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Strategic Civil War Aims and the Resource Curse

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ABSTRACT

Does oil wealth promote or inhibit prospects for civil war? Empirical evidence relating oil to civil war onset is mixed, and depends on the aims of the rebellion: although separatist civil wars (in which rebels aim to create an autonomous region or independent state) occur more frequently in oil-rich regions, oil-rich countries experience fewer center-seeking civil wars (in which rebels aim to capture the capital city). This article provides a new theoretical framework in which the challenger strategically chooses its civil war aims. I first incorporate strategic civil war aims into a formal bargaining model with commitment problems. Then, I derive two countervailing theoretical effects of economic activities, such as oil production, that provide an easy source of government revenues: a conflict-suppressing revenue effect (more money for the government) and a conflict-enhancing predation effect (more for the rebels to capture). Finally, I highlight two reasons that the magnitude of the oil predation effect is larger for separatist than for center-seeking challengers, which connects the theoretical

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implications to the motivating empirical pattern. First, a strategic selection effect for ethnic minorities: governments face more severe commitment problems toward small ethnic groups — who prefer separatist over center-seeking civil war. Second, a geography of rebellion effect: oil-funded repression more effectively deters center-seeking challenges than peripheral insurgencies.

Keywords: Civil war; formal theory; oil; resource curse

Oil production directly boosts per capita wealth and government revenues, yet many scholars argue that so-called black gold can make countries poorer, less democratic, and more susceptible to civil conflict. This article focuses on the latter claim about a *conflict resource curse*. Whereas early influential research established evidence for a conflict resource curse (Collier and Hoeffler, 2004; Fearon and Laitin, 2003; Ross, 2004b), more recent empirical research yields inconsistent findings for oil (Bazzi and Blattman, 2014; Bell and Wolford, 2015; Cotet and Tsui, 2013; Dube and Vargas, 2013; Lei and Michaels, 2014; and additional citations below). Despite the extensive debate, important questions remain regarding if, or under what conditions, oil wealth hinders prospects for societal peace.

We cannot comprehend this frequently cited economic motive for domestic conflict without addressing two crucial puzzles that relate to (1) countervailing effects of oil production on prospects for conflict and (2) differential civil war aims. The typical one-sided focus on whether oil production *curses* prospects for civil peace, as opposed to exerting no systematic effect, is incomplete. I highlight that oil wealth creates countervailing incentives to rebel, which necessitates asking whether oil raises *or lowers* the likelihood of civil war. Two mechanisms follow from a key fact about oil production: as an immobile, capital intensive, point-source resource, oil production is a particularly easy economic activity for governments to tax.[1] Many scholars emphasize the consequent *predation effect* that enhances motives for rebellion by raising the value of capturing the central government or of seceding. Yet oil production also yields a *revenue effect* that boosts government revenues. Giving more money to the state should enable it to take actions, such as building a strong coercive apparatus and dispensing patronage, that lessen opportunities and motives for societal actors to take up arms. Thus, one key puzzle about oil and conflict is *under what conditions does each theoretical mechanism dominate*?

[1] See Ross (2003), Le Billon (2005, p. 34), and Paine (2019a, p. 251–52). These properties also distinguish oil from many other natural resources.

Analyzing empirical data further highlights the need to consider how oil production can either raise or lower prospects for civil war, as the direction of association depends on the *aims of the civil war*. Empirical evidence of an oil-conflict curse is limited to *separatist civil wars*. Despite recent critiques of the aggregate relationship, statistical and qualitative evidence consistently demonstrates that ethnic groups in oil-rich regions often take up arms against the government and aim to create an independent state or autonomous region (Collier and Hoeffler, 2005; Hunziker and Cederman, 2017; Morelli and Rohner, 2015; Ross, 2004a,b; Sorens, 2011), for example, the oil-rich Cabinda region in Angola. By contrast, evidence for *center-seeking civil wars* — in which rebel groups aim to overthrow the government in the capital — points in the opposite direction. Countries with higher per capita oil production experience fewer center-seeking civil wars (Paine, 2016), as exemplified by countries like Saudi Arabia in which vast oil wealth coincides with broad societal peace. Thus, another key puzzle about oil and conflict is why *the empirical pattern is mixed and varies by civil war aims*. In Appendix B, I show that these patterns do not merely reflect differences in data sources and statistical models across disparate publications. Using a common sample and dataset, I replicate the mixed oil-conflict pattern by showing a positive relationship between oil and separatist civil war onset (ethnic groups as unit of analysis) and a negative relationship with center-seeking civil war onset (country units).

The main contribution of this article is to link the countervailing oil mechanisms to distinct civil war aims, which yields theoretical implications consistent with empirical patterns. In so doing, I provide new insights into the conflict resource curse as well as into strategic civil war aims more broadly. I first construct and analyze a general formal model of strategic civil war aims that builds on canonical models of wars triggered by commitment problems. A government arms endogenously and distributes patronage to a regional challenger who can accept, fight a center-seeking civil war, or fight a separatist civil war. If a rebellion occurs, the probability of success depends on each actor's *coercive input*: endowed group size for the challenger, and endogenous military spending for the government. I assume that the marginal effect of each coercive input is higher for the center seeking than the separatist contest function, motivated by research on ethnic conflict and the geography of rebellion. For the challenger, numerically small groups face considerable hurdles to capturing the capital; but in a separatist rebellion, they can viably use guerrilla tactics and capitalize on related advantages from fighting in the periphery. For the government, deploying more soldiers or buying additional tanks more effectively defends the capital than they project power into the periphery. Low government ability to commit to future transfers causes a rebellion to occur in equilibrium, and optimal civil war aims depend on the size of the challenger's ethnic group: small groups prefer

separatist wars, large groups prefer center-seeking wars, and medium-sized groups are indifferent between the two types of civil war. Government military spending affects the challenger's reservation value for a fixed type of civil war and their preferred civil war aims, which yields these three possible outcomes.

I use this foundation for studying strategic civil war aims to conduct comparative statics on an oil parameter. After formalizing the *revenue* and *predation* effects, I derive two implications that account for why the countervailing oil mechanisms align with civil war aims in accordance with the mixed empirical pattern. Thus, I propose a new puzzle: why should the oil predation mechanism be stronger for separatist than center-seeking challengers?

First, a strategic selection effect for ethnic minorities affects motives for rebellion. (a) Although governments can easily tap oil revenues, they retain discretion over where to spend these revenues. Governments distribute more to groups (often defined in ethnic terms) represented in the central government, and discriminate against other groups. Historical factors and strategic considerations have, empirically, led governments to often prioritize members of larger ethnic groups in the central government and disfavor ethnic minority groups. (b) Conditional on rebelling, small challengers typically fight to secede. Combining these two factors yields a strategic selection effect whereby ethnic minority groups tend to receive an unfavorable distribution of oil wealth — which makes the predation effect large in magnitude — and their preferred remedy is to fight a separatist civil war. By contrast, larger ethnic groups typically receive a more favorable distribution of oil wealth. This undermines their motives to rebel — although, if they rebelled, they would seek the center.

Second, a geography of rebellion effect shapes opportunities for rebellion. Additional military spending afforded by oil wealth more effectively drives down the challenger's probability of winning a center seeking than a separatist civil war, which yields a smaller predation effect for center-seeking challengers and hence lesser opportunities for successful rebellion.

After deriving the theoretical logic, I present suggestive statistical evidence that corresponds with additional observable implications of these two theoretical rationales for the mixed oil curse, plus qualitative evidence from Saudi Arabia and Angola. The conclusion discusses how the general strategic framework for studying civil war aims could be applied to studying how oil wealth affects political regimes and to topics beyond the resource curse.

Contributions to Existing Research

These findings contribute to extensive debates about the conflict resource curse. A general shortcoming is that existing theories cannot explain the new puzzle I

raise: why should the oil predation mechanism be stronger for separatist than center-seeking challengers? The predation effect relates to existing arguments about how governments create redistributive grievances by heavily taxing oil-producing regions without providing corresponding benefits (Ross 2003, 2004, 2004, 2012; Sorens, 2011; Asal *et al.*, 2016; Hunziker and Cederman, 2017). However, these accounts do not clearly explain why the oil-induced predation effect would cause *separatist* civil wars only. Implicitly, these arguments assume that the government can neither (a) commit to a favorable distribution of resources toward some region A, nor (b) use oil revenues to amass considerable coercive strength — otherwise, a costly conflict would not occur in equilibrium. If both premises are generally true, then oil production somewhere in the country *outside* region A should create motives and opportunities for residents of region A to initiate a center-seeking rebellion because the government should (a) redistribute little oil wealth to region A and (b) be vulnerable to an attack. For example, Collier and Hoeffler (2005, p. 44) posit that oil production should spark separatist wars specifically because of "the lure of capturing resource ownership permanently if the rebellion is victorious," but this motive should also stimulate center-seeking civil wars. Hence, arguments that can account for the positive empirical relationship with separatist civil wars cannot explain the negative relationship with center-seeking civil wars.

Fewer theories incorporate a variant of the revenue effect, the key countervailing effect I highlight in the model. Theories of authoritarian stability, summarized in Ross (2001), focus on rentier effects that facilitate massive patronage distribution and coercion spending, and Paine (2016) argues that this mechanism helps to explain the rarity of center-seeking civil wars in oil-rich countries. However, these arguments exhibit the opposite shortcoming of the previous ones: they cannot explain why greater spending on patronage and armament afforded by more oil revenues does not also deter separatist civil wars. Nor can arguments connecting oil production to state weakness solve the puzzle. They anticipate oil production raising center seeking, but not separatist, civil war incentives (Buhaug, 2006) — the opposite of the mixed empirical pattern.

Rather than scrutinize the revenue effect, many conflict resource curse theories instead provide greater insight into the strategic calculus of rebel groups than of governments (although see Colgan, 2015). For example, Dal Bó and Dal Bó (2011) enrich the rebels' tradeoff but omit the government as a strategic actor. This simplification is reasonable for certain empirical settings, but not to provide a general explanation for oil and conflict. In their model of trade and conflict, higher income levels yield two effects: an analog of the predation effect (there, the rapacity effect) that raises incentives for conflict, and a *labor opportunity effect* that diminishes incentives for conflict because higher income raises the opportunity cost of supplying labor for extraction rather than production. They predict that the net effect of a shock in oil prices

raises prospects for conflict because capital-intense oil production lowers the opportunity cost of supplying labor for extraction. Dube and Vargas (2013) empirically support this implication using data on oil shocks amid civil war in Colombia. Yet despite providing a compelling analysis of cases like Colombia in which the government could not prevent rebels from accessing oil finance, as I discuss later, rebels rarely loot oil en masse. Instead, governments almost always capture the overwhelming share of oil revenues, which motivates the empirical relevance of the revenue effect in my model.

