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Leader survival and purges after a failed coup d'état

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Abstract

What factors explain variation in the tenure of political leaders who survive a coup d'état? Our main hypothesis is that leaders who survive a coup attempt take the opportunity to purge known and potential rivals while also deterring future coup conspirators. The severity of the purge is also hypothesized to be positively associated with longer post-coup tenures, as potential rivals are eliminated or deterred from future coup attempts. After introducing the topic of the failed coup, and presenting the dataset we developed to measure the level of punishment associated with a failed coup attempt, we offer an analysis of the effect of purges on the survival time of leaders who survive a coup attempt. We find that, conditional on regime type, purging has an effect on lengthening leader tenure, with more severe purges being associated with longer authoritarian tenures. Democratic leaders gain no advantage. Changes in military expenditures do not increase subsequent tenure. We conclude with a discussion of the results as well as what a broader dataset might reveal.

Keywords

attempted coups, authoritarian, failed coup, leader survival, purges

In 1982, Hafez al-Assad, the then leader of Syria, successfully put down an attempted coup d'état and subsequently arrested a large number of the plotters and executed at least one; he survived 18 years further in power and died in office in 2000. On the other hand, in 1979 General Fred Akuffo, the leader of the Supreme Military Council of Ghana, survived in office only 20 days after thwarting an attempted coup. Although the leader of the failed coup, Lt Jerry Rawlings, was arrested, instead of being executed he was put on trial, during which he gave a speech that aroused enough popular and military support that a successful coup removed Akuffo. Although two cases do not constitute grounds for a conclusion, they do at least suggest that purges and punishment following a failed coup can have the effect of lengthening a leader's survival in office. This may seem a commonplace observation, but as we will show below, there is considerable variation in leader survival, even after significant punishment is applied to coup plotters.

This article aspires to contribute to the more general body of literature on leader survival that has followed the publication of Bienen & van de Walle's *Of Time and Power* (1991). Although the scope of the research in this area is broad, two particular strands stand out. One is concerned with events and policies that put leaders at risk of losing office. An early study (Bueno de Mesquita & Siverson, 1995) examined the effect of a nation's war outcome and the battle-deaths suffered on a leader's probability of losing office, a line of research that was substantially extended and expanded by Chiozza & Goemans (2004). More recently, Flores & Smith (2013) reported results suggesting that leaders in small coalition states faced a greater probability of losing office after natural disasters than did their counterparts in large coalition states.

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A second topic of interest – and the one motivating our inquiry – has explored the policies leaders pursue to maintain themselves in office. A notable exemplar of this can be found in Bueno de Mesquita et al. (2003) and their consideration of the interaction of winning coalition size and the manner in which leaders strategically allocate the mix of public and private goods in order to enhance their time in office.

The degree to which leaders are at risk of being removed from office is, of course, variable. Because of known institutional rules and constraints in constitutional democratic states, leaders usually have reasonable estimates of when competition for office will occur. To be sure, the accuracy of their estimate of this timing differs across institutional settings. Upon first taking office, US presidents, for example, know the exact date of the next election. Prime ministers in many parliamentary states not only know when an election must be called, but they also often have the opportunity to choose that date by calling a snap election that can increase the likelihood of a favorable outcome (Smith, 2003). Additionally, democratic political systems are highly transparent, usually furnishing leaders with abundant information on the state of the opposition and the nature of their own standing with the electorate. Hence, while democratic leaders necessarily face constraints they have the advantage of known rules and abundant information on the security of their tenure.

On the other hand, leaders of authoritarian states usually govern without the institutional constraints of a meaningful constitution. As put by Frantz (2016: 2): 'Though formal rules may exist, informal processes often guide authoritarian politics and major decisions are typically made behind closed doors. In other words, dictatorships are particularly challenging to study precisely because they are dictatorships'. While the absence of these rules may endow such leaders with advantages, it also means that competition for the position they hold can be an almost continuous process that can produce sudden, unexpected leadership challenges from those previously thought to be loyal. Such attempts to change national leadership are abetted by informational constraints. In contrast to the transparency of democratic politics, non-democratic systems are usually not only less transparent but even deliberately opaque (Wintrobe, 1998). Such informational constraints may afford leaders the opportunity to further their control, but it also means the ability to gather information is generally limited to organs of state security, which may opt to use the information for their own purposes.

One group of leaders that are at particular risk are those who have survived a failed coup d'état. It is reasonable to infer that coup plotters anticipate the costs and benefits of a coup compared to the status quo under the incumbent. Coup plotters are typically thought to stage a coup after assessing their *satisfaction* with the status quo and the *opportunity* to succeed (Belkin & Schofer, 2003; Finer, 1988; Powell, 2012). A coup attempt is visible evidence that people close to the leader have made an estimate that the leader is weak enough to be removed by the use of force and/or they are dissatisfied enough with the status quo that an attempt is worthwhile. Since, as we will see, the consequences of failing to succeed can be severe, plotters must have a high degree of confidence in their chances for success. Indeed, data drawn from Powell & Thyne (2011) show almost half of all coup attempts between 1950 and 2010 succeeded (49.6%).

When an attempt fails, it is ostensible evidence that the leader is stronger than the plotters expected, but it also indicates to leaders that they are at risk and that it might be wise to adopt policies and tactics designed to extend their tenure. Chief among these policies is the opportunity to eliminate or reduce opposition by removing from the winning coalition those responsible for the attempt, an event we term a purge.[1] In what follows we discuss the topic of coups and leader survival after a failed coup, and explain the data we will use to test the extent that purges from the winning coalition are effective in lengthening a leader's tenure in office after a failed coup, the range of which stretches from a few days to 42 years. After a presentation of our results we will discuss their implications and limitations.

