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Joseph K. Young

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# Repression, Dissent, and the Onset of Civil War

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Joseph K. Young<sup>1</sup>

## Abstract

The prevailing scholarly wisdom is that *weak* states, or resource-poor states, are the most prone to civil war. Yet many weak states never experience civil war. Why then are some weak states prone to civil war while others are not? The author offers a theory that explains how dissidents and states interact to jointly produce civil war. In sum, states that repress their citizens are the most likely to kill citizens and to generate dissident violence. This insight resolves an academic puzzle and when tested provides a model with better predictive ability than previous models.

## Keywords

civil war onset, repression, dissent

Recent scholarship has established that the condition of being a weak state raises the probability of civil war (Fearon and Laitin 2003).<sup>1</sup> Weakness is generally measured as lack of resources or low GDP.<sup>2</sup> UN statistics show that of the fifty countries in the world with the lowest GDP, nearly 60 percent experienced civil strife of varying intensity and duration in the 1990s. While this is a high percentage, the experience of almost 40 percent of these resource-poor states remains unexplained.<sup>3</sup> These statistics, coupled with the academic findings, are the foundation for an interesting puzzle: why do some weak states experience civil wars whereas many others do not?

Consider the experiences of El Salvador and Bhutan. Each state is commonly considered *weak*, each has difficult terrain, neither was a democracy until recently, yet one has seen a bloody, protracted civil war while the other is relatively tranquil.<sup>4</sup> El Salvador is a weak state with a per capita national income that has hovered around \$2,000 since the 1970s. In the mid-1970s, the military leaders of El Salvador responded to increased political mobilization by dissidents with harsh repression. In 1975, for example, protesters against the Miss Universe Pageant were gunned down, killing fifteen (Wood 2003). The process began in the early 1970s as dissident groups openly criticized and organized against the repressive military rule, and by 1979 a state of open civil war existed (Mason and Krane 1989). The civil war lasted over a decade, claiming well over fifty thousand lives (Lacina and Gleditsch 2005).

Like El Salvador, Bhutan is considered a weak state. It is a landlocked country with a per capita GDP that fluctuated between \$400 and \$1,000 between 1988 and 2005.<sup>5</sup>

Since its inception in 1971, the king and other leaders of the state have exercised uncontested control throughout the territory. Even though it has an even lower level of GDP and also has rough, mountainous terrain, Bhutan has avoided the civil war that El Salvador has experienced.

These are not isolated cases. For example, civil war has occurred in Rwanda, Cambodia, Angola, Afghanistan, Sierra Leone, and many other countries. What do these countries all have in common? All of the above states are commonly termed *weak states*. Yet other weak states, such as Bhutan, Cameroon, Ecuador and Burkina Faso, have avoided civil wars. Why?

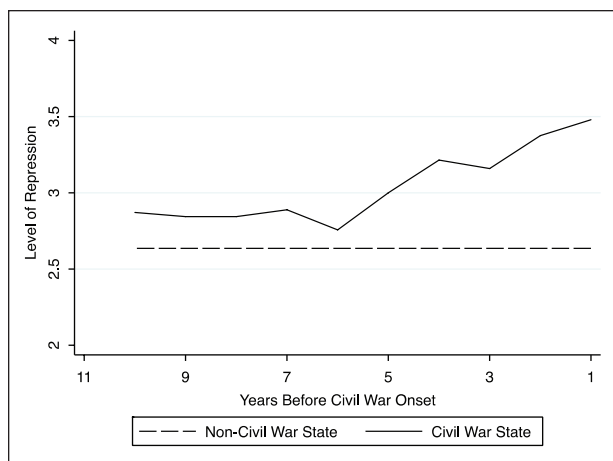
Although El Salvador and Bhutan are matched on some important civil-war-enhancing characteristics, such as population and difficult terrain, an important difference between the two is the Salvadoran military's choice to repress the population. I argue that states that lack resources and *societal support* are at the most risk for the onset of civil war. State leaders make choices, such as repression, that reduce support from society and increase the likelihood of active dissent. Similar to previous scholarship, I argue that states with low capacity are at the most risk of civil war. Contrary to previous work, however, I conceptualize state capacity as involving more than just resources; it also involves societal support.

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<sup>1</sup>American University, Washington, DC, USA

## Corresponding Author:

Joseph K. Young, School of Public Affairs, American University, 4400 Massachusetts Ave NW, Washington, DC 20016, USA.  
Email: jyoung@american.edu



**Figure 1.** Repression levels prior to civil war.

To illustrate this process, Figure 1 examines repression prior to civil war onset across a large sample of countries.<sup>6</sup> Figure 1 shows average repression levels in countries prior to experiencing civil war versus average levels of countries that do not have this type of conflict. As the figure shows, average levels of repression are always higher in countries that will have civil war onsets, and this process builds about five years prior to the civil war. Between years 6 and 5, for example, repression increases 8.8 percent. All of the years following show similar increases except between years 4 and 3, which show a slight decrease (2 percent). Overall, the trend is consistently positive, representing a 26 percent increase in the level of repression from year 6 to year 1.

Extant work has focused primarily on state weakness and failed to incorporate strategic interaction between the state and dissidents. In contrast, I offer a model that explicitly identifies *the process* of violence between states and dissidents that links weak states to civil war. This model clarifies the micro-foundational motives of the central actors, the state and the dissidents. State repression both leads to rising violence levels (illustrated in Figure 1) and pushes civilians into active dissent. Once dissidents are mobilized and challenging the state, civil war becomes more likely. The answer to the puzzle? High levels of repression occur in some resource-poor states; these states are most likely to experience civil war. In sum, I argue that the likelihood of a state experiencing civil war is a function of state–dissident interaction; this is an important claim that, though noncontroversial on its face, has been ignored in the literature.

I begin with a discussion of the prevailing wisdom regarding civil war: civil war is most likely to occur within states that have ripe conditions for insurgency. I then discuss the preferences of state actors and offer an explanation for why some states use violence. After outlining the

state, I describe how the actions and resources of the state affect dissident choices. I then integrate the state and dissidents and show how their interaction affects the likelihood of producing or avoiding civil war. After outlining the theory and deriving hypotheses, I discuss research design. Previous work in the quantitative study of civil war has relied on single equation regressions with a set of control variables. Instead, I estimate a series of equations using a two-stage maximum likelihood procedure and offer a way to empirically evaluate the hypotheses while incorporating the endogenous relationships among some variables. This procedure more accurately models the relationship among the variables of interest and closely ties the theoretical expectations to the statistical estimation. After discussing the sample and variables used in the study, I evaluate the results of the estimations. In the conclusion, I offer some extensions of the theory to other types of political violence and discuss some prospects for future research.

## Why Civil War?

Scholars have generally explained the causes of civil war using a grievance or opportunity approach.<sup>7</sup> In the grievance story, there are certain background conditions or actions by the state that push members of society into active violent opposition. Havard et al. (2001), for example, find that ethnic heterogeneity and inconsistent regimes, or regimes that have elements of openness and repression, increase the probability that civil war will occur. In contrast, Collier and Hoeffler (2001) suggest that opportunities for rebellion increase the likelihood that civil war will develop. For adherents to this approach, where rebels can extort or extract resources, their opportunity costs for violent rebellion are low.

Another opportunity-based approach that has generated much debate suggests that civil war is most likely when the conditions that favor insurgency are present in a particular state (Fearon and Laitin 2003). These conditions affect the relative strength of the insurgency and include such characteristics as a financially weak state, rough terrain, large populations, and the newness of a state.<sup>8</sup> In short, Fearon and Laitin (2003) conclude that structural conditions such as mountains and large populations increase the strength of an insurgency, which increases the probability of civil war. Financial weakness, as proxied by GDP, is critical as it affects the state's ability to perform counterinsurgency, use discriminate violence, and provide local policing. For Fearon and Laitin, financially weak states, or resource-poor states, are the most prone to civil war as they are unable to perform the tasks that reduce the effectiveness of potential insurgent adversaries. Fearon and Laitin conceptualize state weakness as one-dimensional, meaning that the resources available to the state determine its capacity. Fearon and Laitin argue

that conditions that favor insurgency increase the relative strength of an insurgency, which raises the probability of civil war. To test the hypotheses implied by the theory, they focus on the conditions favoring insurgency and treat the relative strength of the insurgency as a latent unmeasured variable.

