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Rebel Strategies and the Prospects for Peace

Xiaoyan Qiu IE University

Abstract: *Prominent formal theories of conflict provide considerable insight into how civil wars begin and end, but offer little understanding of how they proceed during wartime. One prevalent pattern is that rebel strategies vary significantly* within *conflicts over time, from guerrilla to conventional tactics. Why do rebels switch between different fighting strategies? How does the transition affect civil war negotiations? I develop a model of rebel–government negotiation in which rebels choose fighting strategies throughout a multiperiod war. The analysis shows that rebels switch from guerrilla to conventional tactics after gaining strength, and the expectation of growth delays rebels' transition to conventional fighting. The potential switch between different fighting strategies hurts the prospects for peace and prolongs civil wars. I identify the generic conditions under which peace is infeasible, no matter how belligerents negotiate. These conditions characterize the incipient stages of many rebellions, thereby explaining the lack of serious negotiations early on.*

Leading formal theories of civil war provide considerable insight into how conflicts begin. Theories of civil conflict adapt bargaining models of interstate war (Fearon 1995; Powell 2006) to civil wars and identify the underlying information (Walter 2009) or commitment problems (Fearon 2004; Powell 2012, 2013; Spaniel, Bils and Judd 2020) that prevent peaceful settlements. There is some, although less, formal theoretical research on how civil wars end (Fearon and Laitin 2008). This largely parallels the enormous empirical literature on civil war initiation and termination. However, conflict actors' wartime military strategies are conspicuously absent. There is very little formal or empirical work in political science on strategic rebel tactics (although see Kalyvas and Balcells 2010), especially how they vary *within* conflicts.[1] This omission is surprising, especially given that military strategists wrote extensively about different strategies planned in various rebellion stages (Guevara 2002; Mao 1961). Rebel groups carry out these plans and often change strategies as the conflict progresses.

One prevalent pattern about the dynamics of civil war tactics is that many rebels started as guerrillas but switched to conventional warfare at the rebellion's final stages. Born from a symbolic merge of multiple rebel organizations, the National Resistance Army (NRA) in Uganda traced back to the People's Resistance Army that started with only 27 armed fighters. It maintained guerrilla tactics throughout its early time in the Luweero Triangle, an area close to the capital yet unpenetrable due to its bushy environment. Later on, the NRA directly engaged the government in pitched battles, organized sieges against resistant military units, and launched large-scale offensive operations on major cities, including the capital. Similarly, ISIS initially participated in the Iraqi insurgency and deployed various irregular tactics, including suicide bombings, ambushes, and hit-and-run attacks. However, later it funded sophisticated attacks on fortified military compounds and even took over major cities.

Why do rebels change fighting strategies within rebellions over time? Why do groups often start as guerrillas and later transition to fight conventionally? How do strategic rebel tactics affect negotiations to settle the civil war? This article presents a formal model to explain these puzzles. In the model, a rebel group bargains with the government repeatedly and chooses between two fighting strategies—*guerrilla* and *conventional*—in each

Xiaoyan Qiu, Assistant Professor, School of Global and Public Affairs, IE University, 28006, Madrid, Spain (xiaoyan.qiu@ie.edu).

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[1] For exceptions, see Bueno de Mesquita (2013) and Wright (2020).

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period if there is no agreement.[2] Crucially, the probability of a decisive outcome is higher in conventional warfare than in guerrilla warfare. Guerrilla tactics, a powerful "weapon of the weak," can help vulnerable rebels escape state repression and avoid outright defeat. Conventional warfare, by contrast, is more decisive and favors the party with superior power. Besides, guerrilla warfare increases rebel strength by grinding down state power at minimal cost to the group via hit-and-run tactics and expanding the group through revolutionary state-building, ideological indoctrination and mass mobilization. These key assumptions have both static and dynamic implications —beyond the immediate battlefield consequences, rebel strategies also shape belligerents' expectations for war as well as their terms for peace.

The analysis yields several results. First, rebels switch from guerrilla to conventional strategy after gaining enough strength. Rebels resort to guerrilla tactics when weak and prefer conventional warfare after growing strong. The analysis suggests that rebel capability should be evaluated relative to how well the rebels fare under stalemate and the destructiveness of fighting, which might vary from conflict to conflict. If rebels fare well under the status quo, they prefer to continue irregular warfare with a higher chance of maintaining the stalemate.

Second, the expectation of gaining strength delays rebels' transition to conventional tactics. Rebels have a higher chance of winning the conventional war after growing stronger. When they have unrealized growth potential, rebels prefer guerrilla tactics that lead to their growth and increase their survival chance until the more favorable future comes. Therefore, rebel groups sometimes fight a guerrilla war even when they are capable of engaging the government directly. Previous studies attribute guerrilla tactics to rebels' lack of heavy weaponry (Kalyvas and Balcells 2010). By contrast, this model suggests that rebels have strategic incentives—to realize their growth potential—to fight irregularly other than military incompetence and resource scarcity.

Third, the potential switch between different fighting strategies hurts the prospects for peace. If weak rebels have large growth potential, guerrilla warfare is sufficiently indecisive, and there is a long shadow of the future, then peace is infeasible no matter how rebels and the government negotiate. Many rebel groups do not survive long enough to carry out the switch. Nevertheless, the expectation of it makes peace infeasible before the transition materializes.

What causes the bargaining failure? Weak rebels optimally choose guerrilla tactics, which decrease the probability that fighting is decisive. This creates the possibility that, in the future, rebels gain strength and strike back decisively. As a result, patient rebels discount current weakness, put a higher weight on future strength, and have a high reservation value from fighting. For this reason, weak rebels may bargain *as if they are strong*, thereby requiring a large concession to settle the war. The transition in military strategies is crucial. Only by using guerrilla tactics can rebels survive their initial weakness, and only by launching conventional attacks can they take advantage of enhanced capability in the future. The government wants to buy off weak rebels to avoid costly fighting and curb rebel growth. However, by cutting a deal, the rebels stop growing, invalidating the government's commitment to a generous peace agreement postwar. When rebels' growth potential is too large, the government cannot compensate the rebels for their current weakness, resulting in bargaining failure.

Although the theoretical link between commitment problems and conflict is well known, this article proposes a novel mechanism of commitment problems in civil wars in conjunction with rebel strategies. In canonical models of commitment problems, the declining power wants to fight because fighting can prevent further decline and lock in its current favorable position (Fearon 1995, 2004; Powell 1999, 2006). In this article, however, war occurs because the rising power—the rebels—cannot be bought off. Unlike independent countries, the rebels, once bought off, are under close government taps and lose the legitimacy to mobilize, recruit, and expand militarily. Governments can take various measures to consolidate power postconflict. As soon as the rebels lay down their weapons, they are locked into their level of de facto power at the time of the settlement, hence eliminating the prospects for future growth.[3] By contrast, fighting an indecisive guerrilla war enables the rebels to continue expanding.

This mechanism differs from the commitment problem due to rebel disarmament postwar (Walter 1997), because in this model, rebels keep their capability after signing a peace agreement. The model also differs from stalling wars where impatient rebels fight to enjoy a disproportionately favorable status quo (Spaniel et al., 2020). Fighting in this model occurs only when rebels are patient. Rebels gain strength in my model but weaken over time in theirs. The mechanism is also

[2]Symmetric non-conventional (SNC) warfare is not considered separately because the model's strategic underpinning is military decisiveness. SNC wars do not significantly differ from conventional warfare on this dimension, as Balcells and Kalyvas (2014) show.

[3]I discuss the assumption in more depth blow.

distinct from commitment problems caused by differential discount factors, multilateral negotiations, or domestic constraints identified by Chadefaux (2011).

This mechanism better explains why civil wars fought irregularly last longer (Balcells and Kalyvas 2014). The conventional wisdom is that guerrilla tactics decrease the probability of a decisive outcome and directly increase civil war duration. However, this explanation is incomplete because it does not explain why conflict actors fail to cut deals that adjust for the low decisiveness. This article highlights the overlooked strategic effect of guerrilla tactics. They increase temporarily weak rebels' value for fighting by putting more weight on their more advantageous position in the future, render peace less feasible, and indirectly prolong civil wars.

