Civil War, Tenure, and Interstate Insecurity*

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Abstract

Internal and international conflict have long been studied separately. Different sub-fields in political science have staked their claim to the study of one form of conflict at the exclusion of the other, leaving the relation between international and internal conflict poorly understood. We seek to overcome the unfortunate Balkanization in our discipline by examining the reciprocal relationships between internal war and international conflict as well as the reciprocal relationship between conflict and leaders’ expected tenure and incentives. Estimating a three-way simultaneous hierarchical probit model we find strong evidence for the endogeneity of internal and international conflict, as well as the risk of conflict and the risk of a leader losing power. The risk of international conflict increases the probability of civil war, while the risk of civil war augments the probability of international conflict. Although the risk of civil war significantly affects the probability of losing office, the risk of losing office also increases the probability of civil war. Finally, and in stark contrast to the postulated logic of the diversionary use of force, we find that a higher risk of losing office decreases the probability of international conflict, even after we control for the endogenous risk of civil war.

Keywords: political leaders, tenure, civil war, international conflict.

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The horrific events in the late 1990s in the Balkans, Rwanda, Chechnya and elsewhere have led to a remarkable upsurge in the study of civil war. The modern study of civil war lies at the intersection of international relations—with its traditional emphasis on *inter*-state conflict processes—and comparative politics—with its traditional emphasis on *intra*-state processes such as governance, regime stability, and cohesion. Until recently, however, scholars in international relations largely ignored internal conflict while scholars of comparative political essentially disregarded the role of international factors in internal conflict.

Although researchers have tended to assume that international conflict and conflicts within states are inherently different and have sought international and domestic explanatory factors for each type of conflict, contemporary and historical events suggest that conflict within and between states often are closely intertwined. Consider the case of Uganda and the fall of the notorious President Idi Amin. In power since a coup against Milton Obote in 1971, the former army chief Amin ruled with an iron fist and become increasingly brutal towards formerly trusted associates and high ranking military officers perceived to threaten his hold on power. In October 1978, after a prominent general was injured in a highly suspicious car accident, an army regiment in Eastern Uganda launched a mutiny against the president, leading to serious clashes with other forces loyal to the president. Amin accused President Nyerere of Tanzania of aiding the rebels. Obote and his supporters, now in exile in Tanzania, had attempted a coup against Amin in 1972. However, although Amin was obsessed with idea that Obote would try to regain power with the help of Tanzania there appears to be little direct evidence suggesting that the mutiny had been engineered by Tanzania. On 30 October Amin sent troops into Tanzania and formally annexed the 700 square mile Kagera Salient territory. Nyerere responded in a major counteroffensive on 11 November, and forced Uganda to withdraw from the Kagera Salient. At that point, however, Nyerere made it clear that Tanzania would not be satisfied until Amin was deposed. Tanzania threw its support
behind the rebel Uganda National Liberation Forces, and provided military backing in an all-out attack on Amin. On 7 April 1979, rebel and Tanzanian forces captured Kampala, and forced Amin to flee to exile, first to Libya and later Saudi Arabia.

The events in Uganda in 1978-9 demonstrate some of the weaknesses in the existing literature on conflict within and between societies. First, researchers have overemphasized the distinction between internal and external conflict, neglecting how international crises often develop out of internal issues, as well as how insurgencies emerge and evolve in the shadow of international hostilities. Second, researchers have disregarded the political considerations and incentives underlying insurgencies, overlooking how leaders’ responses are shaped by the perceived challenges to their hold on power as well as how rebels mobilize and react based on perceptions about prospects for unseating rulers or getting concessions on their demands.

In his recent review of the quantitative literature on civil war, Sambanis (2002, 226) laments the “relative dearth of studies on the links between international and internal war” and argues strongly in favor of an approach that integrates both. “To date,” Sambanis argues, “we have no integrated theory of war (international and internal) and the closest we come to such [an] integrated approach is in studies that focus on one type of war while controlling for the occurrence of the other type of war.” In this paper, we seek to improve our understanding of conflict and rulers by integrating internal and international conflict within a framework focusing on the incentives of individual leaders based on their opportunities to remain in power. We examine empirically the reciprocal relationships between internal war, international conflict and the tenure of leaders, with particular focus on the causes and consequences of civil war. We model both the endogeneity between internal and international conflict and the endogenous relationships between the tenure of leaders and resort to both forms of conflict.

To anticipate the remainder of our paper, our empirical results indicate that—controlling for the endogenous risk of losing office—the endogenous risk of international conflict increases
the probability of civil war, while the endogenous risk of civil war in turn increases the probability of international conflict. Controlling for the endogenous risk of international conflict, the endogenous risk of losing office does affect the probability of civil war, and the endogenous risk of civil war—not surprisingly—noticeably increases the probability of losing office. However — and in stark contrast to the logic of diversionary theories of conflict — we find that as the endogenous risk of losing office increases, the probability of international conflict actually decreases.

In the remainder of this paper we proceed as follows. In the first section, we discuss the mechanisms that link internal and international conflict and their implications for why we should expect reciprocal, endogenous relations. In the second section, we describe our research design, key variables, and operationalization. In the third section, we present the results of our analyses. In the conclusion we summarize our findings and discuss their broader implications for the study of civil and international conflict.

2 Linking International Conflict, Civil War, and Tenure

The example of Uganda suggest an interrelationship between civil war, interstate conflict, and tenure. We first get a civil war following a coup intended to unseat a leader, where Amin’s hostile response leads to escalation and externalization of the conflict. Poor relations and perceived interference from neighboring Tanzania leads to an all out war and attempted invasion. The counteroffensive and the alliance between Ugandan insurgents and an external actor (Tanzania) then defeats and unseats Amin. These events are clearly intertwined, in the sense that the likelihood of an interstate conflict increases following domestic turmoil and that conflict weakens a leader’s hold of power. In this section, we explore these linkages more systematically. We use the simple diagram in Figure 1 to structure our discussion of the linkages between international conflict, civil war, and a leader’s tenure.
2.1 Civil war and interstate conflict linkages

We start with the link between international conflict labelled segment A in Figure 1. Much research has gone into the internal causes and consequences of civil wars (Fearon and Laitin, 2003; Kalyvas, 2004; Ghobarah, Huth and Russett, 2003; Collier and Hoeffler, 2002). Surprisingly little attention, however, has been paid to the external causes and consequences of civil wars. Nonetheless, we have strong reasons to suspect that international factors and international conflict in particular can affect the incidence, duration and termination of civil wars (Gleditsch, 2004b; McNulty, 1999).

