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Causes and Triggers of *Coups d'état*: An Event History Analysis

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What explains the propensities of countries to experience coups d'état*? This article tests various, at times competing, theories of coups using event history analysis by modeling coups as repeatable events. We highlight the different roles that political regimes play in inducing or deterring coups, and argue that political regimes that are not clearly democratic or autocratic are the most vulnerable to coups. Features of hybrid regimes increase their underlying coup vulnerability and the impact of coup-triggering events. While existing literature has noted higher coup frequency in nondemocratic regimes than in democratic regimes, we note the impact of differences within the nondemocratic regimes, with particular emphasis on the timing of a coup event. Contributing to growing research on variations in nondemocratic regimes and their consequences, our analysis of global coup data in 152 countries indicates that very autocratic regimes are much less vulnerable to coups than hybrid regimes.*

Keywords: Comparative Politics, *Coup d'état*, Political Instability, Regime Change, Democratic Breakdown, Hybrid Regimes, Authoritarianism, Autocracy, Nondemocratic Regimes, Event History Analysis.

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¿Qué explica la propensidad de golpes de estado en un país? Ponemos a prueba diversas teorías, a veces compitiendo entre sí, usando un análisis de eventos históricos modelando golpes de estado como eventos que pueden repetirse. Nosotros destacamos los diferentes roles que juegan distintos regímenes políticos al propiciar o disuadir golpes de estado, y argumentamos que los regímenes que son no son marcadamente democráticos o autocráticos son los más vulnerables a golpes de estado. Características de regímenes híbridos aumenta su vulnerabilidad así como el impacto de eventos que provocan los golpes. Aunque la literatura existente ha indicado una mayor frecuencia de golpes en regímenes no democráticos que en aquellos democráticos, existen diferencias entre los regímenes no democráticos. Nuestro análisis de la información global sobre golpes indica que los regímenes altamente autocráticos son menos vulnerables a golpes de estado que regímenes híbridos. Por lo tanto, nuestro trabajo contribuye a la creciente investigación sobre las variaciones en regímenes no democráticos y sus consecuencias.

This article examines the timing and causes of *coups d'état*, or the seizure of executive power by the use or threat of force by some segment of the ruling class (Luttwak 1969; Marshall and Marshall 2010). Despite the wave of global democratization that began in the late twentieth century, seizure of government by means of a *coup* has remained a viable strategy for political actors in much of the developing world. They are particularly rife in nondemocracies. According to Svolik (2009), 205 dictators were removed by coups between 1945 and 2002. Leaders in democracies are not immune to coups and coup threats either. Coups have also been attempted, often successfully, in many young and transitional democracies, most recently in Thailand (2006) and Honduras (2009), for example. Indeed, coups have occurred in all sorts of political regimes, albeit to varying degrees.

What accounts for the timing and causes of *coups d'état*? Much existing scholarship on the topic focuses on long-term structural causes. Scholars have argued that poverty, inequality, modernization, and political fractionalization, *inter alia*, are primary structural conditions that make societies susceptible to such illegal seizures of governments (Acemoglu and Robinson 2001; Huntington 1995; Jackman 1978; Kposowa and Jenkins 1993; Lindberg and Clark 2008; Londregan and Poole 1990; Stone 2004). Others have examined economic performance (Barracca 2007; Galetovic and Sanhueza 2000;

Gasiorowski 1995) and social instability (Galetovic and Sanhueza 2000). In addition, some recent research focuses on political leaders' coup-proofing strategies (Powell 2012; Quinlivan 1999).

We contribute to this body of literature by examining the different roles that various political regimes play in inducing or deterring coups. We hypothesize that hybrid regimes—political regimes that are neither unambiguously democratic nor autocratic—are the most vulnerable to coups. Coup vulnerability of these intermediate regimes stems from three factors: absence of real access to power by legal means, relative ease of coordination among would-be perpetrators, and lack of a credible threat for merciless retribution against perpetrators in the event of a coup attempt. These regime features increase the underlying coup risk for hybrid regimes compared with more democratic or more autocratic regimes. In addition, these features also influence instantaneous risk of coups through their impacts on short-term coup triggers, such as social instability, regime transitions, and economic crises. We expect that these events have differential effects on coups depending on political regime type. In short, political regime type influences a country's coup propensities both directly and indirectly.

