

Is Civilian Control Self-Reinforcing? A Measurement Based Analysis of Civil-Military Relations

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ABSTRACT

Asserting control over the military is a fundamental characteristic of any stable civilian regime. While scholars have long held that a norm of subjugation within the armed forces is critical to civilian rule, there is little empirical evidence that directly supports this claim. This is driven, in part, by a dearth of valid cross-sectional measures of civilian control across political regimes. Here, I argue that developing a norm of subjugation depends critically on a shared belief among military elites that coups and interventions into politics are untenable policy options. These beliefs develop slowly over time and as the result of stable periods of civil-military bargaining. I test these claims by using latent variable modeling techniques to generate continuous, yearly estimates of civilian control for all countries from 1946 to 2010. I incorporate the presence of norms through a dynamic modeling structure and find that doing so significantly improves model performance, supporting my theoretical expectations.

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1 Introduction

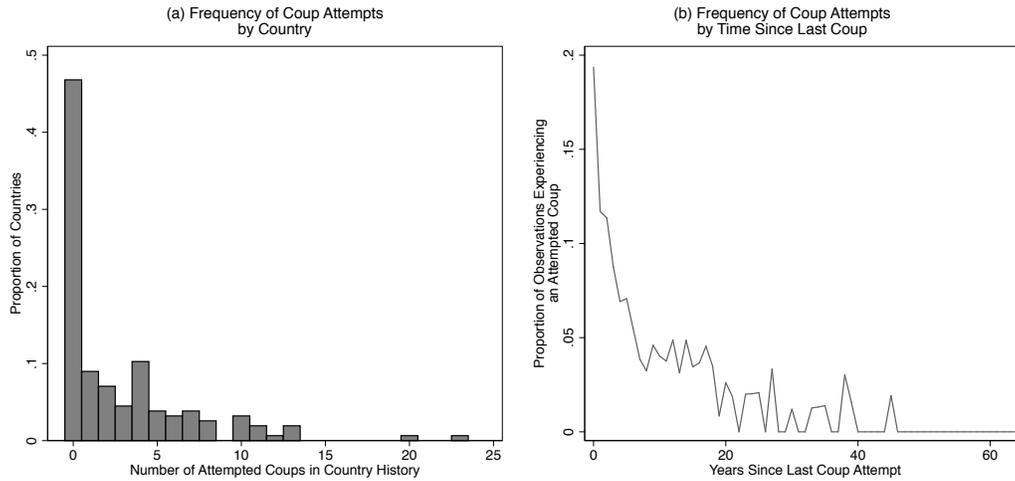
‘There is no power on earth to be compared to him’¹ runs the quotation on the title page of Hobbes’s *Leviathan*. May we not think likewise of the modern army?
–S.E. Finer, *The Man on Horseback*

Asserting control over the military is among the most fundamental tasks necessary to achieve stability in any political regime. As Finer suggests, however, virtually no entity within a state has the capacity to enforce agreements with the military. When bargaining does break down between civilian and military officials, the consequences can be severe. In its most extreme form, these bargaining failures manifest themselves as coups d’état that dislodge elites from power and dismantle political institutions. Such coups are endemic throughout much of the developing world and are among the most frequent means by which political leaders are deposed and regimes collapse. Three out of every four failures of democracy are caused by military coups (Marinov & Goemans 2013, 801). Among autocracies, the military was involved in sixty percent of all extra-constitutional leadership changes (Svolik 2012). Yet, coups occur unevenly across time and space. While nearly half of all countries have never experienced a coup, those that do have an average of about five in their lifespan (Figure 1 a). Coups also tend to cluster temporally, with the risk of coup occurrence dropping precipitously as the time since a previous coup attempt passes (Figure 1 b). Why do some states experience military interventions with alarming frequency, while others appear immune? When civilian control does break down, why does it engender future instability in civil-military relations?

In answering these questions, traditional and contemporary civil-military relations theory relies heavily on the norm of civilian control – intervention becomes less likely once a culture of subordination is embedded within the armed forces (Huntington 1957; Janowitz 1960; Welch 1976; Feaver 2003). This work has contributed greatly to our understanding of civil-military relations, but it provides incomplete answers to the questions at hand. While norms of subordination may prevent coups in stable regimes, it remains puzzling why political elites are so often unsuccessful in imbuing the armed forces with these norms. Moreover, firm empirical evidence supporting the normative explanation has been illusive. This is driven largely by a measurement problem; few attempts have been made in large-n analyses to develop and validate cross-sectional measures of civilian control that would allow for a rigorous examination of these

¹I translate the original quote, "Non est potestas super terram quae comparetur" for the ease of the reader.

Figure 1: Coup Frequency by Country and Across Time



Note: In panel (a) countries are the unit of analysis, and observations are grouped based on the number of coup attempts they have experienced in their history. In panel (b) the country year is the unit of analysis, and observations are ordered based on the number of years since a previous coup attempt. The Powell & Thyne (2011) data is used to identify coups.

arguments.²

I address this problem in two parts. First, I identify civilian control of the military as a self-reinforcing institution. After civilian control is first established, norms of subordination strengthen with the passing of time. Civilian control therefore becomes more durable as a regime ages and time passes since previous instances of military intervention in politics. When interventions do take place, these norms break down, making successive coups more likely. Second, I use latent variable modeling techniques to develop and validate two novel measures that treat civilian control as a continuous, unobserved trait to be inferred based on a series of indicators that identify the extent to which military institutions influence executive decision-making in a particular regime.³ The first of these measures models civilian control as a static process, with each successive year in a country's history treated a new, independent observation. The second models

²Near exceptions include: Weeks (2012) who developed an ordinal indicator of "militarism" or military political autonomy; Belkin & Schofer (2003), who constructed a continuous indicator of coup risk; and Murdie (2011), who developed a continuous measure of conflict between civilian and military elites. Though these measures continue to be critical to the study of civil-military relations, they were not developed to accommodate or test for the presence of self-reinforcing norms and are therefore do not provide clear answers to the question at hand.

³This is consistent with several recent studies that conceptualize institutional characteristics as latent traits (Treier & Jackman 2008, Pemstein, Meserve & Melton 2010, Schnakenberg & Fariss 2014, Fariss 2014, Svolic 2015)

civilian control as a dynamic process, allowing for the accumulation of norms to occur within a given country across time. I compare these two measures using a series of validity checks to determine which better captures processes thought to be associated with civilian control. Results indicate that the dynamic model outperforms the static model. This evidence suggests that civilian control is indeed a self-reinforcing process whereby norms against military intervention in politics accumulate and calcify over time.

This piece fosters a richer understanding of civil-military relations in three ways. First, while the discussion of institutional norms is ubiquitous in this field of research, this analysis provides firm empirical evidence that such norms both exist and are self-reinforcing. Second, I introduce continuous, yearly estimates of civilian control for all countries from 1946 to 2010. To date, the bulk of large-n analyses in civil-military relations and the study of political institutions more broadly have relied on discrete indicators of military rule and recent coup attempts.⁴ The measures constructed here build upon these efforts by developing a means for their aggregation in a way that allows for more precise comparisons of civilian control within and across political regimes. These measures will be valuable for researchers interested in a variety of topics linked with civilian control including: conflict processes; human rights abuse; democratization; and coup forecasting. Third, and finally, I validate and demonstrate the utility of these measures by empirically linking weakened civilian control with the initiation of interstate disputes. These results indicate that existing measures may substantially under-estimate both the scope and magnitude the negative relationship between civilian control and the onset of interstate conflict.

2 Civilian Control as a Self-Reinforcing Process

Military organizations exercise influence and engage in explicit or implicit bargaining with political elites in all regimes where they are present. The concept of civilian control centers on the relative balance of political power between these groups and the extent to which the armed forces refrain from overt seizures of political power while implementing policy according to the orders of civilian elites (Huntington 1957, 80-83, 72; Feaver 1996, 154-155; Desch 1999, 4). In stable regimes, civilian control is typically analyzed with respect to the latter, policy-oriented component of this definition.⁵ Yet, in much of the world, elites are

⁴See Wilson (Forthcoming) and Svolik (2012, ch. 2) on the limitations of such measures.

⁵Desch (1999) is an exception, examining civilian control along policy dimensions in both established and nascent regimes.

yet to satisfy the more fundamental component of civilian control, as the armed forces threaten or use their coercive capacity to intervene in politics by influencing political decision-making or seizing power directly. Ironically, the very forces charged with protecting these states often pose the greatest threat to political stability (Tilly 1992, 203-224; Svolik 2012; Powell and Thyne 2011; Powell 2012).

In determining why some states have achieved this basic degree of civilian control, while others have failed, existing work highlights the importance of the preferences and normative disposition of the armed forces. While domestic crises and concerns over political legitimacy may provide an immediate justification for intervention in politics, the military elites are unlikely to do so unless they believe such action will be perceived as justifiable both within the armed forces and in society at large. At its most fundamental level, civilian control is therefore achieved once apolitical norms and values are adopted, rendering intervention unpalatable. In these cases, spheres of influence are clearly delineated between soldiers and political elites. As Feaver (1999, 226) notes, this concept is central to much of the traditional civil-military relations literature and has been given many different labels, including: professionalism (Huntington 1957) or professional ethic (Janowitz 1960); the "cult of obedience" (Welch 1976); and the "norm of civilian control" (Smith 1951).⁶ When these criteria are not satisfied, the armed forces sometimes expand their sphere of professional responsibility to encompass the entire political system, with political leaders risking military intervention whenever they infringe upon the perceived rights or prerogatives of the armed forces (Welch 1975, 3). It is therefore no surprise that when reviewing potential factors inhibiting military intervention in politics, Finer (1988) argues the most important is "the armed forces' acceptance of the principle of civil supremacy" (28).

