

# Born Weak, Growing Strong: Anti-Government Protests as a Signal of Rebel Strength in the Context of Civil Wars

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**Abstract:** *All rebel organizations start weak, but how do they grow and achieve favorable conflict outcomes? We present a theoretical model that allows for rebel organizations to gain support beyond their “core” and build their bargaining power during fighting. We highlight that rebel organizations need to win over crucial parts of society to generate the necessary support that allows them to attain favorable civil conflict outcomes. We find empirical support for the argument that low-income individuals who initially fight the government (rebel organizations) have to convince middle-class individuals to turn out against the government to gain government concessions. Empirically, we demonstrate that government concessions in the form of peace agreements and the onset of negotiations become more likely when protest occurs in the context of civil conflicts.*

**Replication Materials:** The data, code, and any additional materials required to replicate all analyses in this article are available on the *American Journal of Political Science* Dataverse within the Harvard Dataverse Network, at: <http://doi.org/10.7910/DVN/MYDZNF>.

Protests during civil wars have received little attention in political science. This is surprising since we demonstrate that (a) protests are common in the context of civil wars, and (b) anti-government protests are associated with the emergence of peace agreements. This article explores how strong rebel organizations can trigger larger anti-government movements, which help them to gain government concessions. We provide a theoretical argument highlighting that rebel organizations need to expose government weakness to generate widespread anti-government behavior that allows them to attain favorable conflict outcomes.

Our article relates to a prominent debate in the social movement literature, namely, the link between rebel organizations that operate on the periphery of the state (rural) and the middle class, which tends to organize in urban areas. As Goodwin and Skocpol (1989, 492) highlight: “The

most successful revolutionary organizations—including those in Vietnam, Zimbabwe, and Nicaragua—have won the support not just of the poor or middle peasants, but also of landless and migrant laborers, rural artisans, rich peasants, and even landlords.” These successful revolutionary organizations are able to establish “coalitions, alliances, or conjunctures of struggles that cut across divides between urban and rural areas and among different social classes and ethnic groupings” (Goodwin and Skocpol 1989, 492). In fact, Skocpol (1979, 113) argues that “without peasant revolts, urban radicalism in predominantly agrarian countries has not in the end been able to accomplish social-revolutionary transformations.” Particularly, in the Latin American context, Dix (1983, 290) argues that the interactive relationship between the rural and urban areas was very important because “the combat entails relatively little mass mobilization of the peasantry before

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We want to thank participants from the Political Economy Seminar, Columbia University, Political Methodology and Formal Theory/IR Workshop, University of Maryland, Tactics in Conflict Workshop at University of Konstanz and Formal Models of International Relations Conference at University of Southern California for their helpful comments. We also thank James Fearon, Mark Fey, Kathleen Gallagher Cunningham, Branislav Slantchev, Navin Kartik, and Alessandra Casella for their insights, as well as the anonymous reviewers for helpful guidance. Nils W. Metternich acknowledges support from the Economic and Social Research Council (ES/L011506/1).

*American Journal of Political Science*, Vol. 62, No. 3, July 2018, Pp. 581–596

© 2018 The Authors. *American Journal of Political Science* published by Wiley Periodicals, Inc. on behalf of Society for American Journal of Political Science DOI: 10.1111/ajps.12356

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the winning of power and is instead based substantially on a core of radical youth united with or at least tacitly supported by broad elements of urban elites and the middle-class." This literature also suggests that supporters in urban areas can be involved in fighting (Gugler 1982), but they do not necessarily engage in most costly forms of anti-government behavior (Almeida 2003). Instead, they engage in protest and demonstrations to express their dissatisfaction with the state. This is in line with more general insights that individuals in urban areas (Walton and Ragin 1990) and those who are better educated are more likely to engage in protests (Jenkins, Wallace, and Fullerton 2008; McVeigh and Smith 1999). Our theoretical argument is inspired by this literature and highlights how wars expose the weakness of the state and create opportunities that can be exploited by social movements (Skocpol 1979). This closely follows the general view that "contentious politics is produced . . . when the existence of available allies is demonstrated, and the vulnerability of the opponents is exposed" (Tarrow 2011, 33).

Current research is realizing that battle-related fighting is not the only factor determining conflict outcomes. The recent literature on nonviolent campaigns (e.g., Chenoweth and Cunningham 2013; Chenoweth and Stephan 2011; Stephan and Chenoweth 2008) and earlier work on collective sentiments (e.g., Kuran 1989) demonstrate that conflict dynamics are not simply a function of military strength. There is evidence that fighting and other forms of political resistance are interdependent phenomena and even impact directly or indirectly similar conflict dynamics (White 1989). This leads scholars to investigate the interplay (Dudouet 2013; Shellman, Levey, and Young 2013) or trade-off (Chenoweth and Stephan 2011) between nonviolent and violent campaigns. We contribute to this literature by arguing that political behavior, short of fighting (e.g., demonstrations or strikes) in the context of ongoing civil conflict, can be the consequence of successful rebel organizations, which signal government weakness and enable widespread anti-government behavior.

We propose that urban middle-class individuals, who are less likely to express their discontent through joining rebel organizations, demonstrate their anti-government sentiments through protest and strikes. We provide a theoretical argument demonstrating that governments faced with protest in the context of civil wars are more likely to enter peace agreements and negotiations. Hence, different from the existing literature (e.g., Cunningham 2013; Dudouet 2013; Shellman, Levey, and Young 2013), we attribute violent and nonviolent behavior to different types of actors who subsequently engage in anti-government behavior.

The dynamic growth of rebel organizations, and consequently their ability to attain their objectives, receives limited attention in the civil war literature. This stands in contrast to the literature on collective action regarding political protest and social movements (DeNardo 1985; Finkel, Muller, and Opp 1989; Lohmann 1994; Tarrow 2011). Here, the growth of movements is frequently explained by threshold or cascade models (Granovetter 1978; Kuran 1989; Lohmann 1993; Yin 1998). Starting from the premise that it is difficult to organize collective action (Lichbach 1995; Tullock 1971), activists, leaders, or core members are crucial for initiating political movements. Highly committed individuals can signal their discontent through protests and demonstrations and thereby impact the beliefs of others about the strength and legitimacy of a regime. Other citizens act upon their updated beliefs, which can increase anti-government behavior.

Our argument relates to the idea that armed anti-government organizations need to trigger widespread anti-government behavior to reach a favorable settlement with the government. If the rebel organization can demonstrate the weakness of the government, unarmed opposition groups are more likely to turn out against the government, which provides higher incentives for the ruling elite to provide concessions. In turn, the main objective of the government is to keep the armed anti-government organization from growing, thereby minimizing anti-government support from the unarmed opposition. Hence, we present a theory as to how rebel organizations grow strong, enabling widespread anti-government behavior through exposing the weakness of the government, and achieve favorable conflict outcomes.