The article also sheds light on why we seldom observe serious bargaining, let alone negotiated settlements, between weak rebel organizations and governments in the early stages of many rebellions. Empirically peace negotiations often open only after the rebels survive their initial vulnerability (Bapat 2005). However, leading theories of civil war suggest that rebels should be easier to co-opt early on (Fearon 2004; Walter 1997)—the opposite of the empirical pattern.[4] This model better explains the government's failure to buy off weak rebels early on. Large growth potential, low military decisiveness, and a long shadow of the future characterize the typical early stages of insurgencies when rebels are extremely weak to start with, active primarily in the periphery, and aware that the rebellion is a long fight. According to this article, these factors combined create a perfect storm for war. Unlike the case of asymmetric information where the proposer faces a risk–return trade-off and an agreement is reached with a positive probability (Fearon 1995; Fey and Ramsay 2011), I have a complete information setting where both factions know that peace is infeasible and there is no point of bargaining. These conditions lay bare the minimal requirements for conflict parties to start serious bargaining. Therefore, this article also contributes to the literature on bargaining delay (Feinberg and Skrzypacz 2005; Hart 1989) as an agreement eventually becomes possible after the insurgents gain strength. However, nonserious negotiations arise in this model because of the time needed for rebel growth rather than the incentive to screen strong opponents by fighting (Fearon 2013).

[4]Civil war as a commitment problem hinges on state consolidation, implying that negotiated settlements are more likely when rebels are weaker. Because weaker rebels have less power to lose, it costs the government less to co-opt them, resulting in a wider bargaining range.

This article also makes a novel theoretical contribution by endogenizing rebel strategies in a bargaining setup. Although how belligerents fight presumably affects how they bargain, rebel strategies are absent from the theoretical literature of conflict negotiation. Existing models of rebel tactics also lack endogenous bargaining between rebels and the government (Bueno de Mesquita 2013; Leventoğlu and Metternich 2018), and therefore have little to say about how rebel strategies affect civil war negotiations. This article advances our understanding of rebel strategies and civil war negotiations by studying them in a unified framework.

The article also relates to formal models of conflict that study the bargaining implications of conflict actors' strategic choices. These include endogenous military investments (Debs and Monteiro 2014; Skaperdas 2006), government repression (Gibilisco forthcoming), civilian victimization (Wood and Kathman 2014), war debt financing (Slantchev 2012), and government redistribution (Paine 2019).

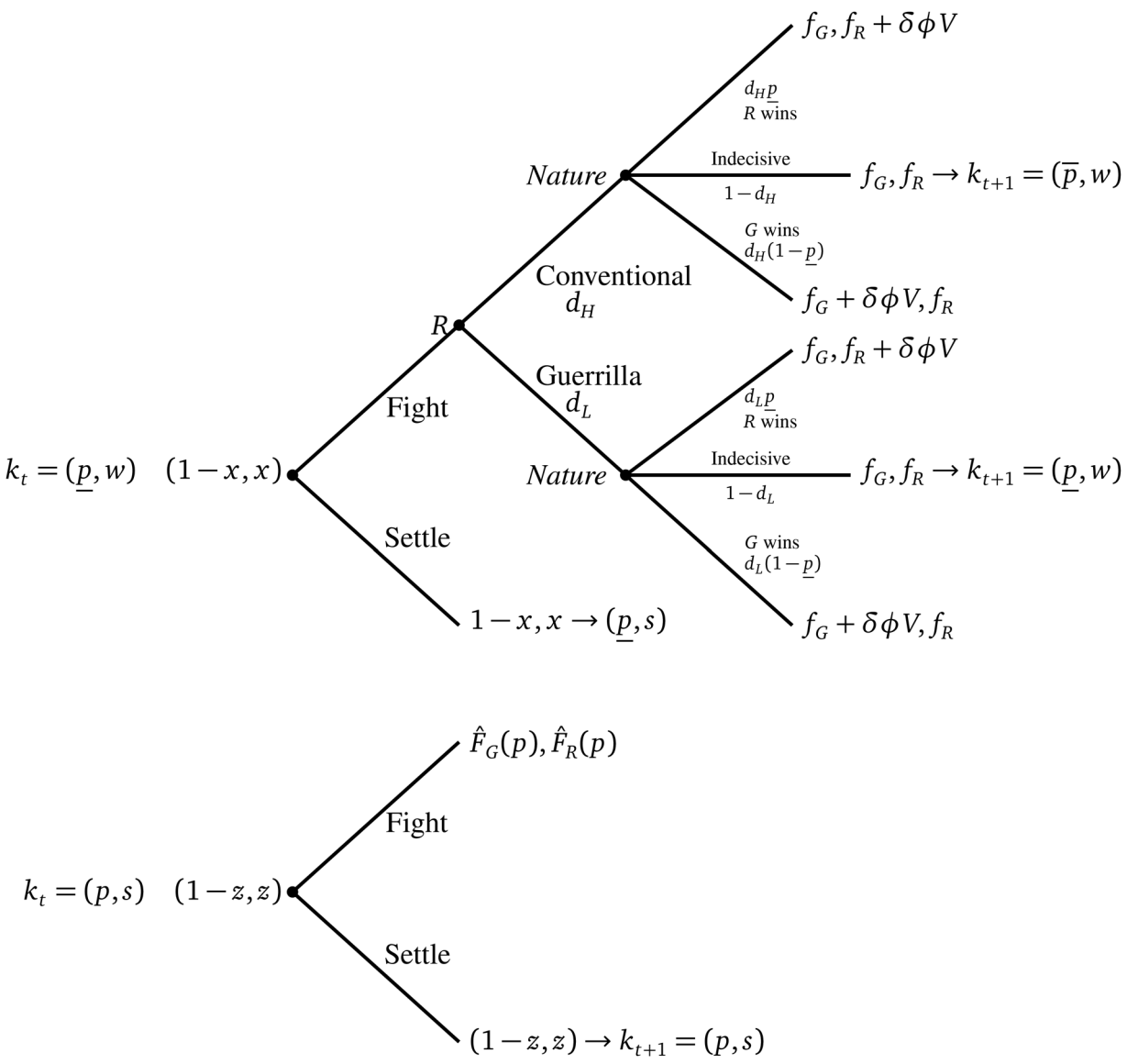
Model Setup

Suppose that a government, G, and a rebel group, R, try to divide a flow of pies over the infinite horizon. The size of the pie in each period is one. Time is denoted by $t = 0, 1, 2, \ldots$ The sum of discounted pies is $V = \sum_{t=0}^{\infty} \delta^t = \frac{1}{1-\delta}$, where $\delta \in (0, 1)$ is the common discount factor.

There are four states of the world determined by whether players are at war or in postsettlement, $\omega \in \{w, s\}$, and whether R is weak or strong, $p \in \{\underline{p}, \overline{p}\}$ with $0 \leq \underline{p} < \overline{p} \leq 1$. Together $k = (p, \omega) \in K$ defines the state of the game.

In a war state with rebel strength p, $k_t = (p, w)$, G and R negotiate over the division of the pie in the current period. A settlement needs mutual consent. If they reach an agreement $(1 - x, x)$, then G and R receive $1 - x$ and x, respectively, in that period, and the game moves to a postsettlement state with the existing level of rebel strength, $k_{t+1} = (p, s)$. If they fail to reach an agreement, R chooses between guerrilla and conventional strategies, and they fight. R's choice determines military decisiveness and the pattern of power shift. If R chooses the guerrilla strategy, military decisiveness in that period is $d_t = d_L \in (0, 1)$, and R's probability of winning becomes $\overline{p}$ in the next period. That is, if $p_t = \underline{p}$ and R chooses d_L, then $p_{t+1} = \overline{p} > \underline{p}$. However, rebel strength is bounded above by $\overline{p}$. If $p_t = \overline{p}$ so that R has mobilized all the potential, choosing the guerrilla strategy will not lead to its further growth, and its

FIGURE 1 Game Play and Power Transition



Note: The upper panel illustrates the game in war periods and the lower panel illustrates the game in postsettlement periods.

probability of winning remains at $p_{t+1} = \overline{p}$ in the next period. If R chooses the conventional strategy, military decisiveness in that period is $d_t = d_H > d_L$, and the probability of winning remains unchanged in the next period.