The importance of these concepts has not diminished in the development of more recent theories of civil-military relations. The behavior and attitudes of military personnel is often thought to be a product of long held organizational beliefs and practices that govern the nature of communication and education within the military (Talmadge 2015, 23-24). Moreover, when one conceptualizes civil-military relations as a principal agent problem, organizational norms function as a means by which civilian and military elites develop a shared expectation that the military will follow orders and avoid unsanctioned or illegal political

⁶Some of this work has been criticized for the tautological manner in which professionalism is linked with civilian control (e.g. Feaver 1999, 2003). The concepts of professionalism and civilian control cannot easily be disentangled from one another since each are defined in terms of the subordination of military organizations. This issue is largely tangential to the current analysis, where norms are treated as a component, not cause, of civilian control.

action (Feaver 2003, 80). In fact, the very application of the principle-agent presupposes that the military has functions as agent, and is therefore subjugated to the authority of the civilian principle.

Schiff's (1995) concordance theory also relies heavily on the normative properties of civil-military relations, highlighting the role of shared attitudes and values between the armed forces, political elites, and citizenry in determining whether and when the military intervenes in politics. Recent treatments of military intervention in the Arab Spring have also explored the development of a "rule-oriented", corporate identity that some militaries have adopted, which restrains predatory involvement in politics (Bellin 2012, Lutterbeck 2013).

Institutional norms are often treated as a constant or non-malleable in existing research. To better understand how these factors develop over time and with respect to the broader context of civil-military relations, civilian control can be characterized as a self-reinforcing process, or one in which an institutional structure becomes more robust to exogenous shocks that would otherwise cause in equilibrium behavior or institutional collapse (Grief & Laitin 2004, 634).⁷ In this framework, civilian control is a political institution that encompasses the formal and informal rules linking civilian and military elites in decision-making procedures, along with the organizational structure that facilitates this process. At the birth of a regime, civilian control is established – it is unlikely that any ruler achieved power with at least the tacit acceptance of the armed forces. Whether civilian control survives depends on: (1) exogenous shocks that alter the preferences of civil-military elites, and (2) the shared norms and beliefs of military elites that inform their belief that intervening in politics or overtly undermining civilian control is a tenable policy option.⁸

Exogenous shocks are the immediate causes of military intervention in politics – these are events or features of the political environment that push the armed forces from the barracks. The existing literature has identified an array of factors that may meet these criteria. Civilian leaders may, for example, have taken some action that the military perceives as being sufficiently threatening to its interests or survival (Huntington 1957, Nordlinger 1977). Failures in foreign policy may also expose the weakness of the standing regime, which may allow the military an opportunity to more overtly pursue their own agenda (Talmadge 2015). Coups may also occur because the standing regime is suffering from domestic economic or political crises

⁷This is analogous to a positive feedback loop, where processes become stable because the cost of switching to alternatives increases with time (Pierson 2000).

⁸See also Belkin & Schofer (2003)'s distinction between structural and proximate causes of coup risk.

(Londregan & Poole 1990, Powell 2012, Lindberg & Clark 2008). Ongoing civil conflict may also increase the risk of coups and military intervention in politics by putting the lives of senior military officers at risk, causing them to adopt more risk-acceptant behavior (Bell & Sudduth 2015).

Whether exogenous shocks ultimately result in military intervention is itself a function of whether elites expect military intervention will be successful. The most obvious risk military personal face is that an attempted coup will fail, resulting in incarceration, torture, or death for alleged plotters (Svolik 2009, 481; Thyne and Powell 2014). Seizing power is also likely to exacerbate and reveal discord in the armed forces, which undermines organizational hierarchy and often leads to purges of the officer corps (Svolik 2012, Finer 1988). To this end, coups are akin to a coordination game, wherein military officers attempt to reduce the risk posed to their subordinates by supporting whichever side is likely to prevail (Geddes 1999, Singh 2014, 21-22). Even if military elites harbor significant grievances against political elites, they are unlikely to instigate a coup if other officers are perceived as unlikely to support these actions (Little 2016).

Norms and shared beliefs are the primary mechanism by which military officers can coordinate expectations regarding the likely actions of their colleagues. In some states, norms of civilian supremacy are deeply held, as the organizational practices and education systems embedded within the armed forces cultivate a shared identity that emphasizes the apolitical nature of the military and an aversion to political activity (Nordlinger 1977, 56-58). When this is the case, the motivation to intervene in politics is suppressed by a shared expectation that the use of coercive power for domestic political objectives will not garner significant or widespread support within the armed forces. Put differently, while military elites may always prioritize being on the winning side of a coup attempt, norms determine prior beliefs on the probability that any such action is likely to prevail. If norms of civilian control are sufficiently strong, the motivations to stage a coup will be counteracted by the belief that the coup will not succeed.

The degree to which civil society has accepted the norm of civilian control also determines the relative costs military officers would face in a coup attempt. In some states, military intervention into politics is relatively common mode of leadership change and may not necessarily be viewed as any less legitimate than democratic elections (Farcau 1994). In others, however, the citizenry have accepted the norm of an apolitical military and would therefore be unlikely to support coup attempts without protestation. Military leaders may therefore face a crisis of legitimacy when there is little precedent for military rule (Powell &

Thyne 2011). In short, intervention in politics is costly by the extent to which the armed forces and society at large have adopted norms of civilian control.

These costs increase as a regime ages with stable civil-military relations, and a normative aversion to coups and similar actions becomes increasingly cemented within the military. Military organizations rely heavily on training and tradition to socialize their personnel, which conditions collective attitudes toward intervention in politics (Finer 1988, Janowitz 1960). Nordlinger (1977) makes this point explicit in describing the socialization of a professional soldier: "Beginning at age fifteen or sixteen when they enter the military academy, and through out their advanced training and career experiences, politically relevant attitudes are purposefully learned, implicitly instilled, and latently internalized" (61). While many military organizations may attempt to cultivate an apolitical identity as part of this process, the strength of this norm will depend on the history of political intervention. When coups and intervention have occurred in the recent past, norms against such action will necessarily weaken and military personnel may reasonably believe that future interventions into politics are possible or even likely. As time passes without such action, however, members of the armed forces adjust their expectations accordingly. As the number of officers believing interventions are possible or justifiable diminishes, there is an increased risk of discord in the armed forces should any faction violate the norm by attempting to seize power. Similarly, the longer any state has survived under civilian rule, the less likely the public will be to accept military rule as a legitimate form of government.

Civilian control can therefore be characterized as a self-reinforcing process. As norms of subordination accumulate, the potential costs officers would face when intervening in politics increase, and the overall probability of such action decreases. As a result, civil-military relations will become increasingly robust to the exogenous factors like domestic or international crises that may have otherwise served as the impetus for a military coup in the early years of a regime. This explains why some states experience coups in rapid succession, while others appear immune. In the former set of cases, each coup further weakens the norm of civilian control, while in the latter, each subsequent year without a coup has the opposite effect.

3 Measuring Civilian Control

Despite its prominence in civil-military relations theory, there have been few attempts to empirically determine whether and the extent to which norms of subordination are self-reinforcing or contribute to civilian control. In part, this is driven by difficulties measuring civilian control, which one can not directly observe. Instead, scholars interested in this concept typically either analyze comparative cases studies of whether and when the armed forces follow orders, or conduct large-n analyses that make use of categorical indicators. Though these approaches have proven fruitful to the study of civil military relations, they do not directly examine or account for the presence or normative dispositions or the possibility that civilian control is a reinforcing process.

To address this issue, I construct a latent variable model of civilian control. While civilian control is not, itself, observable, the model incorporates data on regime features and events linked with civilian control, or a lack thereof. Recall that the particular dimension of civilian control examined in this study pertains the military's abstinence from using its coercive power to directly intervene in politics. Measuring this concept is difficult, because it is most clearly observed negatively; civilian control is weak or absent when military organizations stage overt or illegal interventions in politics. To this end, Huntington (1957, 83) argues "the antithesis of objective civilian control is military participation in politics: civilian control decreases as the military become progressively involved in institutional, class, and constitutional politics." I therefore measure civilian control along a spectrum – at one end civilian control is established and military intervention in politics is rare, at the other military autonomy is high and little or no political power is vested in the hands of civilian elites. Put differently, civilian control is high when military elites do not have a history of intervening in politics, do not occupy high level positions in civilian government, and are not relied upon for civilian elites to remain in power. Conversely, the political autonomy of the military is high when the armed forces frequently intervene in politics, political elites routinely come from the armed forces, and the military is central to maintaining political stability. In the remainder of this section I discuss the data sources used to identify these features. I then discuss the modeling strategy I use to incorporate the potential for self-reinforcing processes into the latent measure of civilian control.