Even though the existing literature has noted higher coup frequencies in nondemocratic regimes than in democratic regimes, the following analysis shows that differences within nondemocratic regimes influence coup risk. Very autocratic regimes, for instance, are much less vulnerable to coups than hybrid regimes. With a few important exceptions (e.g., Svolik 2009, 2012), most coup literature has overlooked these regime differences. In particular, while structure-based theories can explain general proneness to a coup, they cannot pinpoint when conspirators are actually likely to make such a move. This article, therefore, also contributes to growing research on variations in nondemocratic regimes and their consequences, including the triggers that most affect a coup's timing.

We test various, at times competing, theories of coups using event history analysis by modeling coups as repeatable events. In this way, we intend our article to move the analysis of coups beyond conventional research based on detailed studies of particular cases, or logit or probit analysis of the events by examining the time frame when a coup is attempted and by modeling coups as events that can recur. This point is not trivial. Given that some countries have experienced coups repeatedly, where each additional coup increases the hazard of another, the recurrence of coups needs to be explicitly modeled.

Our analysis of 152 countries confirms certain conventional wisdom while refuting others. Poverty and social backwardness increase a society's coup risk, while political pluralism measured by party fractionalization does not affect a country's coup vulnerability. The empirical analysis also provides support for our claims concerning differential regime impacts. We find that hybrid regimes are particularly susceptible to coups compared with autocracies and democracies, indicating that not all nondemocratic regimes are equally

vulnerable to this form of political instability. Among short-term causes, autocracies are the least vulnerable to the coup-triggering effects of short-term instabilities, while both democracies and hybrid regimes face higher risk of coups when political and social instabilities break out. Finally, we did not find evidence that coups are more likely to occur during economic crises.

This article is organized as follows. The first section presents an overview of the long-term structural causes of *coups d'état*. In this section, we also discuss why competitiveness of regimes, barriers to coordination, and credible threats of retribution matter in inducing or deterring coups. We then discuss short-term coup triggers, and the differential effects of these factors for democracies, autocracies, and hybrid regimes. We subsequently present our variables, data, and method, followed by the discussion of the findings of the event history analyses.

Structural Causes of *Coups d'état*

Existing studies of *coups d'état* have largely focused on their underlying structural conditions: the economic, social, and political features of a society that are usually considered more or less intrinsic characteristics, or otherwise slow to change. As long-term causes, structural conditions affect the likelihood of a coup occurring in at least two important ways. First, they may give rise to groups of individuals who are discontent with the *status quo*, and thus are waiting for opportunities to pursue change. Some of those individuals may be willing to use unconstitutional means, such as coups, to achieve their objectives. Second, they determine the degree of societal support available to coup perpetrators. Societal support, at least in its passive forms, for a coup is critical for the coup plotters to take control of the situation in the immediate aftermath of a coup, and in the longer run to sustain a post-coup government. Hence, societal support affects the probability of a successful coup. The economic, social, and political facets of the structural factors influencing a society's coup propensity are central elements of this kind of analysis.[1] In this section, we first review conventional structural theories of coups by stressing disputes in the literature. We then discuss how different types of political regimes generate different incentives and constraints for potential coup perpetrators.

Economic Development

Prior research has identified that economic structural conditions, such as the levels of economic development, income inequalities, and production structures, are important determinants of *coups d'état*. For example, Londregan and Poole

[1] In this article, we focus on domestic factors of coups. We acknowledge the roles that international and regional organizations play in promoting political stability (see e.g., Genna and Hiroi 2007; McCoy 2006). However, the international dimensions extend beyond the scope of this article.

(1990) maintain that poverty raises a country's coup risk. Their analysis of world data from 1950 to 1982 reveals that coups are 21 times more likely to occur among the poorest countries than among the richest. This finding that economic development is inversely related to the risk of coup is consistent with the repeated findings that democracy is much more durable and almost infallible among the wealthiest nations (Przeworski *et al*. 2000).

Other scholars focus on the effect of income inequality in generating political instability (Muller and Seligson 1987). Acemoglu and Robinson's (2001, 2006) formal model shows that high-income inequality leads to a greater likelihood of coup under democracy. According to their analysis, public policy in a democracy represents the preferences of the median voter, which are in effect the preferences of the poor in a highly unequal society with a large poor population. In such societies, the continuous marginalization of the elites' preferences in public policies motivates them to carry out a coup (Acemoglu and Robinson 2001, 2006).