While they find a strong statistical relationship between low GDP and the onset of civil war, Fearon and Laitin's theory struggles to elucidate how low GDP, a fairly time-invariant measure, can explain civil war onset occurring in country  $j$  in year  $i$  and not some other year  $i + 1$  or  $i - 1$ . Their theory also fails to explain why civil war occurs in some weak states and not others. While some financially weak states descend into civil war, many others avoid it. Resources alone do not determine a state's ability to implement its preferred policies.

Fearon and Laitin provide a structural model of factors that correlate with the onset of civil war. I improve on their work by advancing a theory that explains how some states and dissidents interact to produce violence beyond a given threshold. Although they define civil war in a similar way, they do not present a model that offers an explanation for why states and dissidents kill people beyond a given threshold.<sup>9</sup> In the next section, I offer a theory that  $DPV_s + DPV_d$  provides a link between the choices of individuals composing the state and dissident groups and the onset of civil war. I also identify another dimension to state capacity—societal support. In the theory offered below, I show how this concept affects the choices made by dissidents and their propensity to produce violence.

## Theory

Most scholars conceptualize civil war as violent interaction between states and dissidents that produces deaths exceeding some threshold (Small and Singer 1982; Singer and Small 1994; Collier and Hoeffler 2001).<sup>10</sup> This joint production of violence usually requires some minimum portion of the total violence to be created by the dissidents. Below, I offer a verbal and formal definition of civil war that is consistent with previous conceptions but highlights the need for investigating state–dissident interactions based on these two conditions (Moore 1995; Tilly 1995; Shellman 2006).

Let:  $CW$  represent civil war and *Deaths from PV* represent deaths from political violence

Define:  $CW \equiv \text{Deaths from PV} > \tau \left| \frac{DPV_s}{DPV_s + DPV_d} \right| \geq .10$ ,

where  $\tau$  is a cumulative death threshold, usually 1,000 battle deaths,  $DPV_s$  represents the number of state agents among the dead, and  $DPV_d$  represents the number of dissidents among the dead.<sup>11</sup>

Often civilians are the largest portion of  $DPV_d$  when state repression misses the intended target. State repression thus increases  $DPV_d$  while dissident violence increases  $DPV_s$ .<sup>12</sup>

Define: *Deaths from PV* =  $f(\text{DissActivity}, \text{Repression})$ .<sup>13</sup>

Expressed verbally, the probability of the onset of civil war is a function of state–dissident interaction. This seems intuitive, but it has been largely overlooked in the civil war literature. Much of the civil war literature attempts to find *correlates* that increase the likelihood of passing a given threshold while ignoring that civil war is a *process* generated by state and dissident violence.

Developing a theory relating state capacity, or the ability of the state to implement its policies, to civil war must explain how dissident, civilian, and state agent deaths are generated and pushed beyond this threshold. In the next section, I develop some assumptions about state actors and dissidents and in the process identify the micro-motivations that push these actors in certain ways that are more likely to generate large numbers of deaths and, thus, civil war.

## Modeling the State

In developing a process model of civil war onset, I identify three central actors: the state, civilians, and dissidents. In this section, I build on the work of Levi (1988) and others in outlining how states pursue their goals. In the next section, I outline the preferences of citizens and dissidents and discuss how interaction with the state affects their choices.

The first task is to understand the motivations of individuals composing the state. Levi's (1988) model of how state actors maximize revenue given constraints helps explain variance in revenue production, which is an important indicator of state capacity. Building on Levi (1988), I make two assumptions about state actor preferences to derive a model of state actor behavior. I modify her second assumption and explain how this affects the hypotheses derived from the assumptions. First, I assume that the state and the polity are collections of rational individuals and that the preferences of the state are not necessarily the same as the preferences of individuals in the polity. Second, I assume that state actors prefer to maximize revenues given constraints and that the most salient constraint is survival.<sup>14</sup> These assumptions are consistent with what others term the *predatory state model* (Geddes 1995; Levi 1988; Mann 1993; Migdal 1988).<sup>15</sup>

One important implication of these assumptions is that the leader's *job insecurity*, or the leader's expectations about maintaining office in the future, affects the state's decisions. Because state leaders are rational, they prefer

to use less costly means to stay in office. If survival is at stake, however, leaders will discount the value of retaining power in the future and pursue strategies that maintain the leader's present position but are potentially more costly for the leader in the future.<sup>16</sup> One such strategy is to repress citizens. States use repression both to respond to behavioral challenges from dissident groups and as a tool to generate compliance with its policies (Davenport 2007). Recent work by Bates (2008) supports this claim and argues that increased predation by African leaders is caused by their decreased time horizons or decreased job security.

Repression, however, is costly to the state as it affects support for the state and its policies.<sup>17</sup> I conceive of support for the state as a continuous dimension with the poles ranging from low to high. Each citizen has some value for supporting the state, and repression lowers that value by imposing costs on citizens in an attempt to generate compliance. Each additional unit of repression moves more members of society away from the state's preferences.<sup>18</sup> Repression thus decreases societal support and in turn increases the costs of implementing a state's preferred policy.<sup>19</sup>

*Hypothesis 1:* The greater a state leader's job insecurity, the more repression is used by the state.

*Hypothesis 2:* Increasing repression reduces societal support.

Repression is used as a response to the actions of the dissidents. Davenport (2007, 7) claims that the state always responds to behavioral threats (dissident activity) with coercion; he refers to this as the *law of coercive responsiveness*. According to Davenport, "The consistency of this finding is quite astonishing in a discipline where very few relationships withstand close scrutiny." Consistent with Davenport's claim, I expect that behavioral challenges to the state always elicit a response because survival for state leaders is imperative.

*Hypothesis 3:* States respond to increasing dissident activity with increasing repression.

In contrast to the above argument, Lichbach (1987) claims that repression will not increase dissent when it is applied consistently. In Lichbach's model, repression or accommodation by the state will fail to reduce dissident activity when they are applied inconsistently. Two issues relate to Lichbach's argument. First, the question remains, why would the leaders of a state be inconsistent in their response? If being consistent reduces dissent, why would rational state leaders make this mistake? From my argument, the answer is clear: state leaders who are insecure use the repression tool because they do not have time to

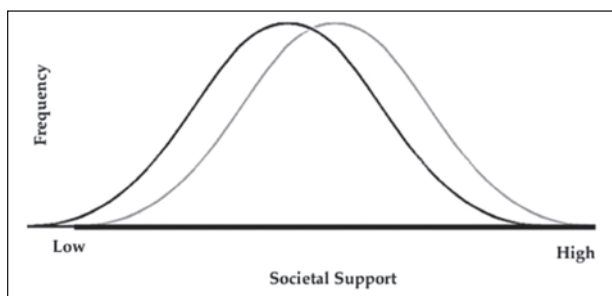
wait on longer term economic and social progress to generate compliance with their policies. Second, testing Lichbach's argument requires a lower level of temporal and spatial aggregation than cross-national country-year (e.g., Moore 1998, 2000). Lichbach (1987) claims that a fair test of his argument should investigate how a state's actions affect a particular group's violent and nonviolent activity. This is beyond the scope of this article but suggests a forum for directly testing my argument versus Lichbach's.

These discussion and hypotheses outline the motivations of the state and explain why some choose to repress. Insecure leaders use this tool to maintain power even though it makes governing in the future more costly. In addition, state leaders respond to threats to their political survival with some form of violence. The next task is to model dissidents and how they respond to state actors.

## Modeling the Dissidents

Because civil war is a violent interaction between states and dissidents, the other important actor to model is the group of dissidents who oppose the state. Since dissidents come from the pool of civilians, I identify three actors in a given polity: the state, civilians, and dissidents. Civilians are the population within a given territory controlled by the state. When they engage in dissident activity, civilians are dissidents.<sup>20</sup> As discussed previously, dissidents produce dissident activity such as violent disruptions, protests, sabotage, guerrilla warfare, and any other action that directly opposes the state and its policies. The state refers to the leaders who direct and decide policy for the polity. To reiterate, I assume members of the polity are rational. In addition, I assume that a distribution of support for the state exists such that civilians can have varying levels of support for their leaders. The shape of this distribution can be normal. In other words, a few people have preferences highly consistent with the state, a few are radically opposed, and the majority have preferences that are in between these poles. Changing the shape of the distribution affects the aggregate support for state leaders. When most people support the state, the distribution is skewed left. When few people support their leaders, it is skewed right. Some important factors that affect this distribution include the institutions within the state and ethnic fractionalization.