Table 1: Observing Military Involvement in Politics; Data Sources and Variables

Data source and citation	Variable Name	Description
Horowitz & Stam (2014) dataset	<i>Leader Military Experience</i>	Leaders classified based on three categories: (1) no military experience; (2) served in the military; (3) had a career in the military. Data covers 1946-2001.
Database of Political Institutions (DPI)	<i>Military Leader</i>	The chief executive is maintains a military rank in office. Data covers 1975-2010.
	<i>Military Defense Minister</i>	The defense minister is maintains a military rank in office. Data covers 1975-2010.
Powell & Thyne (2011) coup data	<i>Recent Coup</i>	A state has experienced an attempted coup in the past five years. Data covers 1951-2010.
Svolik (2012) dataset	<i>Military Entry</i>	The military was involved in the entry of the standing leader into office. Data covers 1946-2008.
	<i>Military Involvement in Politics</i>	States classified according to four categories of military involvement: (1) none; (2) indirect; (3) personal; (4) corporate. Data covers 1946-2008.
Weeks (2012) data	<i>Militarism Index</i>	States are categorized into a four category index based on the political autonomy of the military. Data covers 1946-2000
Geddes, Wright & Frantz (2014) Autocratic Regime Data (GWF)	<i>GWF Military Regime</i>	An autocratic regime in which a group of officers control access to political power. Data covers 1946-2010.
	<i>Prior Military Regime</i>	The preceding regime was characterized by military rule according to the GWF classification. Data covers 1946-2010.
Democracy and Dictatorship (CGV)	<i>CGV Military Regime</i>	An autocratic regime where the effective head of state is a current or past member of the military. Data covers 1947-2009.
Hadenius & Teorell (2007) Authoritarian Regimes Data	<i>ARD Military Regime</i>	An autocratic regime where political power is maintained through the actual or threatened use of military force by the armed services. Data covers 1973-2010.

3.1 Data

In this section I outline eleven indicators that are linked with weakened civilian control (summarized in Table 1). These indicators are collected from various data sources and provide information on: (1) whether political elites have served in and/or maintain ties with the armed services; (2) the recent history of military intervention; and (3) the extent to which political power is concentrated within military institutions. Recall that these traits are observable manifestations from which we can infer the level of civilian control. Note that some of these indicators capture the concept of civilian control at relatively low levels, such as whether statesmen share professional links to the military, while others capture these concepts in the extreme, such as indicators relating to the existence of military rule within a country. Examined in combination with one another, they allow for a more complete assessment of civilian control.

Beginning with the first category, *Leader Military Experience* categorizes regime leaders based on the extent to which they were involved in the armed services prior to taking office. This information comes from the Horowitz & Stam (2014) data, and categorize leaders into three groups: (1) those with no military experience; (2) those who served in the military; and (3) those who had careers in the military. Certainly, political leaders with military experience may not be representative of individuals or leaders within the armed forces more broadly (Janowitz 1960, 4). Nevertheless, individuals trained in and sharing professional ties with the armed forces can be expected, on average, to represent the parochial interests of those organizations to a greater degree than would civilians without such backgrounds. Examining experience is also important because military leaders often shed their uniforms before retaining office, despite maintaining close political ties to the military (Nordlinger 1977, 3). When political leaders are routinely drawn from the military, this is indicative of a poor delineation between civilian and military spheres and that political institutions are not fully civilianized.

Military Leader indicates whether the chief executive of a political regime actively holds a military rank in their title. This information comes from the Database of Political Institutions (DPI) (Beck et al. 2001). Unlike the previous indicator, this suggests an active connection to the armed forces. Note also that holding a military rank in office does not necessarily indicate formal military service per se. Leaders like Milton Obote of Uganda and Daniel Ortega of Nicaragua come to office with experience in rebel organizations and subsequently adopt military titles when supplanting the previous armed forces and

assuming office. Regardless of whether it is inherited from a rebel organization, the presence of a military rank in a regime leader's title indicates that links to the military are being used as a means of legitimizing political power and that civilian rule is not established fully.

Military Defense Minister indicates whether a state's defense minister (or equivalent office holder) maintains a military rank while holding this office. This is also obtained from the DPI. In these cases, the armed forces can exploit this position as a means of directly affecting foreign policy, budgetary decisions, and political decisions more broadly. In 1972, for example, the Uruguayan president's attempt to appoint a defense minister opposed by the military resulted in a six-day stalemate that ended in the president's backing down (Svolik 2012, 135). Thus, even in regimes lead by civilian heads of state, stationing an active member of the armed forces in this position is a manifestation of weakened civilian control, and a politically powerful military.

Recent Coup Attempt codes whether a military coup has occurred within the previous five years in a given country. Coup attempts are a transparent signal that civilian elites have not subjugated the military, which has the capacity and desire to oust political elites. This information comes from the Powell & Thyne (2011) data, where a coup is defined as a "illegal and overt attempt by the military or other elites within the state apparatus to unseat the sitting executive" (252). Though the military is involved in the majority of coups (and successful coups in particular), this this definition does not exclude coups that are instigated by civilian elites. Including these events in this application is appropriate, however, as civilians often attempt to initiate the coup in the hope that the military will support this effort and oust the standing executive. Though the military may ultimately chose to remain in the barracks on these occasions, the attempt nevertheless signals a belief among the political elite that such action is probable, which is itself a sign of a politically autonomous military.

Military Entry records whether the military was involved in the chief executive's entry into office (Svolik 2012, 149). While this often results in military rule, military elites also sometimes appoint a civilian leader to create the illusion of civilian rule. In these instances, however, the military remains highly influential in executive decision making and retains the ability to depose the executive, should it chose to do so. The Thai military, for example appointed Anand Panyarachun as the civilian head of state in 1991. Though Panyarachun maintained relative autonomy in some spheres, the military continued to dominate

much of Thai politics until Panyarachun was subsequently replaced with a general from the armed forces. In sort, this type of political intervention is a manifestation of weak civilian control, regardless of whether a civilian or member of the armed forces is chosen to lead a regime.

The next series of indicators capture the extent to which military organizations are embedded in the regime infrastructure of a given state. *Military Involvement in Politics* is obtained from Svobik (2012, 32-34) and classifies autocratic regimes into four types of involvement: (1) none; (2) indirect; (3) personal; and (4) corporate. States in the first category, "none", are autocracies characterized by civilian rule where the armed forces are largely removed from high-level political decision-making. "Indirect" involvement refers to situations where the military influences politics through indirect channels, even though the chief executive of state may be civilian. Military involvement is "personal" when a military leader or small number of military elites has achieved political prominence. Finally, "corporate" military involvement indicates that political power is concentrated within the military as an institution, rather than a small group of individuals who happen to come from the armed forces.

Next, the Weeks (2014) *Militarism Index* uses data from Geddes (2003) to arrange authoritarian regimes based on the following traits: whether the regime leader is or has been a high ranking military officer; whether the military holds high level cabinet positions; whether the military high command is consulted primarily about security matters; whether the majority of cabinet ministers are from the military; and whether the regime itself is characterized by military rule (39). An eleven category index is generated based on the number of these features that are present within a given regime. Due to limited data coverage, democracies are assumed to be in one of the lowest two categories depending on whether the head of state comes from the military (48-49). For computational ease, the original eleven category index is collapsed into a five category index when it is incorporated into the model discussed in the next section.

Four additional indicators of regime type are incorporated into the analysis. Each of these use different classification criteria, but relates to the same underlying concept, military rule, a clear manifestation of failed or non-existent civilian control. First, the Geddes, Wright & Frantz (2014) *GWF Military Regime* indicator identifies instances of military rule as those where the armed forces exert control over leadership selection, national security decisions, and policy-making more broadly. Note that this pertains to collegial military rule and excludes cases where leaders from the military have established personalist rule. Second,

the Cheibub, Gandhi & Vreeland (2010) CGV Military Regime is an indicator of whether the leader of an autocratic regime is a current or past member of the armed forces. Unlike the GWF indicator, this does not attempt to distinguish between collegial military rule and personal military rule. Third, *ARD Military Regime* comes from the Authoritarian Regimes Data Set and classifies military regimes as those in which political power is maintained through the actual or threatened use of military force (Hadenius & Teorell 2007). Finally, in addition to these indicators, I also include *Prior Military Regime* to classify instances where a regime was preceded by military rule. This is coded using the GWF classification of military rule, and is intended to capture situations where the standing regime inherits a politically powerful military.

Each of these variables are thought to capture various violations of civilian control. Regimes that meet many of the criteria outlined above are therefore assumed to have very poor civilian control and, in the extreme, are characterized by military rule. Conversely, states with few military officers occupying high-level political positions, little or no history of military intervention in politics, and little or no experience with military rule have a high degree of civilian control, at least as it pertains to overt interventions into politics by military officers. While several of these variables pertain to similar concepts, each is composed using unique coding rules and therefore capture disparate aspects of civilian control and military rule. In the following section, I outline the modeling strategy used to generate estimates of civilian control from these variables.