Previous research also indicates that economic production structure is another factor underlying coups. Johnson, Slater, and McGowan (1984) find that industrialization and production diversification both reduce coup risk, while the risk rises the more agrarian and the less diversified an economy. Likewise, O'Kane (1993) contends that the root causes of successful coups are economic rather than political, and that specialization in—and dependency on—primary commodities exports combined with poverty are the preconditions for coups in Africa.

As this brief review reveals, several scholars have identified the relationship between the level of economic development and a country's propensity for a coup, yet the specific foci of research (the exact nature of development) have varied. Moreover, the discussion of economic development is often conflated with social development.[2] Therefore, we test whether a country's wealth *per se*, measured by gross domestic product (GDP) per capita, has an independent effect on coup risk.

> Hypothesis 1: Economic underdevelopment increases a country's coup risk.

Social Modernization

Compared with economic development, the effects of social development are much more disputed. A school of thought that came to be known as modernization theory posits that modernization—higher literacy rates, urbanization, greater consumer markets, and others—fosters the development of a stable democracy (see e.g., Lipset 1959). Hence, modernization should

[2] For example, as we discuss later, modernization theory *à la* Lipset (1959) posits a positive relationship between development (or modernization) and political stability (or democratic development). Modernization is measured by a vast array of social and economic indicators.

reduce the probability of a coup occurring. However, this claim was challenged by subsequent work by Huntington (1968, 41), who argued that "modernity breeds stability, but modernization breeds instability;" and by O'Donnell (1973), who contended that the outcome of modernization for late-developing countries was not a democracy but a bureaucratic-authoritarian state. Similarly, in the study of African coups, Jackman (1978) finds that more industrialized and more educated societies are more coup-prone. Johnson, Slater, and McGowan (1984) also show that a highly mobilized society faces a greater coup risk in post colonial Africa.

A careful examination of these arguments suggests that the relationship between modernization and coup propensity may not be linear, as assumed in each of these studies, but curvilinear, which is implied if we look at the literature as a whole. In other words, a society may be most susceptible to a coup in the transitional stage, that is, when it is no longer primordial but has not matured with full integration of the population. Conversely, coups are unlikely to occur at the lowest and highest levels of social development. We, therefore, examine two hypotheses: one based on a linear relationship, and the other curvilinear.

> Hypothesis 2a: Social development decreases a country's coup risk.
>
> Hypothesis 2b: A coup is most likely to occur in the middle stage of social development, and less likely to occur at the lowest and highest stages.

Political Pluralism

Previous research has also examined political structures as potential factors that may affect the likelihood that a coup will occur. Past studies nevertheless yielded contradictory findings on the impact of political structure—more specifically, of political pluralism or fractionalization—on the incidence of coups. For example, Jackman's (1978) study of 30 African states from 1960 to 1975 shows that multiparty systems significantly increase coup risk. Kposowa and Jenkins (1993) also argue that ethnic antagonisms stemming from cultural plurality and political competition are the major sources of coups. In similar vein, Rabushka and Shepsle (2008, 202) contend that the proliferation of parties in an ethnically fragmented society leads to the instability of democracy. In general, multipartism is viewed as unfavorable to democratic stability (Mainwaring 1993).

Yet this perspective is also contested by many scholars. For example, Johnson, Slater, and McGowan (1984) argue that Jackson's model is not robust when the sample was slightly expanded to include 36 African countries from 1960 to 1982. Rather than raising the risk of coups, their data analysis suggests that voter turnouts and multipartism reduce the risk. Belkin and Schofer (2003) also claim that political competitiveness lowers coup risk because when rules are articulated in a competitive political system, political opponents have greater

room to take part in politics, and hence there is less reason to stage a coup. We thus test the following hypothesis.

Hypothesis 3: Political pluralism increases a country's coup risk.

Political Regimes

A key to understanding the relationship between political structures and coup propensity may lie not in political pluralism *per se* but in the competitiveness of the regime and the opportunities it provides for political actors, as well as ease of coordination and credibility of threats of harsh retribution against coup perpetrators. In a nutshell, we argue that different types of political regimes give rise to different incentives and constraints for potential coup perpetrators, determining varying degrees of coup propensities among different regimes.