Fighting in a war state in one period can end in one of two ways. With probability d_t, it ends with a decisive outcome. With the complementary probability $1 - d_t$, it ends with a stalemate. Conditional on a decisive outcome, R prevails with probability p_t. A decisive outcome happens when one faction is eliminated by the other via military operations, such as the Sri Lankan government's defeat of the Liberation Tigers of Tamil Eelam (LTTE) in 2009. A stalemate happens when neither faction can militarily eliminate the opponent, such as the long-time standoff between the Iraqi government and the Kurdistan Democratic Party (KDP). A decisive outcome effectively ends the game with the winner receiving all future pies minus the fraction destroyed by costly fighting and the loser nothing. If fighting in the current period ends with a stalemate, the game moves to the next period, where they negotiate again under the new distribution of power $k_{t+1} = (p_{t+1}, w)$ based on R's choice of fighting strategies described above. The top panel of Figure 1 illustrates the game starting from a war state with weak rebels, $k_t = (\underline{p}, w)$.

In a postsettlement state with rebel strength p, $k_t = (p, s)$, G and R keep negotiating. If they reach an agreement $(1 - z, z)$, G and R, respectively, receive their share for the current period and move to the same state next period, $k_{t+1} = (p, s)$, where they repeat the process. In any period, any party can initiate conflict if the received share is unsatisfactory. Notably, the nature of conflict changes once they reach a peace deal and R is included in the government (Meng 2019; Paine 2021). Instead of fighting a civil war, G can purge the rebels, or R can stage a coup. Either way, they fight in every period until a decisive outcome under the existing balance of power p with military decisiveness d_s. Here $d_s \in [0, 1]$ is an exogenous parameter describing the military decisiveness of a purge or coup. To capture the swift nature of purges and coups, which can happen undeterred and end in days, I assume that $d_s > d_H$.[5] The bottom panel of Figure 1 illustrates the game starting from a postsettlement state with rebel strength p.

Fighting—a civil war or a purge/coup—is costly and permanently destroys $1 - \phi \in (0, 1)$ fraction of the pie. In any period, if G and R fail to reach a deal and fight, they receive status quo payoffs $f_G \geq 0$ and $f_R \geq 0$, respectively, with $f_G + f_R \leq \phi$ to capture the cost of fighting. If fighting ends decisively, the game ends with the winner receiving ϕ in all future periods and the loser nothing. Therefore, G and R, respectively, receive $f_G + \delta\phi V$ and f_R if G wins, and f_G and $f_R + \delta\phi V$ if R wins.

I adopt a general bargaining protocol by imposing a benign assumption that each party's share in a proposal is nondecreasing in her reservation value from fighting, which will be formalized shortly. The assumption is compatible with a wide range of bargaining protocols, including the well-known Ultimatum bargaining. Adopting this minimalistic assumption makes the results applicable to a broader range of conditions (Fey and Ramsay 2011; Powell 2004). Appendix C on pp. 8–12 of the Supplemental Information (SI) shows that the main results hold with Ultimatum bargaining.

I focus on Markov strategies, where R's choice of fighting strategy in a given period only depends on the state defined by $k_t = (p, \omega)$. Similarly, whether G and R agree to a proposal or not depends only on the state and the proposal at hand. Strategies are formally defined on p. 1 of the SI.

[5]Empirically coups are significantly shorter than wars of any type. Researchers also think that coups are less costly, which is captured by the high decisiveness d_s. The per-period cost of fighting is constant, so the more indecisive fighting is, the longer it lasts, and the more it costs. This assumption is empirically grounded and inconsequential for the main results.

Comments on the Model

This section motivates several key assumptions of the model. First, following Powell (2012), I formalize the probabilities of the three possible outcomes of fighting in terms of military decisiveness, d_t, and the probability that R wins conditional on a decisive outcome, p_t. An equivalent alternative representation is to use unconditional probabilities that G and R prevail, π_t^G and π_t^R, with $\pi_t^G = p_t d_t$ and $\pi_t^R = (1 - p_t) d_t$.[6] In addition to the benefits discussed in Powell (2012), the conditional probability specification captures this article's key concept—fighting strategy. How the belligerents fight affects battle outcomes without altering the short-term balance of power represented by R's conditional probability of prevailing, p_t.

Second, in the model, the guerrilla strategy deterministically increases rebel strength in one period whereas the conventional strategy keeps the existing balance of capability. A direct consequence is that rebels cannot be weak again once they grow strong. This simplifying assumption captures the fact that the guerrilla strategy does a better job than the conventional strategy in building up rebel strength. The guerrilla strategy weakens the state in a war of attrition through harassment, surprise attack, stealth, and raiding that wear the state down at minimal costs to the group. What Kalyvas and Balcells (2010) refer to as "robust insurgency" also emphasizes revolutionary state-building, ideological indoctrination, and mass mobilization that contribute to greater group cohesion, more committed fighters, and broader societal support—all leading to the growth of rebel capability. By contrast, many tactics that are most effective in debilitating the government and strengthening the group are not essential parts of the conventional strategy, which emphasizes pitched battles and direct confrontation with government forces. Guerrilla campaigns also signal government weakness and facilitate civilian protests against the regime (Leventoğlu and Metternich 2018). Irregular tactics are more effective at decreasing civilians' opportunity costs, hence attracting more recruits at low levels of rebel capability (Bueno de Mesquita 2013). I abstract away from these specific mechanisms that lead to rebel growth and focus on the less studied aspect of this dynamic—bargaining implications of dynamic rebel strategies. Moreover, the article's main results do not depend on this assumption. The SI considers two alternative scenarios where guerrilla tactics only probabilistically increase rebel strength, and rebel capability

[6]Fearon (2004) uses this specification.

fluctuates between weak and strong exogenously. Similar results retain in both cases.

Third, another crucial assumption is that rebel strength stops growing postsettlement. As a result, the government cannot commit to transfers beyond the rebels' de facto power at the time of the settlement. This consequential assumption underlies the source of inefficient conflict in this model. Most signed peace agreements require rebels to disarm (Walter 1997).[7] Sometimes the government co-opts rebels into existing government security forces and keeps a close tap on them (Driscoll 2012). After signing a peace agreement, rebel groups also lose legitimate reasons to develop quasi-state institutions, mobilize the population, obtain weapons illegally, or recruit more armed fighters (Albert 2020). Governments can take various measures to consolidate power and monopolize violence during peacetime (Powell 2013). Even when regional autonomy is granted, central governments often allow greater leeways on regional policies and fiscal matters but maintain a tight control over security and defense (Sambanis and Milanovic 2014).

Fourth, in the model, rebels unilaterally decide the fighting strategy associated with a certain level of military decisiveness. This assumption captures the fact that government forces in most civil wars are "modern" military organizations with a high degree of mechanization, heavy armored vehicles, and weaponry ill-suited for irregular tactics (Lyall and Wilson III 2009). Hit-and-run or direct confrontation with the government is up to the rebels. Additionally, rebels can choose only one strategy each period. Although empirically, rebels might simultaneously use both strategies, the binary choice is a useful simplification that captures the fundamental trade-off. The incentives for choosing a particular strategy should encourage the rebels to rely more on that strategy when they optimally mix in a richer setup.

Equilibrium Analysis

This section gives a preliminary analysis of the game. Let σ denote any strategy profile and η a choice of fighting strategies. For $i \in \{R, G\}$, let $V_i^{\sigma}(p, \omega)$ denote i's continuation value from beginning a game at a state $k = (p, \omega) \in K$ if both actors play according to σ subsequently. Let $F_i^{\eta}(p)$ denote i's payoff to fighting to the finish in a war state with $p \in \{\overline{p}, \underline{p}\}$ if R subsequently chooses fighting strategies according to η. Let $\hat{F}_i(p)$ be i's payoff to a purge/coup given $p \in \{\overline{p}, \underline{p}\}$.