3.2 Modeling Strategy

I develop two item response theory (IRT) models to measure civilian control and assess the extent to which this trait is self-reinforcing. IRT models are a type of latent variable model and have been used increasingly often in political science research, providing a principled means of combining information from observable “manifest variables”, or “items”, to generate estimates of an unobserved trait. In this application, each of the variables outlined in the previous section, y_{itj} , are the observable manifestations of civilian control while θ_{it} is the latent trait of interest. Each item is indexed $j = 1, \dots, J$ and is observed at the country-year level, where countries are indexed $i = 1, \dots, N$ and time, in years, is indexed $t = 1, \dots, T$. K_j is the total number of values that each item y_j can take on, such that $K_j = 2$ if item j is dichotomous and $K_j > 2$ if item J is ordered. The IRT model is presented as a series of probability distributions below in Equation 1

$$\begin{aligned}
P[y_{ij} = 1] &= \Lambda(\alpha_{j1} + \beta_j \theta_{it}) \\
&\vdots \\
P[y_{ij} = k] &= \Lambda(\alpha_{jk} + \beta_j \theta_{it}) - \Lambda(\alpha_{jk-1} + \beta_j \theta_{it}) \\
&\vdots \\
P[y_{ij} = K_j] &= 1 - \Lambda(\alpha_{jK-1} + \beta_j \theta_{it})
\end{aligned} \tag{1}$$

where $\Lambda(\cdot)$ is the logistic cumulative distribution function. The likelihood function is

$$\mathcal{L}(\beta, \alpha, \theta|y) = \prod_{i=1}^N \prod_{t=1}^T \prod_{j=1}^J \left[\Lambda(\alpha_{jy_{itj}} + \beta_j \theta_{it}) - \Lambda(\alpha_{jy_{itj}-1} + \beta_j \theta_{it}) \right] \tag{2}$$

Note that the model closely resembles a conventional ordered logistic regression model, save for the fact that the unobserved θ_{it} takes the place of the set of observed covariates X_{it} . α_j is a vector of cut-point parameters of length $K_j - 1$, while β_j is analogous to a slope coefficient for item j . In the IRT framework, α_j is often referred to the item “difficulty” parameter(s), and relates to the proportion of observations in each category of the manifest variables when the latent trait is equal to zero. β_j is the item “discrimination” parameter and corresponds to the extent to which a change in the value of one of the manifest variables corresponds to a change in the latent trait (Jackman 2009, 455). In this way, the α_j and β_j are estimates of the information provided by each individual item.⁹ I make a trivial modification to the traditional ordered logit link function by adding, rather than subtracting, the product of β_j and θ_{it} to the cut point parameters. This is done so that increasing values of θ_{it} correspond to increasing levels of civilian control.¹⁰

I estimate two competing models to determine the extent to which civilian control is self-reinforcing. I begin by outlining the mathematical differences between each model and then identify how these differing strategies map on to competing expectations about the nature of civilian control. Like all IRT models, identification constraints are required for each. We cannot estimate the equations above due to location, scale, and rotational invariance – various linear transformation of θ , β , and α can fit the data equally well.

⁹While the substantive analysis conducted here is primarily concerned with the θ , β_j and α_j are reported in the appendix.

¹⁰Because the model is estimated as a system of equations (one for each item), it is possible to generate estimates of θ_{it} when some subset of the indicators are missing.

Adopting a Bayesian approach and achieving identification through the assignment of priors is a common means of resolving this issue (Jackman 2009, 456). In both models, this is done through priors on θ and β . In the first model, henceforth referred to as the static model, the issue of location and scale invariance is resolved by setting the prior for the latent trait as $\theta_{it} \sim Normal(0, 1)$. In addition to addressing identifiability, this constraint reflects an assumption that the population of states will be roughly normally distributed across the spectrum of civilian control. The prior $\beta_j \sim Gamma(4, 3)$ addresses the issue of rotational invariance. The gamma distribution restricts the values of the discrimination parameter to be positive, with increases on the values of each indicator y_j corresponding to lower values of the latent trait.¹¹ This reflects the prior knowledge that each of the traits outlined in the previous section are theoretically linked with lower levels of civilian control. With identification constraints satisfied, the priors for the difficulty parameters are $\alpha_{jk} \sim Normal(0, 4)$, and an additional ordering constraint placed on the cut-points parameters such that each successive value in the vector α_j proceeds in increasing order.

The second model is a dynamic IRT model.¹² Here, a “random walk” prior is assigned to the latent variable. In this application, the first year a regime is in the data, it is assigned the prior $\theta_{it=1} \sim Normal(0, 1)$, while each subsequent year is $\theta_{it \neq 1} \sim Normal(\theta_{it-1}, \sigma)$.¹³ σ is the innovation variance within each time series and is estimated from the data. This parameter is assigned the prior $\sigma \sim Uniform(0, 1)$. Restricting the values of this quantity between zero and one reflects the assumption that the within-unit variation will be smaller than the cross-sectional variance assigned in the first year of each time series. The remaining priors for the dynamic model mirror those of the static model, all of which are summarized in table 2.

Both models are estimated using Stan, a Bayesian modeling program that employs a No-U-Turn sampler (Carpenter et al. Forthcoming). The code used to construct the model is available in the appendix.

¹¹This is a result of the modification in the above equations so increases in θ shift the probability distribution to the left (in the negative direction) on the latent space of the indicator.

¹²See Jackman (2009, 471-485) for an overview. There have been several applications of such models in political science (Martin & Quinn 2002, Voeten & Brewer 2006, König, Marbach & Osnabrügge 2013, Schnakenberg & Fariss 2014, Fariss 2014, Caughey & Warshaw 2015, Caughey & Dafoe 2016).

¹³As discussed in further detail below, latent variable models smooth estimates of θ over time. One possible pitfall of dynamic modeling, however, is that it may perform poorly when there are sudden changes in the value of the latent variable. By resetting the prior following regime collapse, I greatly limit this possibility of over-smoothing sudden shocks in the latent trait. Regimes and regime collapse are measured using the GWF data. Regimes are defined as "as basic informal and formal rules that determine what interests are represented in the authoritarian leadership group and whether these interests can constrain the dictator" (Geddes, Wright & Frantz 2014, 314). Regime collapse occurs when there are clear and observable changes to these rules.

Table 2: Summary of Prior Distributions for Model Parameters

Parameter	Static model	Dynamic model
Country Year Latent Variable, all years	$\theta_{it} \sim Normal(0, 1)$	
Country Year Latent Variable, first year		$\theta_{it=1} \sim Normal(0, 1)$
Country Year Latent Variable, all other years		$\theta_{it \neq 1} \sim Normal(\theta_{it-1}, \sigma)$
Innovation Variance		$\sigma \sim Uniform(0, 1)$
Difficulty parameter (constant)	$\alpha_{jk} \sim Normal(0, 4)$	$\alpha_{jk} \sim Normal(0, 4)$
Discrimination parameter (slope)	$\beta_j \sim Gamma(4, 3)$	$\beta_j \sim Gamma(4, 3)$

Ten parallel chains were run for 8,000 iterations, with 6,000 iterations from each discarded as burn-in. Trace-plots and \hat{R} statistics were consistent with convergence (Gelman & Rubin 1992).

Though the same data are used to estimate both the static and dynamic model, the difference in the prior distributions assigned in each model reflects different theoretical assumptions imposed on the model regarding the nature of civilian control. The static model estimates each year independently, so estimates of the latent trait pertain only to the values of the manifest variables for a given year. In this present context, this means that the static model does not incorporate information from previous features of civil-military relations into current estimates of civilian control. Importantly, this reflects conventional measurement practices in the quantitative literature of political institutions; a series of coding rules are used to classify political institutions based on their observable features at a given time (typically on either December 31 or January 1) each year.¹⁴ This reflects a prior belief that civilian control is primarily a product of the observable features and institutions within a political regime at any particular point in time. This is to say, the model does not directly account for the history of civilian control outside the information conveyed in the items. The dynamic model, by contrast incorporates information from the previous year’s latent trait estimates and smooths estimates of the latent trait across time. The dynamic model will therefore generate higher estimates of civilian control for states that have continuously remained low on each of the variables linked with military intervention in politics. Importantly, when observations have high or low values for all observed items, the random-walk structure of the prior will push estimates of civilian control further into the tails of the distribution in proportion to the amount of time observations have remained in that state. Observations that have historically been low on each of the military intervention indicators will

¹⁴Note that manifest variables coded on December 31 are lagged by one year in the model constructed here.

therefore produce higher estimates of civilian control when employing the dynamic model. In this regard, the dynamic model will be better suited to capture civilian control if this concept is indeed self-reinforcing, since it allows for the presence of high civilian control in the past to contribute to our belief that civilian control will remain high in the future. In the following section, I examine this issue further as it pertains to the model estimates.

4 Model Comparison

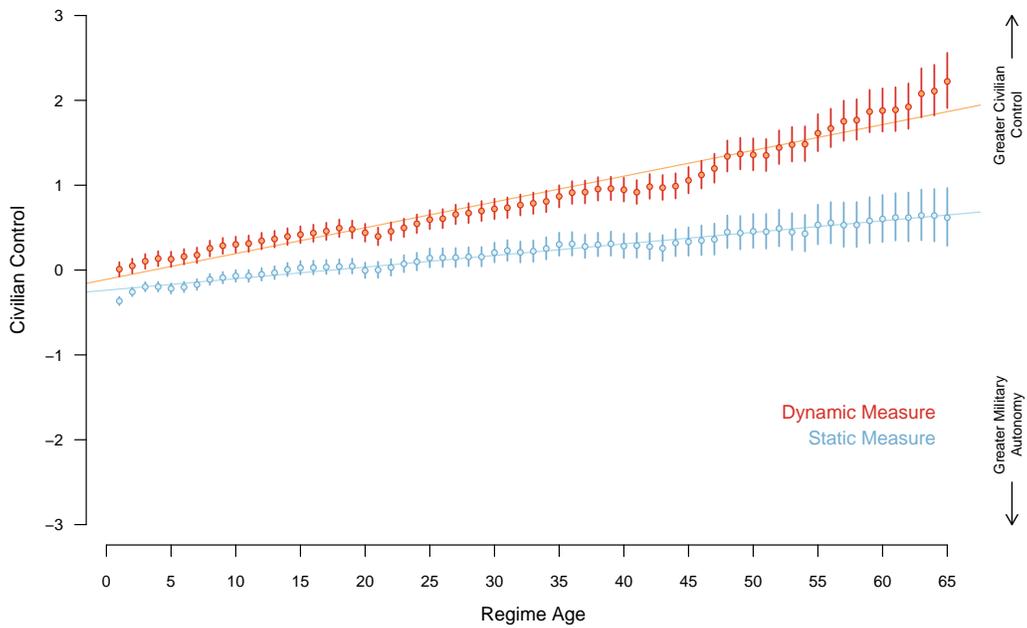


Figure 2: Comparing Estimates of Civilian Control from Static and Dynamic Models Across Regime Age

Note: Figure displays the mean values of civilian control across regime age. Vertical lines correspond to the 95 percent credible intervals of the mean estimates. Though civilian control increases with range across both models, this trend is more extreme among the dynamic model estimates, better capturing the expectation that civilian control is a self-reinforcing process.

