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Determinants of the Attempting and Outcome of Coups d'état

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Abstract

Previous studies have attested to leaders "coup-proofing" their regimes by reducing the ability or disposition of their armies to seek their removal. The following article tests the utility of these efforts. "Structural" coup-proofing such as counterbalancing is expected to reduce the ability to organize a coup plot by creating substantial coordination obstacles to soldiers. Coup-proofing by spoiling militaries with organizational resources is expected to reduce the willingness to intervene. However, increased organizational resources are expected to increase the army's capabilities, thereby increasing the likelihood of a coup's success. The theory is empirically tested using a selection model with a global sample from 1961 to 2000. Findings suggest that both coup-proofing strategies are effective deterrents of coup activity and, more generally, that characteristics of the military appear to be far more important than economic influences on coups.

Keywords

coup d'état, coup-proofing, civil-military relations

Coups have recently unseated leaders in locales as diverse as Thailand (2006), Honduras (2009), and Niger (2010), with subsequent commentaries on each case tending to focus on the motives of the coup plotters. Thai prime minister Thaksin Shinawatra

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was ousted, for example, due to his corruption and interfering with the courts and legislature. Honduran president Manuel Zelaya was ousted after his attempt to abolish presidential term limits, while Nigerien president Mamadou Tandja was ousted following a successful effort to do the same. Though these actions adequately capture the justification offered by the conspirators, there is comparatively little commentary on how the militaries of such countries were able to successfully organize and execute these conspiracies. Thaksin, for example, was assuredly only one of many heads of state accused of corruption, while Zelaya and Tandja were only a pair of numerous leaders that have attempted or succeeded in abolishing term limits. Zelaya fell a year to the week after Ecuador's legislature loosened its one-term limit for Rafael Correa, while neighboring Nicaragua altogether abolished term limits less than six months after Zelaya's ouster, yet neither of the latter experienced the same fate. The same can be said for Africa, where Tandja's fall came on the heels of the abolition of term limits in neighboring Chad and Algeria. Though motives for the undertaking of a coup may have been similar in each case, coups were not a common outcome.

Though motives may be shared, countries will differ in their vulnerability to coups based on the ability of plotters to organize and execute a coup conspiracy. I aim to fill a gap in the study of coups by empirically assessing a variety of characteristics that can impact a military's disposition and its ability to organize and execute a coup, with particular attention given to coup-proofing. The efforts of leaders to reduce the likelihood of a coup has been well established in case studies, has been empirically shown to be attempted (Belkin and Schofer 2003), and has even been argued to reduce the fighting capacity of a state (Quinlivan 1999; Pilster and Böhmelt 2011). However, efforts to assess the ability of such strategies to effectively reduce coup likelihood are lacking. This investigation aims expand the coup literature by testing the prudence of coup-proofing efforts.

The remainder of this article progresses as follows: first, I begin with theoretical expectations regarding the *disposition* to attempt a coup. Leaders often manipulate policy toward their armed forces in an effort to lessen the willingness to attempt a coup, such as increasing organizational resources or pay. These coup-proofing efforts are commonly attested to in case studies but have not been subjected to robust empirical testing. I argue that coup-proofing strategies that lessen the willingness of militaries to intervene, such as an increase in military resources, will reduce the willingness to organize a coup plot, but could actually *increase* the likelihood of success if a coup is attempted. This can be seen as an illustration of the civil–military problematique, in which the institution upon which a government depends for survival, the military, can become its greatest threat (Feaver 1999).

Second, I offer theoretical expectations regarding the *ability* of militaries to organize a plot. This is primarily treated as coordination obstacles for the armed forces, ranging from incidental characteristics such as military size to a variety of specifications of intentional coup-proofing strategies that target the structure of the armed forces. Though a number of important offerings discuss characteristics of militaries

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(Johnson, Slater, and McGowan 1984; Jenkins and Kposowa 1992), this article will offer a more comprehensive look by considering multiple aspects of military funding and structure, including coup-proofing efforts such as the use of armed counterweights against the regular military, the effectiveness of which has been all but overlooked in the empirical cross-national literature on coups.

Third, I theoretically distinguish and test how these factors will impact the likelihood that a coup will be attempted, as well as the likelihood that an attempt will succeed. This last offering is particularly novel, as this analysis represents the first effort to empirically distinguish between the onset and outcome of coup activity in a large cross-national sample. Overall, the study offers a number of important findings. First, there is considerable evidence that coup-proofing efforts are important guarantors of political survival. Multiple aspects of coup-proofing are found to reduce both the likelihood of a coup attempt and the likelihood that an attempted coup will succeed. In contrast to the idea of a civil–military problematique, coup-proofing policies seem to accomplish dual desiderata of deterring coup attempts and lessening the likelihood of success. Second, when controlling for military factors, economic concerns have little impact on coup activity. Instead, the models suggest that overt signs of instability are much better predictors of coups, while economics is important only in the sense that it provides governments with resources with which to coup-proof. The article closes with suggestions for democratizing regimes and foreign policy.

Theoretical Framework

This section lays out the theoretical expectations of coup activity, following a rationalist perspective. Coup conspirators will carefully evaluate their chances of success and should only attempt a coup when the expected rewards of the maneuver and its probability of victory are high enough to offset the dire consequences of a failed putsch. The estimated costs from a coup's failure extend to multiple levels. These include individual consequences such as imprisonment, exile, or execution, and group-level sanctions such as abolition of the military (Costa Rica, Haiti), the purging of a branch's officer corps (Kenya), and the massacre of ethnic groups associated with the coup (Liberia). Further, state-level fallout, such as civil war, is also a possibility. Powell and Thyne (2011), for example, identify fifty cases of coups that resulted in enough fatalities to be included in the Uppsala/Peace Research Institute Oslo (PRIO) armed conflict data set, as well as nine cases of coup attempts reaching the Correlates of War's 1,000-death threshold to qualify as a civil war. Though there is an occasional granting of amnesty to plotters (see 1995 Sao Tome and Principe, for example), these cases are rare and usually come about after the conspirators have already successfully seized power and are able to negotiate an exit. As a result, plotters should refrain from action until the expected likelihood of success is sufficiently high enough to offset the associated risk. Coups, however, as illustrated in Figure 1,

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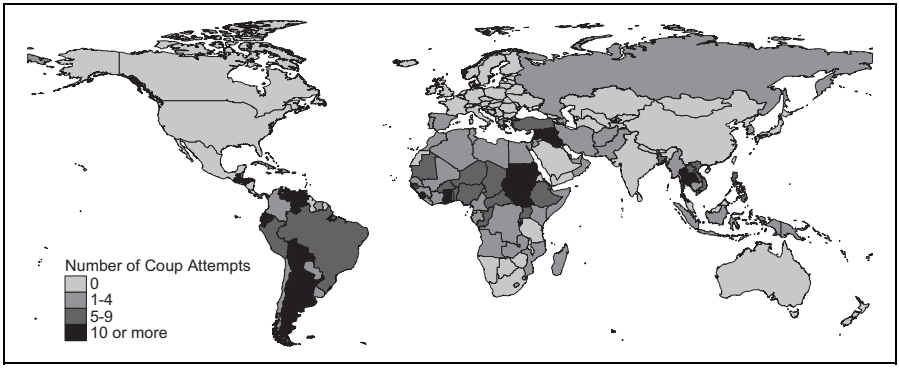


Figure 1. Global distribution of attempted coups d'état, 1950–2010

have stricken every major geographical region over the last sixty years, indicating that plotters are often confident of their likelihood of success.