First, bad relations between states can heighten the risk of civil war in several ways. States engaged in an international conflict sometimes foster attempts to ignite revolts and civil wars in their opponents’ backyard. One famous example is the concerted German effort during the First World War to instigate a revolution and a civil war in Russia (Zechlin, 1963). The Germans went so far as to transport Lenin in a closed train—as if it contained a virulent disease—from Switzerland to Russia in order to weaken that country’s war effort. Moreover, states that are locked into an international rivalry or have enduring antagonistic relationships with other states may intervene in civil wars in third states to promote their own preferred outcomes, potentially leading to escalating intensity and often longer wars (Gartzke and Gleditsch, 2003; Elbadawi and Sambanis, 2000; Blomberg and Hess, 2002).
For example, encouraged by the United States who sought to contain Soviet expansion in Africa, South Africa intervened militarily in the post-independence Angolan civil war on the side of UNITA, in the hope of installing a pro-Western government. In turn, the Soviet Union sent weapons while Cuba sent troops to support the MPLA government. In the Correlates of War project civil war data (Sarkees, 2000), about 25% of the civil wars are coded as including direct foreign interventions on the side of the government. Civil wars could become international wars, if states intervene directly with troops on the side of rebels in a civil war (e.g., as Pakistan has often threatened to do in Kashmir).

More often, however, states intervene in more indirect ways through providing support to the non-state actors in a conflict. Although many wars may not have direct outside intervention it is clearly the case that many insurgents are heavily dependent on foreign support. If prospects for outside support make it easier for rebels to mobilize, we should expect to see a higher risk of civil war when states have bad relations with other states, even if the high international tension does not translate into open war between states. The very possibility of outside intervention or support may make civil war a more attractive option in the first place. In other words, civil war may sometimes be more likely precisely because potential rebels expect external support once civil war breaks out. In some instance, ethnic minority groups may initiate a civil war in the hope of support from another country where it forms the majority (e.g., the Armenians in the province of Nagorno-Karabach in Azerbaijan) or the international community. Likewise, the anticipation of outside support once conflict is underway may often lead one faction to reject compromise settlements, as arguably happened in Afghanistan and Central America in the 1980s (Gleditsch and Beardsley, 2004).1 Finally, interstate tension increases the risk of civil war if insurgents try to take advantage of the weakening of states while involved in foreign crises. Many analyses of revolutions such as

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1Kuperman (2002) argues that expectations that humanitarian crises will promote international interventions to contain atrocities encourages weak groups to start insurgencies, even when these can be expected to launch genocidal responses from governments.
Skocpol (1979) emphasize external conflict and turmoil as important contributing factors to the outbreak and success of major social revolutions.

Second, although international conflict can promote civil war, we may also have causal mechanisms operating in the opposite direction. Civil war may promote international conflict, especially when international conflict or contention originates over issues that emanate from conflict within societies. Indeed, much of the recent interest in civil wars stems from the broad recognition that civil wars can have dangerous international consequences. Civil wars can spread, and cause broad regional instability and conflict. In some cases, conflict linkages may be quite directly related to transnational actors or issues, while in other the relationship may be more indirect. Some transnational actors and rebel constituencies are clearly transnational. Many civil wars involve efforts by ethnic groups to secede or achieve autonomy from a nation state. Many ethnic groups are not completely confined to individual states, but are transnational communities with kin and diasporas in neighboring states and sometimes have special ties with other states or actors in other countries. As such, relations between minority groups and national governments can often lead to frictions with other states. The Albanian revolt in Macedonia, for example, was to a large extent a continuation of forces previously mobilized in Kosovo. In the late 1980s and early 1990s, concerns over the treatment of the Hungarian minority in the Romanian province of Transylvania lead to serious tensions between Hungary and Romania, even though the two states were formally allies through the Warsaw Pact, and was widely considered an issue that potentially could escalate to war.

In other cases, conflict activities may have transboundary activities that generate friction between states. Conflict in one state may “spill over” into a neighbor, in particular when fighters can easily cross the border to find aid and shelter (Gleditsch, 2004b). Rebels often maintain bases in neighboring states, and may be pursued there by government forces. This in turn is likely to lead to conflict between national governments over border violations.
Civil wars can lead to full-fledged international conflicts even if international competitors not care about the domestic outcomes of conflict per se, but simply try take advantage of domestic turmoil in another state and a temporarily favorable balance of power to establish regional supremacy — as happened in the wake of both the Iranian and French Revolutions (Walt, 1997). Civil wars often create serious externalities and negative consequences to neighboring states that are not directly involved in conflict. Many civil wars lead to refugee flows and humanitarian crises in neighboring states, which may create conflict with the host states (Salehyan and Gleditsch, 2004). Finally, the broader economic implications of civil wars in one country may increase the risk of aggression and conflict between states. Sandler and Murdoch (2004) find that economic growth rates are systematically lower not only in the states undergoing civil war but also in states that are geographically close to conflicts.

Given such features, it is not surprising that disputes often originate out of civil wars. A perusal of the narratives released for the new Militarized Interstate Disputes data suggest that many MIDs indeed do originate in intrastate conflicts. Indeed, about 25% of the events over the period 1993-2001 for which summaries are available suggest that the disputes involve issues that we would normally think of internal affairs. This strongly suggests that matters that are often thought of as “domestic” can have important international implications.

To recapitulate, we see many reasons to expect that civil war, or the risk of civil war, should increase the risk of international conflict, and that a higher propensity for international conflict increases the risk of civil war. Ignoring the role of international relations will omit a major factor making civil war more likely in some countries. More specifically, countries that may not have state level characteristics that would expect to lead to a high risk conflict and implement all the right policies could still could have a high risk of civil war, if subject to international pressures. Likewise, whereas studies of conflict between states tend to emphasize dyadic attributes such as the relative balance of power, alliances, and interdependence, ignoring the issues arising out of civil conflict will produce improperly
specified models of interstate conflict. In this paper, we seek to assess how much of the risk in civil war and interstate conflict stems from a high propensity for the other type of conflict, everything else being equal, rather than attempt to identify specific linkages between civil conflict and interstate conflict and evaluate their relative importance.\(^2\) Our expectations can be summarized in the following two hypotheses:

**H. 1: Prevalence of Civil War** The risk of international conflict increases the probability of civil war.

**H. 2: Prevalence of International Conflict** The risk of civil war increases the probability of international conflict.

If we have reciprocal relationships between internal and external conflict, the two forms of conflict must be considered in an endogenous model. Some researchers have suggested similar arguments and tried control for one type of conflict while estimating the risk of the other. However, if international conflict affects civil war while civil war also affects international conflict, then models of one type of conflict that simply control for the other type of conflict as a fixed or pre-determined right hand side covariate are methodologically suspect and likely to produce biased results due to simultaneity. To date, however, the potential endogeneity of internal and international conflict has been completely ignored in almost all empirical studies (Sambanis, 2002, 238). Moreover, since some factors that predict to conflict between states may also increase the risk of civil war directly, we should distinguish between direct effects of covariates on one form of conflict and their total effects, including indirect effects due to increasing the risk of the other form of conflict.