In democracies, coups should be infrequent events. Democracy offers constitutional means to change government, political contestation is regulated by clear and unambiguous rules open to all those who wish to participate, and outcomes are not fixed *ex ante* (Galetovic and Sanhueza 2000; Przeworski 1991). Democracy thus offers a real chance to gain power by legal means, and as such political opponents have an incentive to participate in the democratic game and compete for political office legally rather than recourse to a coup, which is very risky.

In addition, in a stable democracy, actors have internalized democratic norms and conduct of competition, and democratic rules have accrued legitimacy with elections that are held regularly, followed by a legal change of power (Lindberg and Clark 2008). When political actors have acquired democratic norms and democracy has achieved perceived legitimacy, the idea of changing government by means of a coup becomes a distant, unimaginable option for political actors.

In a repressive autocracy, coup is also unlikely for two reasons. First, fear of merciless punishment in the event of a failed coup attempt looms large in conspirators' calculations. The most common punishment for failed coup mongers in autocracies has been death (Svolik 2009). Therefore, in blatantly autocratic regimes, the rules of political conduct are also clear—obey the ruler if you wish to survive—and the threat of the harshest reprisal is credible. Second, even if prospective perpetrators overcome the fear of retribution, they also need to overcome coordination barriers. It is difficult to discover if there are sympathizers that they can recruit in a repressive autocracy where there is likely to be both regime-imposed and self-imposed censorship. But a concerted and coordinated effort is essential if a coup is to succeed.

Indeed, barriers to coordination have been very high in certain autocracies. This has been the case with many totalitarian regimes. For example, the relative stability of Soviet and Communist Eastern European dictators was achieved through the pervasiveness of Communist efforts to penetrate all corners of the

armed forces and civil society. The leaders in these countries employed highly intrusive mechanisms to control and monitor potential challengers to their authority.[3] They also repressed any challenge to their authority swiftly and harshly. This partly explains their relative success and stability. Svolik (2009) shows that dictators can consolidate power to the extent that they cannot be credibly threatened by a coup. These dictators can fall, but when this happens, it is not due to an internal challenge to their authority, such as a coup, but due to exogenous factors, such as popular uprisings.

In a regime that is neither fully democratic nor fully autocratic, political opponents and rivals find their political ambitions only halfway nurtured but derided with their guaranteed defeats at the polls even if their electoral participation may be permitted.[4] Yet they face fewer barriers to coordination because, even though their political participation is controlled, they are nonetheless allowed to participate in politics in a limited capacity, and censorship is less prevalent. This gives crucial opportunities for political actors to connect and communicate with potential allies for their cause. Moreover, viewed as "soft" authoritarians, the threat of severest retribution by nondemocratic rulers in these "hybrid" regimes may not be as credible as it is in unambiguously authoritarian regimes. Therefore, deterrence for coups does not work as effectively in hybrid regimes as in more repressive autocracies.

The rulers in these regimes may choose to co-opt dissidents rather than repress them; many nondemocratic rulers have co-opted opposition because incorporating opposition forces in the legislature may prolong their hold on power (Brownlee 2007; Gandhi 2008; Gandhi and Przeworski 2007; Svolik 2009, 2012). But the literature has also shown that the failure to adequately co-opt opposition is likely to lead to their demise (Brownlee 2007; Gandhi and Przeworski 2007).

In sum, in hybrid regimes, a coup is more likely to occur because frustration builds up among political rivals, which gives an incentive for a coup, but the regime is not as repressive as a full autocracy to thwart coup attempts. As a consequence of this, our argument focuses on the ambition of the political competitors within the regime and the conditions that facilitate unconstitutional seizure of power. This argument is distinct from, yet still complements, Svolik's (2009, 2012) work that centers on autocrats' ambition and opportunism to accumulate more power, and on the reaction (i.e., *coup*) by the members of the ruling coalition to this opportunism. We hypothesize that:

> Hypothesis 4: A coup is more likely to occur in a regime that is neither fully democratic nor fully autocratic.

[3] We thank our reviewers for their suggestions concerning totalitarian and one-party regimes.

[4] See Schedler (2002) for the "menu" of electoral manipulation in electoral authoritarian regimes.