The decision to attempt a coup can thus be thought of in terms of a rationalist framework, as seen in the civil conflict literature in works of scholars such as Lichbach (1995) and in the coup literature by Thyne (2010). The aforementioned groups that can face reprisals for an attempted coup can, of course, also rationally expect to reap the benefits of success. At the individual level, Miller (1970, 17), claimed coups are due to "a man pushing his own interests," a view that is echoed by Decalo (1990). At the group level, organizational interests of the military are also often noted as catalysts for coups, though they have received limited treatment in the empirical literature, a trend that is largely true for characteristics of the military in general. The seminal offerings of Jackman (1978) and Londregan and Poole (1990), for example, do not offer a single measure accounting for characteristics specific to the military nor does the more recent offering of Galetovic and Sanhueza (2000). Finally, the benefits of a coup could also be realized at the state level. Legitimacy is an oft-cited determinant of coups, a dynamic that can be treated as regime type, economic performance, and overt signs of discontent with the regime. Thyne and Powell (2011), for example, argue that coups undertaken against authoritarian leaders are significant determinants of democratization, opening the door for an increase in regime legitimacy and, they presume, improved economic performance.

While the original impetus will no doubt center upon the expected payoffs of the victory, plotters will also be aware of the likelihood of a coup's success. Finer (1988), for example, offered a second set of concerns that should accompany disposition: opportunity. While elites may possess the disposition to overthrow the head of state, they must also take into account their ability to do so, that is, the likelihood of the maneuver's success. This is particularly important given the tendency of regimes to protect themselves through coup-proofing efforts. Feaver (1999) has noted that the available options in accomplishing this task are limited. Legal

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provisions placing restraints on the military are useful only to the extent that the military is willing to conform to the law, a distinction that might be lost when disposition is otherwise high. However, other options are available, and many leaders have attempted to coup-proof by creating structural obstacles that create coordination challenges for their militaries. Welch (1976), for example, argued that leaders should attempt to deter coups by increasing the degree of specialization within different entities of a state's armed forces, thereby creating coordination challenges. This suggestion has been supported in a cross-national study by Belkin and Schofer (2003), who find that regimes with higher levels of coup risk actively coup-proof their militaries though the creation of such obstacles. These efforts will lessen the ability of plotters to carry out the effort, thus lowering the expected utility of a coup and rendering them less likely.

In short, for a coup to have a sufficiently high expected utility, plotters must have enough evidence that the anticipated benefits of an attempted coup are high, and they must further believe that they have a high likelihood of success. Plotters who are disposed to attempt a coup, then, will evaluate their ability to carry out the effort before acting.

Disposition to Intervene

Having laid out a rationalist approach to coups, this section will detail the conditions that can lead to a heightened expected payoff from a coup, that is, a higher disposition toward an attempt. I begin with a brief review of the preferences of nonmilitary actors, a discussion that largely centers on the frequently noted aspect of economic performance. I then move on to describing factors that influence the disposition of the military. Given a strong body of literature covering the former, I will ultimately focus on factors related to the latter.

Wiking (1983) held a simple view that decision to intervene was a function of the military's ability to justify the action. This can be seen in terms of the maneuver's acceptability to the public, as was the case in Wiking's commentary, as well as to other elites, specifically the military. In short, coups occur when a government faces a legitimacy crisis. Legitimacy is also a key component of the coup risk measure developed by Belkin and Schofer (2003), who treat it as a function of the competitiveness and degree of regulation or participation in the political system, though it can more widely be seen as the perception of the regime's right to make rules. Other factors can have an impact on how citizens and the military feel about the government. An ineffective regime, for instance, may lose its legitimacy in the eyes of the military and its citizens due to its poor performance. Implications for coup risk have been well stated in previous research. Finer (1988, 84) contends that the "erosion of popular support" is a prerequisite for intervention, while Welch (1970, 32) claims the citizenry must overtly demonstrate its dissatisfaction with government in order for the military seize power.

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Aside from legitimacy concerns from the public perspective, some commentaries have considered the specific organizational interests of the armed forces. Under the corporate grievance model, militaries oust governments when their organizational interests are at stake (Thompson 1973). These concerns should also be of interest to those studying coups due to the intent of many leaders to coup-proof their regimes. Just as some actions can be counter to the wishes of the armed forces, some leaders aim to lower the disposition to intervene by increasing their organizational resources. Huntington's (1991) prescriptions for democratization, for example, encourage states to increase the pay and benefits of soldiers and to "give them toys" so as to preclude the willingness to intervene. Short-term increases in material or financial incentives send a clear signal to the armed forces that their interests are being taken into account. This should greatly reduce the expected pay off from a coup, rendering one less likely.

In addition to a military that wishes for better pay or resources, low levels of funding per soldier could reflect a lack of training, professionalism, and more general long-term distaste for a regime. Interestingly, though military professionalism or soldier quality has widely been said to impact the military's willingness to attempt a coup, efforts to quantitatively explain this aspect are virtually nonexistent.[1] The difficulty of operationalizing the quality of a state's armed forces is notoriously difficult, of course. It can be hypothesized, however, that soldiers with fewer organizational resources will be less likely to adhere to norms that might otherwise keep the military removed from politics.

Hypothesis 1: States that increase military funding or have higher levels of funding per soldier will have a lower likelihood of coups.

The preceding section illustrated how regimes can influence the disposition of a military to attempt a coup. Just as coup plotters will consider the expected payoffs of a coup, careful attention must also be given to the many obstacles to success. In the following, I illustrate how a number of characteristics of the military can inhibit the ability of would-be plotters to successfully coordinate and execute a conspiracy within the armed forces.