This article also offers a novel formal-theoretic contribution by endogenizing civil war aims. Although the theoretical properties connecting commitment problems to conflict are well known, most existing formal models assume a single outside option to fight for a specified prize (e.g., controlling either the government or a specific piece of domestic/international territory). Fearon (2004) discusses how key parameters in his model differ depending on exogenously specified rebellion aims, although rebels can choose only between accepting a bargaining offer and a single fighting option. Among other relevant theoretical and empirical contributions, several examine causes of separatist civil wars (Gibilisco, 2020a; Lacina, 2015; Toft, 2005; Walter, 2009) or endogenize rebel tactics (Bueno de Mesquita, 2013; Kalyvas and Balcells, 2010; Leventoglu and Metternich, 2018; Qiu, 2020; Wright, 2020), but do not address how rebel groups strategically choose rebellion aims.

Two closely related formal models are Morelli and Rohner (2015) and Esteban *et al.* (2020), which incorporate center seeking and separatist civil war aims. However, our approaches differ in microfoundations for key strategic choices as well as in empirical implications. One difference is that, in my model, the government arms endogenously, and therefore can use oil revenues to drive down the challenger's reservation value to fighting. This anticipates why oil wealth can reduce prospects for conflict. My model otherwise overlaps with elements of the contest functions for each type of civil war in Morelli and Rohner (2015), but the underlying mechanism that drives war differs. In Morelli and Rohner (2015), war can occur along the equilibrium path only because the government, rather than rebel leaders, may get to choose the rebels' war aims. A substantive concern with this setup, however, is that it is unclear how a government can make a group pursue less-preferred aims, for example, forcing a small group to fight for the center if the group would rather secede. This, in turn, implies that small groups should fight center-seeking rather than separatist civil wars, contrary to my findings.[2] In Esteban *et al.* (2020), group size does not affect the challenger's probability of winning, which is a single exogenous parameter; and only after winning a

[2]A distinct innovation in their article is to introduce an oil Gini measure for the countrywide dispersion of oil production, which directly captures their key object of theoretical interest.

rebellion do challengers decide between seceding and taking the center. Group size instead affects incentives for war by altering each group member's per-capita transfer. Within larger groups, each member gains a lower per-capita transfer when out of power, and the government is limited in how much it can offer because holding office confers non transferable club-good rents. Consequently, larger groups are more likely to fight *either* type of civil war, not just center seeking. Although this setup enhances analytic tractability and enables the authors to generate numerous additional implications, I differ by emphasizing how ethnic group size and government military spending influence the probability of success at each type of war *and* the challenger's preferred rebellion aims.

General Model of Strategic Civil War Aims

This section sets up a general model of strategic civil war aims. I introduce oil production later when deriving comparative statics. The model features two players, a government and a regionally based challenger, who are naturally conceived as representative agents of distinct ethnic groups. A fixed amount of economic production occurs in regions occupied by each player. The government captures an exogenously determined fraction of the challenger's production as taxes, parameterized by the ease of hiding the economic activity from the government. Each player seeks to maximize their share of national output. The government's strategic choices are to allocate revenues to its military and offer transfers to the challenger, who can accept, fight a center-seeking civil war, or fight a separatist civil war. Although a shadow of the future exists, strategic moves occur only in period 1. In period 2, exogenous political institutions determine the government's ability to commit to low taxes and high transfers. At the end of the section, I substantively motivate key assumptions about the civil war contest functions.

Formally, two actors, a governing group (G) and a challenger (C) with non overlapping territorial locations, interact in a two-period game of complete and perfect information. The players each value consumption in period 2 at $\Delta > 0$ times the amount consumed.[3] In each period, economic production occurs exogenously and equals 1 in each region.[4] Appendix Table A.1 summarizes notation.

[3]Period 2 is reduced form for an infinite horizon, for which an isomorphic exponential discount factor is $\delta = \frac{\Delta}{1+\Delta} \in (0, 1)$.

[4]I parameterize production in each region in Appendix C.1.

Government's Choices in Period 1

Prior to its strategic moves in period 1, G gains a revenue endowment of $1-e_G$ from its own region and $1-e_C$ from C's region, for total revenues:

$$R \equiv 2 - e_G - e_C. \tag{1}$$

The period 1 revenue endowment equals total economic production in the country minus revenues lost from the economic exit option by (unmodeled) producers in each region. Economic activities that producers can more easily hide from the government, or that facilitate a viable flee option, correspond with higher e_i, for $i \in \{G, C\}$, which diminishes G's revenue endowment. Later, when I introduce oil production into the model, I discuss how various types of economic production influence the economic exit option.

G strategically allocates its revenues among military spending $m_G \geq 0$ and patronage transfers $x \geq 0$, jointly subject to the budget constraint, $m_G + x \leq R$. I omit time subscripts because G makes these choices only in period 1. This choice set implies that regardless of how much revenue G accrues from C's region, G can offer these revenues back to C — as well as offer revenues from its own region; or spend on the military, police, intelligence agencies, and other repressive apparatuses. The patronage transfer captures a general decision to provide benefits such as private transfers, welfare policies, and public-sector job provision.

Challenger's Choices in Period 1

C either accepts G's offer, fights a center-seeking civil war, or fights to separate.

Acceptance. Peaceful bargaining in period 1 yields contemporaneous consumption for G of revenues minus expenditures, $R - x - m_G$, and for C of its retained economic output plus the transfer offer, $e_C + x$; and the status quo regime remains intact in period 2 with future continuation values described below.

Rebellion. If C rebels in period 1, then its probability of winning depends on endogenously chosen war aims: $\mu \in \{0, 1\}$ equals 1 if C chooses center-seeking aims and 0 if separatist. C wins a center-seeking civil war with probability $p_c(m_C, \beta \cdot m_G) \in (0, 1)$ and a separatist civil war with probability $p_s(m_C, \beta \cdot m_G) \in \big[p_c, 1\big)$. These are smooth functions indexed as $p_j(\cdot)$, for $j \in \{c, s\}$. C's endowed coercive input equals $m_C > 0$. I primarily conceive of m_C as the size of C's ethnic group. The coercive input for the government depends not only on its endogenous military spending m_G, but also on a multiplicative coercive efficiency parameter, $\beta \geq 1$. Throughout, when writing the contest functions, I specify only the arguments relevant for the implication in question.

I impose standard assumptions for the first and second derivatives of each contest function. C's probability of winning strictly increases in its own coercive input, m_C, and strictly decreases in G's coercive input, $z = \beta \cdot m_G$, hence $\frac{\partial p_j}{\partial m_C} > 0$ and $\frac{\partial p_j}{\partial z} < 0$.[5] Each contest function also exhibits strictly diminishing marginal effects in each input: $\frac{\partial^2 p_j}{\partial m_C^2} < 0$ and $\frac{\partial^2 p_j}{\partial z^2} > 0$.[6]

Regarding the comparison between war aims, I assume that the marginal effect of each coercive input is larger in magnitude for the center-seeking than for the separatist contest function, $\frac{\partial p_c}{\partial m_C} > \frac{\partial p_s}{\partial m_C}$ and $-\frac{\partial p_c}{\partial z} > -\frac{\partial p_s}{\partial z}$ (for which, again, $z = \beta \cdot m_G$), motivated by research on ethnic conflict and the geography of rebellion (see below). Combining these with the assumption $p_s \geq p_c$ implies that the functions satisfy the strict monotone likelihood ratio property in each of m_C and m_G:

$$\begin{aligned} \frac{\partial}{\partial m_G}\left(\frac{p_c}{p_s}\right) < 0 \quad &\text{for all } m_C > 0 \quad \text{and} \\ \frac{\partial}{\partial m_C}\left(\frac{p_c}{p_s}\right) > 0 \quad &\text{for all } m_G \geq 0. \end{aligned} \tag{2}$$

Additionally, I assume that the likelihood ratios at boundary values of m_C satisfy:

$$\frac{p_c(0, \beta \cdot m_G)}{p_s(0, \beta \cdot m_G)} = 0 \quad \text{and} \quad \lim_{m_C \to \infty} \frac{p_c(m_C, \beta \cdot m_G)}{p_s(m_C, \beta \cdot m_G)} = 1. \tag{3}$$

As examples, the following functions satisfy each assumption:

$$\begin{aligned} p_c(m_C, \beta \cdot m_G) &= \frac{m_C}{m_C + m_0 + \beta \cdot m_G} \\ p_s(m_C, \beta \cdot m_G) &= \frac{m_0 + \beta \cdot m_G}{m_C + m_0 + \beta \cdot m_G} \cdot p_0 + \frac{m_C}{m_C + m_0 + \beta \cdot m_G}. \end{aligned} \tag{4}$$

For center seeking, this is a ratio-form contest function with an intercept term $m_0 > 0$ for G's military strength. The separatist function is similar but imposes a lower bound on C's probability of winning, $p_0 \in (0, 1)$, which flattens the slope of each coercive input.[7]

If C rebels, then in period 1, G consumes its revenues minus the cost of arming and the destructiveness of fighting, $R - m_G - d$ with $d > 0$. C forgoes

[5] Interior-optimal armament choices (for fixed civil war aims) require additional assumptions about the magnitude of the marginal benefit of military spending at the boundaries, which I formalize in Equations (A.3) and (A.6).

[6] Some results require an additional assumption about the steepness of diminishing marginal returns in m_G, which I formalize in Equations (A.8), (A.10), and (A.13).

[7] The additional parameters m_0 and p_0 appear only in these example functional forms.

consuming the government transfer in period 1, and hence consumes e_C.[8] Success in either type of war yields the future continuation values described below, whereas a failed rebellion leaves the status quo regime intact in period 2.

Payoffs in Period 2

Payoffs in period 2 depend on the bargaining outcome in period 1 and on exogenous parameters that determine taxes and transfers; hence, no strategic moves occur in period 2. The consequential assumption is that C experiences an adverse shift in the distribution of power between periods 1 and 2 that eliminates its ability to coerce the government, which instead makes future outcomes dependent on parameters related to the structure of economic production and political institutions. Modeling a shadow of the future incorporates a key rationale for war studied in existing models: shifts in power over time coupled with limited commitment ability cause costly fighting in equilibrium.

As noted, the status quo regime remains intact if either C accepts G's offer in period 1, or C launches but loses a war, yielding continuation values of $V^C_{\text{s.q.}}$ and $V^G_{\text{s.q.}}$. A political commitment parameter $\theta \in [0,1]$ dictates how much G transfers to C and constrains how much revenue G takes from C's region, with high commitment ability corresponding with real-world cases in which members of an outsider faction hold important positions in the cabinet or the ruling party. Specifically, in period 2, G exogenously *transfers* a fraction θ of revenues from its region to C, $\theta \cdot \big(1 - e_G\big)$. Regarding production from C's region, not only does C's economic exit option enable it to retain a fraction e_C of its output, but the political commitment constraint enables C to retain a fraction θ of its remaining production, $1 - e_C$, that the government would otherwise seize. Thus, G accrues exogenous *tax revenues* of $(1-\theta)\cdot(1-e_C)$ from C's region in period 2. Overall, if the status quo regime remains intact, then in period 2, G and C respectively consume:

$$\begin{aligned} V^G_{\text{s.q.}} &= \underbrace{\big(1-\theta\big)\cdot\big(1-e_G\big)}_{\text{Non-transferred revenues from } G\text{'s own region}} \\ &\quad + \underbrace{\big(1-\theta\big)\cdot\big(1-e_C\big)}_{\text{Revenues from } C} = (1-\theta)\cdot(2-e_G-e_C). \qquad (5) \\ V^C_{\text{s.q.}} &= \underbrace{e_C+\theta\cdot(1-e_C)}_{C\text{'s non taxed income}} + \underbrace{\theta\cdot\big(1-e_G\big)}_{\text{Transfers from } G} \\ &= e_C+\theta\cdot(2-e_G-e_C). \qquad (6) \end{aligned}$$

[8] The results are qualitatively identical if C also incurs a cost to rebelling, assuming sufficiently high Δ. Otherwise, C would lack a credible threat to fight because it reaps the gains of winning starting only in period 2.