## Civilians and the Power of Rebel Organizations

While the majority of civil war bargaining work implicitly or explicitly equates power with military power (Walter 2009), there **is an increasing awareness that** other concepts of power matter in attaining favorable outcomes and that they will depend on particular government strategies (Cunningham 2011). Against the backdrop of terrorism within civil wars (Fortna 2015; Thomas 2014) and non-violent movements (Stephan and Chenoweth 2008), it **becomes obvious that outcomes of civil war** are not only determined by military power, an insight that has long been held in research focusing on the role of civilian support for warring parties. Most **prominently**, Tse-Tung (1961, 93) proposes that "the former [people] may be likened to water and the latter [guerrilla] to the fish who inhabit it." Relatedly, Kalyvas (2006) develops a theory

of selective violence in civil wars based on the assumption that control of civilians is important to guarantee that information is kept from the enemy. **Indeed, gaining support among civilians is seen as key to the success** of rebel organizations and dependent on patterns of fighting (Bennett 2008; Davenport and Moore 2012; Findley and Young 2007; Kalyvas 2006; Wood 2003).

**Civilian support can take multiple forms** (Wood 2003). While passive support for the rebels through non-compliance has been highlighted (Scott 2008), **we argue that successful rebels can trigger anti-government behavior** (e.g., protests, strikes, or demonstrations) that can become crucial to attain their objectives. Nilsson (2012) alludes to the role of civil society to attain durable peace after peace settlements, and we further contribute to the nonviolent resistance literature (Chenoweth and Cunningham 2013) by providing a novel theoretical link between violent rebel behavior and anti-government protest. **However, different from the existing literature, which theorizes nonviolent and violent behavior** as strategic complements, respective substitutes for individual actors (Cunningham 2013) and movements (Cunningham, Dahl, and Frugé, forthcoming), or sees violent and nonviolent behavior as part of escalation patterns (Dudouet 2013; Shellman, Levey, and Young 2013), we attribute violent and nonviolent behavior to different types of actors. While violent behavior is used by the core of a rebel organization and initial joiners, nonviolent anti-government behavior can arise from successful rebel organizations' demonstrating government weakness.

## The Dynamics of Gaining Strength

The growth of rebel organizations has mostly been the subject of microlevel or group-level recruitment theories (e.g., Gates 2002; Humphreys and Weinstein 2008; Weinstein 2005). While microlevel theories provide the conditions under which individuals join rebel organizations, these arguments are less interested in how individual decisions translate into conflict outcomes (for an exception, see Staniland 2014). Our article is closely related to cascade or threshold models focusing on this process. Building on threshold models developed by Schelling (1971), Granovetter (1978) provides a model of riot behavior where the choice of rioting depends on how many other individuals have previously protested. Individuals differ in how many others have to protest before joining, and depending on the distribution of individual-level thresholds, cascades can develop faster, develop slower, or stop. In the context of revolutions, Kuran (1989) develops a formal model explaining unanticipated revolutions

by the fact that civilians, while not displaying them publicly, might increasingly prefer government change. As more non-activists become unsatisfied with the status quo, it takes very few activists to trigger a cascade of anti-government actions. The extremists willing to pay a higher cost of participation become active first. As the opposition grows, the cost of participation falls, and moderates willing to pay only a lower cost of participation follow.

Similarly, Lohmann (1993, 1994) studies political change through mass action in regimes with strong control over the dissemination of public information. Here, individual experiences about the regime occur privately, and information about the nature of the regime is dispersed over time. As the public obtains information about changes in the size of protests, the individual chooses whether to support the regime or not. If a sufficiently large number of people decide to join the protests, the regime loses public support and collapses. Thus, demonstration of the government's weakness leads to an increase in anti-government behavior.

## Expanding beyond the Rebel "Core" and Gaining Concessions

Our main argument is that rebel organizations secure concessions from the government when they can demonstrate its weakness, which encourages urban middle-class individuals to engage in anti-government behavior. Hence, even when middle-class preferences are aligned with those of the rebel organization, the urban middle class needs to be convinced that the likelihood of success against the government is sufficiently high before joining anti-government activities and bearing the costs.

We explain the building blocks of our theory via a stylized model with a governing elite in power, a lower-class opposition (rural) constituting the core of the rebel organization, a middle class, (urban),<sup>1</sup> and an upper class. We focus on economic redistribution in order to align preferences across groups and incorporate the empirical insight that rebel organizations are initially more likely to form and operate in poor rural areas. The lower and middle classes prefer more redistribution, whereas the governing elite favors none (e.g., Acemoglu and Robinson 2001). The lower class can join the rebel organization to engage in violent anti-government activities, and the middle and upper classes can participate in other forms of anti-government protests. Economic and

<sup>1</sup>We think of the middle class as a mix of urban poor (who are still better off than the rural poor) and educated but economically excluded individuals.

political costs of anti-government activities may force the elite into a concession. Rebel activities alone are not sufficient to induce concession. However, despite the aligned preferences of the lower and middle classes for economic redistribution, middle-class participation is not immediate. First, participation in anti-government activities within each group is determined by the opportunity cost of participation, which is higher for the middle class. Second, a middle-class individual is likely to participate in anti-government activities only if other middle-class members also participate (e.g., Kuran 1991). This creates a collective action problem (e.g., Wood 2003) among the middle class. Third, anti-government activities can force the elite into a concession only if they create sufficiently high costs; these are determined by the unknown ability of the government to suppress rebel activities, in other words, by the unknown strength of the organization. Society learns about the strength of the organization by updating its beliefs after observing the outcome of rebel activities. The middle class can solve the collective action problem and participate in anti-government activities only if it is convinced of the strength of the rebel organization after updating its beliefs, forcing the elite to concede either immediately or after having updated its beliefs following more successful rebel activities.

We argue that rebel organizations start with individuals with low opportunity costs of participation in violent anti-government activities. These are economically deprived individuals in the lower class of the opposition. While the government is unlikely to give concessions to rebel organizations without any societal support, the expansion of such rebel organizations beyond the “core” membership emerges if the rebel organization can prove to society government weakness. Once higher-income classes engage in anti-government behavior (especially the middle class), anti-government activities may become costly enough to force concessions by the elite.

## Model

We introduce a dynamic model of collective action with learning. Our stylized model makes assumptions to isolate middle-class mobilization and its impact on elite concession, which can be generalized to study other aspects of civil wars (e.g., the role of class preferences on ethnic and economic policies).

Time is discrete and infinite. There is a continuum of agents who discount future payoffs by  $\delta$ . Society is divided into a ruling elite and a repressed opposition. The opposition may be a minority like the Kurds in Turkey or a majority like the Sunnis in Syria and is composed of

lower, middle, and upper classes, which we denote by  $l$ ,  $m$ , and  $u$ , respectively. The size of  $\omega$ -class,  $\lambda_\omega$ , is normalized such that  $\lambda_l + \lambda_m + \lambda_u = 1$ .

The elite is a unitary actor. It can keep the status quo or concede to the opposition. A concession is a game-ending move. When it concedes, the elite implements policies equivalent to a transfer of  $c$  to every opposition agent. The cost of concession to the elite is  $c$  ( $= \lambda_l c + \lambda_m c + \lambda_u c$ ).

We introduce a rebel organization with unknown capability to hit government targets. The organization initially has a leadership and needs members to fight against the government. Opposition agents can join this rebel organization or engage in nonviolent activities to show their discontent with the government.