Democratic institutions may increase overall support for the state as state leaders attempt to make policies consistent with the median voter's preferences. While even in a democracy some people's preferences are extremely far from the median voter and thus have low levels of support for these policies, the frequency of these disaffected people should be lower in democracies than in authoritarian regimes. Democracies offer institutional opportunities to



**Figure 2.** The distribution of societal support.

redress grievances that are likely absent in more authoritarian regimes. According to Dahl (1971, 26), “The greater the opportunities for expressing, organizing, and representing political preferences, the greater the number and variety of preferences and interest that are likely to be represented in policy making.” On average, this should lead to greater support for government policies.<sup>21</sup> As Bueno de Mesquita et al. (1999, 2003) argue, states with democratic institutions should produce policies that are beneficial to a larger number of citizens. These institutions produce better policies, from the perspective of increasing general welfare, as leaders’ political survival depends on maintaining a large winning coalition, defined as the minimum number of people sufficient to maintain power.<sup>22</sup> Since more people are receiving benefits from the state, support for democratic leaders is, on average, likely higher than support for authoritarian leaders.<sup>23</sup>

The ethnic composition of society may also affect the support for a given leader. Since ethnic groups may have a different preference for policies than the state (especially if it is a rival ethnic group), the more groups that exist, the less likely it is that citizens will have preferences closely matched to the state. As before, the further citizen’s preferences, influenced by ethnicity, are from those of the state, the more skewed the distribution will be toward low support.<sup>24</sup> Most important, changes in the mean of this distribution affect the number of civilians willing to become dissidents and engage in antistate behavior (see Figure 2). As each individual’s support decreases, the likelihood that more of these individuals become dissidents increases. The frequency distribution of individual support for the state leaders and their policies is then referred to as societal support.

Societal support is conceptualized as the costs of policy implementation imposed on the state by society.<sup>25</sup> Support as discussed above can be arrayed along a spectrum (see Figure A2 in the appendix at <http://prq.sagepub.com/supplemental/>). The poles of this spectrum are active and negative support. Societal actors can actively support a state policy through what Levi (1988) calls quasi-voluntary compliance or what I term active support. Individuals can

also provide passive support or support that requires actual or threatened coercion or sanctions. Finally, individuals in the polity can provide negative support or mobilize against state policies.<sup>26</sup> The distance between the preferences of citizens and those of the state determines whether they actively, passively, or negatively support the regime. This distinction among types of support is important in explaining the costs to state leaders of implementing policies. In short, active support costs less than passive support induced by actual or threatened force.

Support for the state is lower after the state represses the population, and the distribution of support shifts (from the gray distribution to the black in Figure 2). In addition, more people move further from the state’s preferences, thus increasing their likelihood of producing dissident acts. Therefore, as societal support decreases, the number of dissidents increases.

In short, as the number of people mobilizing against the state and its policies increases, the costs of implementing policies increase. In addition, as support shifts away from the state, more civilians are likely to become dissidents.

This leads to the following hypothesis:

*Hypothesis 4:* A decline in societal support leads to more dissident activity.

Citizens can be unsupportive of the state without taking action. The further, however, citizens’ preferences are from state policies, the more likely they are to engage in dissident acts. This reinforces the above hypothesis because increasing the number of civilians with preferences that diverge greatly from the state increases the likelihood of producing dissidents. Previous work on violence by civilians with extreme preferences generally terms civilians as moderates and dissidents as extremists (Kydd and Walter 2002; Lake 2002). The goal of the extremists is to invoke harsh responses from the state to push the preferences of the moderates closer to those who prefer violence. While the terms are different from this model, the expectations are the same: members of society with extreme preferences use violence to pursue their goals and states respond with violence, thus pushing civilians (or moderates) toward the dissidents (or extremists).

Another important factor that influences a civilian’s decision to become a dissident is the probability of success. Lichbach (1998) suggests that for dissidents to act, they must overcome the canonical collective action problem. Among rationalist–individualist explanations, or what Lichbach (1998) calls market solutions to collective action problems, expected costs and benefits for individuals will influence collective action. According to Lichbach (1998, 64), this solution to dissident collective action “reveals much about a rational dissident’s decision

calculus and hence about protest and rebellion: that a dissident's expectations matter a great deal; that a dissident's expectations, costs and benefits interact to produce rational dissent; and that collective dissent is difficult to predict." As this quote maintains, the probability of winning and the costs associated with acting will be crucial in explaining action versus inaction.<sup>27</sup> Considering that most citizens prefer to be on the winning side of a violent conflict, the expected benefits of joining a dissident group are greater when success is likely, while the expected costs are greater when success is unlikely.

A dissident can approximate the probability of success by evaluating the resources available to the state for the repression of dissent. A state that has a strong coercive apparatus can increase the costs of dissent and more effectively repress.<sup>28</sup> A state that expends resources on its military is expected to reduce the likelihood of generating dissidents and dissident activity. From this discussion, I offer the following hypothesis:

*Hypothesis 5:* The greater the likelihood of dissident success, the more likely it is that a civilian produces dissident activity.

The above definitions, assumptions, and hypotheses offer a model for the interaction between states and dissidents that can explain why some states engage in the processes that lead to civil war while others do not. In sum, the more support a state receives, the fewer the number of dissidents. Therefore, the more support a state receives, the less likely dissidents will produce violent acts. In addition, the greater the military capacity of the state, the less likely dissidents expect their activity to be successful. The fewer challenges to the state, the less likely the state is to repress. With less violence by the state and fewer dissident acts by the opposition, it becomes less likely that combined deaths will be pushed beyond the threshold indicating civil war.

Although many scholars conceive of civil war as violent conflict between the state and at least one opposition group within the same territory that surpasses a minimal death threshold,<sup>29</sup> this theory offers an explicit *process* whereby state-dissident interactions produce this outcome. In addition, this proposed explanation for civil war accounts for why state weakness leads to civil war based on a multidimensional conception of state capacity. As the above hypotheses and discussion suggest, societal support is an important dimension to consider when attempting to explain the relationship between state capacity and civil war. Building a theory that models this dimension helps explain why some weak states are more susceptible to incubating civil wars than others and provides micro-foundations for this phenomenon.

## Path to Civil War Onset

Since civil war is a process of violence caused by dissidents acting and states repressing, I need to incorporate this process when attempting to fit empirical tests with the expectations from the theory. Because the variables operate in sequence and do not just affect the dependent variable of interest, they cannot be modeled using a single equation. Instead, they require the use of multiple equations (Berry 1984).

Using a single equation overlooks the mediating effects of dissident activity and repression. In other words, dissident activity and repression intervene between concepts such as job insecurity and societal support and the onset of civil war. In addition, some of the effects of structural conditions that Fearon and Laitin identify are also likely mediated by repression and dissident activity. As they argue, "The numerical weakness of the insurgents implies that, to survive, the rebels must be able to hide from government forces" (Fearon and Laitin 2003, p. 80).<sup>30</sup> Large populations and mountains allow dissidents and insurgents to hide and survive. Unless dissidents and insurgents can survive, they are unable to produce violent activity. In terms of my argument, these factors increase their ability to produce dissent and thus have an effect on dissident activity. Dissident activity, in turn, increases the likelihood of producing violent interaction between states and dissidents that then exceeds the civil war threshold. Equation 2 outlines these critical factors that should increase or decrease the likelihood of dissident activity and identifies the potential direction of association.

On the state side, mountains and large populations decrease the state's ability to use targeted effective counterinsurgency because it is more difficult for the state to find dissidents in these conditions. Again, repression is mediating the relationship between the structural conditions and the onset of civil war. Equation 3 depicts the factors that influence the likelihood of repression. Below are the three equations for dissident activity, repression, and the onset of civil war. Recall that the onset of civil war is equivalent to the probability of deaths from political violence exceeding a given threshold. Equation 1 depicts this joint production of state and dissident violence that produces civil war.

$$\Pr(DP V > \tau)_t = f([+]DissActiv_t, [+]Repress_t, \text{Controls}_t) \quad (1)$$

$$DissActiv_t = f([-]Repress_{t-1}, [-]SS_t, [-]R_t, [+]DissActiv_{t-1}, \text{Controls}_t) \quad (2)$$

$$Repress_t = f([+]DissActiv_{t-1}, [-]R_t, [+]JobInsecur_t, [+]Repress_{t-1}, \text{Controls}_t) \quad (3)$$

In the statistical models, I focus on estimating the effects of my key variables of interest on repression and dissident activity while using structural covariates from Fearon and Laitin's model to provide context as well as statistical control. In other words, these structural covariates may correlate with both job insecurity and repression or with societal support and dissident activity. In the final estimation, I focus on the effects of dissident activity and repression on the probability of civil war while using information from the previous equations as well as Fearon and Laitin's full model.