\(^2\)For an effort to estimate the impact of different transnational features on the risk of civil war, see Gleditsch (2004b).
2.2 Conflict and tenure linkages

Since a full analysis of the relationships in Figure 1 requires more space than available here, our main concern in this paper is the potential endogenous relationship between civil war and international conflict. However, as is clear from Figure 1, we do not believe that either type of conflict can be adequately studied without considering how leader’s concern over the risk of loss of office influence their conflict behavior as well as the effects of conflict on tenure. Failure to control for the potential endogeneity between tenure and both forms of conflict could bias our inferences about the relationship between internal and international conflict. In this section, we briefly outline why one should expect the risk of loss of office to be related to internal and external conflict.

We start with segment B, which has received by far the most attention in existing research. The long and venerable tradition of the literature on the diversionary use of force (Levy, 1989; Coser, 1956; Simmel, 1955; Downs and Rocke, 1994) has of course argued for a long time that leaders facing challenges to their power at home are more likely to engage in conflict abroad. Indeed, many observers consider Amin’s aggression against Tanzania as an effort to divert attention from the country’s severe economic problems and their political implication, rather than a proportionate response to foreign aggression.

Although empirical tests have generally found little support for the standard version of the diversionary theory of (international) war where international crises and war involvement become more likely when leaders face challenges, Chiozza and Goemans (2003; 2004a) find that as the risk of losing office increases we see a decrease in the probability of international conflict initiation.\(^3\) Since war can be very costly (a large share of leaders deposed in the wake of conflict such as Amin are forced to go into exile or face a firing squad), only leaders that have some degree of security in office will be willing to risk engaging in international conflict.

\(^3\)See also Gaubatz (1991) for similar empirical results.
As in the case of segment A, we do not believe that causality would run in a single direction along segment B. For international diversionary conflict to be rational it must be the case that such conflict in turn should affect the probability of losing office. Diversionary arguments, hence, propose explicitly reciprocal relationships, even if most of the empirical literature to date has focused on linkages from challenges to war involvement. Likewise, just as leaders may seek to take divert attention away from challenges, one might equally well image that countries may become targeted based on the perceived weakness of a leader. Tanzania’s willingness to support the rebels and intervene in Uganda itself after Amin had withdrawn from the annexed territory was at least in part motivated on beliefs that Amin could be unseated.

Segment C relates the risk of civil war to the risk of loosing office. As noted in an early review by Bueno de Mesquita (1980), research on diversionary conflict has often reified the separation between internal and external conflict, and neglected the possibility that domestic challenges could lead to the use of coercive force at the domestic arena rather than external conflict. The struggle over effective leadership of a country often lies at the very heart of civil wars, and cracking down on domestic dissent seems a more likely response to other challenges to a leader’s hold on power than external diversionary conflict. Some theorists in comparative politics have recently proposed that tenure and internal conflict are endogenous (de Figueiredo Jr. and Weingast, 1999, 263). In other words, leaders might initiate or escalate civil wars when the risk of losing power is higher. Fearon (1998, 112) for example, argued that “observing how Milosevic successfully used the ethnic card in Serbia to cement his hold on power might encourage other politicians in trouble to try similar tactics.”

The existing work on domestic “diversion” suggests that leaders instigate conflict when useful for their political survival. However, if we expect leaders to be strategic in the use of force, then the same should be the case for insurgents as well. Civil wars can come in roughly two distinct types, both of which would be heavily conditioned on insurgents’ perception of
the security of rulers. The first class of internal conflicts are essentially coup attempts, or efforts to directly replace the leader of a state by violent means. These become considered civil wars if they generate a sufficient number of deaths, which to some extent is a function of whether coups succeed at the outset or come to actual confrontation. In general, we would expect that situations where leaders are likely to face challenges and coups also should have a greater probability of civil wars.

The second type of civil wars revolve around struggles for succession or autonomy, and typically occurs in the periphery, far removed from the capital and core centers of power in a state. At a first glance, one might not expect that secessionist struggles would be more likely to resort to force conditional on the likelihood of a leader losing office, as their primary aim is to achieve autonomy or independence rather than replacing the current executive. However, secessionist claims will ultimately pose a threat to the key interests of a state and may therefore pose a severe political problem for a ruler. Likewise, the likelihood that leaders will be able to counter with effective resistance against conflicts in the periphery is obviously conditional on the security of a ruler in the center. A weaker leader increases the chances that insurgents will be able to force or negotiate concessions. Hence, we would expect to see a relationship between risk of losing office and the probability of civil war, regardless of the specific motives of rebels.⁴

Existing work on civil war has paid a great deal of attention to the role of state strength plays in deterring violent conflict, see in particular (Fearon and Laitin, 2003). The measures that have been used of state strength, however, are at best very indirect proxies of governmental strength. Fearon and Laitin’s main indicator of state strength, GDP per capita, have be given entirely different explanations in other studies. Collier and Hoeffler, for example, consider GDP per capita a measure of the opportunity costs of conflict. Clearly, a wealthy

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⁴We do not deny that there may a value to distinguishing between types of conflict, depending on their location in the state (core vs. periphery) and motive (autonomy vs. government). This information, however, is not available in existing data on civil war, but we hope, however, to return to this issue in future research.
society does not necessarily translate into a strong state—indeed, rents may promote conflict, as attested by the resource curse phenomenon (Mehlum, Moene and Torvik, 2002)—and poor societies with low average per capita income could in principle have a highly repressive and effective state apparatus (e.g., as in the case of North Korea). We believe that the risk of leaders losing office is a more direct and easily interpretable measure of state strength that avoids some of the problems of proxy measures such as GDP per capita or mountainous terrain.

3 A Three-way model of Civil War, International Crises, and Tenure

We have argued that civil war, international conflict, and leadership tenure should be related to one another in a reciprocal fashion, as shown in Figure 1. If we are correct, we should expect to see endogenous relationships running in both directions among these three component. In this section we describe our strategy for estimating empirically the three-way reciprocal relationships displayed in Figure 1.

3.1 Research Design

To model the relationship between international conflict, civil war, and leaders’ tenure, we analyze a data set with leaders—rather than countries—as the unit of analysis. This approach, pioneered by Bienen and van de Walle (1991) over a decade ago, is rapidly becoming a staple feature of an emerging body of empirical investigations in international relations and comparative politics (Chiozza and Goemans, 2003, 2004\textit{b,a}; Enterline and Gleditsch, 2000; Bueno de Mesquita and Siverson, 1995; Bueno de Mesquita, Siverson and Woller, 1992).

We expect that the risks of the three outcome of interest—the risk of losing power, the risk of being involved in a civil war, and the risk of being involved in an international conflict—
are related in a simultaneous relationship in which each of them causes, and is caused by, the other two. This reciprocal relationship would call for estimators such as two-stage or three-stage least squares in which three endogenous variables influence each other simultaneously.