Ability to Intervene

Organizing an Attempt

The ability of elites to attempt a coup is best thought of in terms of the structural obstacles they will face in recruiting from and coordinating with other divisions in the armed forces. For example, Geddes (1999) has noted that the worst possible outcome for a military is to have to fight other factions of the armed forces, and many coups are indeed bloodless. Though Svolik (2009, 484) has recently "assumed away" any collective action problem elites may face when confronting a dictator with a coup, I argue that cohesion obstacles are of paramount importance. Numerous

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leaders have taken note of these obstacles and have implemented strategies that aim to increase them.

First (1970, 429), for example, noted that numerous African regimes had decreased the prospects of a coup by "building up counter-forces" within their militaries and security services. The infamous 1982 coup attempt perpetrated by the Kenyan Air Force, for example, was violently stopped by the General Services Unit (Frazer 1994; N'Diaye 2002). On the other hand, the 1974 ouster of Nigerien president Hamani Diori has also been noted by Higgot and Fuglestad (1975) to be a consequence of his refusal to fractionalize the armed forces for the purposes of coup-proofing. A number of quantitative studies theorized militaries with less "cohort rivalry" are more likely to attempt coups (Jenkins and Kposowa 1992; Kposowa and Jenkins 1993), but have either limited their analyses to single-year data on these counterforces or have relied on overall military size as a proxy for centrality. Larger militaries are more likely to be composed of separate units, companies, platoons, or informal cliques, and plotters will have to successfully recruit from those potential rivals. Aside from intra-branch recruiting, plotters may also need to go outside of their own service. Thompson (1976), for example, offered an early test of this inter-branch obstacle by using descriptive statistics to demonstrate that coups attempted with the overt support of more armed service branches were more likely to succeed. Though he does not claim more branches translates directly into fewer attempts, potential plotters are no doubt aware of such obstacles and will be wary of attempting a coup as the number of necessary co-conspirators or potential opponents increase.[2]

In an effort to account for these multiple aspects of military fractionalization, Belkin and Schofer (2003) took a major step toward investigating coup-proofing by addressing "counterbalancing." The authors considered the number of military branches, paramilitary organizations, and their respective personnel numbers, and conclude that regimes with heightened vulnerability to a coup do in fact divide "their armies into numerous, mutually suspicious rival forces that check and balance one another" (Belkin and Schofer 2003, 596). This effort provides strong support that coup risk can be said to promote efforts to fractionalize militaries in an effort to survive. However, a second major research question remains unexplored: are these efforts fruitful?

Hypothesis 2: States with stronger military cohesion obstacles (military size and fractionalization) will have a lower likelihood of a coup attempt.

Execution and Outcome of the Coup

Having illustrated the theoretical expectations regarding the decision to attempt a coup, attention must now be given to its execution. There are two general theoretical expectations in this section. First, structural coup-proofing efforts, which are expected to reduce the probability of a coup attempt, are expected to similarly

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reduce the likelihood of success, as these strategies are often accompanied by other efforts to reduce the abilities of the armed forces. Second, the size of a military and its funding per soldier are expected to influence the outcome of a coup in a different way than the decision to attempt one. While military size can create coordination challenges, and while higher levels of funding per soldier can reduce the willingness to attempt a coup, higher levels of each are expected to be additive to the likelihood of success. In the plotting stage, larger militaries are fraught with coordination obstacles. If those obstacles are overcome, greater manpower will allow plotters to more easily overwhelm any potential defenses that might be in place to protect the regime, as well as aid in the capturing of strategic targets, politicians, or in overwhelming presidential bodyguards. So while larger militaries are less likely to attempt coups, those that do should be more likely to succeed.

Hypothesis 3: Coups attempted by larger militaries will have a higher likelihood of success.

Coup-proofing is similarly expected to deter plotters through the creation of coordination challenges, thus lowering the probability of success. Circumstances may arise, however, that convince multiple spheres of the armed forces to act against the head of government. How then, should we expect armed forces that are ''balanced'' to function in the execution stage of the attempt?

I argue that even when controlling for sample selection, that is, when looking at conditions under which plotters feel they have the highest likelihood of success or when high levels of the expected payoff of success convinces plotters to act, the challenges created by coup-proofing can still undermine their effort. Scholars of both civil–military relations and international conflict have suggested that coup-proofing often hinders the ability of soldiers (Quinlivan 1999; Pilster and Böhmelt 2011; Biddle and Zirkle 1996; Reiter and Stam 1998; Biddle and Long 2004). First, when a state puts more resources into structural coup-proofing, they inevitably do so at the expense of the regular armed forces. This is due to a reduction in personnel, armaments, or in soldier quality due to a lack of training and nonmerit recruitment and promotion, strategies that often coincide with structural coup-proofing. For example, Mobutu Sese Seko purged seasoned army officers, executing many, and his military recruitment took on a personalist character, with ''political considerations'' being more important than ''military ones'' (Kisangani 2000, 215). The quality of his forces was clearly diminished, as seen during skirmishes between 1977 and 1978 when the Zairean military was soundly humbled by former Katangan soldiers. In short, the capacity of Mobutu's military to carry out effective maneuvers was eliminated due to coup-proofing.

Second, in addition to shortages in training or materiel, coup-proofing undermines the fighting capacity of a military by creating coordination challenges. This is as true for waging battle as it is for attempting a coup. Durrell-Young (1997, 23), for example, has claimed that unity of command is a ''sine qua non for

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successful military operations," and unity of command is what structural coup-proofing such as counterbalancing specifically attempts to avoid. Pollack (2002, 386), for example, has noted that Muammar Qaddafi "frequently and unexpectedly" rotated command positions during the 1980s, limited the military's training through prohibition of live-fire exercises, and proscribed the regular military from forming division-level commands, which would have to be created "on an ad hoc basis in the field" (Pollack 2002, 386). The Libyan leader instead put paramount importance on his Jamahiriyyah Guard, who proved their utility by beating back an army coup attempt in May 1984. The end result was a regular army in which "concerted" action was "nearly impossible," and accounts of the Chadian conflict fail to report "a single mention of Libyan forces conducting a tactical counterattack" (Pollack 2002, 386). As Pollack concluded, the Libyans deployed "far more advanced and far more powerful weaponry [against the Chadian army] . . . but were crushed nonetheless" (Pollack 2002, 417).[3] Coup-proofing was the goal of the strategies, while a weakened fighting capacity was the consequence.

In short, coup-proofing undermines the ability of militaries to utilize advanced weaponry and modern strategy, a reality that is in stark contrast to well-trained coup-proofing units whom they will have to overtake during the putsch. So while plotters might on occasion attempt a coup in a "coup-proofed" state, these efforts are generally risky, are executed by less capable soldiers, and are likely to fail.