The coup d'état and the failed coup

The coup d'état has long been of interest to students of politics (e.g. Finer, 1988), but until recently its study has been hampered by a number of limitations in the data used in the research. The first of these was the irregular nature of the data. There were, for example, disagreements across studies over how long the conspirators had to stay in power for a successful coup to have taken place (Powell & Thyne, 2011). This issue necessarily implied another. What constituted a failed coup? Was it simply anything that was not a successful coup? No, because the

[1] It might be argued that what we call a purge is simply the removal of people from office that follows a failed coup. However, in collecting data on the removals, arrests, imprisonments, and executions, these acts were overwhelmingly referred to as purges.

question then shifts to identifying failed coups from rumors of coups or shadowy reports of failed coups that were not widely publicized for fear of showing cracks in the regime.

The publication of a comprehensive dataset on successful and failed coups over the period 1950–2010 by Powell & Thyne (2011) was a major step forward in resolving these issues and advancing research on the role of coups in the political life of states. In comparing 14 earlier scholarly sources on coups, Powell & Thyne use a consistent definition of coups and failed coups, thus making us more than reasonably confident that the post-coup purging we record is triggered by a verified event rather than a rumor. They also notably exclude coup plots and rumors, as these events are difficult to observe consistently by their very nature and governments often have an incentive to fabricate these events in order to justify purges or repression.

In a successful coup the leader is gone, but in the case of failed coups the leader survives and their tenure continues. In this context, it is useful to consider the following admittedly rough but nonetheless illuminating summary data on the survival of political leaders in the period between 1950 and 2003, the period we study.[2] The mean tenure of those leaders (n = 202) who were removed by a coup was 4.89 years. The mean time in office for all leaders (n = 1,341) who did not experience either a successful or failed coup was 4.45 years. For those who survived at least one coup (n = 152) the mean time in office is 8.97 years. Since the mean time in a leader's tenure until the occurrence of a failed coup is 3.59 years, it is apparent that those who survive the attempt have significantly longer tenures than other leaders. To be sure, these summary statistics ignore variation in survival times across political system types, but they are at a minimum suggestive that a failed coup allows leaders to eliminate or mitigate revealed opposition and lengthen their time in office.

While the military and security forces are the primary groups behind most coup attempts, it is important to note that coups are rarely carried out by a majority of the armed forces, leading to a fundamental dilemma in successfully carrying out a coup (Kebschull, 1994). Dissatisfied officers who decide to join a coup conspiracy often do so knowing that most of the military will remain in the barracks (Geddes, 1999). In these instances, the primary concern for coup plotters is to avoid or neutralize as many opposing military or state forces as possible while carrying out the coup. A coup attempt can fail if a majority of the military actively opposes the conspirators. Indeed, suspicious rulers often arrange for competing factions of the armed forces to monitor each other's good behavior (Quinlivan, 1999; Belkin & Schofer, 2005; Pilster & Bohmelt, 2011).

However, coups attempts can often fail for far less dramatic reasons. Indeed, failed coups do not necessarily reflect the relative strengths of either the incumbent or the conspirators. While successful coups leave little to the imagination, failed coups are murky affairs, intentionally shrouded in secrecy by both the surviving incumbent and the former conspirators (Kebschull, 1994). Key allies can defect at the last moment, incumbent rulers may become aware of the imminent attempt, or exogenous factors such as neighboring states or even the weather can interfere with otherwise well laid plans. Much as the data on attempted coup d'états can be irregular, the reasons behind failed coups are also difficult to systematically identify. Governments may wish to conceal weakness, while coup plotters are often unavailable to discuss the reasons that their coup attempt failed. Reports on failed coups also tend to be poorly covered by the media, with the fate of the coup plotters unclear or even undetermined years later. It is not uncommon for coup leaders to be conveniently shot during the failed attempt or to commit suicide shortly after the attempt fails.

Coups can fail because disaffected members of the military have fundamentally underestimated the support for the regime, both among the military and society. In both Venezuela in 1962 and Sierra Leone in 1971, the coup conspirators failed to adequately judge the support of the military and other elements (*New York Times*, 1962; *Washington Post*, 1971). In the first case, Venezuelan President Romulo Betancourt survived numerous coup and assassination attempts by far left groups. Betancourt's control over the majority of the military and support from most of the country's peasants and workers meant that he was able to put down a number of coup attempts by dissenting factions of the military. In the case of Sierra Leone, the coup attempt was led by a senior army officer who misjudged his support among his own subordinates. Shortly after seizing power, Brigadier John Bangurah was arrested by the army's third in command, who went on the radio to assure the nation that power was being yielded back to the ousted president. Due to the lack of support from the public and the military both coup attempts were quickly crushed by

[2] The time span we consider was dictated by the fact that the Archigos data on leaders ended in 2003 at the time the purge data were collected.

loyal factions of the armed forces supported by public sentiment.

In other instances, poorly planned coup attempts led to nearly instant failure. In March 1990, the Papua New Guinea national police chief, Paul Tohian, drank too much at a barbecue and decided to stage a coup d'état. After announcing his intentions over the police radio, Tohian was arrested and charged with treason (Moore & Kooyman, 1988; Henderson & Bellamy, 2002).[3] Even well supported and well thought out coup attempts can fail due to simple tactical mistakes. Panama's President Manuel Noriega was seized by military officers in October 1989. However, in an effort to get Noriega to surrender peacefully, the plotters gave him access to a telephone, which he used to summon aid from loyal forces, leading quickly to the collapse of the coup attempt (Sciolino, 1989; Treaster, 1989; Uhlig, 1989).