While I have described the relationship among many of the concepts in the theory and offered explicit expectations about the nature of this association, in the next section I focus on describing and estimating a subset of these equations. In addition, I discuss how to test the hypotheses derived from the process model of civil war.

## Research Design

The temporal domain for the study is 1976–99.<sup>31</sup> The spatial domain includes a sample of 162 states in the international system.<sup>32</sup>

## Operationalizing Concepts

*Civil war.* As discussed above, I conceptualize civil war as the interaction between a state and dissident group(s) that exceeds a violence threshold. An operational definition requires further stipulations to sort civil war from other forms of political violence. The standard operational definitions require that the state or a group representing the state fight with a group or groups from society within the defined territory of the state. This struggle must exceed a certain death threshold, usually one thousand, in a defined period and applies to states beyond some minimal size, usually five hundred thousand people.

To make sure that the inferences are not dependent on the coding decisions of a particular measure of civil war onset, Sambanis (2002) advises using measures from different sources. I use several different indicators of onset to make sure that relationships are not sensitive to coding issues. Fearon and Laitin (2003) have one of the more widely used codings of onset. Gleditsch et al. (2002) have alternative measures that code civil war onset, intermediate armed conflicts, and minor armed conflicts. Using their data on civil war as well as Sambanis's (2004) data should make the results less sensitive to coding criteria. In the estimation tables, I display results for Fearon and Laitin's onset variable (*Onset*).<sup>33</sup> I present models with Sambanis (2004) and Gleditsch et al.'s (2002) data in the appendix.

*Repression.* Repression occurs when states use violence against citizens to induce compliance with policies.

Some have called this state terrorism (Gurr 1986; Poe and Tate 1994), but in this study repression refers to these acts that violate the personal integrity of citizens within the polity. Torture, murder, disappearance, and political imprisonment are all examples. Gibney and Dalton (1996) offer the Political Terror Scale (PTS), ranging from 1 to 5, measuring the level of repression in a given society. Low levels correspond to states where people are not imprisoned for their political views, torture is infrequent or nonexistent, and state murder of civilians is rare. High levels correspond to periods when states use these techniques frequently against a large portion of society. This scale is coded separately using two sources. One is coded from state department country reports (PTS S), while the other is coded from Amnesty International reports (PTS A). I estimate models using both measures independently but display only the results for PTS S (*Repress*). The measures correlate positively and highly and provide extremely similar results.<sup>34</sup>

*Dissident activity.* Dissident activity refers to acts that challenge the state outside of formal institutions. Examples include protests, riots, terrorism, and guerrilla tactics. Data for this activity are difficult to attain cross-nationally and over time. Fortunately, Banks (1996) codes data on dissident activity that spans from the early 1900s to the present. I created a composite index of dissident activity (*DissAct*) using incidents of government crisis or threats to a government's survival, assassinations or politically motivated murder of a state actor, and guerilla warfare or armed attacks against the state. I then logged this score assuming that differences in dissident activity had a larger impact on the likelihood of civil war at low levels than at high levels.<sup>35</sup> I purposefully chose only violent acts by dissidents as these lead to state deaths, while nonviolent protest and large strikes cannot.<sup>36</sup>

*Societal support.* The presidential (or other leader's) approval rating within a country is a common measure of support for a state leader. While this information is available for the United States and more developed democracies, comparable cross-national measures are not available, especially over time. To measure a state's level of societal support, I use a measure from Kugler and Domke (1986). I discuss some alternative measures in the appendix.

The first approach I use to create a proxy for societal support (*Support*) is to use Kugler and Domke's (1986) indicator referred to as relative political capacity (RPC). RPC is constructed using three steps. First, one regresses the tax ratio (i.e., government tax revenues divided by GDP) on time, mining/GDP, agriculture/GDP, and exports/GDP.<sup>37</sup> Second, one calculates the predicted values for the tax revenue, which are assumed to reflect a government's potential revenue. Third, one takes the ratio of actual government revenue to potential government revenue to calculate RPC.



When this measure is greater than 1, a state collects more tax revenues than expected, whereas when this measure is less than 1, the state is inefficient in extracting tax revenues. RPC has two attributes: the ability of the state to collect resources and the degree to which the state leaders can control society. RPC is a better proxy for support than for resources as difficulties in collecting resources are not necessarily related to a state possessing them. I argue that where states lack societal support they struggle to generate compliance with tax policy.

Lemke (pers. comm., 2007), among others, has claimed that this measure is a valid indicator of developing country capacity but cannot adequately proxy for support or capacity in developed countries as policy preferences determine the variance in revenue accumulation among developed states.<sup>38</sup> Since most civil war onsets occur in these developing countries, RPC may be better at linking lack of support to onset of civil war than support to civil peace. Given these concerns, Hendrix (2010, 279) also uses this measure as an indicator in his factor analysis of state capacity variables.

**Job insecurity.** Job insecurity, as previously outlined, is the leader's belief concerning his or her ability to retain office. Operationalizing this concept is somewhat difficult, but Cheibub (1998, 359-60) offers a useful start. Cheibub defines job insecurity (*Job Insecurity*) as the risk of losing office "given the length of tenure in office, the rate of economic growth, and the past rate of executive turnover in each country." Leaders have high job insecurity when they have greater risks of losing office. In the language of survival analysis, job insecurity is the hazard of losing office. Using Cheibub's original data, I replicated this measure. Then I extended it to other states and periods.<sup>39</sup> Using a survival model, I estimated the time to losing office for each leader in all of the countries in the sample.<sup>40</sup> I then predicted the hazard rate of losing office, given the change in GDP and cumulative changes in the chief executive, for each leader-year.<sup>41</sup> Low values correspond to a low probability that the leader will lose office, while high values suggest that the leader's tenure is extremely insecure.

**Institutions.** To measure the concept of democratic institutions, I use the Polity (*Democracy*) data (Marshall and Jaggers 2001). This concept of democratic institutions ranges from institutions that allow individuals to participate and also allow meaningful elite competition to institutions that exclude large segments of the population and do not allow contestation for higher office.<sup>42</sup> While there are many available measures of democracy (see Munck and Verkuilen 2002), Polity offers an index that uses clear and detailed coding rules and is comprehensive across time and space. I subtract the autocracy score from the democracy score to yield a measure that varies from -10 to +10, with high values corresponding

to democratic institutions and low values corresponding to autocratic institutions.

**Ethnic fractionalization.** The most common measure of ethnic fractionalization is the ethnolinguistic fractionalization (*Ethnic Frac*) index, which provides the probability that two individuals drawn from a population are *not* from the same ethnic group. Fractionalization is thought to increase grievances for groups excluded from the state and thus reduce support for the state. This variable is taken from the data assembled by Fearon and Laitin (2003).

**Resources.** Resources and their link to civil war have been the topic of a robust literature (see Ross 2006). The focus of this literature has been on lootable natural resources and nonlootable resources and their varying effects on the likelihood of civil war. When I use the term *resources*, I am primarily concerned with the nonlootable resources available to the state.<sup>43</sup> To measure state resources, I use gross domestic product per capita (*GDP*).

**Military capacity.** To proxy the concept of military capacity, I use the measure of military expenditures (*MilExpend*) from the Correlates of War Project. An alternative is to use military personnel, but having people does not necessarily mean that the military is effective. In short, the more a country spends on its military, the greater the likelihood that the military is able to effectively respond to challenges to the state, thus increasing the costs of dissent. Although the measure is imperfect, I believe *MilExpend* more closely approximates the concept of military capacity.