Hypothesis 4: Higher levels of structural coup-proofing will reduce the likelihood of coup success.

Structural coup-proofing efforts are not the only means by which a leader can attempt to reduce the likelihood of a coup conspiracy. Just as militaries are often divided into competing factions, coup propensity can also be reduced by providing militaries with spoils. As noted above, militaries with organizational grievances are more likely to attempt a coup. Leaders, then, will sometimes address this vulnerability by providing increased benefits to their soldiers (Huntington 1991). However, if the status quo is threatened, be it due to a potential budget crisis brought on by poor economic performance or an actual reduction in military expenditures, even militaries with a high endowment of resources may view a coup as the preferable course of action (Koga 2010). The "toys" of which Huntington spoke of can now be used to unseat the very leader who provided it. Once a coup is launched, soldiers with better organizational resources will have more competence and resources for taking strategic locations and overwhelming potential coup response mechanisms. Although this factor can have a negative impact on the decision to attempt a coup (Hypothesis 1), it is theoretically expected to *positively* influence the chances of a coup's success. These theoretical expectations point to a paradox: though increased expenditures per soldier are believed to reduce the likelihood of a coup *attempt*, the effort will better prepare a military for success if it choose to target a regime.

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Hypothesis 5: Militaries with higher expenditures per soldier will have a higher likelihood of coup success.

Methods

The expectations espoused in the preceding section are tested using yearly data from 143 states for the years 1961–2000. Simultaneously modeling attempt and outcome equations allows the model to consider a relationship between the two stages, making a Heckman model the appropriate estimator for the analysis (Heckman 1979). The traditional Heckman model will first estimate the likelihood of coup attempt and then use a selection hazard as a regressor in the second stage (outcome of the attempt). This provides the outcome stage of the model with a built-in control for having a coup attempted. This is essential when testing the theory since the attempting of a coup and its outcome are each believed to be nonrandom. Further, factors such as expenditures per soldier and military size are expected to influence the attempt and outcome variables in different ways. The two-stage estimator is thus not only attractive; it is also a necessity. The traditional Heckman model uses ordinary least squares to estimate the second equation, an approach that could prove to be inefficient, given the dichotomous nature of the dependent variable. I instead opt to use the "probit–probit" variation detailed by Van de Ven and Van Pragg (1981).

Dependent Variable

Coup attempt follows the definition of Powell and Thyne (2011): "attempts by the military or other elites within the state apparatus to unseat the sitting head of government using unconstitutional means." *Successful coups* are events in which sitting head of government is removed from office for at least one week. Data are available from 1950 to 2010, accounting for 457 coup attempts, of which 227 succeeded. The data are recoded from a count of each failed or successful coup in a country-year to a dichotomous measure that considers whether or not at least one attempt was made in that year.

The first hypothesis considers potential grievances among coup plotters. Historical accounts frequently attest to the tendency of soldiers to rebel following a blow to their corporate interests. Instances of pay cuts or soldiers facing forced resignation are no doubt too mundane to be regularly picked up by international news outlets. Scholars investigating coups will benefit from post hoc reporting of military grievances, but we are left with no reliable data that cover personnel-related grievances that are not accompanied by military intervention in politics. I opt to use the most reliable measure of military interest that is available, their funding. Military expenditure data are taken from Correlates of War capability (CINC) components (Singer, Bremer, and Stuckey 1972). *Change in military expenditure*—as seen in percent year-to-year differences—is expected to negatively influence the likelihood of a coup attempt (Hypothesis 1).

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States that spend more money per soldier are likely to have soldiers with more training and better equipment. Conflict literature, for example, has seen the measure used to operationalize "troop" or "soldier quality" on a number of occasions (Reiter and Stam 1998). While the measure might not serve as an adequate proxy for Huntington's (1957) conceptualization of military professionalism, it should capture the likelihood that a military would be more likely to respect the status quo. The measure thus captures two important factors: contentment and quality. *Expenditures* are operationalized as military expenditures per soldier, once again using data from the Correlates of War. Higher expenditure values are expected to decrease the chances of an attempted coup (Hypothesis 1). However, coups attempted in states with larger military endowments should be more likely to succeed due the higher levels of training and better armaments of these soldiers (Hypothesis 5).

The composition of the armed forces is accounted for in two ways. First, *military personnel* data are readily available from the Correlates of War project. A regime is expected to experience fewer coup attempts as the size of a military or increases (Hypothesis 2). Coups are expected to succeed when attempted by larger militaries (Hypothesis 3). Second, efforts to "coup-proof" regimes have seen leaders divide their militaries into "mutually suspicious" organs, thus precluding the possibility of a widespread conspiracy. There are two notable efforts to quantitatively account for this aspect of coup-proofing. Belkin and Schofer (2003) computed the ratio of military to paramilitary organizations and personnel numbers as determined by the *Military Balance*, published yearly by the International Institute for Strategic Studies (IISS). More recently, Pilster and Böhmelt (2011) have improved upon this precedent by expanding and refining data from the *Military Balance*. First, the data are expanded from Belkin and Schofer's 1966–1986 timeframe to 1970–1999. Second, greater steps are taken to ensure that the organizations for which they are accounting can credibly be expected to influence coup activity. Among regular armed bodies, for example, they rely on ground military forces, as suggested by Luttwak (1968). Nonarmy but ground-capable soldiers such as naval marines are also included. They next refine paramilitaries by excluding those with no ability to combat a coup, such as port authorities or maritime police. They arrive at a coup-proofing operationalization for the number of ground-combat capable organizations. I refer to this variable as *effective organizations*. Though the authors have specifically coded an approach to coup-proofing, this article represents a unique effort in assessing whether or not the strategy is effective.

Finally, I utilize Pilster and Böhmelt's paramilitary data to create a ratio of paramilitary personnel to regular army personnel as a last test of the utility of coup-proofing. This measure is referred to as *paramilitary*. The greater the lever of structural coup-proofing, the less likely coups are to be attempted (Hypothesis 2) and the less likely they are to succeed (Hypothesis 4).

A number of controls are also included. Studies on coup activity commonly attest to the importance of regime legitimacy, and I take three approaches to addressing the phenomenon. First, economics is perhaps the most consistently noted marker of

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legitimacy in the coup literature, whether in regard to state wealth or economic performance. Johnson's (1962, 260) commentary on Latin America, for example, notes that economic decline will "invite coups that will have popular approval," while Galetovic and Sanhueza (2000, 194) similarly argue that a citizenry is more "willing to obey a new ruler when the short-run performance of the economy is bad." In addition to the dynamic factor of short-term economic performance, a state's general level of wealth is an important determinant. In their quantitative analysis of successful coups, Londregan and Poole (1990) have described a dramatic "coup inhibiting" effect of higher income, a finding supported elsewhere by Belkin and Schofer (2003). I thus include two variables related to the economy: *GDP* per capita from Gleditsch (2002), held in real 1996 dollars, and year-to-year *change in GDP* per capita. Percentage changes are reflected in all models. As per capita gross domestic product (GDP) and economic performance increase, coups are expected to be less likely.