A successful coup can suggest that the coup conspirators accurately gauged the strength of the regime and managed to gain at least the tacit support of the majority of the military. However, failed coups rarely paint so clear a picture, with coup conspirators failing due to incompetence, poor planning, foreign intervention, a lack of commitment, or simple bad luck. Consequently, failed coups rarely reveal much about the relative strengths of either coup plotters or surviving leaders. This is important because the relative strengths of these groups are components in calculating the severity of the punishment administered to coup plotters. Miscalculating the incumbent leader's strength relative to surviving rivals can lead to harsh punishments applied to coup plotters, giving rise to further and perhaps more successful coup attempts.

The price of disloyalty

Unless they escape abroad, coup plotters who fail to successfully overthrow their country's government are usually at the mercy of the state's leader. However, the fate of the coup conspirators can vary quite substantially. Between 1950 and 2010, slightly over 60% of all coup conspirators were either executed or imprisoned; the remaining 40% suffered lighter punishment or escaped retribution altogether. The severity of punishment associated with a failed coup can, in part, be inferred from the strategic calculus associated with the coup attempt, as well as the logic associated with elite purges more generally.

It might seem obvious that leaders will seek to impose the most severe sanctions possible on coup conspirators in order to deter future coup plotters. However, some aspects of the failed coup may influence rulers' decisions to impose harsh punishments on conspirators. Although the number of people killed during a coup attempt varies substantially, the intensity of violence associated with a coup might, in part, explain the level of retribution exacted by the ruler after the fact.

Violent coups may not be the only explanation behind the harsh punishment of coup conspirators. While coup plotters may be more than willing to shed blood in order to maximize their chances of successfully overthrowing the government, there are also a number of examples where bloodless coups gave rise to violent reprisals. After successfully capturing Panama's General Noriega in 1989, Moises Giroldi Vega, one of the chief coup plotters, avoided shedding blood in hopes that Noriega would relinquish power peacefully (Pitt, 1989). Indeed, according to the late Major Vega's wife, Noriega and the major were close friends, in part explaining the lack of bloodshed. However, Noriega's execution of a large number of conspirators following the coup's collapse suggests other factors were involved in determining the severity of reprisals, rather than simply the violence of the attempt itself. There may be a systematic relationship between the violence of the coup attempt and the fate of the coup plotter, but there are clearly other elements at play. Leaders often have an incentive to obfuscate or underplay the severity of the coup attempt in order to mask any underlying weakness of the regime. Indeed, when referring to the scale of the 1989 coup attempt, Noriega called it 'tiny' (Uhlig, 1989). Aside from the violence associated with the coup attempt itself, surviving incumbents have to worry about future attempts made by any coup conspirators who may have evaded notice or capture.

When deciding the fate of conspirators, leaders are often concerned with how punishment will influence their support among elites who had remained neutral. Because most coups are carried out by a minority faction of the military or security forces, the imposition of severe sanctions may not necessarily be desirable. The reaction of Manuel Noriega to the coup attempt in Panama provides a compelling example of how in some cases severe punishment of coup plotters can be problematic. Following the collapse of the 1989 coup attempt, Noriega had the coup conspirators captured, tortured, and in many cases executed. The severity of Noriega's reprisals may have deterred enemies within his regime, but it

[3] After a trial Tohian was found not guilty; he was subsequently elected to the legislature and rose to be minister of defense.

hardened the resolve of the United States, leading to his eventual arrest by US forces in 1990.

Indeed, while a minority of the armed forces is often behind coup attempts, leaders who choose to impose harsh punishments on coup conspirators run the risk of angering the rest of the military and triggering a more serious coup attempt (Sudduth, 2017a). The failed coup attempt in Venezuela in early January 1958 was led primarily by the air force and segments of the army. While the collapse of the coup attempt led to numerous arrests, President Jimenez quickly tempered his approach when the rest of the military objected to his response to the coup (Szulc, 1958a,b,c).

The calculus of punishment

The examples above suggest both a cost and a benefit to the severity of reprisals following a failed coup d'état. Leaders can be eager to execute coup conspirators to deter future attempts, or to assuage public outrage over deaths resulting from the coup. However, the costs associated with violent reprisals can be high. Leaders run the risk of hardening support against the regime by purging members of the military or security forces. This can be particularly problematic when the support of the majority of the military is either split or conditional. In many countries rulers co-opt the military for domestic repression (Svolik, 2013). However, as Svolik notes, 'contracting on violence' can be inherently risky. When dictators are forced to rely more on the military, they run the risk of having to cede greater autonomy, resources, and influence over policy to these elites. The military may gain special privileges such as access to state resources or military-run enterprises as independent sources of revenue (Barber & Talbott, 2003). Therefore, in countries where the military has an implicit contract with the ruler, an attempted coup carried out by a faction of the military may reflect growing unhappiness with the status quo. In these cases we might expect that rulers will avoid a strategy of simple deterrence in favor of a more moderate reaction. A surviving ruler may wish to purge potential rivals, but may not be able to do so without running the risk of alienating neutral factions of the military or security forces, and triggering another coup. Rulers may always have an incentive to punish coup conspirators, but the opportunity to do so may not be present if strategic considerations counsel more moderate sanctions.