The rebels attempt to hit government targets while the elite tries to stop them. A successful rebel attack demonstrates the ability of the rebel organization to sustain and advance its stated military objective and signals government weakness to individuals outside the organization.

We model government capability to suppress the rebels probabilistically. This follows the tradition of modeling power distribution among adversaries in crisis bargaining (Fearon 1995; Filson and Werner 2002; Powell 1996, 1999, 2002; Schelling 1960; Slantchev 2003; Wagner 2000). The rebels' success depends on the intrinsic strength of their organization and the size of the opposition engaged in anti-government activities. The former affects the probability of success directly, whereas the latter influences the difficulty the government faces to suppress the rebels and avoid rising costs as the size of the opposition engaged in anti-government activities increases.

A rebel attack succeeds with probability  $\alpha\lambda$ , where  $\alpha$  models the strength of the rebel organization or, equivalently, weakness of the government, and  $\lambda$  is the size of the opposition engaged in violent and nonviolent anti-government activities.

The rebel organization can be strong,  $\alpha = \alpha_h$ , or weak,  $\alpha = \alpha_l < \alpha_h$ . Nobody observes the true value of  $\alpha$ . It is common knowledge that  $\Pr(\alpha = \alpha_h) = \pi_0$ . Society learns about the true value of  $\alpha$  via Bayesian updating of beliefs after observing success or failure of rebel activities. A successful rebel attack creates a cost of  $\psi$  for the elite. Therefore, the expected cost of a rebel activity to the elite is  $\alpha\lambda\psi$ .

Participating in anti-government activities is costly for the opposition. The cost depends on the type of activity and the agent's opportunity cost. We assume that a lower-class agent's cost of participating in rebel activities or protests is zero. Since successful rebel activities may induce middle-class participation and in turn force the



elite to concede, the lower class prefers to join the rebels. In contrast, joining the rebel organization is prohibitively costly for middle- and upper-class agents, so they consider engaging in protests. Let  $y_l = 0$  be the opportunity cost of the lower class to participate in rebel activities, and  $y_m$  and  $y_u$  be the opportunity cost of participation in nonviolent anti-government activities for the middle and upper class, respectively, where  $y_l < y_m < y_u$ .

### Timing of the Game

Let  $\pi_t$  be the belief about  $\Pr(\alpha = \alpha_h)$  in period  $t$ . In every period, given the common belief  $\pi_t$ , every opposition agent decides whether to participate in an anti-government activity. Observing the participation, the elite decides whether to concede. If the elite concedes, the game ends. Otherwise, anti-government activities take place and the success of the rebels is determined probabilistically. Finally, the common belief  $\pi_t$  about  $\Pr(\alpha = \alpha_h)$  is updated to  $\pi_{t+1}$  via Bayes' rule after observing the outcome.

### Equilibrium

Following previous threshold models, we formalize the mobilization process via learning and cascading in Markov perfect equilibrium (Maskin and Tirole 2001). A Markov perfect equilibrium is composed of strategies that depend only on the payoff-relevant state of the world. The only payoff-relevant state in our model is  $\pi_t$ , the society's belief about  $\alpha$ . We characterize a symmetric Markov perfect equilibrium based on thresholds on beliefs.

Let  $\pi_l$ ,  $\pi_m$ , and  $\pi_u$  be the equilibrium thresholds that determine participation in anti-government activities by lower-, middle-, and upper-class opposition and  $\pi_e$  be the equilibrium threshold that determines concession by the elite.

Consider the following threshold equilibrium: Given  $\pi_t = \Pr(\alpha = \alpha_h)$ ,

- When an opposition agent participates in anti-government activities, she joins the rebel organization if she is lower class and joins the protests otherwise.
- An  $\omega$ -class opposition agent participates in anti-government activities in period  $t$  if, and only if,  $\pi_t \geq \pi_\omega$  and as long as every member of society has followed her strategy of participating in anti-government activities. If an agent has ever failed to participate in the past when her participation was expected, everyone else stops participating in anti-government activities forever.

- The elite concedes if, and only if,  $\pi_t \geq \pi_e$ .
- Agents update their beliefs to  $\pi_{t+1}$  according to Bayes' rule after observing the success or failure of rebel activities in period  $t$ .

Since the success and failure of the rebels are observed by all agents, all agents update their beliefs to the same value. Therefore, we refer to  $\pi_t$  as society's belief.

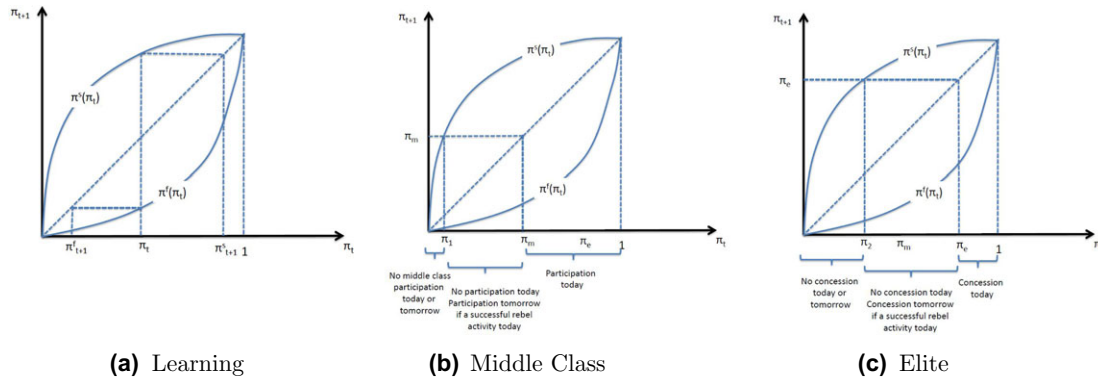
### Assumptions

We make the following assumptions:

- (1)  $\alpha_l \psi < c$
- (2)  $\alpha_h \lambda_l \psi < c$
- (3)  $(1 - \delta)y_m < c < (1 - \delta)y_h$
- (4)  $(1 - \delta)\alpha_h \psi (\lambda_l + \lambda_m) < c$
- (5)  $c < \alpha_h \psi (\lambda_l + (1 - \delta)\lambda_m)$

The first assumption implies the elite never concedes when the rebel organization is weak even if the entire opposition participates in anti-government activities. The second assumption implies the elite never concedes when only the lower class joins the rebel organization, even if the elite believes the rebel organization is strong. So, for the elite to concede, society's belief about the rebels' being strong should be sufficiently high and participation in anti-government activities should expand beyond the core of the rebel organization. The third assumption states that a middle-class agent prefers to give up a one-period income of  $y_m$  for a lifelong stream of  $c$ , whereas an upper-class agent does not. This assumption does not guarantee middle-class participation in equilibrium since a lifelong stream of  $c$  would be realized only if the elite has conceded. The fourth assumption states that one period of participation by both lower and middle classes does not create high enough expected costs for the elite to concede, even when the elite believes that the rebel organization is strong. The fifth assumption states that if the elite is sure that the rebel organization is strong and the lower class always participates in rebel activities, middle-class participation for one period would create sufficiently high costs to force concession.