The key to the analysis is each faction's payoff to fighting to the finish—what each party expects to receive by fighting in every period until a decisive outcome. The payoff to fighting to the finish is each faction's reservation value, and a player will never agree to any settlement that yields a payoff less than this amount. Because the balance of capability stabilizes once the rebels become strong, R's payoff to fighting to the finish at $k = (\overline{p}, w)$ satisfies a recursive structure:

$$F_R^{\eta}(\overline{p}) = f_R + \delta \cdot \left[\eta(\overline{p})\overline{p}\phi V + [1 - \eta(\overline{p})]F_R^{\eta}(\overline{p})\right] = \frac{f_R + \delta\eta(\overline{p})\overline{p}\phi V}{1 - \delta[1 - \eta(\overline{p})]}. \quad (1)$$

The first term on the right is R's status quo payoff regardless of fighting outcomes. The second term is R's discounted expected future payoff starting from the next period, which is the probability that fighting ends decisively this period times R's expected payoff to a decisive outcome, plus the probability that fighting is inconclusive this period times R's payoff to fighting to the finish starting in the next period. If $\eta(\underline{p}) = d_H$, rebel strength remains at $\underline{p}$ and R's payoff to fighting to the finish at $k = (\underline{p}, w)$ has a similar recursive structure: $F_R^{\eta}(\underline{p}) = (f_R + \delta d_H \underline{p}\phi V)/[1 - \delta(1 - d_H)]$. Similarly, R's fighting to the finish with a purge/coup is $\hat{F}_R(p) = (f_R + \delta d_s p\phi V)/[1 - \delta(1 - d_s)]$. If $\eta(\underline{p}) = d_L$, R becomes strong next period if it is reached, thus $F_R^{\eta}(\underline{p}) = f_R + \delta d_L \underline{p}\phi V + \delta(1 - d_L)F_R^{\eta}(\overline{p})$. G's payoff to fighting to the finish in various states can be defined analogously.

Assumption 1. *Let* $x(p) = (1 - x, x)$, $\tilde{x}(p) = (1 - \tilde{x}, \tilde{x})$, $z(p) = (1 - z, z)$, *and* $z'(p) = (1 - z', z')$ *be any proposals.* $x \geq \tilde{x}$ *if* $F_R^{\eta}(p) > \tilde{F}_R^{\eta}(p)$, *and* $z \geq z'$ *if* $\hat{F}_R(p) > \hat{F}_R'(p)$.

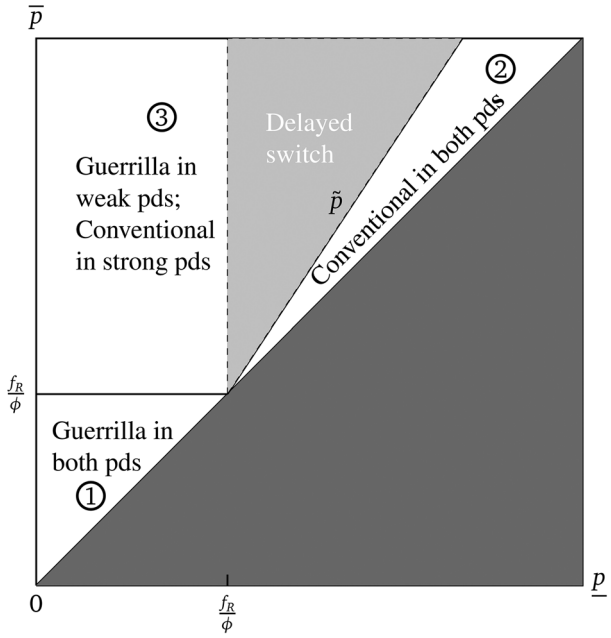
Assumption 1 formalizes the assumption that each party's share in a proposal in any state is nondecreasing in its reservation value from fighting to the finish. Consequently, R chooses fighting strategies to maximize its reservation values.

Lemma 1. *In any equilibrium* σ, $V_R^{\sigma}(p, w) \geq F_R^{\eta}(p)$ *for all* $p \in \{\underline{p}, \overline{p}\}$.

Lemma 1 establishes the lower bound of R's continuation value starting from a war state. R's payoff to fighting to the finish is its reservation value, and R will never agree to any settlement yielding a payoff less than this amount.

[7] This model assumes that rebel capability carries over rather than weakens to distinguish from the commitment problem rising from rebel disarmament. Assuming that rebel capability carries over postwar imposes an upper bound, making a hard case for the main results.

FIGURE 2 Rebel Choice of Fighting Strategy



Note: The lower right section is black because, by assumption, $\underline{p} < \overline{p}$.

Lemma 2. *In any equilibrium* σ, $V_R^{\sigma}(p, s) \leq V - \hat{F}_G(p)$ *for all* $p \in \{\underline{p}, \overline{p}\}$.

Lemma 2 establishes the upper bound of R's continuation value starting from a postsettlement state. This sets the upper bound of R's expected payoff from a peaceful settlement. At $k = (p, s)$, G can guarantee itself at least $\hat{F}_G(p)$. Therefore, G will never agree to any settlement less than this amount, leaving R at most $V - \hat{F}_G(p)$.

Choice of Fighting Strategy

This section characterizes rebels' choice of fighting strategy, summarized in Proposition 1 and visualized in Figure 2. Any feasible agreement must give each party a share at least as good as its reservation value from fighting. R thus chooses a strategy that maximizes its reservation value.

Proposition 1. *There exists* $\tilde{p} \in (f_R/\phi, \overline{p})$ *such that the following holds.*

1. *If* $\underline{p} < \overline{p} < f_R/\phi$, *$R$ chooses guerrilla tactics in both weak and strong periods.*
2. *If* $\tilde{p} < \underline{p} < \overline{p}$, *$R$ chooses conventional tactics in both weak and strong periods.*
3. *If* $\underline{p} < \tilde{p}$ *and* $\overline{p} > f_R/\phi$, *R chooses guerrilla tactics in weak periods and conventional tactics in strong periods.*
4. $\tilde{p}$ *increases in* f_R *and* $\overline{p}$, *and decreases in* ϕ.

If rebels are strong, R's reservation value is given by Equation (1), which increases in military decisiveness if

$$\frac{\partial F_R^{\eta}(\overline{p})}{\partial \eta(\overline{p})} = \underbrace{\frac{\delta}{\left[1 - \delta[1 - \eta(\overline{p})]\right]^2}}_{+} \cdot \underbrace{[\overline{p}\phi - f_R]}_{+/-} > 0.$$

The trade-off is straightforward. An increase in military decisiveness increases the probability of a decisive outcome, giving R an expected per-period payoff of $\overline{p}\phi$. However, fighting also becomes shorter, allowing R to enjoy the status quo f_R less frequently. R prefers the more decisive conventional fighting if its probability of winning is sufficiently high so that $\overline{p}\phi > f_R$. Thus, if $\overline{p} > f_R/\phi$, R prefers the conventional strategy with a higher military decisiveness d_H. By contrast, if $\overline{p} < f_R/\phi$, R prefers the guerrilla strategy.

Weak rebels' reservation value depends on R's choice in both weak and strong periods. If $\overline{p} > f_R/\phi$, R fights conventionally in strong periods. And the difference in weak rebels' reservation values between the two strategies is

$$D(\underline{p}) = \frac{\delta}{1 - \delta(1 - d_H)} \cdot \left[\underbrace{(d_H - d_L)[f_R - \underline{p}\phi]}_{+/-\text{Status quo effect}} + \underbrace{\delta d_H (1 - d_L)\phi V(\overline{p} - \underline{p})}_{+\text{Dynamic growth effect}} \right]. \quad (2)$$

On the one hand, because guerrilla tactics increase R's strength, R is better off waiting for one more period to attack conventionally after gaining strength. This is captured by the always positive *dynamic growth effect* in Equation (2). On the other hand, R faces the same trade-off between the status quo and a decisive outcome $f_R - \underline{p}\phi$ multiplied by the difference in the probability of a decisive outcome $d_H - d_L$ due to different fighting strategies. The sign of this *status quo effect* depends on $f_R - \underline{p}\phi$. If $\underline{p}$ is sufficiently small ($\underline{p} < \tilde{p}$), either the status quo effect is positive, or the status quo effect is negative but overshadowed by the dynamic growth effect. In either case, the overall effect is positive, and R prefers guerrilla tactics in weak periods, depicted by area 3 of Figure 2. By contrast, if $\underline{p} > \tilde{p}$, the status quo effect is negative and larger than the dynamic growth effect in magnitude, resulting in an overall negative effect. Then R prefers the conventional strategy in weak periods, depicted by area 2 of Figure 2. Intuitively, when R is sufficiently strong, a decisive victory is so attractive that it

would be a waste of time to delay conventional attacks any longer.