In contrast, a failed coup can also provide rulers with an opportunity to remove rivals who have identified themselves and to root out future competitors at the same time. Following the 1982 coup attempt in Kenya, 650 individuals were tried for the attempted mutiny, but more importantly, the entire air force was disbanded and reconstituted after a thorough purge (Kebschull, 1994: 577). In this case, the severity of the reprisal was a means to deter future coup plotters, but also an attempt to preemptively remove future rivals and opponents from the branches of the military most at risk of defection. Sudduth (2017b) lays out the logic of a similar argument when examining purges following entry to office through a coup d'état. Building on the assumption that autocrats are always attempting to consolidate power by eliminating rival elites from key positions of power, Sudduth argues that a successful coup provides new rulers with a means of doing so. She makes the point that purging rival elites will likely be tolerated when their ability to threaten a coup is perceived as improving in the future. Potential coup plotters are willing to suffer purges in hopes of being around when their prospects for a successful coup are higher. Over time, the political support revealed by a successful coup will become uncertain once again, leading rival elites to be more willing to launch a coup should the ruler attempt to consolidate power.

With respect to failed coup attempts, we believe there is evidence that the regime's underlying strength or weakness is less clearly revealed by the attempt than a successful coup d'état. Whether the regime's strength or weakness is highlighted by the attempt, rulers will have an incentive to conceal weakness and demonstrate strength through the severity of their reprisals. To the extent that this demonstration is convincing, purges following a failed coup should be associated with longer tenures in office. That is, the likelihood of being removed from office will be a combination of the regime's underlying strength and how effectively future coup plotters and other rivals are deterred from attempting to remove the leader. The severity of the reprisal following a failed coup should also deter potential rivals from staging future coups. Our expectations are twofold. First, that purges following a failed coup will lengthen the leader's tenure in office. And second, the severity of purges will be positively associated with the length of the leader's tenure in office.

Data and research design

The removal of political opponents from their positions via a purge has a long tradition. Plutarch recounts the trumped up trial leading to the ten-year exile of Kimon after his failed alliance with Sparta (Davies, 1993: 59). Even Machiavelli, the foremost expositor of political

survival, was purged from his position in the Florentine administration in 1512 and subjected to torture (Ridolfi, 1963). While the purges of specific individuals and groups have been the subject of a considerable body of literature, there has been little empirical research on purges as a central element in the politics of the state.[4] Yet, it is evident that in many political systems from ancient times to the present, the purge has been a fundamental tool wielded by leaders and regimes to sustain themselves in power.

Our conception of a purge is the permanent removal of members of the state leader's winning coalition. Following Bueno de Mesquita et al. (2003), the winning coalition is conceived of as the group the leader of a state relies upon to remain in power. Among others, it can mean the military, members of a cabinet or a political party, or some faction thereof. At a minimum, a purge leads to an individual's loss of office, but more drastic actions can lead to exile, imprisonment, or death. Further, a purge may be directed at one individual, dozens, or in exceptional cases, millions, as occurred under the Stalinist regime in the Soviet Union (Conquest, 1991). The critical question, in our view, is whether an individual or group in the winning coalition was expelled. To be sure, some people who are purged at one time may be rehabilitated at a later time, as in the case of Deng Xiaoping, who was twice purged but ultimately became the leader of China. Actions against members of opposition parties or other organizations that are opposed to the ruling coalition are excluded from this analysis, as we see these acts as oppression rather than purging. We conceive of oppression as sending a different signal than that sent by a purge of the winning coalition.[5] This belief hinges on the assumption that during a coup leaders are overthrown by members of their own winning coalition rather than uprisings led chiefly by disgruntled opposition groups, which are usually considered revolts or revolutions (Svolik, 2009). Throughout the 20th century, Thailand has experienced long periods of authoritarian rule, marked by elite factionalism and public unrest. In the years following the creation of a constitutional monarchy, there have been 19 coup attempts, 13 of which were successful, all of which were carried out directly or abetted by the military (Neher, 1992).

Other studies have reported data on purges. Most notably, Banks & Wilson's (2015) Cross-National Time-Series Data Archive records instances of purges over the period 1919 to 2008. However, the data are not more finely grained than a 0,1 indicator for a nation in a given year, and are not attached to an individual leader. More recently, Sudduth (2017b) has compiled a dataset recording purges in military regimes between 1969 and 2003. Sudduth's dataset relies on the Keesing Record of World Events and Lexis-Nexis news searches to code information on 438 political leaders in 111 military regimes and records the elimination by the authoritarian leader of members of the military elite. However, since her data do not record a measure of intensity – that is, whether the purged generals were punished beyond the loss of office – it does not address the severity of the purge, a subject of interest here. The data we describe below record the purging of any member of the winning coalition and the fate that befell them following the purge.

To collect data on purges we drew upon the records of the *New York Times*, the *Times* (London), Lexis/Nexis, Pro-quest, and several regionally specific sources including the Hispanic-American Report (1948–64) and Africa Confidential. We recorded all cases in which a leader eliminated members of their winning coalition following a failed coup d'état. We focus on the immediate punishment meted out to the coup plotters. This focus might miss the final fate of some of those purged. For example, after David Lansana's coup on 21 March 1967 in Sierra Leone, he was immediately imprisoned but only executed eight years later in 1975. We look at the immediate post-coup fate of coup plotters for two reasons. First, we make the plausible assumption that the immediate fate is what other members of the winning coalition will use as their best guess at their own punishment should they stage a failed coup. Second, there is the practical consideration of the difficulty of locating events that may take place years or even decades later. The drawback to the assumption that future coup plotters are receptive to the immediate fate of failed coup plotters is that it ignores regime or leader specific knowledge that coup plotters may possess. It may, for example, be well understood that under one leader or regime the loss of a job will likely lead to an arrest, or that a prison sentence is equivalent to a death sentence.