This setup captures the intuition that a challenger with an ineffective economic exit option can still constrain government taxation if it enjoys political representation in the central government; and, alternatively, a viable economic exit option guards groups that lack effective political representation against the government exploitation. That is, θ and e_C are substitutes. Perfect commitment ability ($\theta = 1$) and a perfect exit option ($e_C = 1$) are individually sufficient for G to not extract any revenues from C, whereas no commitment ability ($\theta = 0$) and no exit option ($e_C = 0$) are individually necessary and jointly sufficient for G to predate C's entire output in period 2.

Following a successful center-seeking civil war, in period 2, C consumes all production in its region (which equals 1) and all revenues from G's region, $1 - e_G$; and G consumes 0:

$$V^G_{\text{center}} = 0 \tag{7}$$

$$V^C_{\text{center}} = 2 - e_G. \tag{8}$$

Following successful secession, C consumes all its regional production, but G retains all revenues from its region:

$$V^G_{\text{sep}} = 1 - e_G \tag{9}$$

$$V^C_{\text{sep}} = 1. \tag{10}$$

Figure 1 summarizes the sequence of moves in period 1 and how the outcome in period 1 affects each player's continuation value in period 2.

Assumptions for Contest Functions

Before solving the model, I motivate two assumptions about the center seeking and separatist contest functions. These assumptions are largely unexplored in existing formal theory research because related models typically do not distinguish civil war aims. I defer discussing model choices that pertain specifically to oil production — specifically, why only the government endogenously arms and why I normalize regional production to 1 — until presenting the comparative statics results.

Ethnic group size. One key assumption for the contest functions is a comparative advantage in separatist insurgency for numerically smaller challengers. In Equation (2), I assume that the positive marginal effect of the challenger's endowed coercive capacity, m_C, on its probability of winning is greater in the center seeking than in the separatist contest function.

The most natural conception of m_C is the size of C's ethnic group.[9] A successful rebellion requires aggrieved actors to create a private military

[9]Although in principle the theoretical logic holds for any geographically segregated identity groups, in the real world, rebel groups often exploit ethnic cleavages, especially when they aim to secede (Denny and Walter, 2014).

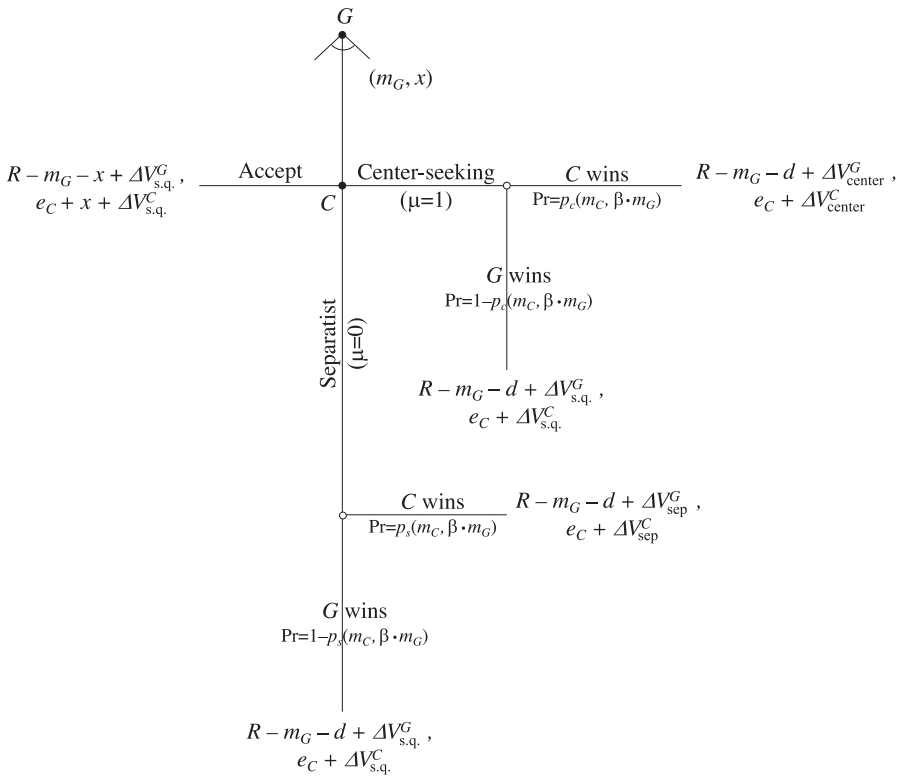


Figure 1: Strategic actions in period 1.

and to defeat the state military in battle. Members of small ethnic groups face difficulties to mustering sufficient support against numerically superior government forces to win control of the capital, and face additional difficulties to defending their control of the central government even if they take over. By contrast, greater knowledge of terrain and local support may enable small rebel groups to survive protracted guerrilla wars in the periphery (Jenne *et al.*, 2007). For example, Cabinda is an enclave province of Angola, which, historically, has created difficulties for the government to control the Cabindan Mayombe (Martin, 1977), and the Cabindan Mayombe's small size inhibits them from organizing an ethnic rebellion that could feasibly capture the capital city of Luanda.

Figure 2 presents empirical patterns consistent with this assumption based on a broad global sample of ethnic groups (see Appendix B). In Panel A, the unit of analysis is all ethnic group–years in the sample, whereas Panel

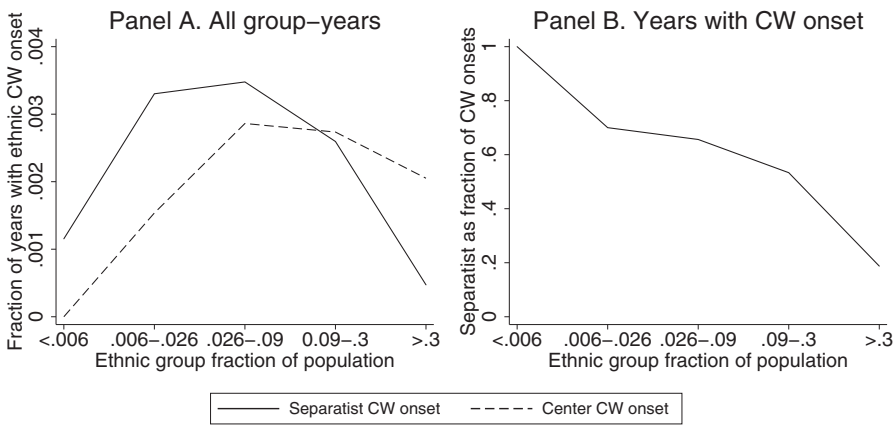


Figure 2: Ethnic group size and civil war aims.

Notes: The figure summarizes the relationship between ethnic group fraction of the population and ethnic civil war onset (disaggregated by civil war aims). I group observations into five bins of roughly equal size and plot the average value for each (N = 31,891). Appendix B provides additional data details on the sample used in Panel A, and the sample in Panel B includes only group–years with an ethnic civil war onset.

B restricts the sample to group–years with an ethnic civil war onset. The horizontal axis is ethnic group fraction of the population, with five bins of roughly equal size.[10] The vertical axis in Panel A presents the frequency of ethnic civil war onset, disaggregating wars into center seeking and separatist, whereas Panel B shows the fraction of civil war onsets with separatist aims.

Existing research demonstrates that larger ethnic groups positively covary with *any* civil war onset (Buhaug *et al.*, 2008, p. 544; Cederman *et al.*, 2013, p. 73). I partially replicate this finding by showing that moving from the first to the third quantile (<0.6% to 2.6–9.0% of the national population) raises the propensity of both types of civil war. Important for the present purposes, the increase is larger in magnitude for center-seeking civil wars because very small ethnic groups almost never initiate center-seeking civil wars. However, for larger increases in ethnic group size, the frequency of either type of civil war decreases — and the frequency of separatist civil wars falls faster than does the frequency of center-seeking conflicts, which Panel B shows. In my

[10]Ethnic group size is heavily left-skewed, which inhibits clear interpretations even when flexibly fitting the raw data (see Appendix Figure B.2). This motivates averaging over five bins with a similar number of observations.

sample, only two ethnic majority groups fought separatist civil wars: Bengalis in Pakistan in 1971, and Southerners in Yemen in 1994.[11]

Yet ethnic group size is not destiny for controlling the government. Among the sample used in Figure 2, in 15.7% of country-years across 59 distinct cases, the ruling ethnic group was small (20% of the population or less). The vast majority of these regimes, however, did not come to power by winning a center-seeking civil war. As I discuss in Appendix D.2, members of small ethnic groups won a center-seeking rebellion and established a regime governed by members of their ethnic group only in eight cases. Instead, regimes governed by small ethnic groups typically gain power by alternative means, including coups d'état (19 cases), decolonization (13 cases), and elections (nine cases).

Geography of rebellion. Another key assumption in the contest functions is that higher government military spending is more effective against center-seeking campaigns: the magnitude of the marginal effect of m_G on decreasing the rebel's probability of winning a center-seeking civil war exceeds that for separatism (see Equation (2)). Related, the coercive efficiency parameter β is, in reality, typically higher against center seeking than separatist campaigns. These assumptions draw from research on how geography affects the projection of state power. If the government builds military strongholds, deploys tanks, and sends a large army into the field, then rebel groups should face great difficulties to defeat the government in the capital. However, these same military tools less effectively combat separatists in the periphery. Stated differently, the marginal effect of buying a tank on diminishing the challenger's probability of winning is larger in magnitude if the government defends the capital than if it fights in the periphery. This logic relates to Buhaug's (2010) empirical finding that regimes with greater coercive strength tend to fight battles farther from the capital. Rebels stand a chance against strong regimes only by fighting in areas that minimize power differential.

Related, divergent military aims of center seeking and separatist campaigns facilitate tactics in the latter that blunt power differentials. Whereas center-seeking rebels usually need to actively engage the government to capture specific targets, separatist rebels can use irregular guerrilla tactics such as hit-and-runs and ambushes to avoid direct confrontation with a larger and better-equipped government military. Analyzing data from Kalyvas and Balcells (2010) support this contention. They analyze rebel tactics — but not civil war aims — and conceptualize technologies of rebellion based on rebel and government strength.

[11] In general, distinguishing evidence for assumptions from evidence for equilibrium implications poses difficulties (Lorentzen *et al.*, 2017). These plots support the *assumption* that larger group size increases the feasibility of center seeking relative to separatist civil wars. Yet civil wars are themselves an equilibrium *outcome* in my model. Later, I discuss how members of larger ethnic groups typically enjoy greater access to the central government in the form of controlling the executive office or lucrative cabinet positions. This countervailing factor for particularly large groups helps to explain why they fight fewer wars.