The standard modeling approaches, however, are precluded in our framework as none of the dependent variables we study is measured on a metric scale. We cannot directly measure the underlying propensity to lose office, the underlying propensity to be involved in a crisis, and the underlying propensity to be involved in a civil war. Instead, we can only observe whether a leader loses office, whether he fights in an international conflict and in a civil war at a given point in time. These dependent variables take the form of dummy (0/1) indicators.

To model the reciprocal relation between three endogenous variables, we extend Mallar’s (1997) two-stage probit model to incorporate a third equation. The following equations represent the form of our model:

\begin{align*}
E(y_1 | y_2^*, y_2, X_1) &= \Phi(y_2^*\beta_{12} + y_3^*\beta_{13} + X_1\gamma_{11}) \quad (1) \\
E(y_2 | y_1^*, y_3^*, X_2) &= \Phi(y_1^*\beta_{21} + y_3^*\beta_{23} + X_2\gamma_{22}) \quad (2) \\
E(y_3 | y_1^*, y_2^*, X_3) &= \Phi(y_1^*\beta_{31} + y_2^*\beta_{32} + X_3\gamma_{33}) \quad (3)
\end{align*}

where equations (1) through (3) represent a generalized linear model in which \( y_1, y_2, y_3 \) are three dichotomous dependent variables; \( y_1^*, y_2^*, \) and \( y_3^* \) are their respective underlying latent constructs; \( X_1, X_2 \) and \( X_3 \) represent a set of independent variables including a constant; \( \beta \) and \( \gamma \) are parameters to be estimated, and \( \Phi \) is the standard cumulative normal distribution.

We follow a two-step approach in which we first estimate the reduced-form equations, that is, three probit models predicting the probability of losing office, the probability of being involved in an international conflict, and the probability of being involved in a civil war with all the exogenous variables included in the system of equations on the right-hand side. Hence, we have three equations:
where \( X = X_1 \cup X_2 \cup X_3 \). From the probit reduced-form equations, we retrieve an estimate of the underlying propensities for the three dependent variables, which we then substitute for the endogenous regressors in the second-stage, structural, probit equations (1–3).

We use a hierarchical setup to take account of the structure of the data. Our covariates include both factors that can vary over time for a given country \( i \) (e.g., democracy and trade openness) as well as factors that are time invariant and cannot change for a given unit \( i \). For example, barring border changes, the share of a country composed of mountainous terrain cannot even in principle change from \( t \) to \( t − 1 \). As such, we adopt a hierarchical specification where we partition the variance into two separate components, within and between countries. Each row vector for a given country \( i \) at time \( t \) in the \( X \) matrices can be decomposed as:

\[
\sum_{m=1}^{J} \gamma_{mjt} x_m + \alpha_j
\]

where \( x_m \) refers to \( m \) time variant covariates and \( \alpha_j \) indicates a country specific component, which in turn is a linear function of the \( k \) time invariant covariates \( w_k \), a unit specific
intercept, plus a random component:

\[ \alpha_j = \delta_0 + \sum_{k=1}^{K} \delta_k w_k + u_j, \text{ where } u_j \sim N(0, \sigma^2) \]  

(9)

To estimate this model, we rely upon the Bayesian data augmentation/Gibbs sampling approach of Albert and Chib (1993). In this approach, the probit model is defined in terms of a Normal regression model in which the dependent variable, say, \( y_1^* \) is only partially observed: \( y_1^* < 0 \) when \( y_1 = 0 \), and \( y_1^* \geq 0 \) when \( y_1 = 1 \). If the unobserved values of \( y_1^* \) were available, estimation would proceed in the straightforward manner of an ordinary regression model. The \( y_1^* \) values, however, can be imputed from suitable truncated normal distributions:

\[ y_1^* \mid y_1, \beta \sim N(X\beta, 1)I(0,+\infty) \text{ if } y_1 = 1 \]  

(11)

\[ y_1^* \mid y_1, \beta \sim N(X\beta, 1)I(-\infty,0) \text{ if } y_1 = 0 \]  

(12)

Bayesian inference through the Gibbs sampler generates samples from the posterior densities for both the coefficients \( \beta \) and the unobserved values of \( y_1^* \) (see also Jackman, 2000). This estimation approach has two major advantages: first, it avoids the evaluation of a non-trivial likelihood function, while generating inferences from the exact posterior distributions of the model parameters. Second, it directly addresses the uncertainties associated with the imputations of the latent propensities from the reduced-form equation: unlike the conventional two-step maximum-likelihood approaches in which the latent propensities are approximated by a linear predictor (i.e., \( \hat{y}_i = x_i \hat{\pi} \), where \( \hat{\pi} \) is a vector of maximum-likelihood reduced-form coefficients), the Bayesian setup generates samples from the posterior distribution for the latent propensities. Thus, in the Bayesian setup, the \( y^* \) values used in the structural...
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Equations reflect both the uncertainty associated with the reduced-form parameters $\pi$ and the uncertainty associated with the $y^*$ values themselves (Li, 1998).

The estimation of a simultaneous equation model requires that the system be properly identified. The rules for identification for two-stage probit models are identical to those of two-stage least square models (Mallar, 1977, 1719): for an equation to be identified, the number of exogenous variables excluded from that given equation must be no less than the number of endogenous variables included in that equation minus 1 (see Gujarati, 1995, 664–665). We return to the issue of identification after outlining the data, control measures, and model specification used.

3.2 Measures and data

3.2.1 Endogenous variables

As we have mentioned previously, some conflict data sets impose a mutually exclusive classifications of conflict as either civil or interstate wars. In particular, this is the case for the Correlates of War (COW) project’s war data, where some conflicts that involve elements of both have been classified in ambiguous ways. For example, the First Kashmir war was classified as an extra-systemic war in India in the 1994 release of the COW data, without any Pakistani participation. In the new COW data released in 2001 Kashmir, however, this conflict is now considered an interstate war between India and Pakistan. Likewise, by the COW criteria, the conflict in Vietnam formally “ceases” in 1965 once the involvement of the USA in the conflict in South Vietnam is considered to be more substantial, thereby setting off a “new” interstate war.5

From our purposes, it is clearly problematic if civil wars “end” once they generate conflict between states, and if international actions related to civil conflicts are disregarded unless

5For a more detailed discussion of potential problematic consequences of the COW data, see Gleditsch (2004a).
they manifest themselves in direct interventions with a high degree of involvement. Indeed, this would preclude us by definition from finding evidence of a relationship between internal and external conflict. As a result, we need to use data sources that are coded independently of one another, without trying to assess whether events are part of the same conflict and whether a given conflict is international or domestic in a mutually exclusive fashion. We therefore use two different sources of data on conflict within and between states that are coded independently of one another and allow us to evaluate whether a higher probability of one type of the events increases the risk of events of the other type.