We classify the leader's response to these events into four categories, where each represents a possible post-coup fate of the coup plotter(s). The categories are ordered from least to most severe outcomes for the coup plotters. The categories and their values are as follows: (0) not known, arrested followed by release, dismissed from job, (1) exile or escape, (2) prison, and (3)

[4] However, see the recent papers by Braithwaite & Sudduth (2016) and Sudduth (2017b) for an analysis of the effect of loss of office by military leaders and the recurrence of civil conflict.

[5] It is worth noting, however, that a recent paper finds coups are often followed by violations of human rights (Derpanopoulos et al., 2016).

execution. The first category includes cases where we were unable to locate any purging proximate to the attempted coup. That is, the coup plotter was arrested and quickly released, or was simply fired with no particularly dire consequences reported. Similarly, office holders who are suspected to have supported a coup attempt, but are not directly implicated, are often removed from office but not arrested. In the second group, we include cases where, following the coup failure, the leaders of the attempt are able to flee or are sent out of the country without retribution. If a coup plotter either escapes or is exiled, it is coded as being less severe than imprisonment but worse than simply being let go. In the third category are individuals who are arrested and to the best of our knowledge were still imprisoned for at least the month after the failed coup. We recognize that this can lead to two types of mistakes. The first is that we overestimate the severity of the punishment. Members of the military may be detained for a few months and then released, possibly in order to avoid pitting the incumbent against elements of the military that may have remained neutral. Second, as noted above, we may also fail to observe the final fate of those put in prison and later executed. A tabulation of the purge data is presented in Table I.

Table I. Frequency of purge levels

Purge	*N*	*Frequency*	*Cumulative percentage*
0	20	13.33	13.33
1	29	19.33	32.67
2	67	44.67	77.33
3	34	22.67	100.00
Total	150	100.00	

Before we explore the effect of changes in military expenditures and purging on leader survival, we will briefly examine variation in survival times across three types of leaders: (1) those that survive a coup attempt and continue in office, (2) those that are removed in a successful coup, and (3) those that do not experience a coup attempt. We do this by comparing their total tenures in a survival model in which the dependent variable is the total time in office of each leader. Subsequently we will use the time in office after the failed coup as the dependent variable. Leaders who are in office in 2004 are treated as censored, as are those who die of natural causes while in office. We use a Weibull model because of its generality.[6] As noted by Svolik (2009), because some authoritarian regimes have a tendency to consolidate power over time, decreasing their hazard, while democratic leaders often face term limits, increasing their hazard, the flexibility of the Weibull model's baseline hazard when dealing with regime type is particularly attractive (Box-Steffensmeier & Jones, 2004).

We employ several control variables commonly associated with leader survival. Before describing these, there is one control variable that needs greater consideration: changes in military budgets following a failed coup. If the leaders of military organizations in authoritarian regimes are looked upon as entrepreneurial and rent seeking, then it would make sense for them to seek budgetary increases following successful coups, when they are now in charge, as well as after failed coups, as a reward for not defecting to the plotters. In the case of coups that fail, this might depend upon just who led the coup attempt. If the coup attempt was led by the military leadership, as opposed to, say, a lower ranking officer or even an NCO, and the military leadership is removed from office, then new military leaders will have to be appointed. The appointment to an important leadership position might be reward enough to secure the new military leadership's loyalty. Removing the plotters from office is certainly an effective way for a leader to strengthen their position; a consideration of this leads us to the topic of purges.

The evidence on coups and military budgets is mixed, however. For example, consider the results from two exemplary studies of the military and their budgets after coups. In his analysis of the changing political landscape of Brazil, Ames (2001) elucidates the manner in which military groups would overthrow the civilian government, take over themselves, increase the military budget, and then turn power back over to a civilian regime. Then the pattern was repeated. However, whether this pattern is more general is questionable. Leon's (2014) broad analysis of changes in military budgets after both successful and failed coups indicates that in the former there are substantial net increases, but following failed coups it is less clear that budgets increase.

An alternative to severe purging may be for a leader to increase the budget of the military in order to secure their future loyalty. To assess this we include in our model two-year differences in the military budget from the year the failed coup took place. These data are derived from the military expenditure data in the Composite Index of National Capabilities (CINC) scores reported by the Correlates of War project (Singer, Bremer & Stuckey, 1972).

[6] An excellent exposition of duration/survival models is found in Box-Steffensmeier & Jones (2004: 25) and includes a discussion of the Weibull model.

Table II. Weibull model of total leadership tenure

Explanatory variable	*Hazard ratio*
Successful coup	1.568**
	(0.133)
Failed coup	0.621**
	(0.053)
Age	1.016**
	(0.004)
Democracy	1.292*
	(0.137)
Switzerland	2.688**
	(0.220)
Constant	0.001**
	(0.000)
Shape parameter	–0.253**
	(0.044)
Log likelihood	–2,660.315
No. of observations	1,525

†$p < 0.10$, *$p < 0.05$, **$p < .01$. Robust clustered standard errors in parentheses.