This includes *irregular conflicts* between weak rebels and a strong government, and *conventional conflicts* between strong rebels and a strong government. Adding an indicator for separatist aims to their regression specifications yields a negative and statistically significant correlation between separatism and conventional conflicts (Appendix D.3).

Equilibrium Analysis

When fixing the government's military spending and the challenger's civil war aims, the mechanisms are standard for conflict bargaining models: the government chooses a transfer amount that holds the challenger down to its reservation value to rebelling; and, in equilibrium, fighting occurs only if the government has minimal ability to commit to low taxes and high transfers in the future. However, incorporating endogenous civil war aims yields new considerations. The challenger faces the following tradeoff: although winning a center-seeking civil war delivers a larger prize (all the country's output), winning a separatist civil war is more feasible. The government takes this into account when choosing how much to spend on the military, which also influences the challenger's optimal rebellion threat. In equilibrium, the challenger's preferred civil war aims depend on its numerical size: separatist if small, center seeking if large, and indifferent if intermediate.

Formally, I solve backward on the period 1 subgame to characterize subgame perfect Nash equilibria. I first presume that it is possible for G to induce C to accept an offer, and then characterize the conditions under which the equilibrium is indeed peaceful rather than conflictual. Appendix A proves every formal statement.

Challenger: Accept or Rebel?

For fixed military spending m_G, C accepts with probability 1 any patronage offer x that weakly exceeds the expected utility to fighting its preferred type of civil war, and accepts with probability 0 otherwise[12]:

$$\underbrace{e_C + x + \Delta \cdot V^C_{\text{s.q.}}}_{\mathbb{E}[U_C(\text{accept})]} \geq \begin{cases} e_C + \Delta \cdot \left[p_c(m_G) \cdot V^C_{\text{center}} + \big(1 - p_c(m_G)\big) \cdot V^C_{\text{s.q.}}\right] & \text{if } \mu^* = 1 \\ e_C + \Delta \cdot \left[p_s(m_G) \cdot V^C_{\text{sep}} + \big(1 - p_s(m_G)\big) \cdot V^C_{\text{s.q.}}\right] & \text{if } \mu^* = 0. \end{cases} \tag{11}$$

[12] Any equilibrium requires C to accept with probability 1 if indifferent because otherwise G faces an open set problem when deciding x.

If C prefers center seeking over separatist civil war, then $\mu^* = 1$; and otherwise, $\mu^* = 0$. In equilibrium, as shown next, G's choices affect C's preferred civil war aims. We can rewrite Equation (11) to state that C accepts if and only if $x \geq x^*(m_G)$, for:

$$x^*(m_G) \equiv \Delta \cdot \Big[\underbrace{\mu^*(m_G) \cdot p_c(m_G) \cdot \big(V^C_{\text{center}} - V^C_{\text{s.q.}}\big)}_{\text{Center seeking}} + \underbrace{\big(1 - \mu^*(m_G)\big) \cdot p_s(m_G) \cdot \big(V^C_{\text{sep}} - V^C_{\text{s.q.}}\big)}_{\text{Separatist}} \Big], \tag{12}$$

and[13]:

$$V^C_{\text{center}} - V^C_{\text{s.q.}} = (1-\theta) \cdot (2 - e_G - e_C) > 0 \tag{13}$$

$$V^C_{\text{sep}} - V^C_{\text{s.q.}} = \underbrace{(1-\theta) \cdot (1 - e_C)}_{\text{Prevent taxes}} - \underbrace{\theta \cdot (1 - e_G)}_{\text{Lose central transfers}} . \tag{14}$$

These equations highlight why, when fixing the challenger's civil war aims, the mechanisms are standard for conflict bargaining models. A successful rebellion enables C to dictate policy in the future, hence consuming either V^C_{center} or V^C_{sep} instead of $V^C_{\text{s.q.}}$. The opportunity cost of rebelling is that C does not receive a transfer, x, in period 1. Higher military spending m_G decreases the expected utility to rebelling by lowering the probability of success (Equation (12)), and higher government commitment ability θ increases the opportunity cost of rebelling by raising $V^C_{\text{s.q.}}$ (Equations (13) and (14)). I focus on strategically interesting parameter ranges by assuming that G's commitment ability θ is low enough that C can credibly threaten to separate, i.e., Equation (14) is strictly positive. Otherwise, secession would eliminate enough central transfers (which C would gain if the status quo regime remained intact) that $V^C_{\text{s.q.}} > V^C_{\text{sep}}$.

Assumption 1 (Credible separatist threat)**.**

$$\theta < \frac{1 - e_C}{2 - e_G - e_C} \in (0, 1).$$

Challenger's Preferred Civil War Aims

A novel consideration in this model is to assess C's preferred outside option. C's expected utility is higher upon winning a center seeking than separatist

[13]Equations (13) and (14) follow directly from Equations (6), (8), and (10).

rebellion, $V^C_{\text{center}} > V^C_{\text{sep}}$. Seceding enables C to retain all future economic production in its region, but taking the center carries the additional benefit of capturing all future taxable output from G's region.[14] However, if p_s sufficiently exceeds p_c, then C's separatist threat binds. Comparing C's expected utility to each type of war enables solving for C's preferred outside option, given G's military spending m_G:

$$\mu^*(m_G) = \begin{cases} 0 & \text{if} \quad \frac{p_c(m_C,\beta\cdot m_G)}{p_s(m_C,\beta\cdot m_G)} < \pi_s \\ \{0,1\} & \text{if} \quad \frac{p_c(m_C,\beta\cdot m_G)}{p_s(m_C,\beta\cdot m_G)} = \pi_s \\ 1 & \text{if} \quad \frac{p_c(m_C,\beta\cdot m_G)}{p_s(m_C,\beta\cdot m_G)} > \pi_s, \end{cases} \tag{15}$$

and $\pi_s \equiv \frac{(1-\theta)\cdot(1-e_C)-\theta\cdot(1-e_G)}{(1-\theta)\cdot(2-e_G-e_C)} < 1$ is the fraction of spoils that C gains from seceding relative to capturing the center (see Equations (13) and (14)).

The binding civil war constraint depends on m_C and m_G, as Lemma 1 demonstrates. Higher m_C raises $\frac{p_c(m_C,\beta\cdot m_G)}{p_s(m_C,\beta\cdot m_G)}$, which pushes C toward center seeking over secession; and higher m_G decreases $\frac{p_c(m_C,\beta\cdot m_G)}{p_s(m_C,\beta\cdot m_G)}$, which deters C from fighting for the center (see Equation (2)). Combined with the boundary assumptions (see Equation (3)), this generates two regions in which C's preferred outside option does not depend on G's actions — separatist for small m_C (part a) and center-seeking for large m_C (part c) — and an intermediate region with values of m_C in which G's military spending influences the type of civil war that C prefers: center-seeking for low m_G and separatist for high m_G (part b).

Lemma 1 (Preferred civil war aims)**.** *Unique threshold values* $\overline{m}_C \in (0,\infty)$, $\underline{m}_C \in \left(0,\overline{m}_C\right)$, *and* $\hat{m}_G(m_C) \in (0,R)$ *exist such that*:

Part a: *If* $m_C < \underline{m}_C$, *then* $\mu^*(m_G) = 0$ *for all* $m_G \geq 0$.
Part b: *If* $m_C \in (\underline{m}_C, \overline{m}_C)$, *then*:

- *If* $m_G < \hat{m}_G(m_C)$, *then* $\mu^*(m_G) = 1$.
- *If* $m_G > \hat{m}_G(m_C)$, *then* $\mu^*(m_G) = 0$.
- $\hat{m}_G(m_C)$ *strictly increases in* m_C.

Part c: *If* $m_C > \overline{m}_C$, *then* $\mu^*(m_G) = 1$ *for all* $m_G \leq R$.

[14] Appendix C.2 changes the setup so that C may strictly prefer to win a separatist rather than center-seeking civil war. In the revised setup, capturing the center requires C to share spoils with the former governing actor in period 2.

Government's Strategic Choices

G chooses x and m_G in period 1 to maximize lifetime expected utility. When fixing m_G, the optimal transfer holds C to indifference, $x = x^*(m_G)$ (see Equation (12)). This is a standard condition in conflict bargaining models because conflict is costly and, conversely, G will not give more than needed to buy off C.

Military investment decreases C's probability of winning, yielding a *direct* effect that lowers C's reservation value, $x^*(m_G)$. If we fix C's preferred outside option, then G faces a straightforward optimization problem to maximize its lifetime expected utility, which is equivalent to minimizing expenditures in period 1. However, m_G also *indirectly* affects G's utility by influencing C's preferred civil war aims (see part b of Lemma 1), a novel component of my model. Equation (16) presents G's maximization problem, which incorporates the direct and indirect effects.[15] This optimization problem yields a unique optimal arming amount for each value of m_C.[16]

$$m_G^* \equiv \arg\max \Bigg\{ \underbrace{\max_{m_G \in [0, \hat{m}_G(m_C)]} R - m_G - x^*(m_G; \mu = 1) + \Delta \cdot V_{\text{s.q.}}^G,}_{\text{Optimal arming against center-seeking constraint, } \mu=1} \underbrace{\max_{m_G \in [\hat{m}_G(m_C), R]} R - m_G - x^*(m_G; \mu = 0) + \Delta \cdot V_{\text{s.q.}}^G}_{\text{Optimal arming against separatist constraint, } \mu=0} \Bigg\}. \tag{16}$$

The set of possible solutions contains three elements. The first two are interior optima. For the first term in Equation (16), I denote as $m_{G,c}^*$ the optimal interior military spending amount when fixing C's civil war aims as center-seeking (see part a of Appendix Lemma A.1). For the second term in Equation (16), I denote as $m_{G,s}^*$ the optimal interior military spending amount when fixing C's civil war aims as separatist (see part b of Appendix Lemma A.1). The third possibility is the boundary value $\hat{m}_G(m_C)$ at which C is indifferent between civil war aims (see part b of Lemma 1). Restrictions on the marginal effect of m_G rule out corner solutions $m_G \in \{0, R\}$ (Appendix Equations (A.3) and (A.6)).

[15] That is, presuming that it is possible for G to induce C to accept an offer, the conditions for which I examine later.

[16] Regarding the inclusive $\hat{m}_G$ boundary for the two constituent optimization problems, combining Equation (15) and Lemma 1 shows that $\mu^*(\hat{m}_G) \in \{0, 1\}$. C's indifference over its civil war aims at $\hat{m}_G$ implies that G's expenditures $\hat{m}_G + x^*(\hat{m}_G; \mu)$ are constant in μ.