Our measure of international conflict is taken from the Interstate Crisis Behavior project. Brecher, Wilkenfeld and Moser (1988, 3) define crisis as “... a situation with three necessary and sufficient conditions deriving from a change in a state’s external or internal environment. All three are perceptions held by the highest level decision-makers of the actor concerned: 1) a threat to basic values, along with 2) the awareness of finite time for response to the external value threat, and 3) a high probability of involvement in military hostilities.”

Our measure of civil conflict is taken from the Correlates of War (COW) project’s civil war data, which identify conflicts between state and non-state actors involving more than 1000 casualties over the course of the conflict, and some minimum level of activity to be considered ongoing. Although 1000 casualties is a relatively high level that may exclude many serious forms of civil conflict, the Uppsala armed conflict data (Gleditsch et al., 2002) — the only real alternative to the COW data — do not at the present have clear enough start and end dates that we can identify whether conflicts take place before or after leader changes within the same year.

Finally, our data on leaders are taken from a new data base of political leaders, called Archigos (Goemans et al., 2004). Archigos identifies the dates of entry and exit of all leaders of independent states in the international system 1875-2002, and also includes information on manner of exit and entry of leaders, previous times in office, as well as a leader’s age.
3.2.2 Exogenous variables

We include a series of exogenous variables that we believe should affect one, or potentially several, of our endogenous variables. One the one hand we consider a series of domestic characteristics of a country, including political factors such as its regime type, GDP per capita income, total population size, extent of mountainous terrain, ethnic and religious fractionalization, and the size of a country’s youth bulge relative to adult population. At the same time, we consider attributes of a country’s international environment such as number of borders, outcomes of previous conflict, and trade openness. We consider various characteristics of leaders, such as age, whether tenure is above or below the median, and the number of times the leader has held political office. Finally, we consider the number of days since the onset of each of the three endogenous outcomes to address potential time dependence. For simplicity, we refer to Appendix A for details on the measures and construction of the exogenous variables.

We have mentioned that estimation requires that we must find exogenous variable that satisfy the exclusion criteria for identification. From a substantive viewpoint, these rules imply that there should be at least one exogenous variable that predicts the probability of being involved in an international crisis that is not a predictor in the structural equation on the probability of losing office, and vice versa. In other words, in our structural equations we must have at least one variable that predicts the probability of becoming a target that does not predict losing office, and at least one variable that predicts the probability of losing office that does not predict the probability of becoming a target. Table 1 lists the exogenous explanatory variables that are included in our system of equations along with the risk of international crisis, the risk of civil war, and the risk of losing office.

Insert Table 1 here
4 Analysis

Table 2 and Table 3 present the results of the structural equations and the reduced-form equations, respectively. The Gibbs sampler was run for 37,000 iterations, discarding the first 7,000 iterations as a burn-in phase. Every fifth iteration was retained for inference, which provides 4,000 samples from the posterior distribution of the model parameters.\(^6\)

Visual inspection of the trace plots and of the within chain autocorrelation plots indicates good mixing and low autocorrelations. We report the mean estimate of the posterior distribution for each of the coefficients as well as lower 2.5th and 97.5th percentile from the samples. We consider the evidence for non-zero linkages strong for estimates where the 95% “confidence bound” does not include 0.

In interpreting the results, we first focus on the findings on the three endogenous regressors. We find evidence that all the endogenous variables are related to one another in a reciprocal fashion, and for none of the regressors does the 95% confidence bound” include 0. The sign of the relationships are summarized in Figure 2. Starting from the equation measuring the risk of civil war, we find that a higher risk of international conflict is an important predictor of a higher risk of civil war. Moreover, since we also find that a higher risk of civil war also increases the probability of international conflict, we conclude that the two forms of conflict feed upon each other, and that cases where one risk is high can generate a cycle of escalating violence domestically and internationally.

In the equation predicting the hazard of losing office, we find that as the risk of civil war involvement increases, so do the chances that a leader will be removed from power. The

---

\(^6\)We use vague priors for the coefficients based on normal priors with variance equal to 100. Although vague priors can make convergence slower they ensure that we do not impose too much prior constraints on the data. We used the the half-normal distribution for the priors on the standard deviation of the random effects, based on advice Spiegelhalter and Gelman.
risk of losing office is also a predictor of a higher risk of an outbreak of civil war. This supports our claims that civil war is an important feature in deposing leaders from office and that leaders that are more likely to lose office are much more likely to face challenges from insurgents. Although leaders that face challenges from insurgents are likely to respond forcefully to remain in power, we see little evidence of successful diversion, since leaders involved in civil wars are less and not more likely to retain power.

With regards to the link between international conflict and the risk of losing office we confirm the findings of Chiozza and Goemans (2003, 2004a) that a lower expected tenure reduces the probability of international conflict. This is consistent with the idea that leaders who are at greater risk of losing office will be more reluctant to engage in violent conflict against other states, given the high costs. These suggests that diversionary incentives are not likely to foster conflict, as a regular pattern of interaction. However, war is not necessarily detrimental to leaders, as leaders that take on international conflict — everything else being equal — are less likely to get run out of office.

Before turning to the substantive effects of our endogenous regressors we focus briefly on the results for our other right hand side variables in the results for the structural equations in Table 2. Most of the results are in line with previous research. We find strong evidence of time dependence in international crises, and that countries with increasing trade and growth
are less likely to be in international crises. In the case of civil war, we find that democratic states seem generally less likely to experience civil war, although the effect seems stronger and more consistent for parliamentary than presidential democracies. Countries with youth bulges and a greater proportion of mountainous terrain are more likely to be involved in civil wars. Finally, leaders are more likely to loose office in democracies and mixed regimes and in the wake of wars.

However, we also find some noticeable differences. Most prominently, although political regime type does not have a consistent effect on the risk of international crises (at least at the monadic level), we find that democratic institutions decrease the risk of civil war, although the effect is stronger and more consistent for parliamentary systems greater negative effect than presidential systems. Previous studies have found mixed or little evidence that democracy can decrease the risk of civil war. We surmise that we find clear evidence for an effect of democratic institutions once we have factored out differences in risk due to a hostile international environment. Perhaps more surprisingly, we do not find a negative effect of economic development on civil war in the endogenous model. Although this has been touted as a strong influence on civil war, we have argued that risk of loss of office is a better measure of the security of a leader and state strength than GDP per capita. Moreover, many other studies have failed to find a consistent relationship between GDP per capita and civil war.

### 4.1 Substantive Effects

Since our model has a country specific random effect intercept, the specific predicted probabilities from the model will differ for different countries, even if the other right hand side variables were identical. However, to get some intuition for how much a higher risk on one of the other endogenous variables would entail, we imagine a country median values on the exogenous values and “average” risks on the other endogenous values, and the imagine that we see a shock leading to a shift to the lower 10th and 90th percentile on one of the endogenous
regressors. How much would the risk of the outcome of interest change as a result?