As an additional control variable we use the leader's age at entry, since there may be differences across states in the ages at which people gain office and, of course, younger leaders are likely to live longer than the old. We also control for whether the state is democratic or not since democratic leaders tend to have systematically shorter terms of office (Bienen & van de Walle, 1991; Bueno de Mesquita et al., 2003).[7] In the first analysis using all states, a dummy variable is also constructed for Switzerland, which gets a new leader every 1 January, and thereby might distort the results.[8] Individual dummy variables (0/1) are constructed for a successful coup and a failed attempt. We cluster the standard errors by country.

Results

The initial results for all states are presented in Table II. Not surprisingly, the results echo the mean survival times reported above: those who experience a successful coup are gone from office substantially earlier than other leaders, while those who survive a coup attempt get to stay in office much longer. Leaders who experience a successful coup are 1.57 times more likely to leave office than those who are not removed by a coup. Or put another way, leaders who are removed by successful coups tend to have shorter total tenures than leaders who experienced failed coups during their time in office. Leaders who survive a coup attempt are about 40% less likely to leave office than leaders who have not survived a failed coup. The gap in the survival time of these two sets of leaders is large by any standard. The mean predicted tenure of a leader who has not experienced a failed coup is over five years shorter than a leader who has experienced a failed coup, assuming they are not removed from office through a successful coup in the future. However, even among leaders who are subsequently removed from office through a successful coup, experiencing a failed coup increases their mean time in office by approximately 3.10 years.[9] But this result was, after all, not unexpected because of the summaries of survival times described above, although those did not, of course, reflect the influence of other variables or provide an estimate of the hazard. *Democracy* increases the hazard of leaving office, because democratic regimes tend to come with term limits, essentially guaranteeing that all democratic leaders leave through a successful, and nominally voluntary, 'coup'. The shape parameter is less than 1, which indicates that the hazard rate is monotonically decreasing with time, perhaps reflecting the fact that approximately 57% of this large sample is non-democratic. These results, however, set the stage for the more important question, how can we account for the fact that the leaders who survive a coup have such a 'healthy' hazard?

To address this, we reduce our dataset to only include those leaders who survived an initial coup attempt. We treat the time that they survive in office *after* the first failed coup as the dependent variable. Because we are examining the influence of purges following a failed coup on post-coup tenure and our theory points towards purging affecting future coups, we right censor all 'regular' exits from office.[10] Our subsequent models will further refine our analysis to include only successful coups and

[7] Using the polity measure of Jaggers & Marshall (2002) we coded as democracy all states with a combined recorded autocracy score of 6 or greater. All other states with a reported score on the scale were recorded as authoritarian.

[8] Studies of leader survival might benefit from recognizing the one-year term limit of Switzerland, lest it unduly influence the results obtained for democratic leaders. A study of international disputes between 1960 and 2010 would include 50 Swiss leaders and only two disputes, a pattern that is perhaps unusual.

[9] These mean survival times are calculated assuming that *Democracy* = 0.

[10] This leaves uncensored cases where leaders leave office in an 'irregular' manner such as direct removal by other state, coup, assassination, rebels, or popular protest (Goemans, Gleditsch & Chiozza, 2009: 7).

Table III. Summary statistics

Variables	*Obs.*	*Mean*	*Std. dev.*	*Min.*	*Max.*
Pre-coup tenure	150	1,318.38	1,810.081	24	10,772
Purge	150	1.767	0.951	0	3
Age	150	47.5	10.005	17	77
Democracy	150	0.147	0.355	0	1
ΔMil. spending1	144	0.168	0.526	–1	2.756
ΔMil. spending2	144	0.336	0.686	–0.961	3.675

Pre-coup tenure is measured in days, age of the leader is in years, and military spending is the percentage change in spending from the year of the coup compared to the relevant following year.

subsequent failed coup attempts as failure events, but for now we employ a broader approach, as purges may also influence other types of removal from office such as encouraging foreign interference or mass unrest.

In addition to purge activity and changes in military spending, we also take into consideration the length of a leader's tenure prior to the failed coup, their age upon entry to office, and whether the government is democratic. Summary measures of these variables are shown in Table III.

The results of this estimate are shown in Model 1 of Table IV. Those leaders who were older when they entered office had a higher hazard, with a 1% increase in the likelihood of failure for a unit increase in *Age*, but the result is not statistically significant. Increases in military spending, in the second year following a coup attempt, are associated with an increase in the hazard of failure, although the result is not statistically significant at conventional levels. This suggests that rewarding the military following a failed coup may not help leaders to remain in office, perhaps because better funded militaries are more likely to succeed in future coup attempts. Purging, however, does have an effect on the survival of leaders, with *Purge* yielding a 30% decrease in the likelihood of failure. *Democracy* is associated with a 78% decrease in the hazard of failure, which is perhaps not surprising considering that regular exits are censored and only exits due to coups, assassination, popular revolts, and other 'irregular' means are considered a failure event. Such irregular events are apparently less likely even in democratic states that have experienced a single failed coup, which raises an interesting question.

Do democratic leaders have a reduced hazard because they are lenient to those who failed in their coup attempt or do they punish coup plotters just as harshly as authoritarian rulers? Bell (2016) finds that institutional constraints on executive power inhibit a leader's ability to repress political rivals. Although there are intermittent exceptions based on exigent circumstances, democratic regimes are usually constrained by the rule of law and due process. Given such circumstances, it may be that purging operates differently in democracies; death penalties, in particular, may be a reach too far for some legal systems. One way to examine if democratic leaders have a lower hazard rate because of the influence of less severe punishment in the wake of a failed coup is to examine the interaction of democratic institutions and purging.