**Controls.** To ensure that results are comparable to other estimations, I use a basket of control variables from Fearon and Laitin's (2003) data set. These variables include the presence of a prior civil war (*War<sub>t-1</sub>*), logged population (*Population*), logged mountainous terrain (*Mountains*), having noncontiguous territory (*NonContig*), oil exporter (*Oil*), the first two years of existence for a new state (*New State*), a major change in the regime score for a state (*Instability*), and religious fractionalization (*Relig Frac*).<sup>44</sup> The variables that are most likely to covary with both my independent variables and the dependent variable, and thus that need to be controlled, include population, new state, democracy, prior civil war, and instability.

Finally, I correct for temporal dependence in my data by using a peace years variable that counts the time between onsets and cubic splines that smooth this function (Beck, Katz, and Tucker 1998).<sup>45</sup> I use Amelia II (Honaker and King 2006), a program that imputes time-series cross-sectional data, to create five separate data sets that are then combined and used in the estimations.<sup>46</sup> Summary statistics for the data with missing values and for the imputed data are reported in the appendix.

**Estimation**

Since repression and dissident activity are directly affected by other variables in the model, utilizing a single equation to estimate the effects of these regressors on the likelihood of civil war would give biased estimates (Kennedy 2003).<sup>47</sup> Instead, I estimate equations predicting dissident activity and repression and then use this information when estimating an equation predicting the onset of civil war. While two-stage techniques are appropriate for estimating these three equations, most two-stage techniques assume that the dependent variable is continuous. As Achen (1986, 49) has shown, if the second stage is a continuous dependent variable, the standard errors can be adjusted based on a weighting factor. If, however, the second stage is a binary variable, adjusting the standard errors is exceptionally complicated. This assumption is justified for both dissident activity and repression, but the onset of civil war is a binary indicator.<sup>48</sup>

As previously mentioned, estimating two-stage models with binary endogenous variables is more complicated than two-stage estimation with continuous variables. Two techniques provide consistent coefficient estimates when faced with this situation (Alvarez and Glasgow 1999). First, a two-stage probit least squares (2SPLS), which is similar to ordinary two-stage estimation, can be estimated. The first step is to estimate reduced-form equations by regressing each continuous endogenous variable on all exogenous variables. Next, predicted values for these reduced-form equations are used as instruments for the endogenous variables. For the probit or logit equation, a similar technique is used except rather than predicting the endogenous variable using ordinary least squares, maximum likelihood is used. The predicted values for all three are then substitutes for the endogenous variables in the final equations. Rivers and Vuong (1988) offer an alternative estimator, two-stage conditional maximum likelihood (2SCML), that provides consistent coefficient estimates as well as consistent standard errors and an explicit test for endogeneity.<sup>49</sup> In estimating the 2SCML, one first estimates the equations for the continuous endogenous variables. Next, residuals are saved for these equations. Third, these residuals are used in the logit/probit equation. Finally, another logit/probit model without the residuals is estimated. A likelihood ratio test (LR test) of the unrestricted model (with residuals) versus the restricted model (without residuals) is implemented. The null hypothesis is that the variables are exogenous. Thus, rejecting the null allows for confirmation that the variables are endogenous.

In the equation section, I identified three equations to be estimated. Most of the hypotheses relate to the equations dealing with dissident activity, repression, and civil war.<sup>50</sup>

Below are the actual equations used.

**Table 1.** Dissent.

Variable	Coefficient	PCSE
Support	-0.033*	(0.014)
Repress <sub>t-1</sub>	0.064**	(0.011)
DissAct <sub>t-1</sub>	0.432**	(0.044)
Job insecurity	0.010	(0.029)
MilExpend	-0.001*	(0.000)
Resources	0.000	(0.002)
Population	0.006	(0.006)
Mountains	0.016**	(0.005)
NonContig	0.068**	(0.023)
Oil	-0.021	(0.023)
Democracy	0.056**	(0.001)
New state	0.115	(0.106)
Instability	0.088**	(0.025)
Ethnic frac	0.029	(0.027)
Relig frac	-0.070 <sup>†</sup>	(0.038)
Constant	-6.535**	(0.909)

N = 3,560. PCSE = panel-corrected standard error.

<sup>†</sup>p < .10. \*p < .05. \*\*p < .01.

$$\text{Repress}_t = \beta_1 \text{JobInsecurity}_t + \beta_2 \text{DissAct}_{t-1} + \beta_3 \text{Repress}_{t-1} + \text{Controls} + \varepsilon$$

$$\text{DissAct}_t = \beta_4 \text{Support}_t + \beta_5 \text{DissAct}_{t-1} + \beta_6 \text{Repress}_{t-1} + \beta_7 \text{MilExpend}_t + \text{Controls} + \varepsilon$$

$$\text{Pr}(CW)_t = \beta_8 \text{DissAct}_t + \beta_9 \text{Repress}_t + \beta_{10} \text{Repress}_{\text{residuals}} + \beta_{11} \text{DissAct}_{\text{residuals}} + \text{Controls} + \varepsilon$$

As mentioned above, I predict residuals from the equations estimating repression and dissident activity, and then add these residuals to the final logit equation. In the results section below, I also discuss the outcome of the LR test. After estimating econometric models using 2SCML, I perform a host of robustness checks to make sure both that adjusting the specification has little effect on inferences and that the models are robust to different coding of independent and dependent variables.

**Results**

Tables 1 through 3 display the results of the 2SCML estimations. I present the results from the model explaining the factors that affect dissident activity (Table 1), the results from the estimation including factors that influence repression (Table 2), and the results from estimating the reduced-form equation for civil war onset that includes the residuals from the previous estimations and the same model without the residuals (Table 3). First, I

**Table 2.** Regression.

Variable	Coefficient	(PCSE)
Support	-0.143**	(0.030)
Repress <sub>t-1</sub>	0.505**	(0.046)
DissAct <sub>t-1</sub>	0.141**	(0.028)
Job insecurity	0.269**	(0.079)
MilExpend	-0.000	(0.000)
Resources	-0.037**	(0.005)
Population	0.079	(0.012)
Mountains	0.025*	(0.010)
NonContig	-0.145**	(0.033)
Oil	0.169**	(0.034)
Democracy	-0.021**	(0.003)
New state	-0.122	(0.219)
Instability	0.089*	(0.038)
Ethnic frac	-0.146**	(0.056)
Relig frac	-0.033	(0.045)
Constant	0.695**	(0.105)

*N* = 3,560. PCSE = panel-corrected standard error.

\**p* < .05. \*\**p* < .01.

present the results from the dissident activity and repression models, then I build to the civil war onset model.

As I argue above, most scholars conceptualize civil war as the production of violent deaths between states and dissident groups that exceeds a given threshold. Few, however, attempt to model this process. The results that I present below support this argument. Violence by states and dissidents begets more state and dissident violence. The leader's job insecurity is important for incentivizing leaders to repress, and a reduction in support for the state spurs dissident activity. Repression has a large impact on why some weak states develop civil wars while others do not.

Results for the dissident activity equation are shown in Table 1. The top four variables are key factors hypothesized to influence dissident activity. All other exogenous variables are included in the reduced-form equation. An important claim from the theory is that a reduction in societal support leads to increased dissident activity. Based on the results from Table 1, *Support* is negatively related to *DissAct* (hypothesis 4). The marginal effect is not large, but the relationship is in the expected direction. Societal support appears to marginally decrease dissident activity. Last period's repression, *Repress*<sub>t-1</sub>, is positively related to *DissAct*, supporting the idea that dissidents and states respond to each other's previous actions. This finding lends support to the notion that this period's repression may kill dissidents, but it also helps create the next period's dissidents. *MilExpend* is negatively related to *DissAct*, lending support to hypothesis 5: potential failure discourages dissident activity. The military capacity of the state

**Table 3.** Impact of Repression and Dissident Activity on Civil War Onset 1976–1999 (Fearon and Laitin 2003, restricted, and unrestricted models).