One of the advantages of our hierarchical approach is that we can evaluate how much of the variation in the outcomes of interest is due to variation within and between countries. The intercept-only model provides us with a baseline for comparison through an estimate of the mean probability of the event as well as the intraclass correlation coefficient or cluster effect. We find that about 80% of the variation in the civil war equation occurs across units. For the international conflict equation, 40% of the variation is between units, while for the loss of office equation only 18% of the variation is within clusters. Beyond the fact that some events are more common than others, the high cluster effect for civil war indicates that a great deal of the civil war cases stem from a relatively small number of units where civil wars are quite persistent.

4.2 Robustness Checks

MCMC estimation raises questions about the impact of priors and the dependence of the results on decisions about the number of samples and the independence of the samples. Using the intercept only model allows us to see how the model fares in terms of convergence. We estimated 37,000 iterations, discarded 7000 and kept every 30th. The Geweke test for the model suggest that convergence appears to be ok. The Heidelberger test fails for the parameters in the civil war equation. Gill (2002, 398–399, 405–408), however, suggests that not too much should be read into specific convergence tests, as any test is bound to fail on some parameters just out of random chance. For future versions of this paper, we hope to consider tighter priors on the second level coefficients $\zeta$ and $\kappa$, which might help speed up convergence.
5 Conclusion

Whereas civil war and interstate conflict are often analyzed separately, we have found strong evidence that the risk of civil war increases the risk of interstate conflict and vice versa. This shows that the conventional wisdom about both of these phenomena may be overly limited. Civil wars are not conflicts limited to the country that they occur. Contrary to common arguments that one should let parties “fight it out among themselves”, conflicts that are usually thought of as intrastate can have serious implications for state security. Likewise, civil wars cannot be adequately understood as country specific conflicts, to be explained by state attributes and processes within states. Rather, international factors, including many that influence the likelihood of interstate conflict, can also give rise to conflicts between state and non-state actors.

With regards to our third leg, we confirm the findings of previous studies that security in office is related to the likelihood of conflict, but in rather different ways than commonly believed. Contrary to the idea of diversionary conflict, we find that leaders are most likely to become involved in international conflicts when they are relatively more secure in office.


A Appendix: Explanatory Variables

Regime Type  We measure domestic regime type using three dummy indicators that identify Mixed regimes, Parliamentary democracies, and Presidential democracies. Autocracies are the excluded baseline category. We code these dummy variables using the Polity IV’s (2000) 21-point scale: countries scoring 7 or higher are coded as Democracies, countries scoring between −6 and 6 are coded as Mixed regimes. The residual category, then, includes the regimes scoring −7 or less, which can be labeled as Autocracies (Jagger and Gurr, 1995, 474). The regime scores for the countries experiencing periods of interregnum, or transition – i.e. those that are coded as −77 and −88 – are converted into conventional Polity scores using the rules detailed by Monty Marshall, Director of the Polity IV project: cases of interregnum are converted to a Polity score of 0; cases of transition are prorated across the span of the transition. The cases of foreign interruption (Polity IV’s score of −66) are excluded from the data set.\footnote{These conversion rules can be found at \url{http://www.cidcm.umd.edu/inscr/polity/convert.htm}. In line with the coding rule developed by Chiozza and Goemans (2003), we code all the leaders who experienced – or enacted – a regime change during their office tenure by attributing them the regime score they had for a longer period of time in the year of the regime transition.}

We then distinguish between Parliamentary and Presidential democracies by a dummy variable indicator, taken from the ACLP data set of Przeworski et al. (2000) for the period 1950-1990, and recorded for the remaining periods from Cook and Paxton (1998), Derbyshire and Derbyshire (1996) and the Encyclopedia Britannica. We folded the ACLP category of Mixed democracy into the Presidential democracy category because non-parliamentary democracies can plausibly be argued to be presidential democracies for International Relations purposes, since in these systems the president typically retains significant authority in foreign affairs.

Economic development  We measure this variable using the logarithm of the levels of energy consumption per capita in any given year (Bollen, 1979). Data are taken from
the Correlates of War (COW) capability data set available in Bennett and Stam’s (2000) EUGene (version 3.03) program;

**Change in economic development** This variable measures the yearly change in the levels of economic development. It is computed as the difference between the logarithm of energy consumption per capita in year $t$ and in year $t - 1$, multiplied by 100.

**Trade openness** We measure this variable using the level of total annual trade, and we standardize it by using the level of energy consumption in a country, where energy consumption serves as a proxy for a country’s level of economic activity. We take the logarithm of the resulting quantity. Total trade is measured as the sum of the state’s total imports plus total exports. Data are taken primarily from Barbieri (2002) for the periods until 1947, and from the International Monetary Fund’s *International Financial Statistics* (available at [http://www.imf.org/external/pubind.htm](http://www.imf.org/external/pubind.htm)) for the years from 1948 onwards. We fill in missing values using the data in Gleditsch (2002) and in the World Bank’s *World Development Indicators – WDI Online* (available at [http://devdata.worldbank.org/dataonline/](http://devdata.worldbank.org/dataonline/)).

**Change in trade openness** This variable measures the yearly change in the levels of trade openness. It is computed as the difference between the logarithm of trade openness in year $t$ and in year $t - 1$, multiplied by 100.

**Population** This variable measures the logarithm of the total population in each country in any given year. Data are taken from the COW capability data set available in Bennett and Stam’s (2000) EUGene (version 3.03);

**Civil war** This is a dummy variable that takes on the value of 1 whenever a leader is in office during a civil war and 0 otherwise. Data are taken from the latest version of the COW Intra-State War data set from Sarkees (2000) for the years until 1997. For 1998
Civil War

and 1999, civil war data are taken from Fearon and Laitin (2003).

Age This variable measures leaders’ age. Data are obtained from Bienen and van de Walle (1991), Lentz (1994, 1999), the http://www.rulers.org web page, the http://www.worldstatesmen.org/ web page, and Encyclopedia Britannica.

Times in office This is a count variable that measures the number of times a leader has previously ruled a country. It is equal to 0 in the first period in office.