If everybody knows the rebel organization is strong, participation by lower- and middle-class opposition is an equilibrium because then the elite concedes and the opposition is better off. Nevertheless, a middle-class agent participates only if sufficient participation by other lower- and middle-class agents is expected. Consequently, no middle-class participation and no elite concession is an equilibrium. In other words, the strategic interaction among the opposition agents turns into a collective action problem when society is sure that the rebels are strong.

**FIGURE 1** Dynamics of Learning, Middle-Class Participation, and Elite Concession

The middle class prefers to solve the collective action problem if the rebel organization is strong and refrains from anti-government activities otherwise.

However, the true value of  $\alpha$  is not observable. Our theory argues that inefficient fighting will occur in equilibrium and the collective action problem will be solved via learning as the size of the opposition engaged in anti-government activities evolves with beliefs. When  $\pi_t$  is low, society is not optimistic about the rebels' strength, and the middle class refrains from protesting. If the rebel organization demonstrates sufficiently many successful activities, society's beliefs improve and the middle class joins the protests. Beliefs also govern the elite's decision to concede, which happens only after the rebels gain support from the middle class.

### Learning

Given  $\pi_t$ , if people observe a successful rebel activity, society updates its belief to

$$\pi_{t+1} = \frac{\pi_t \alpha_h}{\pi_t \alpha_h + (1 - \pi_t) \alpha_l} \equiv \pi^s(\pi_t) > \pi_t,$$

and if it observes a failed act, then

$$\pi_{t+1} = \frac{\pi_t (1 - \alpha_h)}{\pi_t (1 - \alpha_h) + (1 - \pi_t) (1 - \alpha_l)} \equiv \pi^f(\pi_t) < \pi_t.$$

Figure 1 explains the dynamics of learning, middle-class participation in anti-government activities, and elite behavior.

In Figure 1a, the horizontal axis represents current beliefs  $\pi_t$  in period  $t$ , and  $\pi_{t+1}^s(\pi_t)$  plots the next-period beliefs as a function of  $\pi_t$  if the rebel activities of the current period succeed. In this case, society updates its belief to  $\pi_{t+1}^s > \pi_t$ . Similarly,  $\pi_{t+1}^f(\pi_t)$  plots the next-period beliefs as a function of  $\pi_t$  if the rebel activities in the current period fail. In this case, society updates its

belief to  $\pi_{t+1}^f < \pi_t$ . If  $\alpha = \alpha_h$ , the beliefs will improve and drift toward 1 in the long run. If  $\alpha = \alpha_l$ , the beliefs will degrade and drift to 0 over time.

Figure 1b focuses on middle-class participation. The middle class participates in anti-government activities in current period  $t$  if, and only if,  $\pi_t \geq \pi_m$ . When  $\pi_t = \pi_1$ , a successful rebel activity yields  $\pi_{t+1} = \pi_m$ . If  $\pi_1 \leq \pi_t \leq \pi_m$ , the middle class refrains from anti-government activities in the current period, and a successful rebel activity triggers middle-class participation in the following period,  $t + 1$ . When  $\pi_t \leq \pi_1$ , the middle class does not participate in the current or following period because the belief  $\pi_t$  is so low that a successful rebel activity cannot improve the belief sufficiently enough that middle-class participation occurs in the following period.

Figure 1c explains the dynamics of elite concession. The elite concedes in current period  $t$  if, and only if,  $\pi_t \geq \pi_e$ . When  $\pi_t = \pi_2$ , a successful rebel activity yields  $\pi_{t+1} = \pi_e$ . If  $\pi_2 \leq \pi_t \leq \pi_e$ , the elite does not concede in the current period, and successful activity triggers elite concession in the following period,  $t + 1$ . When  $\pi_t \leq \pi_2$ , the elite does not concede in the current or following period, since its belief  $\pi_t$  is so low that a successful rebel activity cannot improve the belief sufficient enough for elite concession in the following period.

### Equilibrium Analysis

A lower-class agent's opportunity cost of joining the rebel organization,  $y_l$ , is 0. Lower-class participation in rebel activities helps society learn about  $\alpha$ , and it may drive participation in anti-government activities to a level that induces elite concession. The beliefs do not evolve in the absence of rebel activities. Therefore, the lower class weakly prefers participation in rebel activities to protests or not participating at all.

An upper-class agent never participates in any anti-government activity (i.e.,  $\pi_u = 1$ ) because  $c < (1 - \delta)y_u$  implies that the lifetime benefit of a concession for an upper-class opposition agent is less than the opportunity cost of participating in anti-government activities.

We will focus on equilibria in which lower-class agents always participate in rebel activities and upper-class agents never participate in anti-government activities, that is,  $\pi_l = 0$  and  $\pi_u = 1$ .

Define  $\alpha_t = \pi_t \alpha_h + (1 - \pi_t) \alpha_l$  as the expected probability of success, given  $\pi_t$ . Let  $\lambda_t$  denote the size of the opposition participating in anti-government activities.  $\lambda_t$  is determined by thresholds as follows:

$$\lambda_t = \begin{cases} \lambda_l & \text{if } \pi_t < \pi_m \\ \lambda_l + \lambda_m & \text{if } \pi_t \geq \pi_m \end{cases}$$

The next proposition ranks equilibrium thresholds for the middle class and the elite. It states that the elite never concedes if the middle class does not participate in protests and provides the first insight into our theoretical argument.

**Proposition 1.**  $\pi_m \leq \pi_e$  in equilibrium.

The term  $\pi_m = 1$  corresponds to the equilibrium in which the opposition cannot solve the collective action problem. In this case, the equilibrium behavior is trivial: The middle class never participates in anti-government activities even if the lower class continues participating, society continues to update its beliefs, and the elite never concedes, that is,  $\pi_e = 1$ .

The following proposition states that  $\pi_e = 1$  cannot be a best response to  $\pi_m < 1$ . Intuitively, when  $\pi_t$  is very close to 1, the lower and middle classes participate in protests and  $\alpha_t$  is very close to  $\alpha_h$  such that conceding now is better than never conceding for the elite.

**Proposition 2.** In equilibrium,  $\pi_m < 1$  implies  $\pi_e < 1$ .

In such nontrivial equilibria, when  $\pi_t$  is low, only the lower class participates in rebel activities. If society's belief  $\pi_t$  improves beyond  $\pi_m$  after observing successful rebel activities, the middle class participates in protests, and if beliefs deteriorate to  $\pi_t < \pi_m$ , the middle class stops participating until  $\pi_t$  improves sufficiently again. If society's belief  $\pi_t$  improves beyond  $\pi_e$ , the elite concedes. The following proposition asserts the existence of a nontrivial equilibrium.

**Proposition 3.** There exists an equilibrium with  $\pi_l = 0 < \pi_m \leq \pi_e < \pi_u = 1$ .

The elite's best response threshold is a nondecreasing function of the middle-class threshold. This is intuitive.

The earlier the middle-class agents join the protests, the earlier the elite concedes.

There are an infinite number of nontrivial equilibria in this game. For example, in the proof of Proposition 3, we show that  $\pi_m = \pi_e = \pi$  is an equilibrium if  $\pi$  is close enough to 1.