Second, I move beyond economic indicators by looking at overt signs of public discontent with the regime. *Instability* refers to the presence of assassinations, purging of governmental officials, guerilla activity, protests, riots, and strikes as coded by Banks (2001). Each component of this aggregate measure is distinct from the dependent variable, illustrates antiregime activity that can signal to coup-plotters a loss of legitimacy for the regime, and has previously been used as a control in the study of coups (Thyne 2010). As the instability index increases, a country is facing more domestic turmoil and is thus more vulnerable to a coup d'état.

Third, I include multiple specifications of regime type. A dummy variable for *military regime* is included (Banks 2001), as military regimes are frequently noted as being vulnerable to coups (Belkin and Shofer 2003; Thyne 2010). Next, I consider regime type in regard to level of democratization. Lindberg and Clark (2008) have claimed that liberal regimes are less likely than authoritarian countries to face military coups due to their ability to "demonstrate their credentials," that is, gain legitimacy. Contrary to this claim, nondemocracies can similarly deter coups, as repressive leaders will have significant resources to combat attempts to end their rule. Svolik's (2009) formal model regarding leadership dynamics, for example, contends that dictators can consolidate executive power to the extent that they can no longer be credibly threatened. I thus incorporate dummy variables for *democratic* and *authoritarian* regimes. The former refers to states that score +5 or higher on the Polity IV index, while the latter refers to states that score −5 or lower. Anocracies (−4 to +4) are excluded from the analysis as a comparison group.[4]

Beyond legitimacy, numerous studies have attested to the additive impact of a previous coup d'état (Londregan and Poole 1990). Countries that have had a recent coup tend to be more vulnerable to another attempt. I address this temporal dependence by including *years since last coup attempt* with associated cubic splines in accordance with Beck, Katz, and Tucker (1998).

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Results

Four specifications of the two-stage estimation of coup onset and outcome are presented in Table 1. Model 1 excludes the measures of structural coup-proofing, as data limitations will substantially reduce the number of observations in models 2 through 4. In order to account for the greatest number of cases, substantive results from non-coup-proofing variables are derived from the first model. A summary of theoretical expectations and empirical results can be seen in Table 2.

The first hypothesis supposed that militaries with more generous financial endowments should have a lower disposition to attempt a coup. This is tested in two respects: change in military expenditures and overall expenditures per soldier. The impact of changes in military funding had no discernable impact on the decision to attempt a coup or its outcome. This is true for each specification. An alternative treatment of the hypothesis, however, does find support. Expenditures per soldier is a negative and significant determinant for coup attempts in each of the first three models. Soldiers that are better funded do appear to be more content with the status quo and are less likely to attempt a coup. In order to better articulate the impact of the findings, substantive interpretations are presented in Figure 2.[5] The figure provides visual representation of changes in predicted probability generated using CLARIFY (Tomz, Wittenberg, and King 2003). In this case, I have chosen a first difference change from the 10th to 90th percentile. Differences for dichotomous variables illustrate a change from 0 to 1. The first column reports the probability of a coup for a country at the 10th percentile of each respective variable, holding other variables constant at their mean or median. A state that is in the bottom 10 percent of military expenditures per soldier, for example, has a .044 probability of a coup occurring. The second column reports the same value for the 90th percentile. In this case, we can see that a state in the top 10 percent of expenditures per soldier has a coup probability of .018. This represent a raw difference of −.026, reported in the third column, or a decline of 59.0 percent, as reported in fourth column. The diamond in the figure represents the raw change in the probability of a coup attempt as a state moves between percentiles for a given variable, while the whiskers illustrate a 95 percent confidence interval. This finding for expenditures per soldier strongly supports the first hypothesis and can be illustrated in the historical record. When Hafez al-Asad took power of Syria, for example, his government doubled the pay of his military and provided "tremendous benefits" to the *mukhabarat*, an approach that led to a dramatic decrease coup activity (Paul 1991, 11, 41).

Moving to the second stage, Hypothesis 5 further claimed that well-funded soldiers should be more likely to succeed than their poorly funded counterparts, given a presumed increase in armaments, training, and professionalism. Substantive findings regarding the success stage of the model are illustrated in Figure 3. The analysis shows that this proposition is not supported, as moving from the 10th to 90th percentile actually reduces success by 65 percent. An alternative explanation could be that

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Table 1. Two-Stage Model of Coup Attempt and Outcome, 1961–2000

	Model 1		Model 2		Model 3		Model 4	
	Attempt	Success	Attempt	Success	Attempt	Success	Attempt	Success
Ch. Mil. Exp.	−0.007 (0.006)	−0.228 (0.143)	−0.004 (0.096)	−0.379 (0.232)	0.071 (0.106)	−0.307 (0.263)	−0.043 (0.169)	−0.762 (0.487)
Exp./Soldier	−0.109** (0.039)	−0.204*** (0.060)	−0.085* (0.053)	−0.095 (0.097)	−0.115* (0.062)	−0.039 (0.121)	−0.116 (0.074)	0.053 (0.177)
Mil. Personnel	−0.100*** (0.022)	−0.191*** (0.047)	−0.095*** (0.029)	−0.158** (0.065)	−0.096** (0.033)	−0.141* (0.074)	−0.100** (0.039)	0.027 (0.097)
Effective Orgs			0.038 (0.077)	−0.090 (0.133)				
Paramilitary					−0.122* (0.062)	−0.337* (0.161)		
Counterbalancing							−0.050 (0.043)	−0.219* (0.115)
Controls								
Ch. GDP/Capita	−0.799 (0.559)	−0.854 (0.924)	−0.826 (0.600)	−0.251 (1.316)	−0.400 (0.646)	0.895 (1.773)	−0.031 (0.772)	0.117 (1.447)
GDP/Capita	−0.073 (0.053)	−0.034 (0.093)	−0.096 (0.066)	−0.092 (0.129)	−0.080 (0.078)	0.061 (0.137)	−0.079 (0.087)	0.040 (0.164)
Instability	0.053*** (0.007)	0.072*** (0.013)	0.053*** (0.008)	0.070*** (0.014)	0.050*** (0.009)	0.059*** (0.016)	0.045*** (0.008)	0.064*** (0.016)
Democracy	−0.234* (0.112)	−0.016 (0.172)	−0.113 (0.140)	0.113 (0.269)	−0.125 (0.167)	−0.155 (0.270)	−0.349 (0.229)	−0.510 (0.466)
Authoritarian	−0.391*** (0.082)	−0.463*** (0.139)	−0.123 (0.102)	−0.196 (0.188)	−0.113 (0.121)	−0.127 (0.190)	−0.370** (0.139)	−0.412* (0.235)
Mil. Regime	0.914*** (0.088)	1.388*** (0.140)	0.761*** (0.114)	1.226*** (0.185)	0.730*** (0.128)	1.308*** (0.209)	0.875*** (0.157)	1.715*** (0.283)
Yrs Since Coup	−0.131*** (0.025)		−0.109*** (0.035)		−0.114** (0.040)		−0.102* (0.048)	
Constant	0.462 (0.392)	0.407 (0.754)	0.257 (0.461)	−0.035 (1.033)	0.532 (0.526)	−1.850* (0.995)	0.560 (0.582)	−3.174* (1.623)
Observations	4,695	264	3,467	160	2,397	124	1,849	98
Athrho	1.339** (0.543)		1.120* (0.605)		1.490* (0.776)		1.263* (0.647)	
Rho	0.87		0.81		0.9		0.85	
Log pseudo likelihood	−909.9		−596.23		−448.99		−329.01	