After obtaining parameter estimates from models, it is necessary to determine the extent to which each captures theoretical expectations about the nature of civilian control. Recall that the dynamic model was expected to produce estimates more consistent with a self-reinforcing process of civilian control relative to the static model. One way to determine whether this is the case is to examine how the estimates obtained

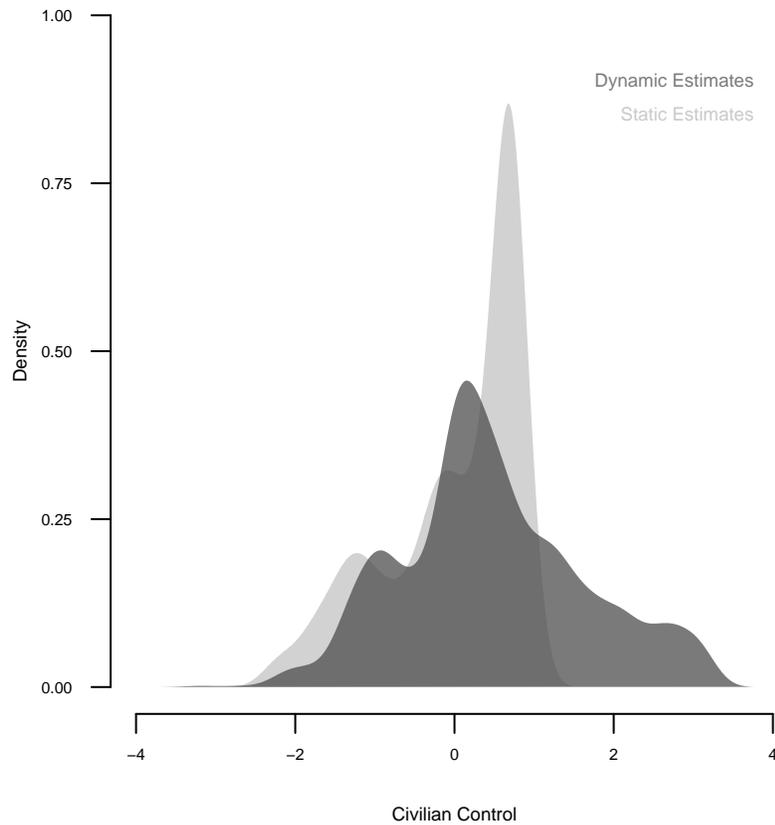


Figure 3: Distribution of Civilian Control Estimates

Note: Plot displays kernel density function for model estimates of civilian control. Bandwidth set to 0.02.

from each model change with the age of a political regime. If civilian control is a self-reinforcing process, one would expect the it to increase steadily as a regime ages without the military intervening in politics or toppling the regime entirely. Put differently, if norms of subjugation accumulate with time, one would expect regimes with a history civilian control to become increasingly insulated from military intervention in politics, even after accounting for the current features of a regime within a particular year. To determine whether this is the case, Figure 2 plots the mean estimate of civilian control from each model across the age, defined from the time a regime enters the data until the time it collapses. Though estimates of civilian control increase with age for both the static and dynamic model, this trend is noticeably more extreme

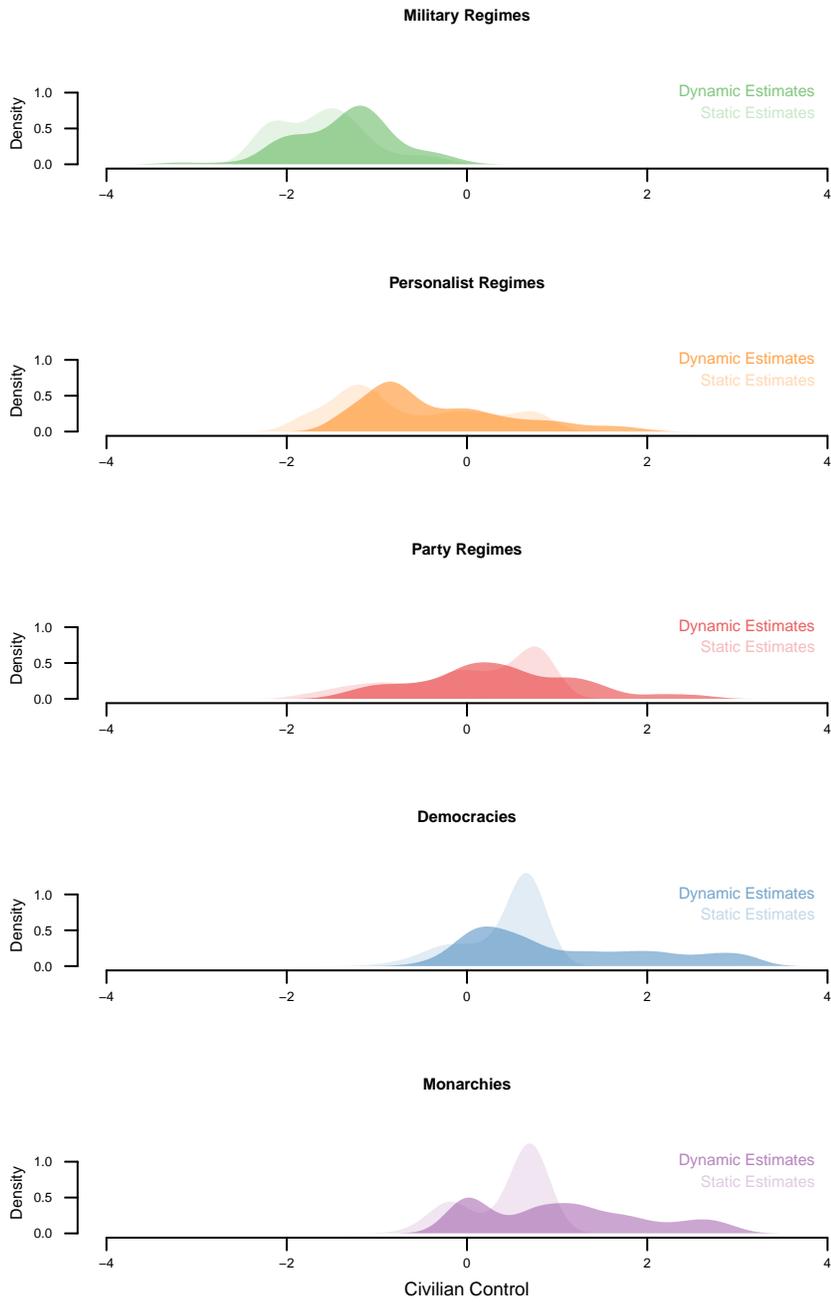


Figure 4: Distribution of Civilian Control Estimates Across Regime Type

Note:Plot displays kernel density function for model estimates of civilian control. Bandwidth set to 0.02.

with the latter. That a general positive trend obtains across both models offers support for previous research arguing that military intervention in politics is particularly likely to occur in young political regimes and that

military regimes are particularly likely to collapse in their infancy (Svolik 2015, Geddes 1999). The fact that this pattern is stronger in the dynamic setting suggests that this model is indeed capturing a self-reinforcing process, with civilian control in the past strengthening civilian control in the present.

To further unpack the differences between model estimates, Figure 3 overlays density plots of the civilian control estimates obtained from each model. Note that the static model generates roughly the same, high estimates for a large proportion of country-years in the data – these are observations which do not meet any of the criteria for military intervention in politics contained in the manifest variables. By contrast, the civilian control estimates from the dynamic model show wider variation. Specifically, the static model treats observations with very high levels of civilian control identically, while the dynamic model produces higher estimates for countries that have remained in a state of high civilian control for longer periods of time.

Figure 4 disaggregates estimates based on regime type, as measured using the GWF typology. Two features here are notable. First, both models uncover considerable variation in civilian control across each regime type. This suggests the existing practice of measuring civilian control through regime type in empirical work is likely to mask significant variation and potentially bias correlations and estimates of causal effects. Second, the dynamic model tends to generate higher estimates for regime types typically linked with high civilian control, including democracies and monarchies.

Finally, to more rigorously examine differences in model estimates, Table 3 displays parameter estimates of models regressing the difference in civilian control estimates on an indicator of regime age, years since a military coup as measured using the Powell and Thyne (2011) data, and GWF regime type variables. The dependent variable in Model 1 is the magnitude of the difference between each model, while the dependent variable in Model 2 is the unadjusted difference between the static and dynamic model. This is done to determine which factors determine both the magnitude and direction of the differences between model estimates.¹⁵

Across both regressions, regime age and years since a coup are associated both with larger differences between models, and higher estimates generated by the dynamic model. The model also tends to produce

¹⁵To incorporate uncertainty in the estimates, I take ten simulated draws from the static and dynamic posterior distributions for each observation and run ten separate regressions with each. I then combine these estimates using standard practices developed for multiple imputation (Rubin 1987, King et al. 2001). Specifically, let $j = 1, \dots, M$ index the models generated from each of the simulated draws from the posterior distribution (here, $M = 10$), SE_j^2 be the variance for a coefficient within model j , and σ^2 be the sample variance of coefficient estimates across M models. The overall standard error for each coefficient, after incorporating uncertainty in the latent estimates, is equal to $\sqrt{\frac{1}{M} \sum_{j=1}^M SE_j^2 + (1 + \frac{1}{j})\sigma^2}$.

higher estimates for democracies and monarchies (the reference category), and lower, but more similar estimates for single party, personalist, and military regimes. In short, the dynamic model is producing higher estimates for regimes that have long histories of civilian control, and institutional arrangements typically thought to be associated with civilian control. Each of these properties is consistent with the expectation that the dynamic model is indeed modeling civilian control in a manner consistent with self-reinforcing processes.