If $\overline{p} < f_R/\phi$, R fights a guerrilla war in strong periods. The difference in weak rebels' reservation values between guerrilla and conventional strategies similarly has two parts. The dynamic growth effect is always positive because R gains strength by waiting for one more period. However, unlike the previous case, the status quo effect is also positive because by assumption $\underline{p} < \overline{p} < f_R/\phi$. The overall effect is positive, so R always prefers guerrilla tactics in weak periods, depicted by area 1 of Figure 2.

The analysis suggests that rebel strength should be evaluated not only relative to government capability. The status quo f_R and the costliness of fighting ϕ also matter. Both thresholds f_R/ϕ and $\tilde{p}$ increase in f_R and decrease in ϕ. As R fares better under the status quo and fighting becomes more costly, R has fewer incentives to launch conventional attacks. These parameters can vary from war to war. For example, rebel organizations making huge profits from contrabands such as drugs, diamonds, and precious metals prefer to avoid direct engagement. The FARC in Colombia was funded by drug trafficking, and the war was a lucrative business. Some FARC members operated independently to continue drug trafficking after the group signed the peace agreement. This finding warns against an unmitigated link between rebels' lack of capability and the use of irregular tactics without accounting for these other factors.

Existing studies also overlook the *dynamic growth effect* of guerrilla tactics. The expectation of gaining strength motivates the rebels to fight irregularly in the hope of better surviving today and resurrecting tomorrow. $\tilde{p}$ increases in $\overline{p}$, indicating that the higher the future capability, the more incentives rebels have to preserve their forces today by fighting a guerrilla war. $\tilde{p} > f_R/\phi$ means that there are circumstances under which rebels would have switched to conventional fighting without the dynamic growth effect but continue to fight a guerrilla war to realize their potential, corresponding to the gray area in Figure 2. The dynamic growth effect highlights rebels' strategic incentives to fight irregularly beyond the lack of heavy weaponry (Kalyvas and Balcells 2010). On the contrary, groups might optimize the weapons to suit their fighting tactics better. Heavy weaponry is ill-suited for guerrilla warfare (Lyall and Wilson III 2009). Even if rebels have access to heavy weaponry, they may not use it in order to employ guerrilla tactics more effectively. For example, the FARC in Colombia had 15,000 to 20,000 fighters in 2000. Using substantial revenues from drug trafficking and exploiting primary commodities, it developed an arms pipeline that delivered assault rifles, heavy machine guns, mortars, rocket-propelled grenades, and even shoulder-launched surface-to-air missiles. The FARC expanded its operations to almost half of the country with more than 70 fronts yet maintained guerrilla tactics in each front. It even saved a substantial part of their revenues for the general uprising planed with a force of 30,000 (Rabasa and Chalk 2001). Instead of being forced to fight irregularly due to the lack of heavy weaponry, rebels sometimes voluntarily abandon heavy weaponry to increase mobility as a tactical choice. The Chinese Red Army in the Long March provides such an example.

Why Does the Bargaining Fail?

The transition in fighting strategies has profound implications for peace negotiations. This section characterizes the generic conditions under which peace is infeasible and shows that the potential to change fighting strategies over time can kill the prospects for peace. I focus on the case of $\underline{p} < \tilde{p}$ and $\overline{p} > f_R/\phi$ so that there is an expected transition in fighting strategies.[8]

Consider a weak war state. Once players reach a deal, the distribution of capability permanently shifts to $\underline{p}$. By agreeing to a division $(1-x, x)$, R receives $x + \delta V_R^{\sigma}(\underline{p}, s)$. The best deal R can obtain now is the entire pie. Once they settle, the most that G can credibly commit to sharing with R is $V - \hat{F}_G(\underline{p})$, according to Lemma 2. Thus, the best possible deal gives R at most $1 + \delta[V - \hat{F}_G(\underline{p})]$. R fights if this amount is smaller than its reservation value from fighting given by Lemma 1:

$$\underbrace{1}_{\substack{\text{Best } R \text{ can} \\ \text{get today}}} + \delta \overbrace{[V - \hat{F}_G(\underline{p})]}^{\substack{\text{Most } G \text{ can commit to} \\ \text{sharing post-settlement}}} < \underbrace{F_R^{\eta}(\underline{p})}_{\substack{\text{Weak } R\text{'s reservation} \\ \text{value from fighting}}} . \quad (3)$$

The right-hand-side $F_R^{\eta}(\underline{p})$ is weak rebels' reservation value given its choice of fighting strategy:

$$\begin{aligned} F_R^{\eta}(\underline{p}) &= f_R + \delta \cdot [d_L \underline{p}\phi V + (1 - d_L) F_R^{\eta}(\overline{p})] \\ &= f_R + \delta d_L \underline{p}\phi V + \delta(1 - d_L)\frac{f_R + \delta d_H \overline{p}\phi V}{1 - \delta(1 - d_H)}. \end{aligned} \quad (4)$$

Equation (3) characterizes the necessary and sufficient conditions under which no peace exists in any

[8] With a positive probability, fighting in weak periods ends decisively, and the transition never occurs. Appendix D on pp. 12–19 of the SI shows that if rebel capability fluctuates probabilistically between weak and strong, the transition occurs under very loose conditions (δ not too small), reducing the concern that this only applies to very narrow conditions.

equilibrium.[9] Before presenting the No-Peace conditions, it is important to first decompose weak rebels' reservation value given by Equation (4). Note that $F_R^{\eta}(\underline{p})$ is R's status quo payoff f_R plus its discounted future payoff. Its future payoff is a weighted sum of R's expected payoff from a decisive outcome in a weak period and its reservation value starting from a strong period. The weight is d_L. It effectively plays the role of an additional discount factor. If guerrilla fighting is not too indecisive (d_L away from 0), R's reservation value depends more on its current military capability. The future is heavily discounted because today is a matter of life and death, and tomorrow never comes. By contrast, if guerrilla warfare is highly indecisive (d_L close to 0), R's reservation value is heavily weighted by the expected future payoff. Current weakness is highly discounted because rebels are unlikely to be eradicated today, and tomorrow they will come back stronger. If guerrilla fighting is extremely indecisive ($d_L = 0$), R's current weak capability $\underline{p}$ becomes irrelevant. All that matters is what rebels can get when the situation shifts in their favor in future years. This is summarized in Lemma 3.

Lemma 3. $\lim_{d_L \to 0} F_R^{\eta}(\underline{p}) = f_R + \delta F_R^{\eta}(\overline{p})$, *which is independent of* $\underline{p}$.

Patient rebels look beyond their current weakness and rationally expect to harvest benefits from future growth in power. The combined use of both strategies grants rebels two advantages. First, the guerrilla strategy helps weak rebels survive. By taking cover in unapproachable areas and among supportive populations, rebels can avoid outright defeat. When guerrilla fighting is sure to be indecisive ($d_L = 0$), their temporary weakness bears no relevance. Second, the guerrilla strategy can gradually shift the balance of power in the rebels' favor if they hold on long enough. They can launch major conventional attacks when the favorable future comes. These are what rebels practice in their rebellions. For example, Museveni, the leader of the NRA, observed that

> *Guerrilla warfare was the only way to mobilise and apply the whole strength of the masses of people against the Obote regime, the only way to expand our forces during the course of the war, deplete and weaken the UNLA, gradually change the balance of forces between the Obote clique and ourselves, subsequently changing from guerrilla to mobile warfare and finally to conventional war and defeat the dictatorial forces.* (Ngoga 1997, p. 222)

Lemma 3 is a consequential result. It challenges the conventional wisdom that bargaining deals should be commensurate with military capabilities. Starting from this assumption, researchers investigate why empirically tiny groups frequently make large demands (Thomas, Reed and Wolford 2016) and why governments often overcompensate moderate rebels to settle for peace (Park 2015). However, this result demonstrates that extremely weak rebels can have large reservation values provided they fight smartly. Large demands from weak rebels and generous peace deals for them should not be surprising.