Note. Robust standard errors are in parentheses. Cubic splines were included in each model but are excluded for presentation.
***$p < .001$. **$p < .01$. *$p < .05$ (one-tailed).

Table 2. Summary of Expectations and Findings, Global Coup Activity 1961–2000

Factor	Operationalization	Predicted attempt	Predicted Outcome	Observed attempt	Observed Outcome
Dependent					
Coup attempt	Powell and Thyne (2011)				
Successful coup	Powell and Thyne (2011)				
Military					
Ch. in Expenditure	% Change in Military Expenditure (COW)	−	NA	ins	ins
Exp. per soldier	Expenditures per Soldier* (COW)	−	+	−	−
Military size	Number of Personnel* (COW)	−	+	−	−
Effective number of orgs.	Pilster and Böhmelt* (2011)	−	−	ins	ins
Paramilitary	Paramilitary forces/Army	−	−	−	−
Counterbalancing	Belkin and Schofer (2003)	−	−	ins	−
Controls					
Income	GDP per Capita* (Gleditsch 2002)	−	NA	ins	ins
Economic performance	% Change in GDP/Capita (Gleditsch)	−	NA	ins	ins
Domestic instability	Banks (2001) Conflict Index	+	NA	+	+
Regime type	Authoritarian (Polity < −4)	−	NA	−	−
	Democracy (Polity > +4)	−	NA	−	ins
Military regime	Banks (2001)	+	NA	+	+
Years since attempt	Powell and Thyne (2011)	−	NA	−	exc.

Note. Signs under "Observed" indicate the explanatory variable was significant at .05 (one-tailed); "NA" denotes the variable's theoretical contribution is not applicable to the second stage of the model; "ins" denotes an insignificant variable. Independent variables that significantly depart from the normal distribution are transformed to their natural logs. These are denoted with an asterisk (*) in the operationalization column.

well-funded soldiers will be less likely to risk their spoils by cooperating with a conspiracy, leading them to resist coup attempts that do come about. This would seem to lend support to Huntington's suggestion to give the military "toys" and increased benefits, as they seem to reduce both the willingness and ability of undertake a coup conspiracy. Future efforts could also attempt to more directly capture the nature of military spending. Henk and Rupiya (2001) , for example, note that many African countries spend an inordinate amount of military funding on personal allowances. While such a trend could adequately reflect the contentment component of

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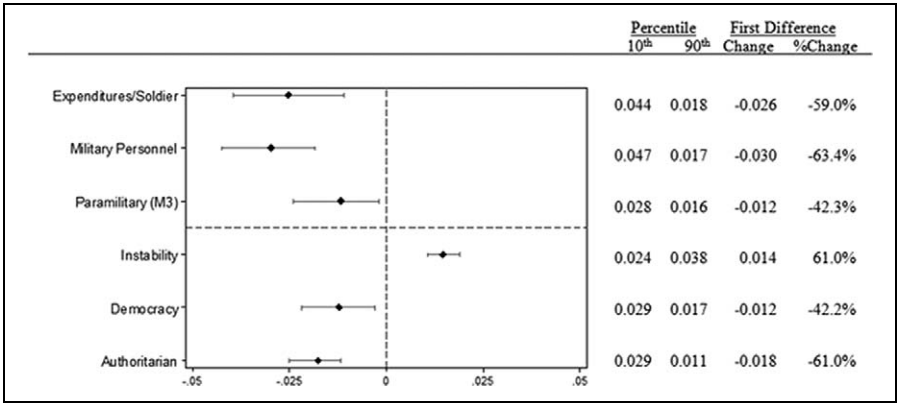


Figure 2. Substantive impact of selected independent variables on coup attempts

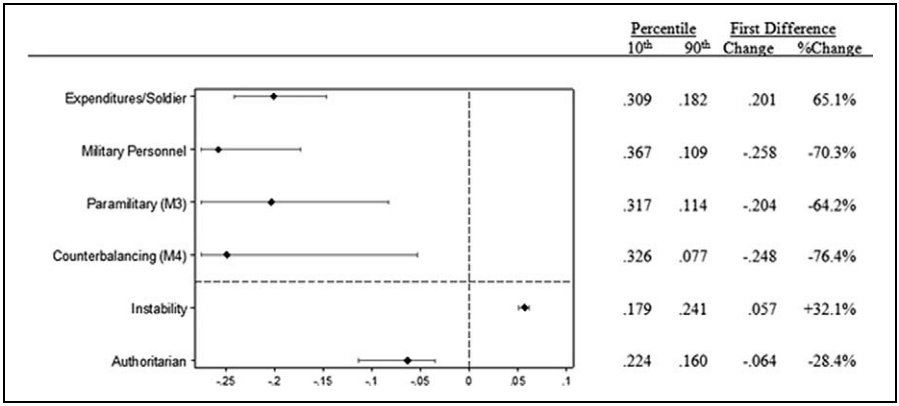


Figure 3. Substantive impact of selected independent variables on coup outcome

Hypothesis 1, such expenditures do little to improve military fighting capabilities, as presumed in Hypothesis 5.