Variable	Fearon–Laitin	Restricted model	Unrestricted model
Repress	—	1.100** (0.189)	1.543** (0.377)
DissAct	—	0.828** (0.261)	0.066 (0.615)
DissAct <sub>residuals</sub>	—	—	0.824 (0.715)
Repress <sub>residuals</sub>	—	—	-0.505 (0.537)
War <sub>t-1</sub>	-1.251** (0.428)	-3.040** (0.550)	-3.035** (0.571)
Resources	-0.324** (0.074)	-0.309** (0.072)	-0.264** (0.075)
Population	0.265** (0.092)	0.052 (0.125)	-0.001 (0.141)
Mountains	0.194† (0.104)	0.068 (0.117)	0.058 (0.121)
NonContig	0.673† (0.392)	1.321** (0.474)	1.560** (0.476)
Oil	0.444 (0.310)	0.098 (0.352)	-0.063 (0.346)
Democracy	0.006 (0.021)	0.026 (0.024)	0.043 (0.029)
New state	2.466** (0.462)	2.642** (0.486)	3.195** (0.664)
Instability	0.633† (0.358)	0.143 (0.358)	0.220 (0.357)
Ethnic frac	0.758 (0.512)	1.053* (0.536)	1.225* (0.587)
Relig frac	-0.417 (0.729)	-0.470 (0.791)	-0.675 (0.838)
Constant	-6.535** (0.909)	-8.045** (1.117)	-8.610** (1.151)
Area under ROC curve	0.796	0.886	0.886
Reduction in error (PRE) (%)	0	7.939	11.378

*N* = 3,588.

†*p* < .10. \**p* < .05. \*\**p* < .01.

seems to be a deterrent to dissidents challenging their leaders. The more states spend on their military, the less likely dissidents will mount violent challenges to their authority.

Table 2 displays the results for the repression equation. Again, the factors identified in the theory section that influence repression include job insecurity, resources, previous repression, and previous dissident activity. All other exogenous variables are included in the reduced-form equation. Hypothesis 1—that *Job Insecurity* is positively

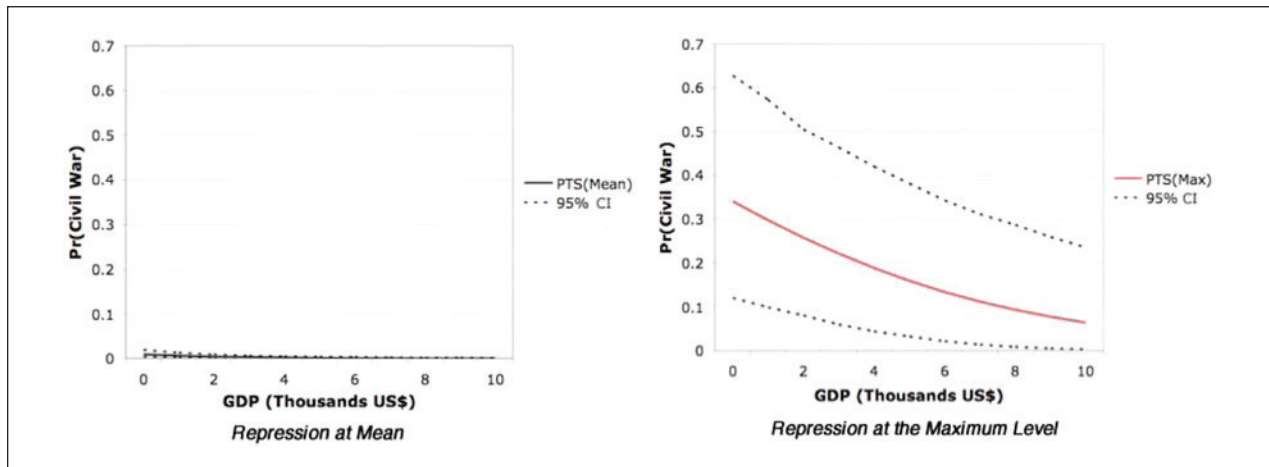


Figure 3. Predicted probability of civil war—repression at mean, repression at maximum.

related to *Repress*—is supported. Moving *Job Insecurity* from its minimum to its maximum leads to a 0.27-unit increase in *Repress* when holding other variables at their mean. In other words, increasing *Job Insecurity* from its minimum to its maximum results in an 11 percent increase in the expected value for *Repress* holding other variables constant. Hypothesis 3 also receives support as *Repress* increases when *DissAct*<sub>*t*-1</sub> increases. When holding other variables at their mean, a unit increase in *DissAct*<sub>*t*-1</sub> leads to a 0.141-unit increase in the expected value for *Repress*. As expected, states respond to last period's dissident acts with repression. Similar to Poe and Tate (1994), I find that the more *Resources* a state possesses, the less likely it is to use repression.

Finally, the results for the civil war onset equations are presented in Table 3. Table 3 displays the results for Fearon and Laitin's model using a smaller temporal period (1976–99), the unrestricted model, and the model that includes the residuals from the dissident activity equation and the repression equation and offers the results for the restricted logit model, or the model without the residuals. A LR test of the two models rejects the null of exogeneity ( $\chi^2 = 13.01, p < .01$ ), providing support for the presence of endogeneity in the restricted logit model.<sup>51</sup>

*DissAct* and *Repress* are both positively associated with the likelihood of civil war onset, but only *Repress* is significant. In addition, *Repress* has a large substantive effect. The residuals are not significant, but the LR test provides support for their joint inclusion in the model. While the coefficient for *Repress* is clearly larger than many other variables in the model, substantive interpretation of this coefficient is more difficult in a logit model. To display the effects of *Repress* on the likelihood of civil war, I simulate predicted probabilities using Clarify

(King, Tomz, and Wittenberg 2001) for the onset of civil war over the range of possible values of *GDP* while setting repression at its mean and the maximum.<sup>52</sup>

Figure 3 displays the results of the simulations. On the y-axis is the predicted probability of civil war, and on the x-axis is *GDP* per capita in U.S. dollars. The possibility of civil war when holding repression at its mean (left-hand side), even among the most resource-poor states, is highly unlikely. When repression is held at its mean, the expected probability of civil war remains less than 2 percent throughout the range of values for *GDP*. Even when *GDP* is close to zero, the predicted probability of civil war is a little more than 1 percent, plus or minus about 0.5 percent. When *Repress* is at its mean, the probability that a state produces civil war approaches zero as soon as *GDP* exceeds about \$5,000. Civil war is a rare event for all states.

When increasing repression to its maximum (right-hand side of Figure 3), the results change considerably. In Figure 3, *Repress* is held at its maximum, or at 5. As the figure shows, the effects of increasing *Repress* are quite strong. The probability that a state with *GDP* close to \$1,000 produced civil war is nearly 30 percent. Uncertainty around this estimate is quite large, as the 95 percent confidence interval ranges from about 10 percent to over 50 percent. While confidence in a precise point estimate is less than what it might be, this simulation shows that the probability of civil war drastically increases for so-called *weak states* or resource-poor states when repression is increased to its maximum. This effect is large and the effect of maximum repression does not approach zero until *GDP* reaches about \$7,000. The graphs are truncated as *GDP* ranges from near zero to above \$30,000. As both of these graphs show, at about \$5,000 or \$7,000, the likelihood of civil war

approaches zero and subsequent increases in GDP have nearly no effect on the likelihood of civil war. Only Iran, during this period,<sup>53</sup> had a GDP greater than \$6,000 and experienced a civil war.<sup>54</sup>

There are a few interesting results to note from the group of control variable from Fearon and Laitin. First, *GDP* still has a negative significant effect, but this effect is reduced by 23 percent (from  $-0.344$  to  $-0.264$ ) when the residuals from the previous equations are included along with *Repress* and *DissAct*.<sup>55</sup> Second, many of the structural variables become insignificant, suggesting that factors such as mountains and populations have a marginal impact on states' and dissidents' abilities to repress or dissent but have no direct impact on the likelihood of civil war.

Opportunity approaches, like those of Fearon and Laitin and of Collier and Hoeffler, claim that ethnicity does not play an important role in the onset of civil war. In these results, the impact of *Ethnic Frac* is positive and significant. Similar to Blimes (2006), I find an effect for ethnic fractionalization when choosing a different modeling strategy than Fearon and Laitin and than Collier and Hoeffler. A final interesting note is that states that export oil tend to repress more but are not more likely to generate civil war. Because these states have a resource advantage over dissidents, they may be able to stave off civil war even though few citizens support the state. Although many scholars think of civil war as the production of violent deaths between states and dissident groups, few modeling strategies reflect this. The results here support this approach. Previous repression and dissident activity affect current repression and dissident activity. Societal support and job insecurity both affect the choices made by dissidents and states, respectively. Finally, repression has a large effect on the likelihood of civil war onset.