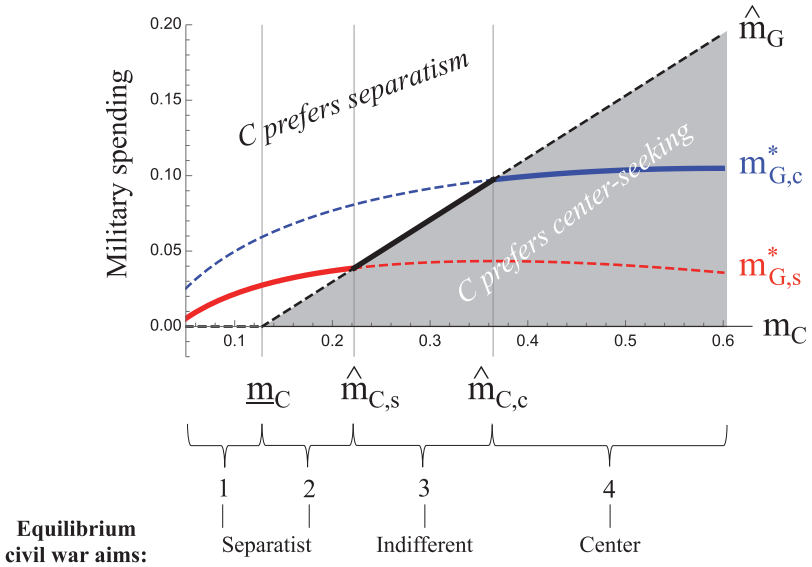


Figure 3: Equilibrium military spending and civil war aims.

Notes: The figure uses the functional forms for the contest functions from Equation (4) and the following parameter values: $\theta = 0.3$, $e_C = 0.5$, $e_G = 0.9$, $\Delta = 1.5$, $\beta = 3.8$, $m_0 = 0.2$, and $p_0 = 0.2$. For these parameter values, $\overline{m}_C = 1.22$ (not depicted).

In equilibrium, C's separatist threat binds for small m_C, center seeking binds for large m_C, and C is indifferent for intermediate m_C. Figure 3 visualizes the intuition, and Appendix Figure A.1 depicts the equilibrium offer and budget surplus. Figure 3 plots as a function of m_C the three candidates for optimal m_G: $m^*_{G,c}$ in blue, $m^*_{G,s}$ in red, and $\hat{m}_G$ in black. Each curve is solid for parameter values at which it equals the equilibrium amount of military spending, and dashed otherwise. If (m_C, m_G) lies in the gray region, then C prefers center seeking to separatist civil war, and vice versa in the white region; these depict the parameter ranges described in Lemma 1.

In region 1, G's optimization problem is straightforward because $m_C < \underline{m}_C$ implies that C prefers separatist over center-seeking aims independent of m_G (part a of Lemma 1). Thus, to solve Equation (16), we need only to consider the direct effect. G chooses $m^*_{G,s}$ because, by definition, this choice of m_G maximizes G's utility when C's separatist threat binds. Conversely, for $m_C > \overline{m}_C$, C prefers center seeking over separatist aims independent of m_G (part c of Lemma 1; not depicted in Figure 3, although given the numbering scheme, this would be region 5). Clearly, G chooses $m^*_{G,c}$ in that range.

For intermediate values $m_C \in \left(\underline{m}_C, \overline{m}_C\right)$, we need to also consider the indirect effect of m_G on C's preferred outside option. Higher m_G drives down C's probability of winning either type of war but more so for center seeking, hence enhancing C's relative preference for separatist aims (part b of Lemma 1). In region 2, m_C exceeds — but only slightly — the threshold $\underline{m}_C$ below which C prefers separatism over center seeking for *any* m_G. Thus, in region 2, C prefers separatism over center seeking unless m_G is *really* low, and spending $m^*_{G,s}$ on the military is high enough that C prefers separatism. Consequently, regions 1 and 2 are strategically identical: G chooses $m_G = m^*_{G,s}$ and C's separatist threat binds. The figure shows that region 2 ends at $m_C = \hat{m}_{C,s}$ (see Appendix Lemma A.2), the point at which the red curve for $m^*_{G,s}$ intersects the black line for $\hat{m}_G$.

Region 4 reflects a similar logic. Here, m_C is lower than — but only slightly — the threshold $\overline{m}_C$ above which C prefers center seeking to separatism for *any* choice of m_G. Thus, in region 4, C prefers center-seeking to separatism unless m_G is *really* high, and $m_G = m^*_{G,c}$ is low enough that this armament amount does not deter C from preferring center seeking. Consequently, regions 4 and (not pictured) 5 are strategically identical: G chooses $m_G = m^*_{G,c}$ and C's center-seeking threat binds. The figure shows that region 4 ends at $m_C = \hat{m}_{C,c}$ (see Appendix Lemma A.2), the point at which the black line for $\hat{m}_G$ intersects the blue curve for $m^*_{G,c}$.

The logic for regions 2 and 4 anticipates the surprising result in region 3: G chooses $\hat{m}_G$, which makes C indifferent between rebellion aims in equilibrium. *Choosing an interior-optimal amount of military spending for one type of rebellion would cause C to prefer the opposite rebellion aims.* In region 3, $m^*_{G,s}$ is low enough that, at this armament amount, C's center-seeking threat binds (red curve lies below black line); and $m^*_{G,c}$ is high enough that, at this armament amount, C's separatist threat binds (blue curve lies above black line). Unable to achieve an interior optimum, G prefers the minimum level of m_G that induces C to prefer separatist — or, equivalently, the maximum level of m_G that induces C to prefer center seeking. As Equation (16) shows, this is $\hat{m}_G$, which makes C indifferent between civil war aims. Lemma 2 summarizes this result.

Lemma 2 (Equilibrium military spending and civil war aims)**.** *Unique thresholds $\hat{m}_{C,s}$ and $\hat{m}_{C,c}$ exist that satisfy $\underline{m}_C < \hat{m}_{C,s} < \hat{m}_{C,c} < \overline{m}_C$, for $\underline{m}_C$ and $\overline{m}_C$ defined in Lemma 1, such that for m^*_G defined in Equation (16):*

Part a: If $m_C < \hat{m}_{C,s}$, then $m^*_G = m^*_{G,s}$ and $\mu^* = 0$.
Part b: If $m_C \in \left[\hat{m}_{C,s}, \hat{m}_{C,c}\right]$, then $m^*_G = \hat{m}_G$ and $\mu^* \in \{0, 1\}$.
Part c: If $m_C > \hat{m}_{C,c}$, then $m^*_G = m^*_{G,c}$ and $\mu^* = 1$.

Peace and Conflict in Equilibrium

Civil war occurs in equilibrium if G would need to spend more than its entire budget in period 1 to buy off C. This can occur because of G's limited commitment to offer transfers and to not overtax in period 2, when C cannot fight. Peaceful bargaining is possible in equilibrium if and only if the budget constraint in period 1, $B^* \geq 0$, is satisfied, for:

$$B^* \equiv R - m_G^* - x^*, \tag{17}$$

with R defined in Equation (1); m_G^* characterized in Lemma 2; and (with slight abuse of notation), $x^* \equiv x^*(m_G^*)$, as defined in Equation (12). To see why low commitment ability θ is necessary for equilibrium fighting, suppose instead $\theta = 1$. Then C pays no taxes and receives maximum transfers in period 2 under the status quo regime — identical to a successful center-seeking civil war. Additionally, $m_G^* = 0$, and Equation (17) reduces to $2 - e_G + \Delta \cdot (1 - \mu^*) \cdot p_s(0) \cdot (1 - e_G) > 0$. By contrast, if $\theta < 1$, then Equation (17) may be violated.

Proposition 1 characterizes the subgame perfect Nash equilibrium strategy profile, which is unique with respect to payoff equivalence. Appendix A.3 shows that G's armament optimization problem is an affine transformation of Equation (16) if $B^* < 0$, hence yielding an identical choice despite rebellion occurring in equilibrium.

Proposition 1 (Equilibrium strategy profile)**.**

Part a. Peace: *Suppose* $B^* \geq 0$. *G chooses* $(x, m_G) = (x^*, m_G^*)$. *C accepts any* $x \geq x^*(m_G)$. *If* $x < x^*(m_G)$, *then C rebels and Lemma* 1 *characterizes C's optimal war aims as a function of* m_G. *Along the equilibrium path, C accepts* x^*.

Part b. Conflict: *Suppose* $B^* < 0$. *G chooses* $m_G = m_G^*$, *and is indifferent among all feasible* x. *C rebels in response to any offer, and Lemma* 1 *characterizes C's optimal war aims as a function of* m_G. *Along the equilibrium path, C rebels and Lemma* 2 *characterizes civil war aims.*

Comment about Indifference Region for Civil War Aims

One surprising implication of the model is the intermediate region of m_C values in which, in equilibrium, C is indifferent between civil war aims. Although scholars sometimes dismiss mixing regions as uninteresting technical impediments in models, they can carry important empirical implications (Gibilisco,

2020b). I mostly leave this as an open question for future research on strategic civil war aims because, for the remainder of the analysis, I assume that m_C lies in parameter ranges in which G chooses an interior optimal military spending amount, $m_C \in (0, \hat{m}_{C,s}) \cup (\hat{m}_{C,c}, \infty)$. However, in two empirical cases in my dataset, a rebel group switched aims during its rebellion: EPRDF in Ethiopia and SPLA in Sudan. Appendix C.3 discusses these cases in the context of a model extension with multiple war periods in which the rebel group can switch aims in between periods, although these cases are also consistent with equilibrium mixing.

Countervailing Effects of Oil Production

Oil production generates countervailing pressures for whether civil war occurs along the equilibrium path. In the real world, economic activities vary in how easily governments can extract tax revenues. Distinguishing features of oil production are its fixed location and high capital intensity, which enable governments to easily tax oil production. This *revenue effect* provides funds that the government can spend on the military and on transfers, which hinders the opportunity structure for rebellion. However, easily taxed oil production also creates a *predation effect* that heightens the challenger's motives to rebel — either to eliminate predatory government taxation of its oil production, or for C to itself predate oil produced in the government's region. These effects (with one exception) do not vary in the challenger's civil war aims, and in the next section I consider the interaction between these two mechanisms and civil war aims.

Incorporating Oil Production into the Model

To facilitate comparative statics on oil production, I introduce the following new parameters and assumptions. Oil production constitutes a fraction $O_i \in [0, 1)$ of total economic output in each region (which, again, equals 1), for $i \in \{G, C\}$. Oil production is O_G in G's region (*government oil*) and O_C in C's region (*regional oil*). Another new parameter, γ, indicates regions: $\gamma = 0$ for G's region and $\gamma = 1$ for C's region.

In the real world, oil production facilitates easy government taxation. I capture this in the model by assuming that oil production undercuts economic exit:

$$\frac{de_i}{dO_i} < 0. \tag{18}$$

Oil constitutes a point-source resource because it is "exploited in small areas by a small number of capital-intensive operators" (Le Billon, 2005, p. 34). Ross (2012, p. 46) shows the capital-to-labor ratio in the oil and gas industry exceeds

that in any other major industry for U.S. businesses operating overseas (see also Ross, 2003). Because governments can relatively easily enforce military control over oil fields — relative to output produced in a non-concentrated area — extracting this point-source resource requires minimal bureaucratic capacity (Dunning, 2008, p. 40). Local producers cannot threaten to move immobile oil reserves outside the government's reach if taxed at unfavorable rates. Paine (2019a) compares oil production to other types of economic activities that producers can more easily hide from the government, concluding that oil production yields a particularly low exit option for local producers, i.e., low e_i.[17] By contrast, natural resources like alluvial diamonds correspond with higher e_i. This geographically dispersed resource entails a labor-intensive mining process, which enhances opportunities for societal actors to loot these resources — i.e., higher exit.