Beyond the immediate effect on battle outcomes, the ability to change fighting strategies also carries profound implications for conflict actors' bargaining behaviors. Extremely weak yet patient rebels taking advantage of both strategies cannot be easily bought off.

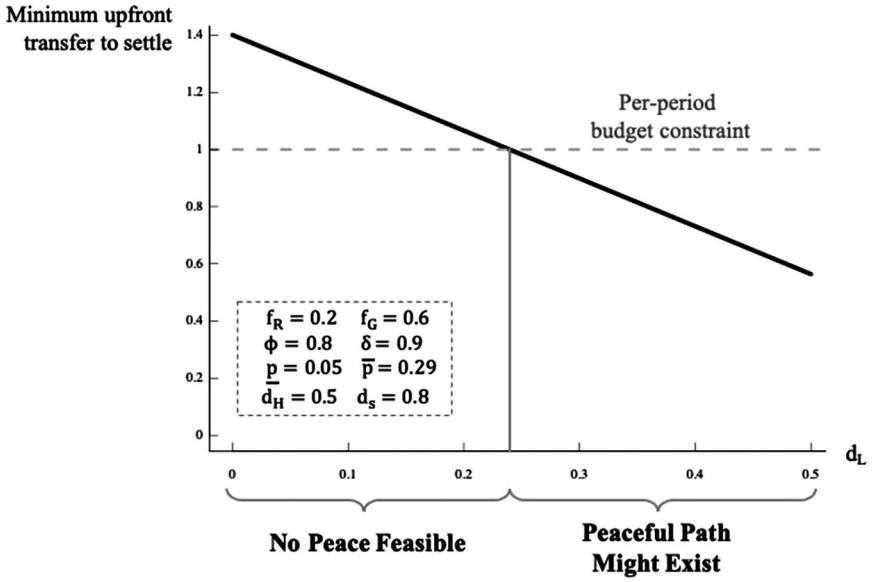
Why cannot the government buy off weak rebels with generous offers? As a declining power, the government is eager to cut deals because a negotiated settlement generates a bargaining surplus and prevents rebels from further growth. However, the rebels stop growing by cutting a deal, invalidating the government's commitment to a generous offer postwar. Knowing this, rebels require a large upfront transfer to compensate for their current weakness in order to settle. When rebels' growth potential is too large, the best the government can offer today—the entire pie—is not enough to make up for the rebels' loss postwar. Consequently, any settlement is unsustainable. This logic leads to Proposition 2, which characterizes the conditions under which peace is infeasible no matter how players negotiate. If rebels' growth potential is large enough, guerrilla warfare is sufficiently indecisive, and actors are sufficiently patient, bargaining will break down in weak periods.

Proposition 2 (No-Peace Conditions)**.** *Assume* $\overline{p} - \underline{p} > \frac{1-\phi}{\phi}$. *There exists* $\hat{d}_L \in (0, 1)$ *and* $\hat{\delta} \in (0, 1)$ *such that, if* $d_L < \hat{d}_L$, *and* $\delta > \hat{\delta}$, *then peace is infeasible in weak periods.*

These three conditions are jointly sufficient. The exact value of each threshold is not individually necessary. However, they provide reasonable upper or lower bounds for characterizing the inherent bargaining problem. If δ is too small or d_L too large, rebels discount the future and weigh their current unfavorable circumstances more. This makes the rebels cheap to buy off and opens up a wider bargaining range. If the growth potential is small, even when rebels value the future, the government can

[9] Equation (3) is both necessary and sufficient, whereas the conditions in Proposition 2 are only sufficient for reasons explained in its proof.

FIGURE 3 No-Peace Conditions: A Numerical Example



Note: The example shows that the No-Peace conditions are not necessary, as $\overline{p} - \underline{p} = 0.24 < (1 - \phi)/\phi = 0.25$.

compensate the rebels with a large upfront transfer to avoid inefficient fighting.

Peace is not automatically guaranteed if these conditions are violated. Instead, it means that there might exist a bargaining protocol under which a negotiated settlement is possible. These conditions only lay bare the minimal requirements for conflict parties to start serious bargaining. Bargaining may still fail due to other reasons discussed in the existing literature. The precise demarcation between war and peace also depends on the specific bargaining protocol. The bargaining problem in those situations can be much worse than the generic bound identified here. Figure 3 demonstrates how serious the problem can be with a numerical example. With a reasonable discount factor ($\delta = 0.9$) and a moderate growth potential ($\overline{p} - \underline{p} = 0.24$), it only takes $d_L < 0.23$ to kill the hope for peace.

Similar to other conflict models, peace should prevail when the cost of war is very high. This happens because $\overline{p} - \underline{p} > (1 - \phi)/\phi$ is less likely to hold as fighting becomes more costly (ϕ decreases). When fighting destroys everything ($\phi = 0$), $(1 - \phi)/\phi$ goes to infinity, and one of the No-Peace conditions fails for sure.[10]

Moreover, the expectation of future growth rather than its actual realization causes bargaining failure. Many rebel groups never realized their full potential. However, this does not invalidate rebels' rational plan of switching to conventional attacks after gaining strength. This is compatible with the model where R has a positive probability of losing decisively in any period.

Proposition 2 is the central result of this article. It is robust after relaxing many simplifying assumptions. Appendix B on pp. 4–7 of the SI relaxes the assumption that rebels grow from weak to strong in one period for sure with guerrilla tactics and allows probabilistic transition. Appendix C on pp. 7–12 of the SI allows the rebels to resume rebellion if unsatisfied with the terms of peace and demonstrates with Ultimatum bargaining where the government makes the offer. Appendix D on pp. 12–19 of the SI relaxes the assumption that guerrilla tactics lead to rebel growth and rebels cannot weaken after growing strong. Instead, rebel capability fluctuates between weak and strong probabilistically over time independent of rebels' choice. A similar set of No-Peace conditions persist in all three extensions. Appendix C also shows that allowing rebels to resume rebellion if unsatisfied with peace does not alleviate the commitment problem if the government can preemptively purge co-opted rebels before they resume a guerrilla war. Empirically, it takes much longer to organize a rebellion than executing a purge. Subsequent sections discuss other substantive implications of these extensions.

[10]The opposite is not true. If fighting destroys nothing ($\phi = 1$), $\overline{p} - \underline{p} > (1 - \phi)/\phi = 0$ always holds. However, the other two conditions might fail, and peace is still possible.

Why Are Early Peace Talks So Rare?

The model sheds light on the lack of serious bargaining between weak rebel organizations and the governments at the incipient stages of many rebellions. The Tigray People's Liberation Front (TPLF) in Ethiopia, for example, launched the rebellion with less than 50 men in 1975. No negotiation was attempted until 1991, when the TPLF was on the eve of victory. The TPLF's experience is not unique. In Colombia, all four largest rebel groups—FARC, ELN, EPL, and M-19—started with very few fighters and did not negotiate with the government early on. It was nearly 20 years before the FARC first sat down with the government. M-19, which had the shortest time span between its inception and the first peace talks, did not negotiate with the government nearly a decade after its foundation.