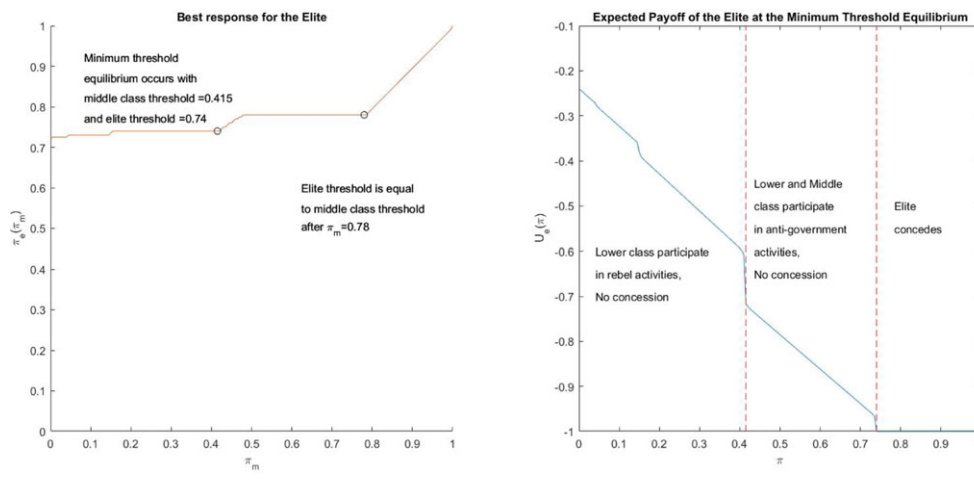
We define a minimum threshold equilibrium  $(\pi_l, \pi_m, \pi_u, \pi_e)$  as being such that  $\pi_l = 0$ ,  $\pi_u = 1$ , and there is no other threshold equilibrium  $(\pi'_l, \pi'_m, \pi'_u, \pi'_e)$  with  $\pi'_l = 0$ ,  $\pi'_u = 1$ , and  $\pi'_m < \pi_m$ . By definition, a minimum threshold equilibrium is unique. This is also interesting from a substantive point of view because the earliest concession is obtained in that equilibrium. Figure 2 plots the minimum threshold equilibrium for  $c = 1$ ,  $\delta = 0.7$ ,  $\alpha_l = 0.2$ ,  $\alpha_h = 0.8$ ,  $\psi = 2$ ,  $y_h = 0.5$ ,  $\lambda_l = 0.6$ , and  $\lambda_m = 0.35$ . The threshold strategies at the minimum threshold equilibrium are  $\pi_m = 0.415$  and  $\pi_e = 0.74$ . Also,  $(\pi_l = 0, \pi_m = \pi_e = \pi, \pi_u = 1)$  is an equilibrium for every  $\pi \geq 0.78$ .

The left panel plots the elite's best response threshold as a function of the middle-class threshold. This is a nondecreasing function: The later the middle class participates, the later the elite concedes. The minimum threshold equilibrium is realized at  $\pi_m = 0.415$  and  $\pi_e = 0.74$ . Also,  $\pi_m = \pi_e = \pi$  constitutes an equilibrium for every  $\pi \geq 0.78$ . The right panel plots the lifetime expected payoff of the elite at the minimum threshold equilibrium. The elite payoff without the cost of rebel activities and concession is normalized to 0 in this graph. Since the lower class always participates in rebel activities in this equilibrium, the expected payoff of the elite is negative even for low values of  $\pi$ . The payoff decreases as  $\pi$  increases, because the lifetime expected cost increases due to the greater likelihood of middle-class participation in anti-government activities. When  $\pi$  exceeds  $\pi_m$ , the cost from middle-class participation is realized, so there is a sudden drop in expected payoff at  $\pi_m$ . The elite payoff continues to drop as  $\pi$  increases beyond  $\pi_m$  due to the increased likelihood of concession.

## Empirical Analysis

We focus on the empirical implication that the societal extension of anti-government behavior beyond the "core" of the rebel organization leads to government concession. Hence, we expect these concessions to become more likely when middle-class individuals engage in anti-government behavior alongside low-income individuals. Our analysis focuses on two types of concession: the timing of (a) peace agreements and (b) peace negotiation onsets, which have previously been conceptualized

**FIGURE 2 Best Response for the Elite/Government (Left); Expected Payoff of the Ruling Elite/Government at the Minimum Threshold Equilibrium (Right)**



as indicators for government concessions (Greig 2015; Thomas 2014). We also provide initial support for our argument that successful fighting leads to increasing anti-government behavior of middle-class individuals (see the supporting information).

### Distinguishing Lower and Middle Class Anti-Government Behavior

Our theoretical argument distinguishes between lower-income individuals (mostly rural), who are willing to engage in actual fighting activities, and middle-income individuals (mostly urban), who are more likely to show anti-government behavior by protesting, striking, or using other forms of nonviolent behavior. Before turning to our main analyses, we provide empirical support for our argument that economic development is correlated with different types of anti-government behavior. While fighting is associated with rural regions of lower economic activity, protest and riots are associated with urban areas of higher economic activity. We believe it is important to demonstrate this correlation to deliver a convincing argument that our data are capturing the concepts implied by our theoretical framework. At the same time, this section allows us to introduce the primary data sources used in our analyses.

Throughout this article, we measure the rebel organizations' "core" activity using the Uppsala Conflict Data Program's Georeferenced Events Dataset (UCDP-GED version 3-2015; Sundberg and Melander 2013). We exclude one-sided violence events from the UCDP-GED and only identify fighting events in Africa between 1989 and 2014. For activity beyond the core, we rely on the

Social Conflict in Africa Database (SCAD 3.1; Salehyan et al., 2012) to identify demonstrations, protests, and strikes directed against the central or regional government.

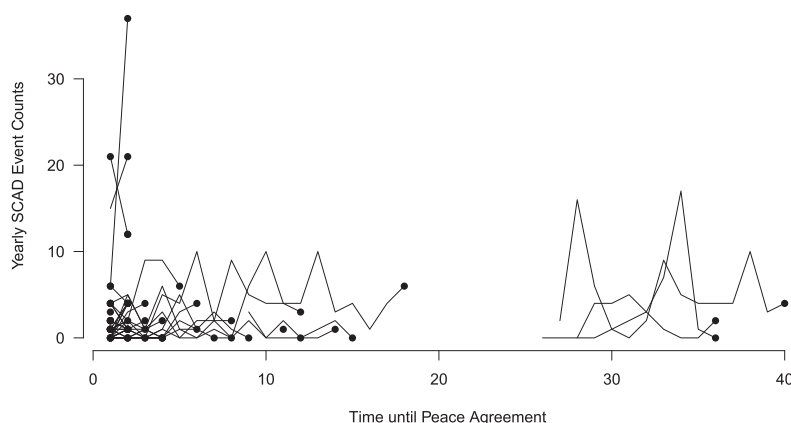
The explicit aim of SCAD is to collect information on social and political conflict not captured by civil war data sets. Their event data set covers the African continent from 1990 to 2014 and provides geographical and temporal information for each case. Focusing only on events that target a central or regional government, we extract the following events from SCAD to form a yearly count of anti-government protest: organized demonstration, spontaneous demonstration, organized violent riot, spontaneous violent riot, and anti-government violence (all definitions from Salehyan et al., 2012 appear in the supporting information).