Short-Term Triggers

Although widely used, explanations based on structural conditions are not complete. In particular, they cannot explain exactly when a society is at risk of experiencing a coup because structural conditions are rather static and slow to change. In other words, structure-based theories can explain general proneness to a coup, but they cannot pinpoint when conspirators are actually likely to make such a move.

Short-term conditions determine the actual timing of a *coup d'état*. We focus on three possible coup triggers: macroeconomic deterioration, social instability, and regimes' transitional periods. Changes in these factors affect conspirators' cost-benefit calculations of launching a coup and the probability of their success, thereby affecting the likelihood that a coup will occur at time t. In this section, we first discuss anticipated, independent effects of these three factors. We then posit that the actual impacts of these factors will vary depending on political regime type.

Macroeconomic Deterioration

Adverse macroeconomic performance, such as high inflation, negative income growth, and balance of payments crises, raises the incentives to overthrow an incumbent government. Negatively affected individuals may collude to depose the government who they perceive is responsible for their country's economic disaster and declining welfare of its citizens, particularly of their own. Economic crises also raise their expected probability of success for such an action because the government should have lost much of support in the society due to its policy failures that led to the current crisis, its inability to control and put an end to the crisis situation, or both. The loss of legitimacy may generate active and/or implicit support among segments of the society for an extraconstitutional ouster of the government. Prior research has shown that deteriorating macroeconomic conditions led to coups and regime changes in the past (Acemoglu and Robinson 2001; Barracca 2007; Galetovic and Sanhueza 2000; Gasiorowski 1995; Londregan and Poole 1990). Therefore:

> Hypothesis 5: Macroeconomic deterioration increases the likelihood that a coup will be attempted.

Social Instability

Like sharp macroeconomic deteriorations, social instability challenges a government's legitimacy and ability to rule. Among others, military and other security forces, which are typically central actors in coups, are known to care about social and political order of the country. Extensive social unrest, such as antigovernment demonstrations and large-scale strikes, may signal them that the government is no longer capable of governing. Coup plotters may also see an opportunity to launch a coup upon observing large-scale public manifestation of

discontent with the incumbent because they may believe that the people are less likely to oppose a removal of the government (Galetovic and Sanhueza 2000).

In Latin America, for example, populist regimes in Brazil, Argentina, and elsewhere during the 1960s and 1970s contributed to social instability and economic crises. According to O'Donnell (1973), the military in these countries ousted democratically elected populist governments to restore political and economic order, leading to the establishment of bureaucratic authoritarian regime. A study of 89 noncommunist developing countries during 1950 to 1982 by Galetovic and Sanhueza (2000) also shows that popular unrest significantly increased the probability of a coup attempt in autocracies. Hence:

> Hypothesis 6: Social instability increases the likelihood that a coup will be attempted.

Transitional Regimes

A coup is more likely in a rapidly changing regime than in a stable regime. When the rules of competition and political conduct are shifting, as is the case during the periods of political liberalization or democratic erosion, the stakeholders of the old regime will resist the change while the transitioning regime may not have acquired its new constituencies. According to O'Donnell and Schmitter (1986, 6), during the period of transition, "the rules of the political game are not defined. Not only are they in constant flux, but they are usually arduously contested." Under such circumstances, supporters of the old regime may try to prevent further changes, or attempt to return to the previous system, while the new and transitional rules are yet to acquire their adherents. For the supporters of the old regime, the cost of the transition can be very high—perhaps as high as their persecution or prosecution under a new system—but the benefit of a successful coup is also high if they can reestablish the old system where they know they will do well.

For example, the 1985 *coup* in Nigeria was preceded by deteriorating democratic institutions, widespread corruption, and a military coup against a civilian government. General Buhari, the 1983 coup leader, refused to restore civilian rule, and insisted on conducting extensive corruption investigations and introducing a comprehensive package of unpopular economic austerity measures. Buhari was ousted in another coup in less than two years after leading a *coup*.

As this example illustrates, coup vulnerability of political transitions also helps explain why coups are often followed by counter-coups. During the period following a coup, political offices are highly contested by ousted leaders and their supporters on the one hand, and perpetrators of the coup and other political actors who have stakes in the new government on the other. Even though political competition can be intense, rules to regulate such contests do not exist. Thus a coup may invite a counter-coup by deposed leaders and their supporters who attempt to restore the pre-coup system. A coup may also open

up an opportunity for other political actors to dislodge the coup leaders to seize the government. Hence:

> Hypothesis 7: Regime transitions increase the likelihood that a coup will be attempted.