These key features of oil production also motivate why — in addition to making the model more tractable — only the government makes an endogenous arming choice, whereas the challenger's coercive input is endowed. Consequently, only the government can use oil wealth to build military capacity. In the real world, governments face advantages over societal groups to control the preponderance of their country's oil revenues because oil production is highly capital intensive and fixed in location. Thus, the government, but not societal groups, can use oil revenues to fund a bigger military. By contrast, some scholars argue that oil located near potential rebel groups makes conflict likely by providing an opportunity to steal oil production to finance a rebellion (Dube and Vargas, 2013; Lujala, 2010; Ross, 2012). My assumption better reflects the large majority of empirical cases. Despite outliers — e.g., ISIS in Iraq and Syria, the Niger Delta in the 2000s, and Colombia — rebel groups rarely achieve large-scale looting of oil production to finance an insurgency (Colgan 2015; Paine 2016, 2019a).

A final notable assumption is that total economic production in each region equals 1. Normalizing *total* production means that the only effect of oil production in the model arises from the exit option in Equation (18). Many scholars instead focus on the large absolute size of oil production — hence creating a lucrative prize to capture — rather than specifically its effect on producers' economic exit option. In Appendix C.1, I parameterize total production in each region and assume that producing oil corresponds with higher overall production. Contrary to arguments that the large-prize mechanism unambiguously makes conflict more likely, I instead show that this

[17] In that article, I explicitly model a strategic choice for the challenger to either pay taxes to the government or exit from the formal economy, and I include additional parameters that more precisely express the deleterious effect of regional oil on the challenger's economic exit option. Given the new moving parts I add here to study strategic civil war aims, I omit these microfoundations.

mechanism creates countervailing effects qualitatively identical to the revenue and predation effects expounded here.

Revenue and Predation Effects

An increase in oil production exerts two effects on the equilibrium budget constraint B^*, defined in Equation (17). First, a *revenue effect*. Because oil enables greater tax revenues than other economic activities (Equation (18)), an increase in either government oil or regional oil production raises G's available revenues in period 1 (which Equation (1) denotes as R) to spend on transfers and coercion. This effect increases the range of parameter values in which G can meet the budget constraint. Formally:

$$\text{Revenue effect: } \frac{dR}{dO_i} = -\frac{de_i}{dO_i} > 0. \tag{19}$$

Second, the same easy-revenue properties of oil production also yield a *predation effect* that raises C's incentives to fight. Oil diminishes the ability of (unmodeled) producers in G's region to exit the formal economy, which boosts the revenues from G's territory in each period, $1 - e_G$. Winning a center-seeking war enables C to gain *all* these revenues, rather than only the fraction θ that C would accrue as exogenous transfers under the status quo regime. C also wants to guard its regional oil production against predation by G, which creates similar motives. Oil production increases the revenues that C provides to G in period 2 if the status quo regime remains intact, $(1 - \theta) \cdot (1 - e_C)$, by diminishing C's ability to exit the formal economy, whereas winning either type of war would enable C to consume *all* production from its region. The predation effect works through G's expenditures $x^* + m_G^*$ because, by increasing C's consumption following a successful war relative to the status quo, oil production raises the minimum amount of government spending on sticks and carrots that satisfies the budget constraint in Equation (17).

Predation effect[18]**:**

$$\frac{d}{dO_i}(m_G^* + x^*) = \Delta \cdot (1 - \theta) \cdot p_j(m_G^*) \cdot \left(-\frac{de_i}{dO_i}\right) > 0$$
$$\text{if } (1 - \mu^*) \cdot (1 - \gamma) = 0. \tag{20}$$

An increase in oil production exerts similar effects for most combinations of oil location and C's civil war aims: if the oil is produced in C's region

[18]For all $m_C \in (0, \hat{m}_{C,s}) \cup (\hat{m}_{C,c}, \infty)$, applying the envelope theorem to compute $\frac{d}{dO_i}(m_G^* + x^*)$ yields this expression. The envelope theorem applies in this parameter range because G chooses an interior-optimal value of m_G.

and/or if C's center-seeking threat binds. However, if C prefers separatism, then an increase in *government* oil does not exert a predation effect because seceding would not enable C to amass these additional revenues. Instead, an increase in government oil strictly *diminishes* C's incentives to secede, as C would lose the additional central transfers in period 2 (which equal a fraction θ of revenues from G's region):

$$\frac{d}{dO_i}(m_G^* + x^*) = -\Delta \cdot \theta \cdot p_s(m_G^*) \cdot \left(-\frac{de_i}{dO_i}\right) < 0$$
$$\text{if } (1-\mu^*) \cdot (1-\gamma) = 1. \tag{21}$$

Proposition 2 presents the net effect of oil production on the equilibrium budget constraint, B^*, by incorporating the countervailing effects from Equations (19) and (20). Higher B^* implies a narrower range of parameter values in which fighting occurs, hence decreasing equilibrium civil war prospects, whereas the opposite holds for lower B^*.

Proposition 2 (Countervailing effects of oil production)**.** *If* $m_C \in (0, \hat{m}_{C,s}) \cup (\hat{m}_{C,c}, \infty)$ *and* $(1-\mu^*) \cdot (1-\gamma) = 0$*, then the overall effect of oil production on the equilibrium budget constraint in period 1 is*:

$$\frac{dB^*}{dO_i} = \Bigg[\underbrace{1}_{Revenue} - \underbrace{\Delta \cdot (1-\theta) \cdot p_j(m_G^*)}_{Predation} \Bigg] \cdot \left(- \frac{de_i}{dO_i} \right) >< 0,$$

for $i \in \{G, C\}$ *and* $j \in \{c, s\}$.

Theoretical Implications for the Mixed Oil Curse

The motivating empirical pattern for this article is that separatist civil wars occur more frequently in oil-rich than in oil-poor regions, whereas center-seeking rebellions occur less frequently in oil-rich than in oil-poor countries. Combining strategically chosen rebellion aims with the countervailing oil mechanisms enables rephrasing this mixed empirical relationship in terms of theoretical mechanisms: why should the predation mechanism be stronger for separatist than for center-seeking challengers? This section proposes two theoretical implications that each align with the empirical patterns. The inherently conditional nature of these propositions yields additional empirical implications about cases in which oil wealth should curse prospects for peace, which I state as explicit hypotheses before examining data in the next section.

Selection Effect for Ethnic Minorities

An increase in the government commitment parameter, θ, diminishes the magnitude of the predation effect of oil. Empirically, θ is typically lower for members of small ethnic groups. This creates a selection effect for ethnic minority groups: producing oil in their territory exerts a net effect that *increases* their incentives to rebel; and their small size engenders a preference for separatist aims (see Lemma 2). I present the formal result after substantiating the key empirical affinity that underpins the selection effect.

Ethnic minorities and ethnopolitical exclusion (low θ). Various historical and strategic reasons anticipate why members of smaller ethnic groups typically exert less influence in central governments, an empirical operationalization for low θ. Members of larger ethnic groups often controlled historical states that persisted until independence from European colonialism, or dominated parties that won elections at the end of the colonial period (Paine, 2019b; Wucherpfennig *et al.*, 2016). Strategically, whoever controls the state faces greater incentives to devolve more power to members of larger ethnic groups because they pose a more credible rebellion threat (Francois *et al.*, 2015; Roessler and Ohls, 2018).

Figure 4 shows empirically that governments indeed tend to exclude ethnic minority groups from positions of power. The sample of ethnic groups and the horizontal axis are the same as in Figure 2. Here, the vertical axis expresses the fraction of ethnic groups with political representation in the central government.

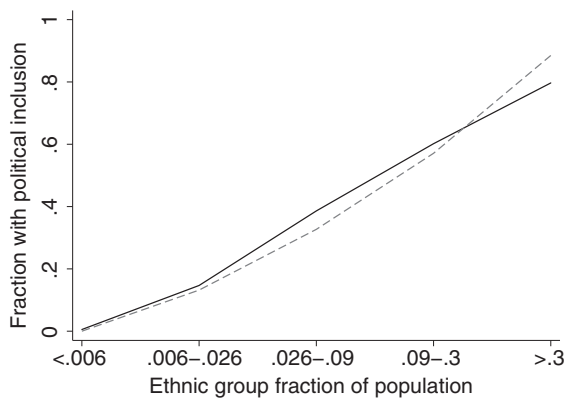


Figure 4: Ethnic group size and political inclusion.

Notes: The figure summarizes the relationship between ethnic group fraction of the population and ethnopolitical inclusion. I disaggregate the sample into five bins of roughly equal size and plot the average value for each quantile (N = 31,891). The black curve uses a broad global sample, and the dashed gray curve subsets this sample to ethnic groups with a giant oil field in their territory. Appendix B provides additional data details.

This incorporates data from the Ethnic Power Relations project (see Appendix B), which codes politically relevant ethnic groups' decision-making authority within the central government based on who controls the presidency, cabinet positions, and senior posts in the administration. In Figure 4, I coded any group–year as *politically included* if the group had a power access status of *monopoly*, *dominant*, *senior partner*, or *junior partner*; whereas groups with a lesser power-access status are considered *excluded*. The black curve demonstrates the positive association between ethnic group size and political inclusion, and the dashed gray curve shows a similar pattern among ethnic groups with a giant oil field in their territory.

Formal analysis. An increase in θ affects the magnitude of the oil effect, $\frac{dB^*}{dO_i}$, in two ways.[19] Directly, higher θ decreases the magnitude of the predation effect (Equation (20)) because, in the future, G can commit to transfer more government oil to C and to tax regional oil at lower levels. This raises the opportunity cost of rebelling. Surprisingly, a countervailing indirect substitution effect *increases* the magnitude of the predation effect. Higher θ diminishes G's marginal benefit to arming by reducing C's threat to rebel, which lowers equilibrium military spending m_G^* (see Appendix Equations (A.1) and (A.4)). This substitution effect increases C's equilibrium probability of winning, $\mu^* \cdot p_c(m_G^*) + (1-\mu^*) \cdot p_s(m_G^*)$. A sufficient assumption for the direct effect to outweigh the substitution effect in magnitude is that the contest functions exhibit steep-enough diminishing marginal returns. This assumption holds for commonly used contest functions, including those in Equation (4). I elaborate on this intuition in Appendix A.4.

Proposition 3 (Selection effect for ethnic minorities)**.** *For* $\frac{dB^*}{dO_i}$ *defined in Proposition* 2*, with* $i \in \{G, C\}$*, we have*:

$$\frac{d^2B^*}{dO_i d\theta} > 0.$$

Although small ethnic groups *typically* lack political representation in the central government (see Figure 4), in cases where a minority group enjoys political representation (high θ), the predation effect of oil should not be large in magnitude, which blunts incentives to secede. This yields a specific implication about the ethnic groups for whom local oil production should most often trigger separatist rebellions. Notably, my model provides clear microfoundations for why oil production and ethnic exclusion exert *complementary* effects on conflict, as opposed to *substituting* for the importance of each other (see also Asal *et al.*,

[19] Proposition 3 evaluates comparative statics for the substantively interesting cases in which oil production generates a predation effect. If C's prefers separatist aims, then increasing O_G does not create a predation effect (see Equation (21)).