Table IV. Weibull models of post-coup leadership tenure, all cases and authoritarian

	Model		
Explanatory variable	*(1) All states Hazard ratios*	*(2) All states Hazard ratios*	*(3) Authoritarian Hazard ratios*
Purge	0.716*	0.687**	0.693*
	(0.102)	(0.098)	(0.099)
Democracy	0.224*	0.048**	
	(0.137)	(0.045)	
Democracy × Purge		2.941*	
		(0.290)	
Military spending 1 year	0.656	0.616	0.686
	(0.248)	(0.254)	(0.352)
Military spending 2 year	1.496†	1.568†	1.424
	(0.129)	(0.378)	(0.483)
Age	1.010	1.010	1.010
	(0.014)	(0.014)	(0.014)
Pre-coup tenure	1.000	1.000	1.000
	(0.000)	(0.000)	(0.000)
Constant	0.009**	0.009**	0.009**
	(0.008)	(0.008)	(0.009)
Shape parameter	–0.524**	–0.510**	–0.519**
	(0.104)	(0.106)	(0.110)
Log likelihood	–190.24	–189.25	–177.78
No. of observations	144	144	122

†$p < 0.10$, *$p < 0.05$, **$p < .01$. Robust clustered standard errors in parentheses.

Model 2 of Table IV, which incorporates all the elements in the previous analysis and an interaction between *Democracy* and *Purge*, tells an interesting story. The estimated hazard ratio on this interaction term is multiplied by the hazard ratio associated with *Purge*, providing the marginal effect of *Purge* on different regime types.[11] What is particularly striking is the drop in the hazard associated with positive values of purging in non-democratic states. When democracy is 0 in the model, the hazard for the non-democratic leaders is 0.687; as the level of *Purge* increases, survival also increases. When democratic leaders purge they experience a higher hazard, implying a shorter continued tenure, with the marginal effect indicating that democratic leaders are more than twice as likely to fail for every level of *Purge*.

But is the hazard for democratic leaders lower because they are institutionally restrained in their purging? The simple cross-tab in Table V indicates this is not the case, as their level of purging is statistically indistinguishable from the autocratic leaders who have experienced at least one failed coup. An alternative explanation, which would find support in the literature (Bueno de Mesquita et al., 2003), is that democratic leaders in general have higher hazards than authoritarians, being forced out by the normal process of political competition, but have a lower hazard of experiencing irregular exits such as coups, assassinations, and popular revolts. What is noteworthy is that democratic leaders that engage in severe purges appear to have higher hazard rates than those who apply more moderate sanctions. Another alternative explanation is that our measure does not capture the extensiveness of the purge. It may be that fewer individuals are punished in democratic systems.

Rather than focusing on the interaction, the extent to which purging is effective for autocrats may be estimated directly by reducing the dataset to only those cases in which the leader is autocratic, according to our measures from the Polity data (Jaggers & Marshall, 2002). The results for these 122 cases are shown in Model 3 of Table IV. Here the value of the purge variable's hazard of 0.69 is both statistically significant and substantial. Leaders who purge gain at least a 30% decrease in the likelihood of leaving office for every unit change in *Purge*, a substantial advantage. Changes in military spending have no effect on the authoritarian subset of the sample, suggesting that military spending may be more important in influencing the military's incentives among democratic states, rather than in authoritarian regimes. A cynical interpretation of this might be that for leaders who are interested in staying in office, purging is both more effective than paying off the military and allows them to keep for their own purposes the money that might have otherwise been spent on the military budget.

Table V. Weibull model of post-coup leadership tenure

	Model	
Explanatory variable	*(1) Irregular exits Hazard ratios*	*(2) Second coup attempt Hazard ratios*
Purge		
Purge = 1	0.550	0.603
	(0.212)	(0.287)
Purge = 2	0.340**	0.442†
	(0.129)	(0.191)
Purge = 3	0.268**	0.295**
	(0.101)	(0.135)
Age	1.000	0.998
	(0.014)	(0.017)
Pre-coup tenure	1.000	1.000
	(0.000)	(0.000)
Constant	0.028**	0.013**
	(0.024)	(0.012)
Shape parameter	–0.491**	–0.386**
	(0.086)	(0.078)
Log likelihood	–222.72	–186.34
No. of observations	128	128

†$p < 0.10$, *$p < 0.05$, **$p < .01$. Robust clustered standard errors in parentheses.

However, if purging is effective for autocrats, we might consider if all the levels of a purge are equally effective at reducing the hazard for these leaders. The scale of purging is ordinal, so death, as we noted above, is deemed more severe than prison and prison more severe than the other categories. Looking only at the non-democratic leaders and removing the measures of military expenditure, Model 1 of Table V displays the effect of each of the ordinal variables on the survival of the leaders. All three levels of the purge measure have an impact, decreasing the hazard faced by leaders, although the variable tapping the least severe punishment is not statistically significant. Both prison and execution reduce the hazard of an irregular exit, as shown in their respective hazard values of 0.34 and 0.27. These values are no different from each other statistically, so it remains the

[11] This is equivalent to taking the log of the hazard ratios and adding the relevant coefficients together to provide the marginal effect of *Purge* on different regime types.

case that when leaders use either of them they are getting a similar extension of their tenure.