While the existing literature supports our assumption that low-income individuals are more likely to join rebel organizations (Collier and Hoeffler 2004; Humphreys and Weinstein 2008), we use nightlight data in the supporting information to further strengthen our claim that rebel organization fighting is indeed associated with areas of lower economic development (mostly rural), whereas anti-government protests are a phenomenon related to slightly higher economically developed areas (mostly urban).

### Peace Agreements as Concessions to Rebel Organizations

The first analysis focuses on the timing of peace agreements at a yearly level. Using SCAD events targeting the government as our main measure of anti-government



**FIGURE 3 Time until Peace Agreement Is Reached**

*Note:* For each peace agreement, the corresponding anti-government SCAD protest event count is plotted. Dots at the end of the lines mark the beginning of a peace agreement. On the right-hand side of the plot are conflicts that started before 1990 and have been settled within our observation period (left-truncated observations).

behavior beyond the rebels' core, we analyze its impact on government concessions. In line with previous work (Greig 2015; Thomas 2014), we use peace agreements as a measure of government concessions.<sup>2</sup> In the post-cold war era, the period covered by our data, most conflicts are settled by peace agreements, but we exploit the timing of peace agreements in our statistical analysis (Harbom, Högladh, and Wallensteen 2006). We hypothesize that an increase of SCAD events, which we argue is a signal of middle-class individuals, turning against the government, is associated with the emergence of peace agreements. We use the UCDP Peace Agreement Dataset (version 2.0; Harbom, Högladh, and Wallensteen 2006) and Uppsala Conflict Data Project data (Gleditsch et al. 2002) to calculate the fighting time until a peace agreement is reached. If multiple peace agreements exist within a conflict, we calculate the fighting time since the last agreement. Peace agreements outside of fighting activities are not included in our data set. Our data include 44 peace agreements and 137 yearly observations. Figure 3 plots the duration of peace agreements against our main explanatory variable (SCAD events count).

**Estimation.** Using Cox proportional hazard models, we test whether an increase in SCAD events (lagged 1 year) decreases the duration until peace agreements occur. A crucial assumption made by the Cox model is that explanatory variables shift the baseline proportionally,

<sup>2</sup>Peace agreements are thought to be an indicator of concessions because they allocate relevant policies to the opposition, with over 50 % of peace agreements providing political provisions and almost 40 % including territorial provisions (Högladh 2012)

without a systematic time dependency (Box-Steffensmeier and Zorn 2001). Hence, we provide proportional hazard tests assessing the correlation between the Schoenfeld residuals and time for each variable in Table B2 in the supporting information (SI). We also include the interaction with the  $\log(\text{time})$  in our model to test for possible proportionality violations in our models (see SI Table B3). In the second test, we make an important discovery. The effect of anti-government protest on the timing of peace agreements is conditional on conflict duration. Anti-government protests in roughly the first 2–3 years increase the hazard of peace agreements, but this effect weakens the longer fighting continues. This finding is explored in greater detail in the following analyses.

**Rebel Strength.** In our model specification, we control for three dynamic measures of rebel strength because we want to distinguish the effect of fighting from anti-government protest. First, we measure the strength of rebel organizations by coding the number of fighting events in which rebel organizations are fighting with the government, because stronger organizations should attract, initiate, and prove resilient to a larger number of fighting events. Second, stronger organizations should also have the ability to fight in more geographically distinct places than weaker ones. Hence, we measure the number of unique Peace Research Institute Oslo (PRIO) grids affected by rebel organizations. Finally, there is evidence that rebel organization strength is correlated with their ability to move and operate closer to a country's capital. Therefore, we measure the average distance between

the respective capital and fighting events involving rebel organizations.

**Control Variables.** We control for variables that might be correlated with our main explanatory variable and likely to impact our outcome variable. We include economic development (gross domestic product per capita [GDP per capita]; Heston, Summers, and Aten 2012), because developed countries might on average have more urban middle-class citizens engaging in protest, and population size (Heston, Summers, and Aten 2012), because larger countries might experience more protest. Democratic institutions encourage open political protest, and we therefore include the countries' Polity scores (Marshall, Jaggers, and Gurr 2009). We take into account conflict duration and control for the number of ongoing conflicts in a country. Finally, there is reason to believe that a strong government can force rebels into peace agreements. While GDP per capita is frequently used to assess state strength, we include the military expenditure (thousands of current-year U.S. dollars; National Material Capabilities [v5.0]; Singer 1988) per capita as a more direct measure of military power. All summary statistics are in SI Table B1.

**Results.** Table 1 provides the duration estimation results. In line with our theoretical expectation, we find that SCAD events increase the risk of peace agreements, but this effect is time dependent. The left panel in Figure 4 plots the percentage increase in the hazard of a peace agreement in the second year of fighting as the number of SCAD events increases, holding all other variables at their median value. At the mean number of SCAD events in the past year ( $\sim 2.5$ ), the hazard of a peace agreement increases by about 39% in the second year of fighting. Importantly, we also find that this effect diminishes over time. In the third year, the hazard decreases to about 17% with very large confidence intervals (center panel in Figure 4). This effect completely disappears by the fourth year of fighting (right panel in Figure 4). This finding provides initial evidence, on the yearly conflict level, that anti-government behavior beyond the "core" of rebel organizations increases the probability of a peace agreement. However, this effect is time dependent, and only anti-government behavior at the beginning of conflicts increases the probability of peace agreements. We believe this is a meaningful effect providing support for our argument that, at least in the early phases of fighting (including fighting after previous peace agreements), anti-government behavior outside of the rebel organization's core is important to gain concessions.

**TABLE 1 Peace Agreement Models: Cox Proportional Hazard Model Estimates**

	Dependent Variable
	Time to Peace Agreement Model 1
SCAD Events <sub><i>t-1</i></sub>	0.252*** (0.111)
SCAD Events <sub><i>t-1</i></sub> $\times$ ln(time)	-0.167*** (0.117)
GED Event Count <sub><i>t-1</i></sub>	-0.001 (0.005)
GED Capital Distance <sub><i>t-1</i></sub>	-0.0002 (0.001)
GED PRIO Grids Affected <sub><i>t-1</i></sub>	-0.001 (0.025)
GDP per Capita <sub><i>t-1</i></sub> (log)	-0.571* (0.354)
Population <sub><i>t-1</i></sub> (log)	-0.232 (0.339)
Xpolity <sub><i>t-1</i></sub>	-0.190* (0.117)
Conflict Duration	0.024 (0.020)
Ongoing Conflicts	-0.496 (0.837)
Military Expenditure per Capita <sub><i>t-1</i></sub>	8.091** (5.346)
Observations	137
Log Likelihood	-93.584
Wald Test	399.720*** (df = 11)

*Note:* The outcome variable is the time to peace agreement. The unit of analysis is the conflict year preceding peace agreements. Clustered country standard errors are shown.