2016 and Hunziker and Cederman, 2017). Complementarities arise because oil production exerts a net conflict-inducing effect only for low θ. By contrast, for high θ, the overall effect of increasing oil production diminishes incentives for conflict — which anticipates the negative empirical relationship between oil production and *center-seeking* civil wars.

> **Hypothesis 1** (Politically excluded minorities)**.** *Only among politically excluded ethnic groups (low θ) should regional oil wealth raise separatist civil war propensity.*

Geography of Rebellion Effect

The second implication from the model that helps to explain the mixed oil curse is a geography of rebellion effect. Even a moderately capable government can translate high military spending into a low probability that a challenger can capture the center. However, when combating a separatist insurgency in the periphery, the same government faces greater impediments to translating its revenues into a high probability of defeating the challenger, which enhances the predation effect of oil.

Proposition 4 formalizes this intuition by taking comparative statics on β, the efficiency with which G translates military spending into coercive units in the contest function. For the reasons discussed above, coercive efficiency should typically be higher against center seeking than separatist challengers. Higher β reduces the magnitude of the predation effect through two channels: raising G's total coercive strength at a fixed choice of m_G, and increasing m_G^* by elevating the marginal benefit to arming (see Appendix Equations (A.1) and (A.4)). Both mechanisms lower the challenger's probability of winning a rebellion, and hence diminish the minimum transfer needed to buy off C.

> **Proposition 4** (Geography of rebellion mechanism)**.** *For $\frac{dB^*}{dO_i}$ defined in Proposition 2, with $i \in \{G, C\}$, we have:*
>
> $$\frac{d^2B^*}{dO_i d\beta} > 0.$$

In addition to comporting with the overall mixed oil-conflict relationship, this logic also generates specific expectations for which cases should fit the general empirical pattern and which should defy it — i.e., when oil wealth should not trigger separatist civil wars and when it should not prevent center-seeking rebellions. Only for groups with permissive geography for secession (which I operationalize below) should we expect regional oil production to associate

with separatist civil wars. By contrast, for groups that face particularly difficult geography for seceding, β is, in effect, high, despite fighting outside the vicinity of the capital.

> **Hypothesis 2** (Favorable separatist geography)**.** *Only among ethnic groups with favorable separatist geography (low β) should regional oil wealth raise separatist civil war propensity.*

Conversely, a government that is vulnerable for reasons independent of oil wealth may lack consolidated control over any oil produced in its country, resulting in low β. Vulnerable governments cannot effectively translate oil wealth into a low probability for a challenger to win a center-seeking civil war, thus negating governments' general advantages when defending the center.

> **Hypothesis 3** (Non vulnerable governments)**.** *Only in countries where governments lack conditions of acute vulnerability (high β) should oil wealth diminish center-seeking civil war propensity.*

Where Do We Find A Resource Curse?

Propositions 3 and 4 provide theoretical implications consistent with the mixed empirical oil-conflict patterns, and also underpin the logic for more specific hypotheses about conditions under which oil production should raise or lower prospects for civil war. This section summarizes cases in which civil wars occurred in oil-rich regions or countries, presents simple interactive regression models, and discusses Saudi Arabia and Angola in more depth.

Separatist Civil Wars

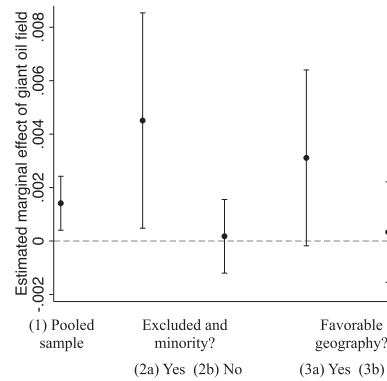
Appendix Figure B.1 establishes that ethnic groups residing in oil-rich territories participate in separatist civil wars at elevated rates. What variation drives this correlation? Panel A of Figure 5 provides a transparent look at the data by listing every ethnic group with at least one giant oil field in its territory that fought a major separatist civil war between 1946 and 2013. Almost every separatist civil war over an oil-rich territory has occurred in locations for which the theory anticipates that the predation effect should be large in magnitude because the group is a politically excluded ethnic minority (as posited in Hypothesis 1) or faces favorable geography to separate (Hypothesis 2). In the column for Hypothesis 1, m indicates ethnic minority groups (with the group's national population share in parentheses), and e indicates groups excluded from power in the central government. All but two ethnic groups are both

A. Oil-separatist civil war cases

Ethnic group	Country	Onset year	Politically excl. minorities (H1)	Favorable sep. geog. (H2)
Bakongo*	Angola	1992	m(13%), e	-
Cabindan Mayombe*	Angola	1992	m(2%), e	N
Assamese (non-SC/ST)	India	1991	m(1.4%)	D
Acehnese	Indonesia	1989	m(1%), e	M%, N, D
Acehnese	Indonesia	1999	m(1%), e	M%, N, D
East Timorese*	Indonesia	1975	m(0.5%), e	M%, N, D
Kurds	Iran	2004	m(8%), e	M%, D
Kurds	Iraq	1961	m(17%), e	M%
Kurds	Iraq	1974	m(17%), e	M%
Igbo	Nigeria	1967	m(18%), e	-
Baluchis	Pakistan	1973	m(3%), e	M%, D
Baluchis	Pakistan	2004	m(3%), e	M%, D
Chechens	Russia	1994	m(0.9%), e	M%, D
Chechens	Russia	1999	m(0.9%), e	M%, D
Dinka	Sudan	1983	m(10%), e	D
Malay Muslims*	Thailand	2004	m(5%), e	D
Southerners	Yemen	1994	- (55%)	M%

*Only offshore oil

B. Regression estimates



Notes: The figure presents point estimates and 95% confidence intervals (using two-sided hypothesis tests) for logit regressions described in Appendix B. The dependent variable is separatist civil war onset, and the unit of analysis is ethnic group-years. The table lists every year in which an ethnic group with a giant oil or gas field in its territory initiated a separatist civil war. The text describes the various symbols, and Appendix B provides supporting information.

Figure 5: Conditional results for oil and separatist civil wars.

excluded and minorities.[20] The column for Hypothesis 2 contains information on the favorability of separatist geography. *M%* indicates that the percentage of the ethnic group's territory with mountains exceeds the median in the sample, *N* indicates that the ethnic group's territory is noncontiguous from the territory containing the country's capital city, and *D* indicates that the distance between the centroid of the ethnic group's territory and the capital exceeds the median in the sample. These variables relate to different aspects of favorable geography for rebellion discussed in the literature (Buhaug *et al.*, 2008; Fearon and Laitin, 2003). Fifteen of seventeen oil-separatist cases exhibit at least one favorable geography condition.

Panel B of Figure 5 directly assesses Hypotheses 1 and 2 by estimating relative frequencies across the full sample of ethnic group-years.[21] Appendix Equation (B.3) adds interaction terms to the statistical models used to establish the positive correlation between oil and separatism (see Appendix Figure B.1). Compared to the baseline specification (Column 1), the estimated

[20] Ross (2012, p. 155–6) highlights a similar qualitative pattern. Appendix B.4 describes the data sources.

[21] Groups without a concentrated territorial location cannot feasibly secede because they lack a natural territory from which to create an independent state or autonomous region. To reduce heterogeneity, the sample for these regressions omits geographically dispersed ethnic groups. Geographic dispersion nearly perfectly predicts the absence of separatist, but not center-seeking, civil wars (see Appendix D.4).

marginal effect of oil on separatist civil war onset is between 2.4 and 2.9 times larger among politically excluded ethnic minority groups (Column 2a),[22] or among groups with any favorable geography conditions (p-value equals 0.06 in Column 3a). By contrast, the relationship is null among groups lacking either condition.[23]

Disaggregating onshore and offshore oil production yields similar support for the two hypotheses (Appendix D.5). This finding is intriguing because some existing theories posit the importance of oil profits financing rebel groups. In these theories, *offshore* oil production should not cause separatist civil wars by inhibiting rebel groups from looting oil. By contrast, the present theoretical logic anticipates similar effects for offshore and onshore oil because both induce a predation effect, which the data reflect.

Center-Seeking Civil Wars

Appendix Figure B.1 establishes that greater oil income per capita covaries with less frequent center-seeking civil wars at the country level. Despite the discrepancy in relative frequencies, in 16 cases, a center-seeking civil war began between 1946 and 2013 in a country producing at least $100 in oil income per capita in the previous year, which Panel A of Figure 6 lists. Hypothesis 3 anticipates exceptions to the general pattern for any government vulnerable (independent of oil wealth) to attack. Various factors can make oil-rich governments vulnerable to attacks on the capital: externally triggered focal points for mass mobilization, or the government lacks consolidated control over its oil revenues. Appendix B.5 details how I coded the following three vulnerability conditions.

First, the country experienced recent defeat in warfare or a violent political transition (W for war). Several oil-rich countries experienced these conditions within two years prior to their center-seeking civil war. Governments should face particular difficulties to deterring rebel groups in violent independence cases where a domestic war that began during the foreign occupation was already ongoing (Angola 1975, Algeria 1962, Iraq 2011), or where the rebel group was already organized from a previous civil war, as with SPLA in Sudan in 2011 after South Sudan gained independence. War defeats can also create new focal points for mass mobilization, such as the Shi'a uprisings following Iraq's defeat in the Persian Gulf war in 1991. Second, the Arab (A) Spring uprisings across the Middle East and North Africa in 2011 similarly created a focal point for the opposition to organize against governments even

[22]Hunziker and Cederman (2017) demonstrate a similar pattern when instrumenting for oil discoveries.

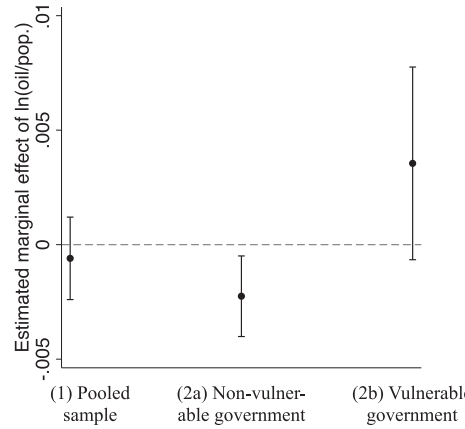
[23]Including country fixed effects yields similar correlations (not reported). Paine (2019a) presents additional supportive evidence for the predation mechanism: in most oil-separatist cases, rebel groups espoused concerns specifically about unfair oil redistribution.