Model 2 of Table V addresses two related issues concerning how leaders leave office. We hypothesize that the severity of a punishment will be negatively related to occurrence of future coups, thereby increasing post-coup tenure in office. However, our analysis has focused on the impact of purges on time in office after the first failed coup attempt, assuming that the leader exits office in a non-constitutional, or irregular, manner. A more pointed test of our hypothesis would be to examine time until failure due to a second coup attempt, *whether a success or a failure*. Because our theory focuses on purges that deter potential rivals, examining time until an irregular exit may not capture the narrow deterrent behavior that we hypothesize is operating. Rather, our previous analysis could easily reflect a broader deterrent effect on the revolutionary behavior of the mass public or foreign enemies.

Therefore, we recast our analysis slightly, as shown in Model 2 of Table V. Instead of examining time until an irregular exit following a failed coup, we now examine time until a second failed or successful coup in Model 2 of Table V. The results are consistent with what we observed in our previous analysis. The shape parameter is less than 1 and is statistically significant, suggesting that the hazard rate is decreasing over time, which is consistent with previous studies positing authoritarian consolidation over time. Leaders that are able to consolidate power make it less likely that they will leave office regularly or through a coup. The hazard ratios associated with the two most extreme levels of purging are less than 1, and are statistically significant at conventional levels. This suggests that leaders who imprison their enemies or execute them are less likely to experience subsequent coups. Leaders who execute coup plotters experience only about 30% of the failure risk compared to those who do not punish coup plotters. By comparison, imprisoning coup plotters leads to leaders facing about 40% of the coup risk experienced by leaders who do not punish coup plotters. The top two levels of *Purge* are associated with increases in mean duration time of approximately 6 years to slightly over 13 years when leaders choose to execute coup plotters, compared to leaders who do not punish conspirators.

Conclusion

The results above indicate that, conditional on regime type, purging does have an effect on leader tenure, with more severe purges being associated with longer authoritarian tenures. Changes in military expenditures do not have a similar effect, and purging on the part of democratic political leaders apparently has no effect on lengthening their tenures. As far as we know these results are the first empirical estimates of the effect of purges on the political fortunes of political leaders. One reaction to the results might be that they are no surprise and that of course leaders purge to stay in office after someone attempts their removal. Perhaps, but it is worth considering that the estimates above do a bit more than that in several ways. First, not all leaders benefit from purging. Leaders who are content with removing people from office or exiling them fare no better than those who do nothing. Second, the leaders of democratic states derive no apparent addition to their tenure from purging. Finally, the results tell us that those whose purges are effective are authoritarian leaders who apply harsher punishments, such as prison terms and executions.

There is possibly a hidden dynamic present in the data that we recognize but find difficult to deal with. There may be some amount of endogeneity in the relationship between purging and longer tenures. Since purging is a costly activity that may create new enemies among the friends and families of those punished, it may be that weak leaders are not in a position to purge vigorously, while powerful leaders are able to pursue the extreme measures that allow them to survive longer in office. While such a dynamic is possible, to assert that this is what the data tell us falls into the realm of tautology. The empirical evaluation of this possibility will require different data we do not have at hand. At a minimum, we control for the tenure of leaders before they experience their first coup, as a means of controlling for the consolidation of power that might occur over time as leaders attempt to enhance their influence over the levers of authority. The fact that our broader model in Table IV demonstrates that purges influence irregular exits from office as well as exits from subsequent coups, suggests that how leaders treat their rivals for power can influence more than just rivals within the winning coalition. Future work might focus on how the impact of purging the winning coalition affects the choices made by rivals in the opposition, other relevant political figures like a king or queen, or the behavior of rival state actors.

There are other aspects of the relationship between leadership tenure and purging that further data would permit investigation. For example, leaders who have purged most of their capable enemies early on in their tenure may face relatively little danger from a coup attempt. There exist a number of leaders who came to power and soon began removing from office or other

positions of power those who helped them into office. Examples of these abound. Fidel Castro survived an extremely long time in office without facing an attempted coup, perhaps because he was unremitting in his tendencies to rid the regime of many of those closest to him. Of the 21 ministers appointed by Castro immediately after the Cuban Revolution's success only six were still in office two years later (Skierka, 2004: 68). Other purges followed, including the execution of General Arnaldo Ochoa and several other high-ranking officers in 1989 and the subsequent removal of other Soviet-trained officers and members of the Ministry of the Interior (Horowitz, 1995: 496). Although Saddam Hussein did experience attempted coups, his early tendency to purge was remarkable.[12] These cases are not rare, and any reading of the literature on individual authoritarian states will reveal similar patterns.

What needs to be done in the investigation of purges? First, a larger, more finely grained dataset would enable a more expansive exploration of the role of purges in the statecraft of leaders. The leaders who survive a coup are not the only leaders who purge and it may be worthwhile to consider whether more general purging has a salutary effect on leader survival. Such a dataset might be created through a careful scraping of content from the internet.[13] Second, the role of purges in the politics of the state cries out for theoretical advancement, which is, at present, lacking in its development. Wintrobe (1998) touches on purges, but largely in the context of the Soviet Union. More general considerations are to be found in Bueno de Mesquita et al. (2003) and, more recently, in Bueno de Mesquita & Smith (2017). Empirical research derived from this, however, remains lacking.

Replication data

The dataset, codebook, and do-files for the empirical analysis in this article can be found at http://www.prio.org/jpr/datasets.

[12] And was even recorded on video, and although not the best quality, the video of the purge may be seen at https://www.youtube.com/watch?v=kLUktJbp2Ug, accessed on 17 May 2016.

[13] It might be thought that a simple Google search on 'Leader X purge' would suffice, but there is the difficulty that the longer a leader is in power, the greater the opportunity to purge.

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