Conflict outcomes Conflict outcomes are identified by three indicators that measure whether a given international confrontation ended in victory, defeat, or draw in line with Gelpi and Griesdorf’s (2001) and the ICB’s (2003) codings. The outcome of the conflict is measured in the last year it was waged and in the subsequent years until there is a leadership change. We use a hyperbolic transformation to discount the effects of conflict outcomes over time. Each of the three outcome variables is coded using the following time-dependent function: \( \text{Outcome}_t = 1/t \), where \( t \) represents the number of years since the termination of the conflict. Thus, in the year the outcome is realized the outcome indicator—be that victory, defeat, or draw—is coded as 1, in the second year after the end of the conflict it is coded as .5, in the third year as .333, and so on. The conflict indicators are coded as 0 for the leaders who have not fought a conflict or who were removed before the conflict ended. This coding choice reflects our intuition that the effects of the outcomes of international conflict can well linger for a long time among voters or members of the ruling coalition, but that over time the importance of the outcomes of conflict will dissipate;

Major power This is a dummy indicator that takes on the value of 1 for all the leaders of a major power and 0 otherwise. Data are taken from the State System Membership List from the Correlates of War 2 Project (2003). Military mobilization: We measure this variable using a procedure developed by Alesina and Rosenthal (1995). First, we take
the difference between the number of soldiers in year $t$ and in year $t-1$. Then, we divide this difference by the population in that given year and multiply it by 100. Data are taken from capability data set available in Bennett and Stam’s (2000) EUGene 3.03 program;

**Number of borders** This variable counts the number of land borders of each nation. Data are taken from Stinett et al. (2002);

**Time since last target** This variable measures the number of days that have elapsed since a leader became a target in an international crisis. We take a log transformation because we assume that any additional day has a declining impact on the probability of becoming a target.

**Ethnic fractionalization** From Fearon and Laitin (2003)

**Share 2nd largest group** From Fearon and Laitin (2003)

**Cultural fractionalization** From Fearon and Laitin (2003)

**Religious fractionalization** From Fearon and Laitin (2003)

**Mountainous terrain (log)** From Fearon and Laitin (2003)

**Youth bulge** Our measure of youth bulges is taken from Urdal (2001), indicating the share of population aged 15-25 relative to the total adult population. Although Collier and Hoeffler (2002) and others, using measures based on the ratio of young persons as a percentage of total population, have not found evidence for an effect of youth bulges, Urdal (2001) demonstrates why this is a poor measure. Many states with high fertility rates will also have large numbers of children. Using total population, including children in the denominator, will in this case understate the extent of a bulge relative to the adult population.
Table 1: Model Specification\textsuperscript{a}

<table>
<thead>
<tr>
<th>Exogenous variables</th>
<th>Equation 1 Int’l Conflict</th>
<th>Equation 2 Civil War</th>
<th>Equation 3 Loss of Office</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Leader’s features</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>×</td>
<td>×</td>
<td>√</td>
</tr>
<tr>
<td>Longer-than-median duration in office</td>
<td>×</td>
<td>×</td>
<td>√</td>
</tr>
<tr>
<td>Number of days in office</td>
<td>×</td>
<td>×</td>
<td>√</td>
</tr>
<tr>
<td>Number of previous times in office</td>
<td>×</td>
<td>×</td>
<td>√</td>
</tr>
<tr>
<td><strong>Country’s domestic economic and political features</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regime type</td>
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<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Economic development</td>
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<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Change in econ. development</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Trade openness</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Change in trade openness</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Total population</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Median duration in office</td>
<td>×</td>
<td>×</td>
<td>✓</td>
</tr>
<tr>
<td>Ethnic fractionalization</td>
<td>×</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Share of second largest ethnic group</td>
<td>×</td>
<td>✓</td>
<td>×</td>
</tr>
<tr>
<td>Religious fractionalization</td>
<td>×</td>
<td>✓</td>
<td>×</td>
</tr>
<tr>
<td>Mountainous terrain (log)</td>
<td>×</td>
<td>✓</td>
<td>×</td>
</tr>
<tr>
<td>Youth bulge</td>
<td>×</td>
<td>✓</td>
<td>×</td>
</tr>
<tr>
<td>Days since last civil war</td>
<td>×</td>
<td>✓</td>
<td>×</td>
</tr>
<tr>
<td><strong>Country’s international political environment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major power status</td>
<td>✓</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>Military mobilization</td>
<td>✓</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>Number of borders</td>
<td>✓</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>Days since last crisis int’l conflict</td>
<td>✓</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>Involvement in an ongoing crisis</td>
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<td>×</td>
<td>×</td>
</tr>
<tr>
<td>Outcomes of conflict</td>
<td>×</td>
<td>×</td>
<td>✓</td>
</tr>
</tbody>
</table>

\textsuperscript{a} The symbol ✓ indicates that a variable is included in an equation; the symbol × indicates exclusion of a variable from an equation.
Table 2: Structural equations

<table>
<thead>
<tr>
<th></th>
<th>Int’l Conflict</th>
<th>Civil War</th>
<th>Loss of Office</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mean 2.5% 97.5%</td>
<td>mean 2.5% 97.5%</td>
<td>mean 2.5% 97.5%</td>
</tr>
<tr>
<td>Int’l conflict</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Civil war</td>
<td>0.313 0.250 0.379</td>
<td>0.098 0.019 0.177</td>
<td>-0.084 -0.167 -0.011</td>
</tr>
<tr>
<td>Loss of office</td>
<td>-0.663 -0.751 -0.577</td>
<td>0.169 0.058 0.288</td>
<td></td>
</tr>
<tr>
<td>Mixed regime</td>
<td>0.014 -0.197 0.214</td>
<td>0.041 -0.185 0.263</td>
<td>0.440 0.326 0.553</td>
</tr>
<tr>
<td>Parl. Democ.</td>
<td>0.288 -0.024 0.598</td>
<td>-0.483 -0.966 -0.054</td>
<td>0.594 0.443 0.756</td>
</tr>
<tr>
<td>Pres. Democ.</td>
<td>0.151 -0.149 0.454</td>
<td>-0.333 -0.742 0.041</td>
<td>0.484 0.320 0.634</td>
</tr>
<tr>
<td>Econ. development</td>
<td>0.042 -0.015 0.096</td>
<td>0.058 -0.002 0.126</td>
<td>0.001 -0.031 0.030</td>
</tr>
<tr>
<td>Change in ec. develop.</td>
<td>-0.253 -0.478 -0.030</td>
<td>0.085 -0.150 0.309</td>
<td>-0.170 -0.336 0.004</td>
</tr>
<tr>
<td>Trade openness</td>
<td>0.057 -0.010 0.127</td>
<td>0.005 -0.073 0.088</td>
<td>0.019 -0.017 0.056</td>
</tr>
<tr>
<td>Change in trade open.</td>
<td>-0.226 -0.417 -0.032</td>
<td>0.013 -0.173 0.195</td>
<td>-0.160 -0.301 -0.014</td>
</tr>
<tr>
<td>Population</td>
<td>0.114 0.023 0.199</td>
<td>0.157 0.073 0.254</td>
<td>-0.002 -0.043 0.038</td>
</tr>
<tr>
<td>Military mobil.</td>
<td>-0.077 -0.219 0.063</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Num. of borders</td>
<td>-0.021 -0.071 0.027</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Days since last int’l conf.</td>
<td>-0.387 -0.426 -0.347</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Youth bulge</td>
<td>0.052 0.028 0.079</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Days since last civil war</td>
<td>-0.460 -0.490 -0.430</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Times in office</td>
<td>-0.140 -0.231 -0.050</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Days in office</td>
<td>-0.276 -0.317 -0.234</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Longer-than-median</td>
<td>0.694 0.582 0.804</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Victory</td>
<td>-0.116 -0.483 0.245</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Defeat</td>
<td>0.506 0.131 0.895</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Draw</td>
<td>-0.255 -0.609 0.105</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median duration in office</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-2.250 -2.484 -2.028</td>
<td>-2.727 -3.265 -2.229</td>
<td>-0.968 -1.156 -0.797</td>
</tr>
<tr>
<td></td>
<td>0.722 0.136 1.303</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a Number of iterations: 37000; Burn-in phase: 7000; Chain-thinning: 30
Table 3: Reduced-form equations