Table 3: Determinants of Differences in Civilian Control Estimates

	(1)	(2)
	$ \theta_{dynamic} - \theta_{static} $	$\theta_{dynamic} - \theta_{static}$
Regime Duration	0.005* (0.001)	0.004* (0.001)
Years since Last Coup	0.005* (0.001)	0.006* (0.001)
Democracy	0.081* (0.040)	0.092* (0.037)
Party-Based Regime	-0.303* (0.041)	-0.275* (0.032)
Personalist Regime	-0.299* (0.042)	-0.280* (0.040)
Military Regime	-0.305* (0.043)	-0.289* (0.046)
Constant	0.651* (0.038)	0.631* (0.034)
Observations	7,954	7,954

Note: Coefficient estimates are reported with standard errors in parentheses. Significance levels * $p < 0.05$, two-tailed tests. The unit of analysis is the country year. Parameters in Models 1 and 2 are generated by combining estimates from 10 models run using simulated draws of the posterior distributions of civilian control for each observation (Rubin 1987).

4.1 Posterior Predictive Checks

Recall that the only difference between the two models is the assignment of priors. While the dynamic model comports with expectations, we can not yet conclude that it better approximates reality. When evaluating competing measures, each model is akin to a hypothesis about the concept of interest, and to adjudicate between these hypotheses one must conduct a series of validation exercises to determine which better captures the underlying construct (Adcock & Collier 2001). One common method of validation is to

determine how well each model can reproduce the data that was used to estimate model parameters in the first place through a series of posterior predictive checks (Gelman & Hill 2007). In this procedure, I take 1,000 draws from the posterior distributions of the latent trait for each country year (θ_{it}), as well as the difficulty parameter (α_j), and discrimination parameter (β_j) from each model. I use these quantities to make 1,000 predictions for each item observation (y_{itj}). I then compute a sum of squared errors to measure the accuracy of each set of predictions. This calculation is expressed in Equation 2,

$$ss_{itj} = \sum_d (y_{ijt} - \hat{y}_{itjd})^2 \quad (3)$$

where d indexes the draws from the posterior distribution. For each item, I then determine what proportion of observations is better predicted by the dynamic model, as measured using the sum of squared errors.

Results for each item are displayed in Figure 5. The dynamic outperforms the static model in predicting all items. The dynamic model performs best for manifest variables relating to the institutional features of the regime. For example, the Weeks Militarism Index is better predicted by the dynamic model for about 92 percent of observations. Though still superior to the static model, the dynamic model fares less well in predicting whether a regime was preceded by military rule and whether there was a recent coup - here the dynamic model produces more accurate estimates for 58 and 56 percent of observations, respectively.

While these results indicate the dynamic model better fits the data (and therefore better captures the concept of civilian control), it is perhaps more important to ensure that the dynamic model is outperforming the static model among observations with high levels of civilian control. This is because these are the observations for which the dynamic model's estimates are most closely tied to the expectation that civilian control is self-reinforcing.

To determine whether this is the case, I compare each model's predictive accuracy as it varies across values of civilian control. More specifically, I examine every item observed for each country-year and subtract the sum of squared errors produced by the dynamic model ($ss_{dynamic}$) from the static model (ss_{static}) and plot this across dynamic model estimates (Figures 6 and 7). The vertical axis is therefore $ss_{static} - ss_{dynamic}$, with positive values indicating that the dynamic model is performing better, and negative values indicating that the static model is performing better. Each item recorded for a particular observation is color coded according to its value. A LOWESS line is also included in each plot to clarify

where each model is performing relatively well.

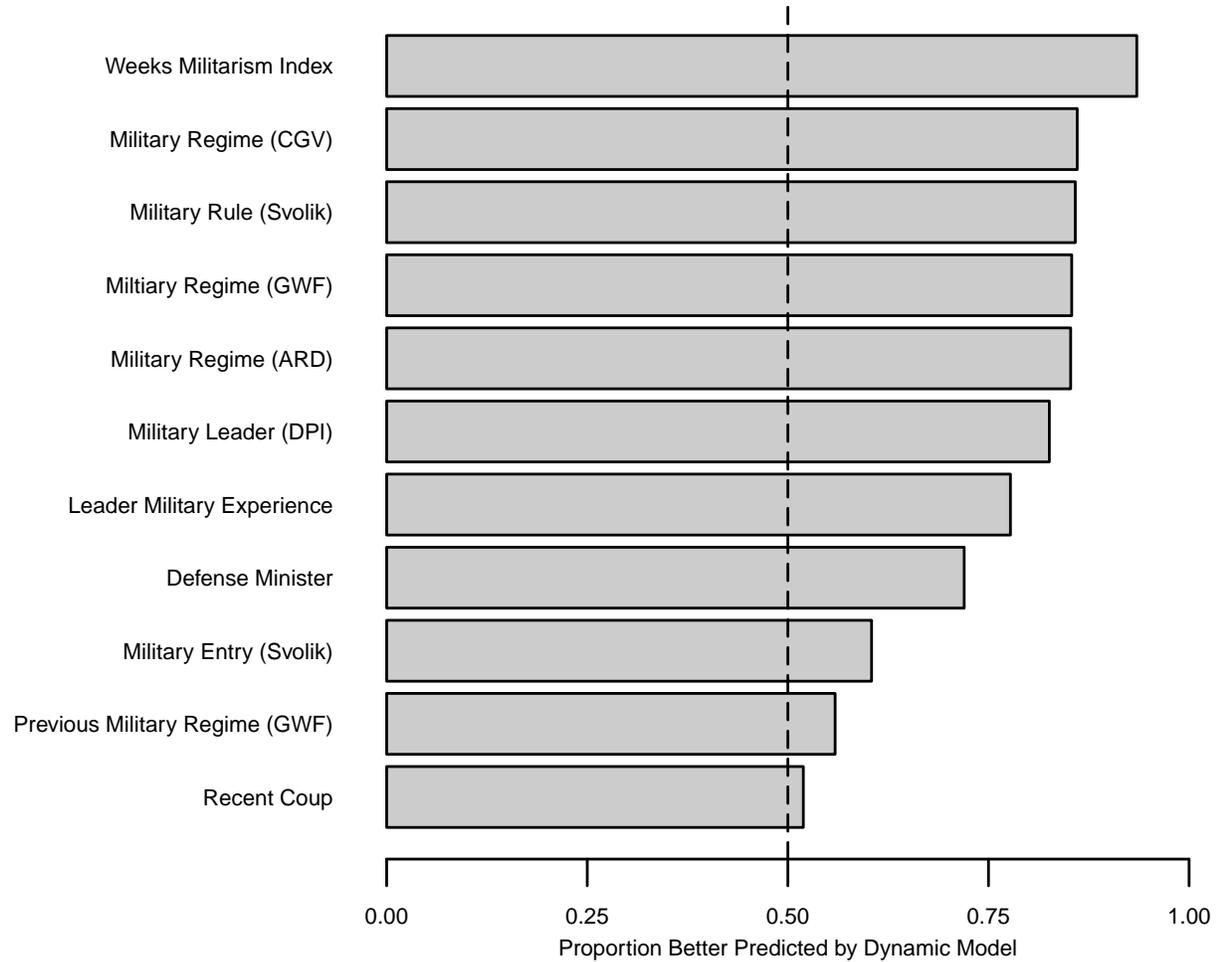


Figure 5: Summary of Posterior Predictive Checks

Note: Figure reports the proportion of observations for which the dynamic model outperforms the static model in predicting the observed set of values for a particular item. Values above .5 on the horizontal axis therefore indicate that the static model better predicts a majority of observations than the static model. The dynamic model outperforms the static model for all items.

Again, the majority of the observations have positive values; the dynamic model generates more accurate predictions. For the majority of the indicators (Military Entry, Military Defense Minister, Prior Military Regime, Recent Coup, and Leader Military Experience) the dynamic model is performing at or near its best at high levels of civilian control. For the remaining indicators the gains are marginal, but

the dynamic model continues to outperform the static model for virtually all observations high on civilian control. In short, the dynamic model nearly always generates better predictions when civilian control is high, and is often performing at its best.

To briefly summarize, the dynamic model differs from the static model by generating estimates of civilian control that are consistent with the expectation that norms of civilian control accumulate and become self-reinforcing. As a result, the dynamic model generates higher estimates of civilian control for observations that have historically been low on each of the indicators associated with military intervention in politics. Because the dynamic model is better able to reproduce the data used to estimate the models, we can more safely infer that this model better approximates reality and the underlying process of civilian control. The fact that the model is superior for country-years with high estimates of civilian control further underscores this conclusion.