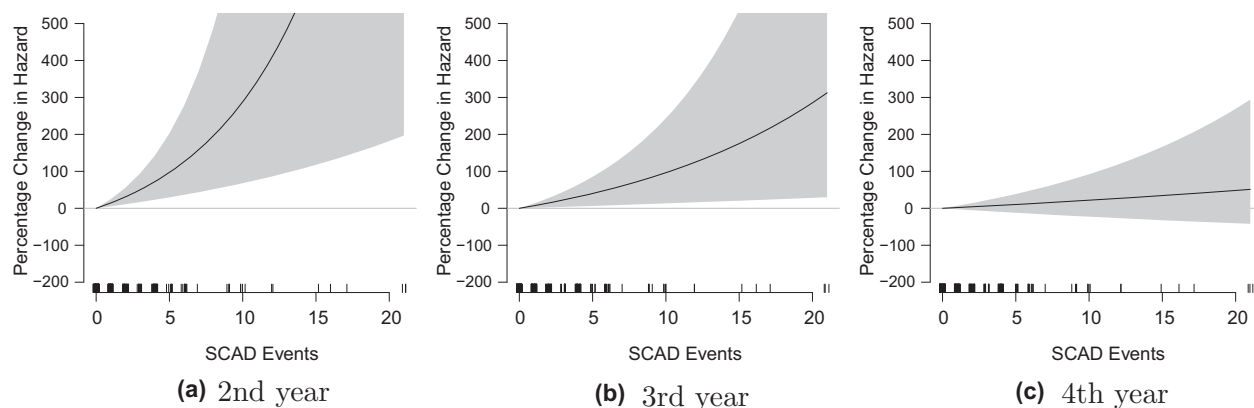
\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

### Negotiation onsets as concessions to rebel organizations

In a second analysis, we focus on a related phenomenon: the onset of negotiations, frequently seen as the government's response to strong rebel organizations (Thomas 2014). In a study by Thomas (2014), negotiations are an indicator of whether governments reward terrorist activities by rebel organizations through the onset of negotiations. Using data<sup>3</sup> from Thomas (2014), we analyze whether anti-government SCAD events have a positive effect on negotiation onset. In addition, we investigate whether SCAD events also have a positive effect on the

<sup>3</sup>We use updated GDP per capita and population data to correct for missing data.

**FIGURE 4** Percentage Change in the Hazard of Peace Agreements Conditional on the Past Year's Number of Anti-Government SCAD Events



*Note:* Estimates obtained from Model 1 in Table 1. Left panel: Changes after one year of fighting. Center panel: Changes after two years of fighting. Right panel: Changes after three years of fighting. Mean estimates with 95% confidence (dark gray). Rugs above the x-axes show the empirical distribution of SCAD events.

number of strong rather than weak concessions by the government. The advantage of using Thomas's data is that we can analyze monthly-level dynamics, rather than yearly aggregations.

**Estimation.** We evaluate our theoretical argument by estimating four different models, which have a similar model specification as presented in Thomas (2014). First, we estimate a binary outcome model (logistic regression) in which the outcome variable is whether or not negotiations started in a particular month. The second and third models focus on the number of strong and weak concessions (Thomas 2014) eventually made by the government using a negative binomial count model.<sup>4</sup> Focusing only on countries and years covered by SCAD and GED leaves us with 1,403 rebel organization months. Similar to the conflict-level analysis, we find a strong time-dependent effect of anti-governmental SCAD events when including interactions with the time a particular rebel organization is fighting (see SI Table B4 for a time-dependency test for all relevant variables).

**Rebel Strength.** In addition to the fairly time-invariant measure of rebel strength (Cunningham, Gleditsch, and Salehyan 2009) included in Thomas's (2014) original model specification, we add our three dynamic mea-

sures of rebel strength as outlined in the previous analysis: (1) the monthly number of fighting events of a rebel organization, (2) the monthly number of distinct PRIO grids in which a rebel organization is operating, and (3) the monthly average distance to the capital.

**Control Variables.** We first include the control variables featured in Thomas (2014): External rebel support and mediation efforts could be conditional on rebel strength and correlate with other anti-government behavior. Hence, we include a measure of external support from the non-state actor data set (Cunningham, Gleditsch, and Salehyan 2009) and third-party mediation (UCDP Categorical Variables data set). The number of battle-related deaths is associated with conflict costs (Mason and Fett 1996), which might increase the probability of protests against the government and alter the propensity of the government to enter peace agreement negotiations (Uppsala Conflict Data Program 2016). There is also support for the idea that conflict types condition fighting dynamics (Gleditsch and Ward 2013), which might be correlated with the type of protest we observe; thus, we control for conflict incompatibility (Gleditsch et al. 2002; Uppsala Conflict Data Program 2009). Ethnic conflicts might be more consistently linked to grievances that make anti-government protests more likely. As in Thomas (2014), we account for ethnic conflicts as coded by Cederman, Wimmer, and Min (2010). We control for conflict duration, and because a greater number of actors could be associated with other anti-government behavior, we include a count of active rebels and the number of conflicts within a country. We also include the

<sup>4</sup>Thomas (2014) distinguishes between no concessions and minimal, moderate, substantial, and maximal concessions. Multiple concessions can be granted, which allows for a count variable. The variable *strong concessions* is a count of substantial and maximal concessions, whereas the coding of weak concessions is a less restrictive coding and includes moderate, substantial, and maximal concessions.

**TABLE 2** Negotiation Onset and Outcome Models: Logit Regression Estimates (Model 1) for the Negotiation Onset Model

	Dependent Variable		
	Negotiation Onset <i>Logistic</i> Model 1	Number of Strong Concessions <i>Negative Binomial</i> Model 2	Number of Weak Concessions <i>Negative Binomial</i> Model 3
SCAD Events <sub>t-1</sub>	0.665*** (0.200)	0.812* (0.283)	0.631* (0.265)
SCAD Events <sub>t-1</sub> × Month in Episode	-0.010** (0.004)	-0.010 (0.006)	-0.009** (0.005)
GED Event Count <sub>t-1</sub>	0.011 (0.034)	-0.068 (0.050)	-0.048 (0.043)
GED Capital Distance <sub>t-1</sub>	0.001* (0.0003)	0.0004 (0.0005)	0.001* (0.0004)
GED PRIO Grids Affected <sub>t-1</sub>	0.017 (0.063)	0.117 (0.088)	0.081 (0.077)
Success <sub>t1</sub>	0.418* (0.134)	0.337* (0.150)	0.411* (0.137)
Success <sub>t1</sub> × Month in Episode	-0.013** (0.005)	-0.014* (0.007)	-0.017** (0.007)
Month in Episode	0.042* (0.016)	0.020 (0.023)	0.018 (0.020)
Month in Episode <sup>2</sup>	-0.001* (0.0002)	-0.0003 (0.0004)	-0.0003 (0.0003)
Month in Episode <sup>3</sup>	0.00000* (0.00000)	0.00000 (0.00000)	0.00000 (0.00000)
Controls included	Yes	Yes	Yes
Intercept	-7.983*** (1.057)	-7.703*** (1.366)	-7.563*** (1.204)
Observations	1,364	1,364	1,364
Log Likelihood	-438.483	-356.386	-453.436
θ		0.174*** (0.039)	0.211*** (0.041)
Akaike Information Criterion	926.965	762.772	956.871

*Note:* The table also provides negative binomial regression estimates for the strong number of concessions model (Model 2) and the weak concessions model (Model 3).