<table>
<thead>
<tr>
<th></th>
<th>Int’l Conflict</th>
<th>Civil War</th>
<th>Loss of Office</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mean 2.5% 97.5%</td>
<td>mean 2.5% 97.5%</td>
<td>mean 2.5% 97.5%</td>
</tr>
<tr>
<td>Mixed Regime</td>
<td>0.075 -0.076 0.233</td>
<td>0.279 -0.077 0.479</td>
<td>0.437 0.326 0.551</td>
</tr>
<tr>
<td>Parl. Democ.</td>
<td>-0.198 -0.444 0.053</td>
<td>-0.504 -0.971 -0.062</td>
<td>0.566 0.405 0.723</td>
</tr>
<tr>
<td>Pres. Democ.</td>
<td>-0.010 -0.243 0.234</td>
<td>-0.186 -0.580 0.192</td>
<td>0.416 0.262 0.564</td>
</tr>
<tr>
<td>Econ. development</td>
<td>0.022 -0.018 0.064</td>
<td>0.035 -0.022 0.100</td>
<td>0.016 -0.013 0.046</td>
</tr>
<tr>
<td>Change in econ. develop.</td>
<td>-0.049 -0.247 0.147</td>
<td>0.057 -0.167 0.269</td>
<td>-0.197 -0.344 -0.043</td>
</tr>
<tr>
<td>Trade openness</td>
<td>0.039 -0.010 0.094</td>
<td>0.009 -0.068 0.090</td>
<td>0.026 -0.008 0.062</td>
</tr>
<tr>
<td>Change in trade open.</td>
<td>-0.005 -0.162 0.151</td>
<td>0.009 -0.164 0.177</td>
<td>-0.200 -0.327 -0.062</td>
</tr>
<tr>
<td>Population</td>
<td>0.075 0.018 0.135</td>
<td>0.116 0.018 0.218</td>
<td>-0.001 -0.048 0.045</td>
</tr>
<tr>
<td>Military mobil.</td>
<td>0.055 -0.072 0.177</td>
<td>0.010 -0.125 0.213</td>
<td>-0.141 -0.257 -0.024</td>
</tr>
<tr>
<td>Num. of borders</td>
<td>-0.021 -0.053 0.010</td>
<td>0.034 -0.020 0.087</td>
<td>0.017 -0.008 0.043</td>
</tr>
<tr>
<td>Age</td>
<td>-0.006 -0.012 0.000</td>
<td>-0.005 -0.013 0.003</td>
<td>0.013 0.009 0.017</td>
</tr>
<tr>
<td>Times in power</td>
<td>0.021 -0.142 0.182</td>
<td>0.245 0.060 0.426</td>
<td>-0.106 -0.190 -0.024</td>
</tr>
<tr>
<td>Days in office</td>
<td>-0.042 -0.108 0.023</td>
<td>0.069 -0.018 0.160</td>
<td>-0.212 -0.249 -0.174</td>
</tr>
<tr>
<td>Longer-than-median</td>
<td>-0.138 -0.325 0.031</td>
<td>-0.012 -0.252 0.230</td>
<td>0.655 0.548 0.764</td>
</tr>
<tr>
<td>Victory</td>
<td>2.670 2.389 2.962</td>
<td>1.132 0.750 1.489</td>
<td>-1.475 -1.780 -1.159</td>
</tr>
<tr>
<td>Defeat</td>
<td>2.643 2.337 2.947</td>
<td>1.339 1.000 1.684</td>
<td>-0.726 -1.023 -0.398</td>
</tr>
<tr>
<td>Draw</td>
<td>2.646 2.414 2.881</td>
<td>0.990 0.672 1.334</td>
<td>-1.623 -1.895 -1.325</td>
</tr>
<tr>
<td>Youth bulge</td>
<td>0.000 -0.016 0.014</td>
<td>0.033 0.011 0.055</td>
<td>-0.001 -0.011 0.010</td>
</tr>
<tr>
<td>Days since last civil war</td>
<td>-0.003 -0.027 0.021</td>
<td>-0.463 -0.495 -0.435</td>
<td>-0.043 -0.059 -0.026</td>
</tr>
<tr>
<td>Days since last int’l conf.</td>
<td>-0.259 -0.290 -0.231</td>
<td>0.082 0.039 0.125</td>
<td>-0.054 -0.083 -0.027</td>
</tr>
<tr>
<td>Major power</td>
<td>-0.120 -0.424 0.193</td>
<td>-0.267 -1.009 0.433</td>
<td>0.201 -0.070 0.482</td>
</tr>
<tr>
<td>Median duration in office</td>
<td>-0.008 -0.023 0.006</td>
<td>-0.075 -0.111 -0.041</td>
<td>-0.047 -0.062 -0.032</td>
</tr>
<tr>
<td>Ethnic fract.</td>
<td>0.123 -0.171 0.449</td>
<td>0.392 -0.171 0.920</td>
<td>0.112 -0.208 0.421</td>
</tr>
<tr>
<td>Share 2nd largest group</td>
<td>-0.244 -0.981 0.532</td>
<td>-0.455 -1.660 0.681</td>
<td>-0.094 -0.711 0.504</td>
</tr>
<tr>
<td>Religious fract.</td>
<td>0.029 -0.279 0.348</td>
<td>0.251 -0.268 0.789</td>
<td>-0.179 -0.459 0.102</td>
</tr>
<tr>
<td>Mountainous terrain</td>
<td>0.029 -0.020 0.078</td>
<td>0.157 0.075 0.249</td>
<td>0.029 -0.012 0.069</td>
</tr>
<tr>
<td>Constant</td>
<td>-1.917 -2.175 -1.676</td>
<td>-2.789 -3.192 -2.418</td>
<td>-1.077 -1.266 -0.900</td>
</tr>
</tbody>
</table>

\(^a\) Number of iterations: 37000; Burn-in phase: 7000; Chain-thinning: 30