated impact of the regime type variables is much greater, while other variable results are almost all quite similar. This indicates that the reduced, Table 3 sample is reasonably representative of the larger, Table 2 sample; and that, as expected, the estimated impact of regime type is watered down when the noisy effects of intra-war regime change are included in Table 2.

Returning to the literature on the war-ending mechanisms, it is worth noting that the war-fighting effectiveness and war-cost-tolerance mechanisms receive more attention than the concessions-constraint mechanism. In view of the relatively higher frequency of negotiated endings in ethno-territorial wars, and the greater difficulty of explaining military victory or defeat, future research should devote more resources to figuring out why efforts to negotiate endings succeed or fail.<sup>20</sup>

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<sup>19</sup> The examples mentioned involve commitments to revolutionary ideologies. But other types of compelling ideological causes may include defensive responses to existential external threats or to significant internal revolutionary threats.

<sup>20</sup> This is not to say that focusing on negotiated endings is not a longstanding research program. For an early statement that focuses on characteristics of rebels, see Stedman (1997). Again, Fearon (1994) offers a useful theoretical framework.

Do other types of civil wars exhibit similar patterns? For example, research has recognized that international military intervention on the rebel side is important in ending civil wars. But, at least in ethno-territorial wars, such intervention makes agreed endings more likely, but not rebel military victory.<sup>21</sup> Again, is this also true for other types of civil war?

Returning to ethno-territorial war, we have found that there is explanatory value-added in controlling for nationalist leadership preferences. This raises the question of whether regime type, in addition to its direct effects on ethno-territorial war duration, also has indirect effects via state-side and rebel-side nationalist leadership preferences. For our sample of ethno-territorial civil wars, cross-tabulations show that more authoritarian regimes have leaders making more far-reaching prewar demands, while facing rebels who make more limited demands. By contrast, more democratic regimes have leaders making more limited prewar demands (offer greater prewar concessions), while facing rebels who make more far-reaching demands. These patterns indicate that the indirect effects of regime type on war duration via nationalist leadership preferences may not be as simple as we might expect.

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<sup>21</sup> Again, there are only two cases of rebel military victory. In neither case was there international military intervention on the rebel side.

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**Table 1.** Expected Differences in Civil War Duration Mechanisms by Regime Type

Mechanism Government Type	War-Fighting Advantages: Weaker for Ethno-Territorial War	War-Costs Tolerance: Weaker for Ethno-Territorial War	Concessions Constraint: Stronger for Ethno-Territorial War
More Authoritarian	Expected advantage weaker in ethno-territorial war	Likely to have more similar tolerance for costs in both types of wars	More similarly likely to make concessions in both types of wars
More Democratic	Expected disadvantage more similar in both types of war	Likely to be more tolerant of war costs in ethno-territorial wars	Less likely to make concessions to end ethno-territorial wars