Although there is a clear empirical pattern, leading theories of civil war suggest the opposite—rebels should be easier and cheaper to buy off early on. The existing literature identifies the commitment problem as a critical barrier to the peaceful settlement of civil wars (Walter 1997). According to the canonical model of commitment problems (Fearon 1995; Powell 2006), the rising power cannot commit to not renege after growing stronger, and hence the declining power fights now to lock in its favorable position. Others apply the logic to intrastate conflict and attribute the source of commitment problems in civil wars to rebel disarmament after signing a peace agreement (Walter 2009). The explanation of civil war as a commitment problem hinges on state power consolidation and the weakening of rebel strength (Fearon 2004; Powell 2012). Though not explicitly stated, this approach implies that a negotiated settlement should be more likely when the rebels are weaker. Because weaker rebels have less power to lose in the first place, it costs the government less to co-opt them, opening up a wider bargaining range.

Given favorable opportunities to settle peacefully, why do governments fail to buy off weak rebel groups early on? According to Proposition 2, any deal is not sustainable if all three conditions are satisfied. These conditions characterize the early stages of many rebellions. First, the growth potential $\overline{p} - \underline{p}$ is larger for weak groups at their founding stage with very small $\underline{p}$. Insurgencies generally start small. For example, the Eritrean Liberation Front (ELF) started fighting for Eritrea's independence with 11 men. The NRA of Uganda started with 27 armed fighters. The Revolutionary United Front (RUF) in Sierra Leone started with 35 trained soldiers. The FARC had only 48 armed fighters when it was founded in 1964. Charles Taylor had about 100 followers when he led the National Patriotic Front (NPF) cross into Liberia in 1989 (Herbst 2004). These tiny groups expanded over time into giant militant organizations with thousands of armed fighters. Second, rebellions frequently start from rural peripheries with weak or even absent state control, featuring low military decisiveness when the guerrilla strategy is successfully implemented. Tiny rebel groups with fewer than a hundred armed fighters are known to survive for a long time. The EOKA, a Greek Cypriot group that fought to end British rule in Cyprus, challenged the British Army with 47 rifles, 27 automatic weapons, and seven revolvers. Georgios Grivas, the leader of the EOKA, proudly claimed: "It was with these arms and these alone, that I kept the fighting going for almost a year without any appreciable reinforcements" (Slovo 1982, p. 138). Many rebel groups hold up years or even decades. Third, rebel leaders enter into the domestic struggle for power, knowing that it will be a long fight. Mao (1961) refuted both the optimism of a quick victory and the pessimism advocating for a surrender. Instead, he argued that the war against Japan would be a protracted one with China's final victory. Joe Mathews of the African National Congress (ANC) fighting to end the apartheid in South Africa expressed similar ideas: "I said then that the struggle would be long and difficult. History has proved that those who thought the struggle would be brief were utterly wrong" (Matthews 1982, p. 139). Numerous other rebel leaders and guerrilla strategists emphasized the need to mobilize and prepare for a protracted war in their writings. They also engaged in various propaganda to convince the rank and file to stay patient (de Bragança and Wallerstein 1982).

These factors jointly create the perfect storm for war. Unlike the case of asymmetric information where the proposer faces a risk-return trade-off and an agreement can be reached with a positive probability, this article has a complete information setting where both factions know that no peace is feasible, so there is no point in bargaining.

Rebel Strategies and Civil War Duration

Changes in the model's parameters can affect conflict duration in two ways: directly, by affecting the probability of stalemate, or indirectly, by affecting the difference between the minimum shares that each side can accept compared to fighting. Strictly speaking, in the baseline, this difference bears only on war occurrence, not on its

duration. For a given set of parameters, either there is peace or not. If not, the minimum expected war duration is just one because peace becomes feasible once rebels grow strong.[11] However, this should be interpreted with caution as the rebels fully mobilize in one period in the baseline. In a rich setting where the growth takes several periods, military decisiveness directly affects the minimum expected war duration—civil wars last longer as guerrilla fighting becomes more indecisive.[12]

The probability of fighting discontinuously changes in model parameters.[13] We either have war or not. However, we can describe the expansion or compression of the parameter space in which conflict occurs. I define the bargaining range as the difference between each side's minimum value for an enforceable peace deal. Conflict propensity increases as the bargaining range shrinks, because a narrower bargaining range is more susceptible to random shocks in parameters that render a deal infeasible. In this spirit, Proposition 3 is substantively meaningful.

Proposition 3. *The bargaining range in weak periods shrinks as $\underline{p}$ decreases, $\overline{p}$ increases, and as d_L decreases.*

Proposition 3 suggests that conflict propensity increases as rebels' current military capacity $\underline{p}$ increases. By definition the growth potential $\overline{p} - \underline{p}$ decreases as $\underline{p}$ increases, and the No-Peace conditions become more likely to be violated. Therefore, peace talks and negotiated settlements occur more frequently as rebels grow stronger. Bapat (2005) finds that higher government repressive capability negatively correlates with the opening of peace processes. Buhaug, Gates and Lujala (2009) and Cunningham, Gleditsch and Salehyan (2009) find that stronger rebels tend to fight shorter wars.

Factors associated with higher future rebel capability $\overline{p}$ also increase conflict propensity in weak periods and indirectly increase civil war duration. This again works through decreasing rebels' growth potential $\overline{p} - \underline{p}$. Rebels' capability ceiling $\overline{p}$ is associated with several factors. In weakly institutionalized and low-capacity states, there is a higher chance that some exogenous event happens yet the government is incapable of dealing with the crisis and ends up being weakened temporarily. In ethnic civil wars, a larger ethnic group implies a higher growth potential. Rebels can mobilize their coethnics and build up strength over time. Access to natural resources and external support also affects the rebels' future strength. Rich natural resources provide a stable source of funding that rebels can use to build up strength in the long run. The expectation of receiving support from the government's international rivals also increases the rebels' capability ceiling. Buhaug et al. (2009) find that conflicts in regions with rich natural resources tend to last longer. Akcinaroglu and Radziszewski (2005) find that the expectation of rival intervention can substantially prolong civil wars even when the actual support has not been granted.

Factors favorable for indecisive guerrilla fighting should also increase conflict propensity and duration. Military decisiveness is a combination of rebels' strategic choice, government competence, and nonstrategic factors such as geography. Competent governments have a higher ability to identify and eliminate rebels. In those cases, fighting is decisive even under guerrilla warfare. Rugged terrains, large mountainous areas, and access to foreign safe havens all contribute to low decisiveness by helping rebels hide. Rugged terrain is well known for being conducive to civil war onset (Fearon and Laitin 2003). Buhaug et al. (2009) also find that civil conflicts far away from government strongholds and along remote international borders last longer. Salehyan (2007) finds that civil wars last substantially longer if rebels have extraterritorial bases.

In a richer setup where rebel growth takes more than one period, the probability of growth affects civil war duration nonmonotonically.[14] On the one hand, as the probability of growth increases, the No-Peace conditions are easier to satisfy, resulting in higher chances of bargaining failure and longer civil wars. On the other hand, if the No-Peace conditions are satisfied, peace is infeasible until the rebels grow strong. Then fighting lasts longer in expectation for a lower probability of rebel growth.

These comparative statics are consistent with existing empirical findings. However, they work through the endogenous choice of rebel strategies and satisfying or violating the No-Peace conditions. Both my model and the literature on asymmetry and civil war predict that greater rebel capability should be associated with a higher likelihood of peace (Hultquist 2013; Park 2015), but through very different mechanisms. The literature on asymmetry and civil war identifies rebels' capability

[11] Proposition A.1 on p. 4 of the SI provides a formal statement. Peace is not guaranteed but only feasible. Thus throughout, I talk about the minimum rather than the exact expected war duration.

[12] Proposition B.4 on p. 7 and Proposition D.4 on p. 19 of the SI provide formal statements.

[13] This is true in bargaining models with complete information when we only consider pure strategies. The No-Peace conditions in this model only depend on players' reservation values. Because R only mixes when indifferent between reservation values from the two strategies, allowing mixture does not affect this conclusion.