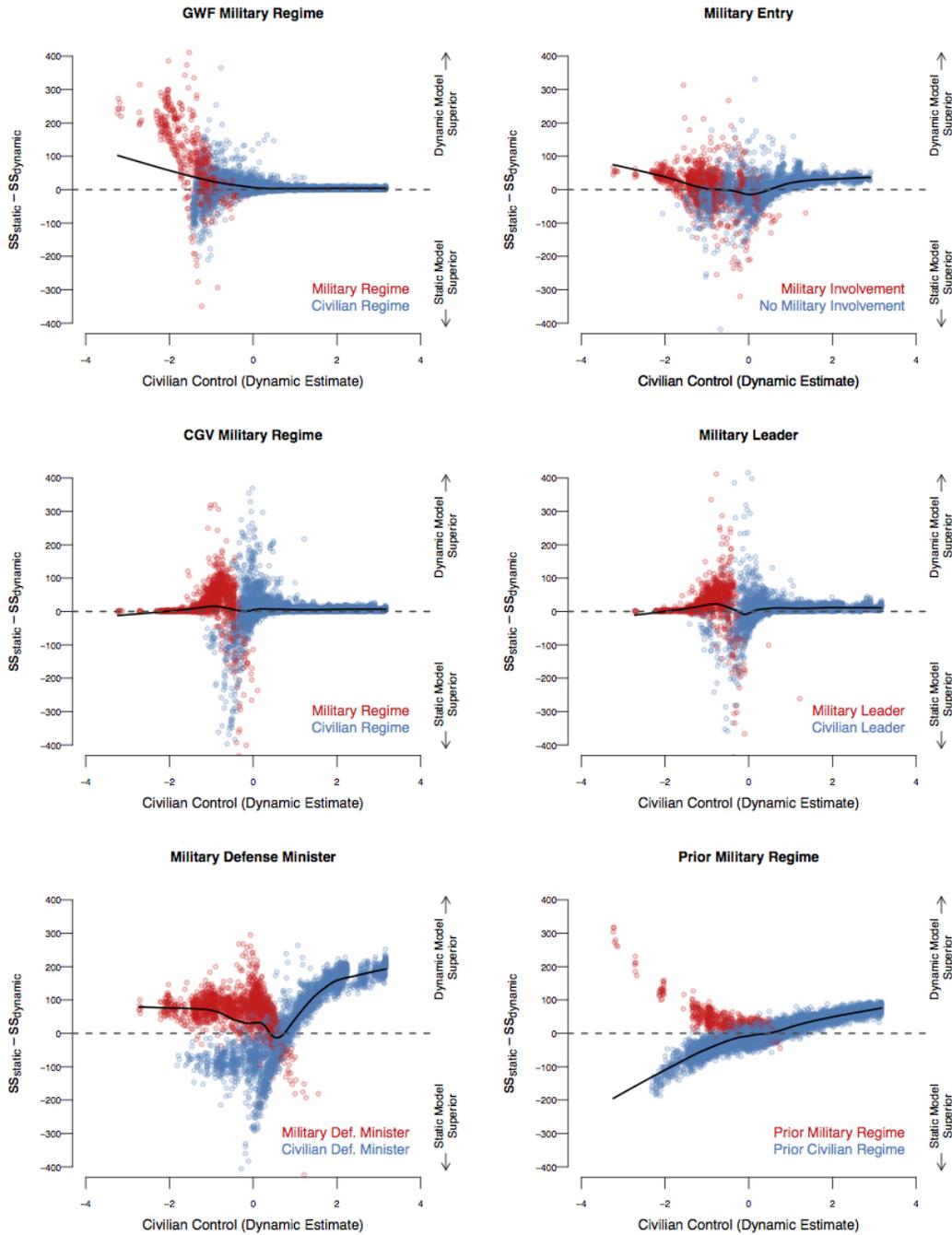


Figure 6: Model Performance by Dynamic Civilian Control Estimate (Dichotomous Items)

Note: Figure compares the accuracy of each model in predicting dichotomous items across dynamic estimates of civilian control. Each point on the plots pertains to an observation of a particular item at the country year level. Points are colored according to their values on each indicator. The vertical axis reports the difference in the sum of squared errors obtained from the static and dynamic model. Positive values therefore indicate that the dynamic model better predicts a particular observation than the static model, while negative values indicate the opposite. LOWESS lines are displayed on each plot to indicate how the relative performance of each model changes across values of civilian control. The smoother span for the LOWESS line is set to 0.3. The dynamic model generally outperforms the static model across all values of civilian control, and often performs particularly well among observations that are high on this trait.

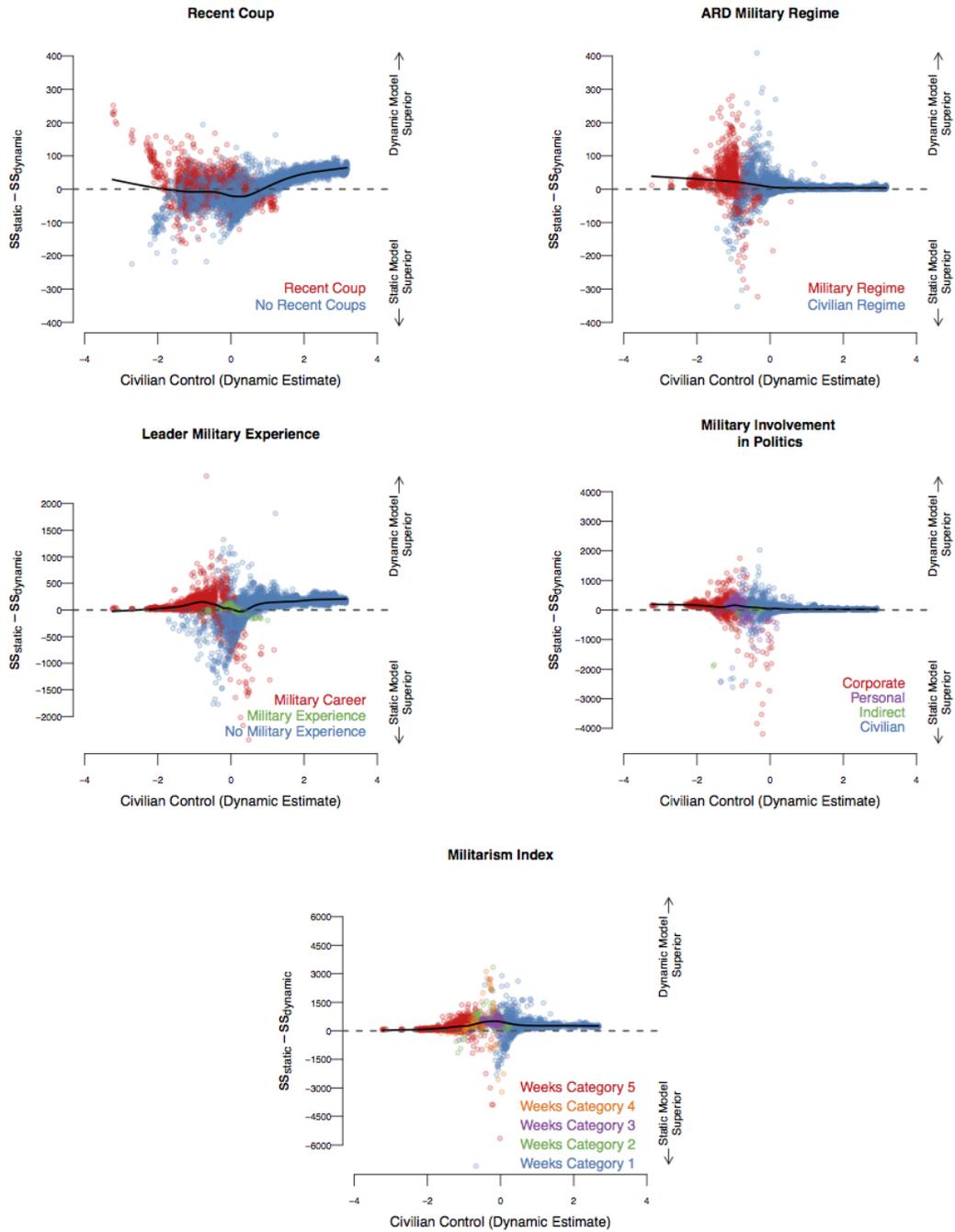


Figure 7: Model Performance by Dynamic Civilian Control Estimate (Ordinal Items)

Note: Figure compares the accuracy of each model in predicting ordinal items across dynamic estimates of civilian control. Each point on the plots pertains to an observation of a particular item at the country year level. Points are colored according to their values on each indicator. The vertical axis reports the difference in the sum of squared errors obtained from the static and dynamic model. Positive values therefore indicate that the dynamic model better predicts a particular observation than the static model, while negative values indicate the opposite. LOWESS lines are displayed on each plot to indicate how the relative performance of each model changes across values of civilian control. The smoother span for the LOWESS line is set to 0.3. The dynamic model generally outperforms the static model across all values of civilian control, and often performs particularly well among observations that are high on this trait.

4.2 Civilian Control and Interstate Dispute Initiation

If the dynamic model is better capturing the underlying construct of civilian control, it should also be more strongly associated other concepts that are linked with civilian control (Adcock & Collier 2001). Several studies have argued that weak civilian control and military rule leads to an increased propensity to initiate interstate conflicts (Sechser 2004, Lai & Slater 2006, Weeks 2012, Weeks 2014, Bak, Kenwick & Palmer 2015). Even in non-military regimes, military autonomy and weak civilian control is commonly thought to lead to aggressive or offensive foreign policies, which themselves incite conflict (Posen 1986, Snyder 1984).¹⁶ In this section, I examine how well the measures developed here explain variation in the initiation of interstate disputes as an additional validity check.