Differential Effects of Coup Triggers in Democracy, Autocracy, and Hybrid Regimes

As we discussed, in addition to the potential benefits that a coup would bring about, coup conspirators should consider the ease of coordination, societal support, and the severity and credibility of punishment in the event of a failed coup in deciding whether they should carry out a coup. These factors vary by political regime types. Hence, even though crisis situations raise incentives for a coup, and coup conspirators may see opportunities for a coup therein, the effects of these short-term triggers are filtered by the types of political regimes.

First there is a question of regime legitimacy. Leaders of nondemocratic countries hold power without popular consent formally bestowed by free, fair, and competitive electoral processes. They, therefore, lack popular legitimacy for their rule. Most contemporary nondemocratic leaders instead should rely on good government performance, such as economic growth, job creation, and social stability, to justify their rule.[5] Rulers who should rely on performance legitimacy to stay in power are particularly vulnerable to a coup when they face a crisis of performance-based legitimacy, which could occur during arduous economic and political times, when popular support for their rule quickly dwindles. However, as we discussed in the previous section, for political leaders in democratic regimes, their claim to rule depends not only on performance legitimacy but also on popular, democratic legitimacy. Therefore, even though crisis situations will still increase coup risk for democratic leaders, they may not be as vulnerable as nondemocratic leaders.

Yet, even though they do not enjoy popular legitimacy, autocratic leaders in very repressive regimes may not necessarily be as vulnerable to coups as leaders in democratic or especially hybrid regimes. Two factors account for this. First is the credibility of the threat of retaliation, as we discussed above. In highly repressive regimes, the threat of atrocious retaliation is likely to be credible. In a democracy, failed coup mongers may go to jail, but they are likely to retain their lives, and their civil rights are still presumably guaranteed. In a hybrid regime, political leaders may still threaten severe punishments to those who challenge their rule, but their regimes' ambiguous positions—not fully committed to democracy but neither to autocracy—may

[5] A few political leaders, such as hereditary monarchs, may still be able to convoke custom or birthright to justify their rule, but even in these cases, we do not know how strongly their claim to rule will be supported by the populous in the face of economic or other crises.

reduce the credibility of these leaders' commitment and ability to carry out such punishments. So there is a credibility problem for political leaders in hybrid regimes.

Second is the censorship effect. In a highly repressive regime, information is also likely to be strictly controlled and political opposition is not tolerated. Information control and the absence of clear political opposition make it difficult for coup conspirators to seek allies and assess the extent of support that they will have for a coup. Where information is rigorously controlled, political leaders may hide the existence of crises that undermine their performance legitimacy. Their country may be experiencing an economic crisis, but the data can be manipulated; there may be an antigovernment demonstration, but it may be swiftly suppressed before the general public becomes aware of it. But in hybrid regimes, limited political opposition is tolerated and information control is not as extensive as it is in autocratic regimes. Coup conspirators thus face fewer obstacles to recruitment, analysis, and support building.

The issues of performance legitimacy, information, retribution, and societal support suggest that the impact of the aforementioned short-term causes of coups should vary across different regime types. We expect that:

> Hypothesis 8: The impact of the short-term triggers will be the greatest for hybrid regimes, followed by democracies, and then by autocracies.

The remainder of this article examines the hypotheses discussed in this and previous sections empirically.

Variables and Data

Dependent Variable

Our dependent variable is the risk that a coup will occur in year *t* given that it has not occurred until *t*. If a coup was attempted in year *t*, we coded that year as having experienced a coup regardless of whether the coup was successful or not. We coded successful and attempted coups as coup events based on Marshall and Marshall's (2010) *Coup d'état Events, 1946-2009*.[6] We did not code coup plots as coup events because reports of coup plots are notoriously incomplete and unreliable. Some countries experienced more than one coup attempt in the same year, but our coding does not differentiate between single

[6] Powell and Thyne (2011) recently published coup data that combined and "cleaned up" various existing coup datasets, including Marshall and Marshall (2010). We adopt the Marshall and Marshall dataset because the Powell and Thyne data eliminated cases of self-coups (commonly known as *autogolpe*) in the process of their clean-up. Self-coups meet our definition of coups insofar as they occur in an attempt to forcefully seize executive power by some elements of the political elite. For example the 1992 presidential coup in Peru meets this condition. President Fujimori, in his attempt to rule the country without opposition, closed down the congress and the courts. Prior to this, Fujimori was frustrated with the opposition-controlled congress that refused to consider his proposals. As such, he unconstitutionally seized unhampered executive authority.

and multiple coup episodes within the same year.[7] We will discuss how we set up the coup data more in the Method section.