\*p < .05, \*\*p < .01, \*\*\*p < .001.

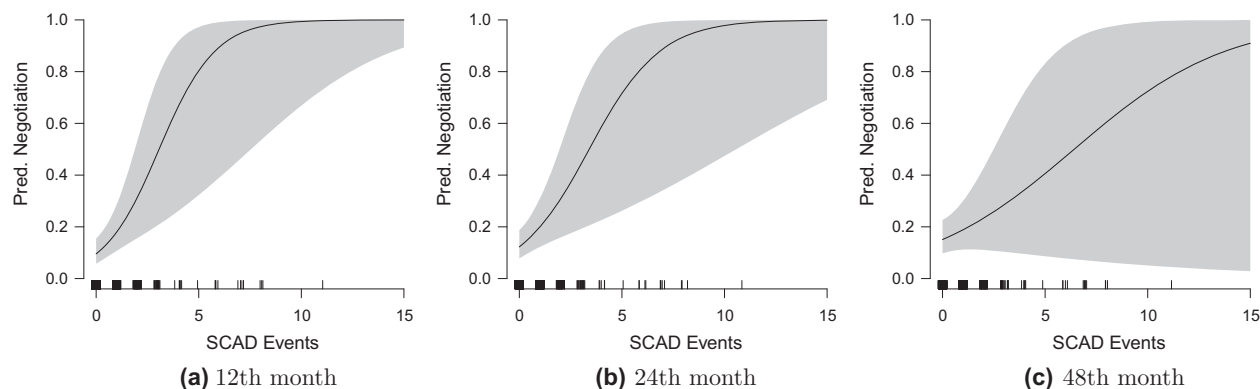
conflict episode and, more importantly, the month of the episode and its squared and cubed terms to model time dependency as described in Carter and Signorino (2010). We control for population size, GDP per capita, and military expenditure per capita for the reasons discussed in the previous analysis. To compare the effect of anti-government behavior beyond the rebel “core” to other activities against the state, we include the number of successful terrorist attacks conducted by rebel organizations in the model specification. This is the main measure that Thomas (2014) introduces in her work based on the

Global Terrorism Database (GTD; 2016). Thomas (2014) argues that governments reward “bad” behavior by rebel organizations with peace negotiation onset. The inclusion of this variable is also necessary because the decision to use terrorist attacks may be caused by similar factors that drive anti-government protest.

**Results.** The results of the negotiations onset model (Table 2, Model 1) show a positive effect for the level of SCAD events in the past month on negotiation onset. Figure 5 provides detailed insights into the effect of SCAD



**FIGURE 5 Predicted Probability of Negotiation Onset Conditional on the Number of Past Month's Anti-Government SCAD Events**



*Note:* Estimates are obtained from Model 1 in Table 2. Left panel: Changes after 12 months of fighting. Center panel: Changes after 24 months of fighting. Right panel: Changes after 48 months of fighting. Mean estimates with 95% confidence intervals (dark gray) are shown. Rugs above the x-axes show the empirical distribution of SCAD events.

events on negotiation onset. The left panel plots the predicted probability of negotiation onset in the 12th month of fighting, holding all other variables at their median value. Compared to the yearly aggregations, the monthly count of SCAD events is of course much lower, and the empirical observed values are provided at the bottom of the panel. However, the marginal effect of increases in the level of SCAD events is fairly large. Three protest events in the past month are associated with a 0.36 predicted probability of negotiation onset compared to 0.1 predicted probability if no protest events occur. However, the longer rebels fight, the smaller the effect of anti-government protest becomes; after 24 months (center panel of Figure 5), two protest events in the past month are associated with a 0.34 predicted probability of negotiation onset compared to 0.12 predicted probability if no protest events occur. After 48 months (right panel of Figure 5), two protest events in the past month are associated with a 0.24 predicted probability of negotiation onset compared to 0.15 predicted probability if no protest events occur. This means that over time, protest events contribute less to a change in predicted probability for the onset of peace negotiations with a rebel organization.

We find this time dependency not only for anti-government behavior, but also for successful terrorist attacks that were originally analyzed by Thomas (2014). When comparing the effect size of anti-governmental behavior compared to the effect of successful terrorist attacks, we find that a single protest event has a larger effect than a single successful terrorist attack, and the difference between these effects is significantly different at standard levels. Hence, our results highlight that less

violent forms of anti-government behavior seem to play an important role in the context of negotiation onset, especially because the mean number of protests and successful terrorist attacks is comparable (mean successful terrorist attacks = 0.1935 events per month; mean protest events per month = 0.1845).

If protest events are a signal of strong rebels' enabling the anti-government behavior of the middle-class, they should also help rebel organizations to achieve more favorable concessions. Turning to a comparison of whether protests lead to a higher number of strong concessions rather than weak ones, we find that the estimate for protest in the strong concession count model (Table 2, Model 2) is slightly larger than in the weak concession count model (Table 2, Model 3). This difference is statistically significant at conventional levels. This pattern is similar to the findings for successful terrorist attacks found by Thomas (2014), which we cannot replicate in our study with a slightly different subsample, perhaps because we only consider countries that are covered by SCAD and GED.

## Conclusion

All rebel organizations start with a "core" membership with very low opportunity costs, but they have to evolve into broader movements to gain concessions from the government. We propose a theoretical argument that alludes to the fundamental mechanisms at play when organizations trigger anti-government behavior beyond their core and facilitate the turnout of middle-class individuals against the government. Past research on political protest

and social movements (DeNardo 1985; Finkel, Muller, and Opp 1989; Lohmann 1994; Tarrow 2011) and more recent work on nonviolent campaigns (Chenoweth and Cunningham 2013; Chenoweth and Stephan 2011) highlight the power of political action that goes beyond battlefield fighting. Inspired by this literature, we analyze the interaction between behavior of lower-class and middle-class individuals in the context of civil conflicts. Only if rebels can demonstrate the weakness of the government will middle-class individuals join the broader anti-government movement. Political leaders faced with anti-government actions from middle- and low-income individuals will make concessions that are favorable to the rebel organization. Accordingly, our empirical results indicate that demonstrations and protests at the beginning of conflicts increase the ability of rebels to attain favorable peace agreements.

Finally, this article speaks to the growing interest in the relationship between political, as well as economic inequalities, and civil conflict (Alesina, Michalopoulos, and Papaioannou 2012; Cederman, Weidmann, and Gleditsch 2011; Østby 2008; Østby, Nordås, and Rød 2009). That is, the distribution of income types (Yin 1998) is likely to influence the initial size of the rebel organization's core and how quickly they can motivate broader anti-government behavior to force government concessions. We hope this article demonstrates that an enhanced understanding of the conditions under which rebel organizations grow and trigger anti-government behavior will contribute to the explanation of general conflict dynamics (onset, duration, and recurrence) in future work.

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## Supporting Information

Additional Supporting Information may be found in the online version of this article at the publisher's website:

**Appendix 1:** SCAD Definitions

**Appendix 2:** Nightlight as a Measure of Economic Development in Locations of Fighting versus Protest

**Appendix 3:** Probing the Impact of GED Events on SCAD Events

**Appendix 4:** Proofs

**Appendix 5:** Tables