A. Oil-center seeking civil war cases

Country	Onset year	Oil p.c.	Gov. vulnerability (H3)
Argentina	1973	$130	S
Algeria	1962	$161	W
Syria	1979	$455	S
Peru	1981	$467	S
Sudan	2011	$479	W
Angola	1975	$543	S, W
Yemen	2004	$592	-
Syria	2011	$651	A
Nigeria	2013	$677	-
Iraq	1959	$701	-
Algeria	1992	$708	-
Congo, Rep.	1997	$788	-
Iraq	1991	$1,814	W
Iraq	2011	$2,451	W, A
Iran	1978	$3,481	S
Libya	2011	$9,007	A

Notes: The table lists every country-year with a center-seeking civil war onset and at least $100 in oil and gas income per capita in the previous year. The text describes each symbol, and Appendix B provides supporting information.

B. Regression estimates



Notes: The figure presents point estimates and 95% confidence intervals (using two-sided hypothesis tests) for logit regressions described in Appendix B. The dependent variable is center-seeking civil war onset, and the unit of analysis is country-years.

Figure 6: Conditional results for oil and center-seeking civil wars.

though long-standing oil wealth facilitated a strong coercive apparatus. This engendered new center-seeking civil wars in Libya and Syria. Third, newly oil-rich governments face difficulties to consolidate control over revenues (Bell and Wolford, 2015). Many countries experienced newfound oil wealth amid the major oil shock (S) that lasted roughly a decade after the OPEC oil embargo of 1973. Peru crossed the $100 oil income per capita threshold the year before its war began, and Argentina and Syria (1979) within five years.

Panel B of Figure 6 directly assesses Hypothesis 3 by estimating relative frequencies across the full sample of country–years. Appendix Equation (B.4) adds an interaction term to the statistical models used to establish the negative correlation between oil production and center-seeking civil wars (see Appendix Figure B.1). Among countries lacking any vulnerability conditions, increasing annual oil and gas income per capita from $0 to $1000 decreases the predicted probability of center-seeking civil war onset by 67%. By contrast, among countries with at least one vulnerability condition, greater oil production associates positively with center-seeking civil war onset.

Qualitative Evidence from Saudi Arabia and Angola

Qualitative evidence from Saudi Arabia and Angola supports the key theoretical mechanisms. Two aspects of these cases are *typical*: no major center-seeking civil wars in oil-rich Saudi Arabia, and a major separatist civil war in Angola's oil-rich Cabinda province. The theory also helps to understand *deviant* aspects: no separatist civil wars by oil-rich Saudi Shi'a, and oil-rich Angola's major center-seeking civil war.

Saudi Arabia has not experienced any major center-seeking civil wars since becoming oil-rich, and exemplifies oil-rich rulers using patronage and coercion — the government's choice variables in the model — to prevent challenges. Oil companies made their first discovery in 1938, and the country has produced at least $1000 in oil income per capita in every year since 1951. This initial period coincided with favorable conditions for consolidating control over oil revenues (H3). Ibn Saud had recently asserted military dominance over the modern territory of the Saudi state, which spans the Arabian peninsula. This included capturing eastern Arabia in 1913, which produces most of the country's oil (Jones, 2010, p. 90–92). In the interim period between initial discoveries and the onset of major exports, British and US oil companies provided concessionary payments and assistance. King Saud used payments from oil concessions in the 1930s to start building a modern army (Khatani, 1992, p. 52). Over time, the size of and expenditures on the military grew considerably (Gause, 1994, p. 66–8), and the kingdom employs a large percentage of citizens in the public sector (roughly half in the 1990s) to buy their loyalty (59). Overall, Saudi Arabia has experienced a dramatic transformation relative to pre-oil periods in which the government relied on tribal leaders for resources and faced occasional tribal revolts (12–14, 24).

The theory also provides insight into a deviant outcome: no major separatist civil wars in Saudi Arabia's eastern province populated by Shi'a, which has produced the overwhelming majority of the country's oil wealth since discovery in the 1930s (Jones, 2010, p. 91–92). Although Shi'a are a politically excluded minority group, they lack any of the posited favorable geography conditions, which anticipates difficulties to organizing a rebellion (H2). Failed labor strikes in the 1950s preceded widespread protests and demonstrations in 1979 and 2011 (Matthiesen, 2012). Jones (2010, p. 138–216) discusses how the unequal distribution of the country's oil wealth provided a catalyst: "Both before and after the [1979] uprising, oil and the Shiites' exclusion from oil wealth dominated the political discourse" (185). Yet despite these grievances, the government's coercive presence in the region dampened prospects for a broader rebellion. "Although it is unlikely that local anxieties about the dislocations and failures of modernization had faded" during the peaceful period between the 1950s and 1979, "[t]he Saudi state became increasingly proficient at rooting out and oppressing dissenters" (176), including arresting and exiling many Shi'a

political activists. Similarly, in 1979, the government used "overwhelming force to crush the Shiites" and responded by bolstering its police and intelligence forces — causing dozens of deaths among the thousands of protesters (218–19). Although the Iranian revolution in 1979 (led by Iranian Shi'a) and the Arab Spring in 2011 spurred temporary mobilization by Saudi Arabia's Shi'a to protest frustrations over the distribution of oil revenues, repressive strength afforded by extracting oil revenues from the region enabled the government to prevent a major war.

Angola's Cabinda province is a typical case in which politically marginalized and oil-rich ethnic minority groups (H1) with favorable geography (H2) launched a separatist civil war. Regarding H1, Cabinda produces the majority of Angola's oil, and Cabinda's oil revenues have provided roughly half the country's budget since independence (Martin, 1977, p. 57; Porto, 2003, p. 3). The central government has heavily taxed the region while offering few compensating benefits. Cabinda "remains one of the poorest provinces in Angola. An agreement in 1996 between the national and provincial governments stipulated that 10% of Cabinda's taxes on oil revenues should be given back to the province, but Cabindans often feel that these revenues are not benefiting the population as a whole, largely because of corruption" (Porto, 2003, p. 3). These failed promises support the presumption that a lack of political representation undermines government commitment ability. Oil exploitation features prominently in separatists' narrative: "oil" and "petroleum" appear 62 times on the main page of the Cabinda Free State's website (Cabinda Free State, n.d.).[24]

Cabinda also exhibits favorable geography for rebellion (H2) because it is territorially separated from mainland Angola, and Portugal governed Cabinda as a largely distinct colony (Martin, 1977, p. 54–55). During Angola's decolonization struggle, MPLA (the rebel group that gained the seat of government at independence) failed to establish a strong presence in Cabinda (58). In 1992, following low-intensity fighting since independence, the Cabindan rebel group FLEC launched major separatist operations. It escalated operations in response to intensification of the government's center-seeking war fought in a different part of the country (Porto, 2003, p. 5), therefore attacking a vulnerable government.

Regarding a deviant aspect of the case, Angola was relatively oil-rich at independence, at $543 in oil income per capita, but experienced a center-seeking war. H3 anticipates this outcome because Angola met a government vulnerability condition at independence. Various Angolan rebel groups fought Portugal for independence from 1961 to 1974. Despite striking a brief truce at independence, the opposition groups UNITA and FNLA never disarmed

[24]Despite offshore fields producing nearly all of Cabinda's oil (Le Billon 2007, p. 106; Porto 2003, p. 4), local residents still clamor for a fairer distribution of resources, consistent with the argument in Appendix D.5 that offshore oil can create incentives for separatism.

(Warner, 1991, p. 38–9), and major hostilities resumed after independence in 1975 — in essence, continuing the decolonization struggle. Further contributing to government vulnerability, UNITA received considerable support from neighboring countries, including South Africa. Thus, although by convention Angola is coded as experiencing a civil war *onset* in 1975, in fact it continued an ongoing decolonization war that the new Angolan government was largely powerless to stop, despite the country's oil wealth.

Conclusion

This article develops a general theory of strategic civil war aims. Its implications help to explain an empirical puzzle about oil, a commonly cited economic motive for civil war: oil wealth correlates positively with separatist civil war onset (among oil-rich ethnic minorities), but negatively with civil wars to capture the center. The theoretical logic reconciles how oil production can either raise or lower prospects for civil war. To recap, imagine a country with two ethnic groups whose members reside in distinct regions. How does a mode of economic production — such as oil production — that enables the governing group to collect more tax revenues affect incentives for different types of rebellion? A *revenue effect* suppresses opportunities for rebellion by generating more resources for the government to buy off and coerce the challenger. By contrast, a *predation effect* enhances motives for rebellion by generating more spoils for the challenger to either grab by taking the center or protect from government expropriation. The net effect of an increase in oil production depends on the numerical size of the challenging group and, for small groups, also on within-country oil location. Large challengers prefer center-seeking aims. Two factors diminish the magnitude of the predation effect for these challengers. First, governments typically can commit to greater transfers and fewer taxes for members of large ethnic groups, yielding lesser motives. Second, defending the center implies that the government can more efficiently translate its revenues into a low probability of the challenger winning a civil war, yielding lesser opportunities. Therefore, oil production anywhere in the country diminishes the equilibrium likelihood that a center-seeking civil war occurs. The converse of these claims applies for small groups — in which case oil production in the group's region (but not elsewhere in the country) should create opportunities and motives for separatist civil war.

The logic of the model carries implications beyond the oil-conflict relationship. Within the resource curse literature, my framework may help to reconcile another set of puzzling empirical patterns: although oil-rich countries often experience civil wars, many of these countries also have durable authoritarian regimes (Colgan, 2015). Why would the factors that cause civil wars not also make these regimes unstable? My account offers an alternative inter-

pretation of this puzzle, although one consistent with Colgan's (2015) focus on what I term the revenue effect. Oil wealth frequently triggers separatist civil wars, but these conflicts do not directly threaten regime stability. By contrast, *infrequent* center-seeking civil wars mitigate one source of instability for authoritarian regimes. The strength of institutions and ruling coalitions also matter (Menaldo, 2016; Smith, 2007) because they determine whether oil production indeed diminishes opportunities for center-seeking rebellions (see H3). Regarding another source of authoritarian stability, Wright *et al.* (2015) provide evidence for a different implication from my model: oil-rich regimes spend more on their militaries, which they link to lower susceptibility to coups.

My theory of strategic civil war aims also relates to mechanisms posited in the broader civil war literature, including government coercive capacity and other economic incentives to fight (Chassang and Padro-i-Miquel, 2009; Collier and Hoeffler, 2004; Fearon and Laitin, 2003). Despite extensive debates regarding the importance of these explanatory factors for civil war, scholars devote little attention to heterogeneous effects on different types of civil war (although see Buhaug, 2006). Strong government coercive capacity may more effectively deter center seeking than separatist civil wars because of difficulties to project power into the periphery, as I discussed. Thus, for example, military aid and other types of foreign aid that funnel directly to the government may more effectively prevent center seeking than separatist civil wars. And although oil production yields easy government revenues, other economic activities that scholars link to conflict exhibit different properties. For example, rebel groups can more easily loot alluvial diamonds than oil. Perhaps for this and other types of natural resources, the predation effect tends to outweigh the revenue effect even for center-seeking civil wars, as examples from Liberia and Sierra Leone in the 1990s suggest. The model may also be fruitfully extended by examining dynamic civil war aims, as Appendix C.3 discusses. Overall, extensions of the present framework should help to guide future theorizing on and empirical evaluations of strategic civil war aims.

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