Investigating the second hypothesis yielded a similar trend, as each model suggests that coups attempts will become less likely as military size increases (Hypothesis 2). Coup likelihood falls from 4.7 percent to 1.7 percent (63.4 percent reduction) when moving from the 10th to 90th percentile in military personnel, giving support to the second hypothesis. In contrast to theoretical expectations of the third hypothesis, results of the outcome stage also mirrored findings regarding expenditures. Coups attempted by larger militaries were expected to have overcome the organizational cohesion challenge and higher personnel numbers were expected to improve the effort's chances of success (Hypothesis 3). In fact, militaries in the highest decile of personnel will only

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succeed 11 percent of the time, hinting that coups attempted by large militaries rarely succeed. Further, suggestions that coups can succeed with only a small segment of the armed forces participating would seem to be suspect (Luttwak 1968).

In addition to the cohesion challenge offered by size, this article sought to explicitly test the utility of structural coup-proofing efforts (Hypotheses 2 and 4). These efforts have been quantified in three ways: Pilster and Böhmelt's (2011) calculation of the number of effective ground combat organizations, the number of paramilitary versus military personnel, and Belkin and Schofer's (2003) counterbalancing measure. The number of effective organizations fails to gain statistical significance (model 2). The other two measures, however, suggest that coup-proofing is not done in vain. In regard to an attempt, a state's coup likelihood drops 42.3 percent (.028 to .016) when changing from the 10th to 90th percentile in paramilitary strength (model 3), while the probability of success is reduced by 64 percent (.317 to .114). Counterbalancing, meanwhile, is negative and significant in the second stage, with the first difference shift representing a 76 percent reduction (.326 to .077) in the likelihood of success (model 4). This suggests that the structural obstacles for a coup remain strong even when selectively choosing the opportune moment for its execution. A reduction in the ability of soldiers to organize and coordinate seems to effectively reduce their ability to attempt a coup.

These findings offer support for Hypotheses 2 and 4, though the number of effective combat organizations failed to gain significance. Given the nature of the other two competing operationalizations of structural coup-proofing, it could be the case that while the number of capable organizations does not influence coup activity, the relative size of those organizations versus the regular military is in fact an important determinant. For example, the infamous 1982 Kenyan coup attempt was conducted in the presence of only one paramilitary organization, the General Service Unit (GSU). While the country may have possessed only one armed counterweight to the regular armed forces, Decalo (1998, 237) has noted that the GSU possessed enough power to defeat "the entire army." Given the paramilitary strength and counterbalancing measures both take into account relative strength of the military versus the paramilitary, it appears that this distinction is more meaningful than having more numerous armed bodies.

Control variables also yield substantively interesting findings. Levels of wealth and economic growth perform poorly, with both GDP per capita and change in per capita GDP failing to gain significance in either stage of any of the four models. Given the conventional wisdom that increased wealth and economic performance act as a coup-inhibitor, this is a surprising finding. However, using the instability index developed by Banks (2001), it seems that domestic instability is consistently additive to both the onset and the success of coups. It would be difficult to overstate the importance of blatant displays of dissatisfaction with the regime. The baseline probability of a coup attempt in a state in the 10th percentile of instability is only .024, compared to .038 for those in the 90th

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percentile. This represents a 61 percent jump in a country's vulnerability to a coup attempt, a marked increase.

Instability is also positive and significant at the .001 level for the outcome stage of every model. Coups attempted in states with little overt antiregime activity are expected to succeed less than 18 percent of the time. As instability increases, so does the coup's prospects for success. This finding implies not only that plotters are cognizant of public opinion and will avoid action until high levels of instability are present, but that they will actually *benefit* from instability even after controlling for selection. Recent events in Madagascar could illustrate this trend, as its military refused Antananarivo mayor Andry Rajoelina's pleas for a coup until protests had crippled the country. By the time of the coup there was little willingness—either from other sectors of the military or from the public—to combat the putsch. While economic concerns could contribute to coup activity, it could be the case that they only do so when they first lead to increased overt signals of public disaffection, as suggested by Welch (1970). To test this alternative, I ran additional specifications of the models. First, models 1 through 4 are reassessed by omitting the instability variable. It could be the case that economics is important, but only when it leads to the intervening variable of instability. Economic variables should perform better in these models if the impact of economics is being drowned out by instability. However, results in these additional models (online Appendix Table A) are substantively similar to those reported in Table 1.[6] The sole exception is change in GDP per capita in the attempt stage of model 2. Bivariate assessments also indicate a surprising lack of a relationship between the variables, as instability displays a weak correlation with both GDP per capita (corr $= -.017$, $p = .223$) and change in GDP per capita (corr $= -.003$, $p = .839$).

A second approach was to drop another indicator of regime legitimacy: regime type. Geddes (1999) has noted that high levels of economic development is the most consistent indicator of democratization. Including a measure for regime type, then, could potentially obfuscate the importance of economic variables due to a high correlation with democratization. Once again, omitting democracy and authoritarian variables (Appendix Table B) leads to alternative specifications that are in terms of statistical significance and direction of relationship identical to those we see when omitting instability.

Third, it is intuitive that countries with higher levels of wealth will possess an increased ability to provide their militaries with spoils. The insignificance of economic variables, then, could be due to the inclusion of the per capita military expenditures measure. Replication of the models while omitting this measure reveals findings that are consistent with those of Table 1, with one important exception: level of state wealth. Omitting expenditures per soldier causes GDP per capita to gain significance with the expected negative sign in the first stage of all four models, though change in GDP per capita continues to fall below conventional thresholds for statistical significance. This finding suggests that higher levels of wealth is perhaps best treated not as an indicator of regime legitimacy, rather it provides leaders with

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increased resources with which they can manipulate coup-proofing strategies, especially in terms of military financing.

Other controls behaved as expected. Support is found for the inverted-U relationship between regime type and coups, though the result is not robust. In model 1, democracies are over 40 percent less likely to suffer an attempt than anocracies, while authoritarian regimes are 60 percent less likely to face one. Differences, however, emerged when considering outcome. Coups targeting democracies were no more likely to succeed or fail than those targeting anocracies, while those perpetrated against authoritarian regimes are 28 percent less likely to succeed than those that target weak regimes. These results indicate that coups attempted against the strongest autocrats will be unfruitful. Other models, however, offered mixed support. Democracy failed to attain significance when accounting for structural coup-proofing in each subsequent model, while the findings regarding authoritarian regimes are only echoed in model 4.