To compare these measures, I construct three logit regression models, with the directed dyad year as the unit of analysis and the initiation of a militarized interstate dispute (MID) as the dependent variable (Palmer et al. 2015). The independent variable of interest in the first two models is the estimates of civilian control obtained from the dynamic and static models, respectively. The third model uses the previously mentioned Weeks Militarism Index, which is included for comparison because it reflects the closest existing measure of civilian control commonly used in the study of interstate conflict. Note that the index is reflected so that increasing values on all three measures correspond to increasing measures of civilian control. Each of the models also feature a small set of additional covariates to control for potentially confounding factors. These include: geographic contiguity (Stinnett et al. 2002); relative capabilities (Singer, Bremer & Stuckey 1972); the GWF indicators for single-party, democratic, and personalist regimes; and cubic polynomials of the time (in years) since a previous dispute (Carter & Signorino 2010). As before, uncertainty around the latent estimates is incorporated by combining parameter estimates from models run on ten simulated draws from posterior distributions of the static and dynamic model.

Table 4 reports the coefficient estimates from each model. Consistent with expectations, all three measures have a negative and statistically significant effect on dispute initiation. The substantive effects of these three variables are displayed in Figure 8, which also includes a histogram that displays the distribution of observations along the horizontal axis. Two aspects of these results are particularly noteworthy. First,

¹⁶In contrast to conflict initiation, there is less consensus regarding the precise empirical and theoretical links between civilian control and battlefield effectiveness (see Brooks 2008; Murdie 2011; Talmadge 2015).

well over half of all observations are coded as "0" on the Weeks index, meaning both the static and dynamic measures capture more variation on the civilian control-military autonomy spectrum. Second, the estimated relationship between weakened civilian control and MID initiation varies depending on which measure is used. Specifically, the estimated effect of civilian control is substantially larger when using the dynamic measure than it is with either the static or Weeks measures.

These results are important for two reasons. First, both the static and dynamic models passed an important predictive validity check, as both are strongly linked with MID initiation. Second, the fact that the effect of civilian control was largest with the dynamic model has important implications for our interpretation of theoretical relationships. Specifically, these results suggest that failing to incorporate normative dynamics into measures of civilian control may lead researchers to substantially underestimate the effect of this trait on other concepts or events of interest. Third, the fact that these findings hold even after controlling for regime type indicates that the relationship between civilian control and conflict initiation is not merely a product of military rule or specific institutional arrangements.¹⁷

¹⁷In auxiliary models, the GWF Military regime indicator was also included in the first two models. This did not substantively alter results; the coefficient for each measure of civilian control remained positive and statistically significant.

Table 4: Determinants of MID Initiation, 1946-2000

	(1) Dynamic	(2) Static	(3) Weeks
Civilian Control (Dynamic)	-0.314* (0.063)		
Civilian Control (Static)		-0.223* (0.074)	
Weeks Militarism Index (Reversed)			-0.657* (0.197)
Target's Relative Capabilities	0.098 (0.177)	0.015 (0.176)	-0.002 (0.174)
Challenger's Absolute Capabilities	10.366* (1.077)	10.751* (1.083)	11.030* (1.066)
Target's Absolute Capabilities	10.194* (1.217)	10.357* (1.219)	10.468* (1.211)
Personalist Regime	0.327 (0.223)	0.227 (0.223)	0.263 (0.221)
Democracy	0.227 (0.258)	-0.062 (0.258)	0.032 (0.278)
Single Party	-0.168 (0.252)	-0.347 (0.259)	-0.274 (0.263)
Contiguity	3.364* (0.132)	3.378* (0.133)	3.383* (0.133)
Peace-years	-0.207* (0.019)	-0.207* (0.019)	-0.206* (0.019)
Peace-years ²	0.004* (0.001)	0.004* (0.001)	0.004* (0.001)
Peace-years ³	-0.000* (0.000)	-0.000* (0.000)	-0.000* (0.000)
Constant	-5.943* (0.238)	-5.835* (0.251)	-5.376* (0.207)
Observations	691,518	691,518	691,518

Note: Coefficient estimates are reported with robust standard errors, clustered by directed dyad given in parentheses. Significance levels * $p < 0.05$, two-tailed tests. The unit of analysis is the directed dyad year. All models are estimated using the same set of country-year observations. Parameters in Models 1 and 2 are generated by combining estimates from 10 models run using simulated draws of the posterior distributions of civilian control for each observation (Rubin 1987).

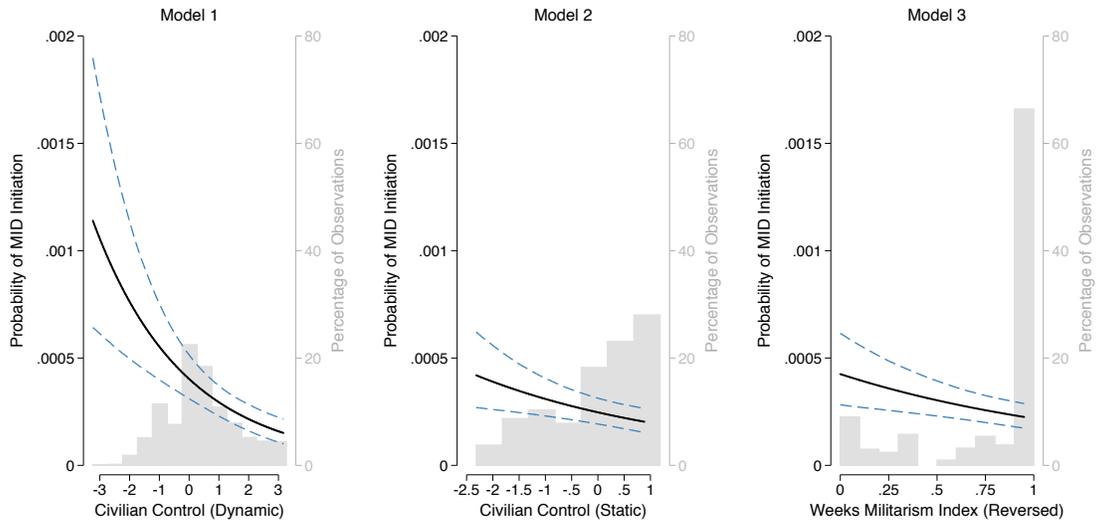


Figure 8: Effect of Civilian Control on Interstate Dispute Initiation

Note: Figure reports the probability of militarized interstate dispute initiation across dynamic estimates of civilian control, static estimates of civilian control, and the weeks militarism index. These estimates are obtained from the three models reported in Table 4. These plots are superimposed on a histogram showing the distribution of each independent variable, with the percentage of total observations reported on the alternate vertical axis. Note that movement across the horizontal axis corresponds to increasing civilian control with the estimates of latent civilian control, and weakening civilian control with the Weeks Militarism Index. Across all three models, weakening civilian control increases the probability of interstate dispute initiation. This effects pertaining to the static, and particularly the dynamic estimates are stronger that obtained using the Weeks Militarism Index.

5 Conclusion

This paper opened by asking why some states experience coups with such persistency, while others appear immune. The answer provided here draws upon existing work on norms of subjugation within the military in arguing that civilian control is a self-reinforcing process; as norms and standards are developed, civilian control becomes increasingly robust to exogenous factors that might otherwise lead the military to intervene in politics or topple regime leaders. By constructing and assessing two competing measures of civilian control, I find empirical evidence supporting this claim. The assumptions underlying the dynamic model allowed for the estimation of civilian control in a manner that is consistent with theoretical expectations, civilian control was found to increase over time as a regime survives without experiencing observable manifestations of weakened civilian control. A series of validation exercises confirmed that this modeling choice better captured the concept of civilian control than a competing framework that modeled civilian control as a static process.

These findings have several implications for the study of civil-military relations more broadly. While norms have long been present in civil-military relations theory, this work have rarely been subject to rigorous testing and have been neglected in much of the existing quantitative research in this field of study. By evaluating these concepts within a measurement framework, this piece provides novel empirical evidence supporting long-held theoretical expectations and yields more precise country-level estimates of civilian control in the process . Doing so opens the door for novel insights to several fields of inquiry, two of which I discuss briefly below.

First, with respect to foreign policy, I found that existing measures of military autonomy underestimate the magnitude of the relationship between these concepts and interstate dispute initiation. Unlike comparisons that rely primarily on dichotomous or ordinal measures, the continuous measures developed here indicate that weakened civilian control heightens the likelihood of conflict across a range of polities, even after controlling for regime type. Moreover, knowing that civilian control is a self-reinforcing process also suggests that the heightened bellicosity of military regimes in the international environment may be a problem that lingers even after military rulers have returned to the barracks.

Turning to the development of political institutions and stability, scholars have recently debated whether coups facilitate the process of democratization, with some arguing that post-Cold War coups typi-

cally lead to democracy (Marinov & Goemans 2013), and others arguing that coups are more likely to result in autocracy and increased levels of state-sanctioned violence (Derpanopoulos et al. 2016). The evidence uncovered here calls for caution in evaluating the possible benefits to military intervention in politics. Even when military intervention in politics results in democratization in the short-term, such actions are also likely to undermine the development of civilian control, leaving the newly established regime at an increased risk of similar interventions in the future. In other words, coups have long-term deleterious effects that may not be apparent when examining post-coup political institutions alone.

I conclude by noting that this piece focused on one particular dimension of civilian control relating to the military's propensity toward overt, extreme, and illegal interventions in politics. After this basic degree of subordination has been established, however, civilian leaders will also struggle to ensure that the armed forces can also be expected to faithfully and fully carry out the orders they are given (Desch 1999, Feaver 2003). This form of civilian control may or may not be subject to the same patterns and processes described here. Nevertheless, the measurement and validation strategies developed here can be extended to answer these questions as scholars continue to collect more nuanced and comprehensive data on civil-military relationships.

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