## Conclusions

What the theory and statistical model provide is an answer to the puzzle that began the article: we are most likely see civil war in weak (low resource) *repressive* states. This group of weak states is susceptible to dissident challenges, and they increase the likelihood of civil war via repression that reduces popular support and thus stokes the process of violence. Leaders with job insecurity use repression to stay in office in the short term while making civil war more likely in the long term. Similar weak states such as Zambia and Malawi have extremely low GDP, but their governments have average repression levels in this sample that are much lower than those of states such as Iran, El Salvador, and Somalia.

Returning to Figure 3, Bhutan had an average GDP from 1976 to 1989 of \$571 and an average repression score of 1.6. As the figure shows, Bhutan's predicted

probability for civil war is close to 1 percent plus or minus about 0.5 percent, holding other variables constant.<sup>56</sup> El Salvador, by contrast, had a repression score (4.3) that approaches the maximum in the few years prior to civil war in 1979. In addition, their GDP averaged \$2,099 over this period. Based on these values, their expected probability for civil war from 1975 to 1977 was 13 percent while holding other variables at their mean.<sup>57</sup> In 1978, El Salvador's expected probability of civil war was over 30 percent.<sup>58</sup> While this percentage is not approaching certitude, the difference in likelihood between Bhutan and El Salvador experiencing civil war during this time is quite large.

Beyond looking at the substantive impact of repression, it is important to look at the predictive ability of a model of civil war (Ward and Bakke 2005). Since scholars and policy makers are concerned with where civil war may happen next, building accurate predictive models is a chief concern. Previous studies of civil war have focused on uncovering significant findings rather than the ability to accurately predict cases of war or not war. The receiver operating characteristic (ROC) curve is one way to compare the in-sample predictive ability of a model.<sup>59</sup> The ROC curve provides a graph that shows how the model may make Type I or Type II errors given different cut points. In the case of civil war, a Type I error is predicting civil war when one did not occur. In contrast, a Type II error is predicting no civil war when one actually happened. Other methods, such as the percentage correctly predicted, are sensitive to the threshold that one uses when establishing a prediction of 1 versus 0. The area under the ROC curve gives the percentage of cases correctly predicted and provides an estimate of model fit (Beck et al. 2001). The area under the curve for Fearon and Laitin's full model using data from 1945 to 1999 is 0.760. In the sample from 1976 to 1999, the prediction slightly improves to 0.796. For the model that includes the measures of repression, dissident activity, and residuals from the prediction equations for the two variables, this number increases to 0.886.<sup>60</sup> The results from the ROC curve show that a process theory of civil war also provides better in-sample predictions of the likelihood of a country experiencing civil war onset. In-sample predictions can often explain the patterns in the data set but might not explain patterns outside of the sample.<sup>61</sup> Out-of-sample forecasts can be used to assess the predictive ability of a model to new data. I use a cross-validation procedure to perform these forecasts.<sup>62</sup> The predictive ability of both a process model and Fearon and Laitin's model declines slightly in the out-of-sample forecasts, but the results are substantively the same. The area under the ROC curve explained by Fearon and Laitin is 0.738. The process model explains 0.849, a 15 percent improvement over Fearon and Laitin.

I had to make some simplifications in both the verbal and statistical models, as with any model. One benefit of a process model,<sup>63</sup> which I did not fully incorporate here, is that potential direct and indirect effects can be identified. Using path models or structural equation models, scholars can estimate the effects that some variables have through others. For example, mountainous terrain may not have a strong direct effect on civil war onset but may encourage dissident mobilization, which then influences onset. My estimation approach did not fully explore these indirect effects or total effects, but future work could usefully unpack these more complicated causal pathways. Another simplification that I made relates to the role of third parties and the international system. Recent work by Salehyan and Gleditsch (2006), Thyne (2006), and Salehyan (2009) suggests that interstate processes and interaction can affect civil war onset and dynamics. I have simplified the process of civil war onset to two main actors. Future work could usefully continue the research just described and incorporate the role of these third parties in influencing the dynamic contention between states and dissidents that I offer.

Building a model of civil war should take into account that it is a process between the state and dissidents that does not simply *happen* but builds through interaction. While claiming that civil war is a function of state and dissident violence is not entirely novel, highlighting this point makes it clear why scholars of civil war need to consider the dynamics of repression and dissent. Previous studies have not provided adequate micro-foundations for the onset of civil war. In addition, state capacity arguments tend to think of this concept in simple terms and leave out important variations among states. States can be stronger or weaker than other states based on both the resources available to the state and the amount of support the state receives from society.<sup>64</sup> Some weak states can avoid civil war, not by simply strengthening their repressive apparatus but through engendering support from society. Increasing support should decrease dissident activity and thus the need for future repression.

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### Notes

1. The definition of a weak state is one that lacks the capability to implement its preferred policies. This definition is discussed and expanded in later sections.
2. I use the term *resources* to refer to *state* resources. Others use this term to refer to *natural* resources such as oil or diamonds. To avoid confusion, I use *natural resources* when discussing oil, diamonds, or other lootable natural resources.
3. The temporal variance is even larger as the probability of onset for a particular state is almost always closer to zero than to one.
4. Fearon and Laitin (2003) use the variables mountainous terrain, GDP, and a large change in regime score, among other variables, to proxy the concept of *weak state*. These variables all make insurgency against a state more likely and viable.
5. GDP estimates come from the Penn World Tables.
6. The repression measure is the Political Terror Scale, which ranges from 1 to 5. As the scale increases, both the intensity and scope of repression in society increase. The measure of civil war onsets comes from Fearon and Laitin (2003).
7. Collier and Hoeffler (2001) frame this debate as *greed vs. grievance*.
8. Fearon and Laitin include other items that likely affect the balance between state and insurgents, such as foreign support, contraband, and foreign sanctuary, but the above conditions are most central to their theoretical story.
9. According to Fearon and Laitin (2003, 76), civil war involves the following criteria: "(1) . . . fighting between agents . . . of a state and organized, nonstate groups who sought either to take control of a government, to take power in a region, or to use violence to change government policies. (2) The conflict killed at least 1000 over its course with a yearly average of at least 100. (3) At least 100 were killed on both sides (including civilians attacked by rebels)."
10. If the violence were solely by states or dissidents, terms such as mass killing, politicide, or terrorism might be used. Collier and Hoeffler (2001) require that at least 5 percent of the killings are attributable to each side. Sambanis (2004) offers some other criteria for creating an operational definition, such as the dissidents must be based within the same territory as the state, the state must be internationally recognized, and the state must have a minimal population.
11. Dissidents are members of the population who use tactics, such as rioting, protests, or terrorism, to challenge the state and its policies. The state refers to the leaders who implement and determine policy for the population. Including the conditional ratio of state to dissident dead ensures that