Looking at another regime type, military regimes are about five times more likely to suffer a coup attempt than civilian-led governments, *ceteris paribus*. These coups are over four times more likely to succeed, indicating that military regimes are not only more likely to fall victim to attacks from their own forces, they are also easy targets. These findings mesh with previous commentaries. Geddes (1999) has noted that military regimes carry with them the seeds of their own destruction and along with Hadenius and Teorell (2007) illustrate that military governments are among the most short-lived regime types. A final control concerned years since a previous coup attempt. As expected, as the most recent attempt grew more distant, coups became less likely. States that have had a coup in the previous year (the 10th percentile) will face a challenge the following year about 40 percent of the time.[7] In contrast, states that are coup-free for at least thirty-six years (90th percentile) have virtually no chance of having a coup attempted (.009 percent). A more meaningful interpretation for coup-prone regimes would be to consider short-term impacts, so I re-assessed the first difference to consider moving from one to five coup-free years. This more conservative range still points to a 42 percent reduction (39.5 percent drops to 22.7 percent), strongly supporting what Londregan and Poole (1990) referred to as the "coup trap."

The preceding analyses have built upon the study of coups in multiple respects. Most importantly, commentaries frequently attest to the efforts of leaders to coup-proof their regimes. Though accounts of coup-proofing have frequently been made for specific countries (N'Diaye 2000, 2002) or regions (Quinlivan 1999), and though a study of a global sample suggests vulnerable regimes do actively coup-proof (Belkin and Schofer 2003), the utility of these efforts had yet to be empirically demonstrated.

Conclusion

The empirical findings in this article have important implications for both scholars studying coups and for policy makers who wish to either prevent or promote them. For scholars, this offering has made a number of novel contributions. First, an

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empirical assessment of the utility of coup-proofing had yet to be undertaken with a large cross-national sample. This article points to a number of effective survival strategies that target both the disposition and ability of the military to attempt a coup. Huntington (1991), for example, has argued that democratizing states should give their armed forces "toys" in order to appease them, though such practices have been met with skepticism by others (e.g., N'Diaye 2000). The theoretical offerings of this article included a suggestion that militaries will be more capable of undertaking a coup as they are given more organizational resources, but this potential "paradox of professionalization" was not supported. In fact, the results suggest that militaries that are given larger financial endowments lack both the disposition and the ability to attempt a coup. This is not to say that such soldiers are incapable of mounting a coordinated effort, rather their resources appear to provide the military as a whole with enough incentive to resist any potential coup that might arise. N'Diaye (2000) is correct in noting that regimes such as the Ivory Coast have sacrificed long-term civil–military relations in order to appease their militaries in the short run, and a lack of improved security sector governance no doubt contributed to the Ivory Coast's eventual 1999 coup, subsequent coup attempts and, ultimately, to civil war. However, the policy of providing spoils was also an important contributor to the country's prior three coup-free decades. The results of this analysis, then, indicate that coup-proofing can bring increased stability to an otherwise vulnerable country. Such a trend should thus be of interest to infantile democracies that fear their militaries in the short term.

In addition to organizational resources such as expenditures per soldier, this analysis has revealed the importance of efforts to structurally coup-proof. Though others have commented on counterbalancing (Belkin and Schofer 2003), the actual ability of these practices to reduce coup likelihood had gone uninvestigated. I find that increasing the relative strength of a paramilitary versus the regular armed forces can act as a deterrent for coups, while increasing the number of potential coup-proofing organs does not. This latter policy of building up numerous armed counterweights is also problematic in that it has been empirically shown to decrease military effectiveness (Pilster and Böhmelt 2011). Leaders, then, would be better served by increasing the resources of a single paramilitary body.

Second, this article theoretically distinguished between the decision to attempt a coup and the ability to successfully execute it. This incorporation of a selection model is the first such effort in the study of coups. Findings suggest that coup-proofing accomplished a dual benefit of both reducing the military's ability to organize a plot and reducing their ability to execute one. This finding applies to equally to structural coup-proofing efforts such as building up paramilitary strength as well as giving the military spoils. Findings regarding this latter aspect were surprising, as it would suggest that militaries that are given considerable materiel and training do not benefit from their superior equipment. Future efforts could look more closely at this finding by more closely considering the nature of military spending.

Finally, these results have implications for foreign policy. In his aptly titled *Washington Post* editorial "Let Us Now Praise Coups," Collier (2008) pushes

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Western governments and international organizations to foment coups in Zimbabwe and Myanmar. This suggestion has recently been strengthened by Thyne and Powell's (2011) work showing that coups undertaken against staunchly authoritarian regimes can effectively promote democratization, and Thyne (2010) has shown that both military and nonmilitary signals from the United States toward a target can effectively promote a coup. Findings regarding regime type, however, show that efforts to promote a coup against staunchly authoritarian governments are both unlikely to promote an actual coup attempt and that any coup effort that does take place is unlikely to succeed. However, there is one potential window of opportunity: periods of domestic instability. Overt signs of public discontent point to both a loss of legitimacy for the regime and potential long-term consequences such as economic turmoil. These conditions make a coup particularly attractive, and instability is found to be one of the strongest determinants of coup activity. This suggests that even the strongest autocrats could potentially be vulnerable during times of such crises. Contemporary events in the Middle East and North Africa provide a number of cases in which long-sitting autocrats have suddenly faced unprecedented challenges, with Egypt having already seen the military seize executive power. Though by no means easy targets, the results of this analysis and the reality on the ground suggest that once-insulated leaders become increasingly vulnerable during massive protests. Any effort to remove these leaders, however, will still face a considerable obstacle: overcoming decades of coup-proofing efforts.

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Notes

1. A recent exception is Ruby and Gibler (2010). They find US military education programs reduce the likelihood of coups in states that have higher numbers of graduates of these programs.

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2. Many small African militaries, such as Togo and Burkina Faso have had their armies, navies, air forces, and gendarmes unified under a single command structure (IISS). These systems could potentially see a plotter face fewer obstacles during the recruiting phase of a coup, making an attempt more likely.
3. More recently, Pilster and Böhmelt (2011) used large-*N* analyses to find that coup-proofed armies are less effective on the battlefield, supporting earlier suggestions by international conflict scholars (Biddle and Zirkle 1996; Reiter and Stam 1998; Biddle and Long 2004).
4. I also run the analysis using *polity-squared* to test this regime hypothesis. The measure is constructed by squaring (democracy–autocracy) from Polity IV. Polity squared is expected to have a negative sign. Using this measure avoids a loss of data, but I opt to use dummy variables in the analysis in an effort consider potential differences between the coup-proneness of democracies and authoritarian regimes. Substantive interpretations are unchanged when using the polity-squared measure.
5. The figure is created using the plotting utility offered by Boehmke (2006).
6. Results not reported but are available in the online appendix at www.appendix.weebly.com.
7. Years since last coup is omitted from Figures 2 and 3 for presentation purposes. Its far stronger substantive impact dramatically skews the figure.

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