[14] Proposition D.3 on p. 18 and Proposition D.4 on p. 19 of the SI provide formal statements.

relative to the government as the driving force (Holtermann 2016; Toft 2007). In this model, besides relative capability, rebels' growth potential also plays a crucial role. When the growth potential is small, the No-Peace conditions are violated and peace might be feasible. There are three scenarios. First, rebels are weak relative to the government and unlikely ever to grow much stronger. Second, rebels are relatively weak but will grow stronger. Third, rebels are relatively strong but very close to $\overline{p}$. Peace might be feasible in the first and third cases as there is no transition in fighting strategies. Peace is infeasible in the second case with large growth potential. If the war starts from the second scenario, but rebels gradually gain strength, the growth potential shrinks over time, and peace becomes more likely. Thus, this article relates relative capability, geography, and various other factors suggested by the literature to conflict propensity and duration through rebels' choice of fighting strategies. Balcells and Kalyvas (2014) empirically show that warfare type matters for civil war outcomes and duration. This article suggests the theoretical importance of disentangling fighting strategies because country-level characteristics might have heterogeneous effects across different warfare types.

Government Attributes and Reactions

Some government attributes matter but not others. Regardless of capability and decisiveness, the government always wants to buy off rebels as early as possible to avoid costly fighting and curb rebel growth. Because war is costly, in principle, there should always exist a range of possible settlements that both parties prefer to fighting. The government can harvest the bargaining surplus from an early settlement. An agreement is a sweet deal for the government because the large concession is only one time, and it prevents the rebels from posing a larger threat in the future. Thus, the government wants to buy off weak rebels even when military decisiveness is high.

However, government patience affects the prospects for peace. As the government becomes increasingly patient, peace becomes less likely. A crucial component of Equation (3) that yields the No-Peace conditions is what the government can commit to sharing postwar, which depends on the government's reservation value postsettlement ($\hat{F}_G(\underline{p})$). As the government's discount factor increases, it values the future more and has a larger reservation value postsettlement. This leaves less room for a concession to the rebels, decreases the rebels' expectation from a potential settlement, and makes peace less likely.

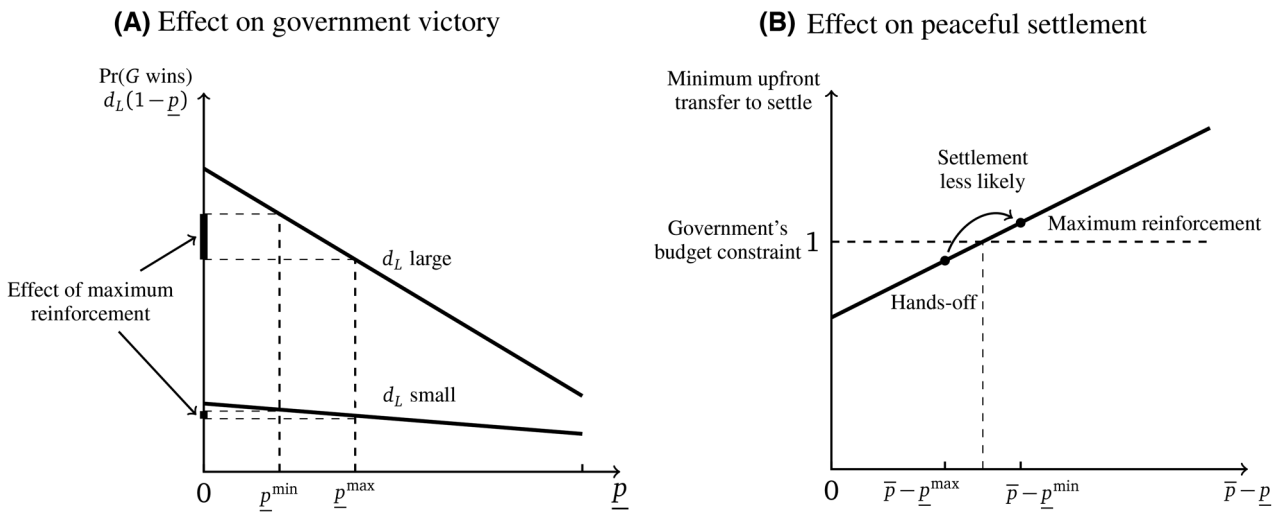
The model has implications for what counterinsurgency measure works and what does not. Although the informational aspect is not modeled, guerrilla tactics should signal rebel weakness and motivate the government to increase military investment to eliminate the rebels before they become a greater threat. I extend the baseline to consider two strategic responses by the government, early reinforcement to eliminate weak rebels and costly effort to contain rebel growth. In both scenarios, the rebels' maximum strength $\overline{p}$ remains unaffected.

The measures that boost the government's capability but do not curb rebel growth or increase military decisiveness do more harm than good. As Appendix E.1 on p. 19 of the SI shows and Figure 4 visualizes, merely sending in more mechanized troops to augment government power is not effective counterinsurgency. The probability of a government victory depends on military decisiveness and government capability. Early reinforcement cannot effectively convert into government victory when weak rebels optimally fight an indecisive guerrilla war. Moreover, early reinforcement creates a larger gap between rebels' current and future strength. This larger growth potential more likely satisfies the No-Peace conditions, making a settlement even harder.

Counterinsurgency measures that prevent rebel growth work, but only for high-capacity states. Appendix E.2 on pp. 20–24 of the SI considers the government's costly investment to curb rebel growth. Everything in the baseline remains the same, except now weak rebels' probability of growing strong under guerrilla warfare decreases as government investment increases. I also assume that governments with higher state capacity more effectively undermine rebel growth. The analysis reveals a nonmonotonic effect of state capacity. The government's optimal investment decreases in state capacity when rebels' future strength is low. It is constant in state capacity when rebels' future strength is moderate and increases in state capacity when rebels' future strength is high. The government is most concerned with the future threat of an empowered rebel group. However, low-capacity states make an insufficient investment, leaving weak rebels on expansion and eventually becoming strong enough to strike back decisively. These are precisely the countries experiencing protracted civil wars in the real world.

Besides state capacity, strong international and domestic constraints also create high costs for containing the rebels. Despite their willingness, high-capacity countries with civilian privacy and human rights concerns might face strong constraints to carry out

FIGURE 4 Early Reinforcement, Government Victory, and Peace



Note: Panel (A) shows the effect of maximum early reinforcement on government victory. Panel (B) illustrates its effect on peaceful settlement.

counterinsurgency campaigns. Democracies typically find it challenging to justify significant investments before insurgent threat surfaces. Most Americans were unaware of ISIS's existence, let alone its threat, until it took the second-largest city in Syria. The United States also had the military capability to devastate the Taliban but lacked international and domestic support. Instead, it got bogged down in the protracted counterinsurgency war in Afghanistan.

The extension also yields a counterintuitive finding. Surprisingly, the government strategically makes no investment if weak rebels' future strength is moderate. Weak rebels optimally fight an indecisive guerrilla war, which prevents the government from effectively using its superior power. If the rebels' future capability is moderate—large enough to induce their transition to conventional tactics but not enough to pose a fatal threat, the government prefers to wait until the threat surfaces and squash the insurgency through a conventional war, which the government's "modern" army is better at fighting.

Conclusion

Rebel strategies vary significantly within conflicts over time. Weak rebels use guerrilla tactics to escape state repression and weaken the government. However, hit-and-run attacks alone can hardly overthrow the regime. Rebels launch conventional attacks after growing stronger to win. I develop a model of rebel-government negotiation in which rebels choose how to fight.

The analysis yields several results. First, rebels switch from guerrilla to conventional tactics after gaining strength. Second, the expectation of gaining strength delays the switch. Rebels continue to fight irregularly to grow even when they have the capacity to engage the government directly. Third, the potential to switch fighting strategies hurts the prospects for peace. Weak rebels fight irregularly to survive the initial vulnerability, shift the situation in their favor in the long run, and eventually strike back decisively after gaining strength. In the model, rebels fight to mobilize their potential and cut a better deal in the future. The model better explains why civil wars fought irregularly last longer and the lack of serious negotiations at the early stages of many rebellions.

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Supporting Information

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Appendix A: Proofs of baseline results
Appendix B: Extension: probabilistic transition
Appendix C: Extension: ability to resume rebellion
Appendix D: Extension: independently drawn rebel strength
Appendix E: Extension: government reactions