**Table 2.** Ethno-Territorial War Duration, Cox and Competing-Risks Regressions with Clustered Standard Errors

	Model 1A Cox Proportional Hazard Model	Model 1B Cox Proportional Hazard Model	Model 2A Competing Risks Proportional Sub-Hazard Model: Agreement	Model 2B Competing Risks Proportional Sub-Hazard Model: Agreement	Model 3A Competing Risks Proportional Sub-Hazard Model: State Victory	Model 3B Competing Risks Proportional Sub-Hazard Model: State Victory
State-Level Authoritarianism (Polity II)	6.818*** (4.56)	9.254*** (4.47)	2.144 (1.55)	4.744* (1.88)	1.268 (0.31)	0.406 (-1.24)
State-Level Anocracy (Polity II)	2.651* (1.86)	5.113*** (2.96)	0.713 (-0.51)	1.698 (0.58)	1.878 (0.95)	1.325 (0.43)
Rebel Minimum Acceptable Demands		0.360*** (-2.86)		0.341*** (-2.78)		0.607 (-1.05)
State Minimum Acceptable Demands		0.335*** (-3.56)		0.066*** (-5.39)		3.298* (1.83)
Rebel Ethnic Group Man-power Share (Natural Log)	0.880 (-0.76)	0.828 (-1.17)	1.212 (0.88)	1.549 (1.44)	0.852 (-0.61)	0.719 (-0.94)
Share of Mountainous Territory (Natural Log)	0.879* (-1.72)	0.876 (-1.21)	0.863 (-0.87)	1.015 (0.07)	0.874 (-0.65)	0.876 (-0.55)
External Military Intervention on Rebel Side	10.421*** (4.22)	5.068*** (2.64)	11.428*** (3.63)	6.542*** (2.61)	0.273 (-0.82)	0.392 (-0.40)
Limited External Support for Rebels	0.878 (-0.51)	0.879 (-0.47)	0.707 (-0.91)	0.694 (-1.21)	0.805 (-0.46)	0.725 (-0.55)
Political Discrimination (Minorities at Risk)	0.812** (-2.10)	0.774** (-2.09)	1.111 (0.63)	1.094 (0.43)	0.708 (-1.34)	0.725 (-1.01)
Country-Wars Started	51	51	51	51	51	51
Country-Wars Terminated	42	42	27	27	13	13
Country-Wars Terminated by Competing Risks			15	15	29	29
Time-Periods at Risk	869	869	869	869	869	869

Note: Coefficients are hazard ratios or sub-hazard ratios. z-statistics are in parentheses. \* p < .10, \*\* p < .05, \*\*\* p < .01

**Table 3.** Ethno-Territorial War Duration, Cox and Competing-Risks Regressions with Clustered Standard Errors (Intra-War Regime Change Time-Periods Right-Censored)

	Model 4A Cox Proportional Hazard Model	Model 4B Cox Proportional Hazard Model	Model 5A Competing Risks Proportional Sub-Hazard Model: Agreement	Model 5B Competing Risks Proportional Sub-Hazard Model: Agreement	Model 6A Competing Risks Proportional Sub-Hazard Model: State Victory	Model 6B Competing Risks Proportional Sub-Hazard Model: State Victory
State-Level Authoritarianism (Polity II)	11.382*** (2.83)	51.943*** (3.40)	1.822 (0.71)	23.094*** (2.98)	2.267 (1.33)	0.478 (-0.79)
State-Level Anocracy (Polity II)	8.158** (2.29)	17.115*** (2.76)	1.719 (0.54)	7.346 (1.62)	1.512 (0.52)	0.873 (-0.20)
Rebel Minimum Acceptable Demands		0.400** (-2.86)		0.235** (-2.27)		0.492* (-1.73)
State Minimum Acceptable Demands		0.200*** (-4.40)		0.019*** (-4.82)		3.511** (2.07)
Rebel Ethnic Group Man-power Share (Natural Log)	0.961 (-0.14)	1.034 (0.13)	1.822 (0.71)	1.605 (1.53)	0.740 (-1.31)	0.554* (-1.66)
Share of Mountainous Territory (Natural Log)	0.899 (-0.78)	0.945 (-0.39)	0.961 (-0.18)	1.005 (0.02)	0.964 (-0.15)	0.836 (-0.68)
External Military Intervention on Rebel Side	7.335*** (4.22)	4.856* (1.92)	9.459** (2.22)	6.668* (1.65)	0.349 (-0.60)	0.289 (-0.44)
Limited External Support for Rebels	0.746 (-0.86)	0.545* (-1.75)	0.625 (-0.75)	0.418*** (-2.63)	0.788 (-0.47)	0.885 (-0.21)
Political Discrimination (Minorities at Risk)	0.754** (-2.42)	0.660*** (-2.65)	1.034 (0.19)	0.962 (-0.19)	0.553** (-2.32)	0.553 (-1.58)
Country-Wars Started	51	51	51	51	51	51
Country-Wars Terminated	29	29	17	17	10	10
Country-Wars Terminated by Competing Risks			12	12	19	19
Time-Periods at Risk	495	495	495	495	495	495

Note: Coefficients are hazard ratios or sub-hazard ratios. z-statistics are in parentheses. \* p < .10, \*\* p < .05, \*\*\* p < .01