- genocides, politicides, and other cases of mass killing of unarmed civilians are not counted as civil wars. In this project the conditional ratio is implied throughout but left out for notational convenience.
12. Dissident violence can also increase  $DP V_s$  when dissidents target civilians, as was the case in the Algerian civil war as well as in Peru during the Shining Path insurgency. Civilians are often the largest portion of the dead, as control over civilian populations is central to the struggle between states and dissidents (Kalyvas 2006). Sympathetic populations to either side are often counted among the dead for that particular side.
  13. As noted above, the conditional ratio of deaths is suppressed.
  14. This diverges from Levi (1988), as she does not make a claim about leader survival being more important than the other constraints on revenue maximization. Bueno de Mesquita et al. (1999) make a similar assumption about the leaders of a state. They claim that a leader's main goal is to survive or stay in office.
  15. Marxists and pluralists have a different conception of the state and of the preferences of the actors who compose the state. For Marxists, the state is merely a tool of the capitalist class with *no independent preferences*. Pluralists see the state as an arena for contention among societal groups. Pluralists differ from the Marxists as they do not expect one class or group to dominate government but are similar as they expect the ruling class preferences to be synonymous with state preferences.
  16. Both Levi (1988) and Cheibub (1998) use this concept in their theories of state revenue accumulation. Cheibub operationalizes the concept by predicting hazard rates for losing office dependent on time, past cumulative leader changes, and economic growth. Both refer to this concept as the *discount rate*. To avoid confusion with how game theorists use the term, I instead refer to *job insecurity*.
  17. Goodwin (2001) argues that repression is the primary factor motivating revolution. For Goodwin, explaining revolution requires a state-centered approach. His claim is that this type of political violence is *constructed* by certain kinds of states. In sum, states that are repressive, have weak infrastructural power, and are clientelistic are the most likely to generate successful revolutions. Our arguments are similar as we both emphasize the role repression plays in violent movements. By contrast, we are interested in different samples of countries, periods, and types of violence.
  18. Goodwin (2001, 30) argues that "violent exclusion or repression of certain social groups, tends to 'push' these oppressed groups into revolutionary movements." Similarly, I expect that repression pushes citizens toward dissident violence.
  19. Repression is also costly for states as they have to maintain an apparatus capable of repressing. This state agency requires some portion of the budget that could be spent in other areas.
  20. I use the terms *civilian*, *individual*, *citizen*, *person*, and *member of the population* interchangeably. I reserve the term *dissident* for when an individual acts against the state.
  21. A large body of empirical work supports the notion that democracies repress less than other regimes (see, e.g., Davenport 1995; Poe, Tate, and Keith 1999).
  22. This subset, the winning coalition, comes from what Bueno de Mesquita et al. (1999) call the selectorate, or the total number of people in society who have some say in selecting leaders. To be clear, the state provides public goods, not out of benevolence but because the costs of providing private goods to a large amount of supporters are too great.
  23. In Bueno de Mesquita et al.'s (1999) terms, institutions that have a large *W/S* ratio should produce more public goods and thus benefit a larger portion of society.
  24. Recent opinion polls from Iraq provide some corroboration for this approach. Support for the nascent state is influenced by which ethnic group the respondent belongs. According to a Program on International Policy Attitudes poll taken January 21, 2006, in general the Shia and Kurds do not support attacks against the state (about 3 percent of Shia and 1 percent of Kurds). The Sunni, however, have a lower average level of support for the state, with over 24 percent supportive of attacks against the central government. Support for attacks against the U.S.-led coalition was much higher across the ethnic groups and followed similar differences in levels of support, with 88 percent of Sunnis supportive, 41 percent of Shia, and only 16 percent of Kurds. More troubling is that when asked if the newly elected parliament would be a legitimate representative of the Iraqi people, only 6 percent of Sunni replied yes, compared to 81 percent of Kurds and 90 percent of Shia.
  25. This definition is similar to that of Nordlinger (1987).
  26. While I conceive of individual actors actively, passively, or negatively supporting a policy, I am more interested in the distribution of these types in a polity. A polity that has a distribution with a higher mean value for support is conceived of as providing high levels of societal support, and conversely a distribution with passive or negative support has a lower mean value of societal support.
  27. As Lichbach (1998, 64) notes, survey evidence suggests that potential success helps explain protest behavior. See Muller (1972), Muller and Opp (1986), Finkel, Muller, and Opp (1989).
  28. Gurr (1988) argues that states that have demonstrated strong internal repressive capacities dissuade dissidents from mobilization.
  29. See Sambanis (2004) for a discussion of definitions of civil war.
  30. While Fearon and Laitin (2003, p. 75) do not define what an insurgent is, they define insurgency as "a technology of military conflict characterized by small, lightly armed

bands practicing guerrilla warfare from rural base areas.” We can assume that an insurgent is one who practices this form of violence. *Dissident* is more general than the way Fearon and Laitin use *insurgent*. While they refer to mostly rural activists, many of the conflicts they include in their data involve a sizable urban component. Insurgents in their data thus are members of organized groups violently challenging the state. This conception is nearly identical to my use of *dissident*, and in this project the two terms are synonymous.

31. Measures of state repression, a key variable in the analysis, begin only in 1976. Fearon and Laitin’s data, which include a large portion of the controls, end in 1999.
32. See the appendix (at <http://prq.sagepub.com/supplemental/>) for a discussion of the sample.
33. Results from models using the other two measures were very similar.
34. In the appendix, I also discuss the use of the Cingranelli and Richards (1999) data.
35. I also used the raw *dissident* activity measure and had very similar results.
36. An alternative specification uses these measures in the index as well without significant differences.
37. In the literature on American state politics and policy, this concept is referred to as “tax effort,” or the amount of taxes a state collects relative to the tax base available to the state.
38. This claim was articulated during a personal communication with the author. Sweden, for example, has a larger relative political capacity than the United States based on different general preferences for state revenue accumulation. See Jackman (1993) for a similar critique.
39. In the years where our data overlap, our two measures correlate at .998. We both assume a Weibull distribution for the hazard. In other words, we assume that the hazard function is monotonically increasing or decreasing. More information about the indicator and how it is constructed is available in the appendix.
40. I follow Cheibub in using this parametric form. Other parametric models yield similar hazard rates.
41. Leader-year and country-year are the same in the sample. Operationally, the first year for a new leader is the year after the other leader loses office to avoid multiple country-year records.
42. See Dahl (1971) for a thorough description of these attributes of democratic political systems, or what he refers to as *polyarchy*.
43. States, however, can generate resources in a variety of ways that are potentially substitutable, including but not limited to foreign aid, tax revenues, colonial expansion, and natural resources.
44. See Fearon and Laitin (2003) for a detailed discussion of each of these variables.
45. Carter and Signorino (2010) offer an alternative to Beck, Katz, and Tucker (1998) that uses the peace years variable (a time counter), this variable squared, and then this variable cubed to model time dependency. The advantage of this approach is that it does not assume any parametric form for the time dependency, and the coefficients are more easily interpretable than using cubic splines. I implemented both approaches, and the estimates were very similar for both. Neither approach affects the main coefficients of interest, and none of the coefficients of the time variables is statistically significant.
46. See the appendix for a detailed discussion on multiple imputation.
47. Since repression and dissent likely correlate with the error term, finding a suitable instrumental variable is a way to solve this potential threat to valid inference. A good instrumental variable is correlated with the independent variable but uncorrelated with the error term (Wooldridge 2000). In two-stage approaches, all of the exogenous variables in the system make a suitable instrument for the endogenous variable of interest. In practice, these exogenous variables are used to create an estimated value for the endogenous variable, and this prediction serves as the instrument (Kennedy 2003).
48. *Dissident* activity ranges from 0 to 3.5 but can take on all values in between. Repression ranges from 1 to 5. While the values are ordinal, having at least five categories makes treating the variable as continuous plausible. Previous research using this measure does treat it as continuous and uses ordinary least squares (OLS) regression to estimate models of repression (Poe and Tate 1994; Poe, Tate, and Keith 1999).
49. Alvarez and Glasgow (1999) were the first to implement this approach in the political science literature.
50. In this project, I do not estimate the effect that repression has on support or hypothesis 2. An OLS regression supports this claim as well as structural equation models.
51. The critical value is 5.99 for a model with 2 degrees of freedom or 2 residual terms.
52. I hold all the controls at their mean. The simulations are performed one thousand times and draw values from the five imputed data sets.
53. The United Kingdom also fits this description, but its onset occurred in 1969, which is outside the temporal domain of this study.
54. Interestingly, as Przeworski et al. notes, no democracy with a per capita GDP above \$6,055 has ever transitioned to an authoritarian regime. Argentina is the sole democracy above \$6,000 that made such a transition.
55. I am comparing the coefficients from Fearon and Laitin’s full model to my unrestricted model with a limited time period. If I compare Fearon and Laitin’s results while restricting the sample to the same period (1976–99) to the unrestricted model, the results are even more substantive: there is a 38 percent reduction (from  $-0.426$  to  $-0.264$ ) in the size of the coefficient. These results are available in the appendix.



56. This is an overestimate, as Bhutan's average repression score is nearly a point below the mean.
57. The 95 percent confidence interval ranges from 3.4 percent to 34 percent. While this is a wide confidence interval, the percentage is always much higher than the expected values when repression is held at its mean. In addition, the upper bound is further from the mean than the lower bound.
58. The 95 percent confidence interval ranges from 6 percent to 73 percent.
59. There are several other ways, which I discuss in the appendix.
60. Including splines and years at peace only marginally increases the predictive ability to 0.890.
61. This problems is referred to as *overfitting*.
62. I describe the approach in the online appendix.
63. See Bremer and Cusack (1995) for a collection of essays on how *process* can advance the study of interstate war.
64. While my argument identifies how job insecurity influences repression, more work should be done to outline why certain leaders are more insecure than others.

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