Independent Variables

We measure economic development using natural logarithm of GDP per capita in 2000 constant dollars. We test the effects of social modernization on coup propensity with the percentage of the total population who live in urban areas. Both data come from the World Bank's (2010) *World Development Indicators*. The impact of modernization is examined with and without its squared terms to test the possibility of both linear and curvilinear relationships. We use the party fractionalization index as a proxy for political pluralism. This variable is coded based on Rae (1968) in Arthur Banks' (2011) *Cross-National Time-Series Data Archive*.[8] Political regimes are measured using the Polity IV dataset's variable polity2 (Marshall, Jaggers, and Gurr 2010). Polity2 rates countries annually on a 21-point scale, ranging from −10 (most autocratic) to 10 (most democratic). It gauges each country's institutional characteristics with respect to the degree of competitiveness and openness of executive selection, constraints on chief executive, and competitiveness of political participation. Marshall, Jaggers, and Gurr (2010) recommend certain cutoff points to create regime dummy variables, which we follow.[9] A country is coded as full autocracy when its polity2 score is from −10 to −6, hybrid regime if rated between −5 and 5,[10] and democracy if rated between 6 and 10. We include full autocracy and full democracy in the data analysis, leaving hybrid regimes as a reference category.[11]

As for immediate causes, we use log-transformed annual GDP growth rates (World Bank 2010) to measure macroeconomic deterioration. Social instability is measured by a natural log of an additive index of the number of strikes, demonstrations, and riots based on Banks (2011).[12] We operationalize transitional regime by the absolute mean change in the polity2 regime scores over two *preceding* years.

[7] Existing coup data do not differentiate whether coups were carried out by the military as an institution or by a fraction of the military. Such information would be helpful to determine whether the military is acting autonomously or acting as an instrument of another group.

[8] We transformed the party fractionalization index by dividing its values by 100 to reduce the digit below the decimal point for its coefficient.

[9] In the polity2 variable, the cases of "interregnum" are coded as zero. Since such cases may be especially susceptible to coups, we reestimated all models by excluding these cases as a robustness check. In the Data Analysis and Results section, we present findings based on the original polity2 variable because both results are comparable.

[10] Marshall, Jaggers, and Gurr (2010) call regimes in this middle category "anocracy."

[11] We use trichotomous regime classifications rather than a continuous variable to measure levels of democracy because our theoretical interest is in the differences in the regime impact.

[12] Banks' (2011) data are mainly informed by U.S. newspapers, and therefore there is a possibility that while comprehensive, Banks' data may be underreporting events.

Our analysis also controls for the effects of the Cold War and military ruler. Coup risk was higher during the Cold War period. *Cold War* is a dummy variable coded as 1 during the period between 1960 and 1991. We also consider coup vulnerability of a military regime among different kinds of nondemocratic regimes.[13] *Military Leader* is a dummy variable taking the value of 1 if a country's chief executive is from the military. In addition, to address region-specific effects, dummy variables are included for Africa and Latin America and the Caribbean countries because these regions are known to be more coup-prone.[14] Finally, to evaluate if the effects of short-term factors vary depending on political regime types, we run additional analyses on the full autocracy, full democracy, and hybrid regime subsamples.

Due to the availability of the data on the independent variables, our sample covers 152 countries during 1962 and 2007. All independent variables, except transitional regime, were lagged by one year to address potential endogeneity problems. The values of the variable for transitional regime are already "lagged" in its construction because it is based on the average change in the scores over the two preceding years.

Method

Coups are recurring events in many countries (Londregan and Poole 1990). The underlying coup risk is different between those countries that have never experienced a coup and those that have. In addition, once a country experiences a coup, and with each subsequent coup it undergoes, its subsequent coup risk is likely to become greater. Methodologically, it means that each coup episode is not independent of prior coup events.

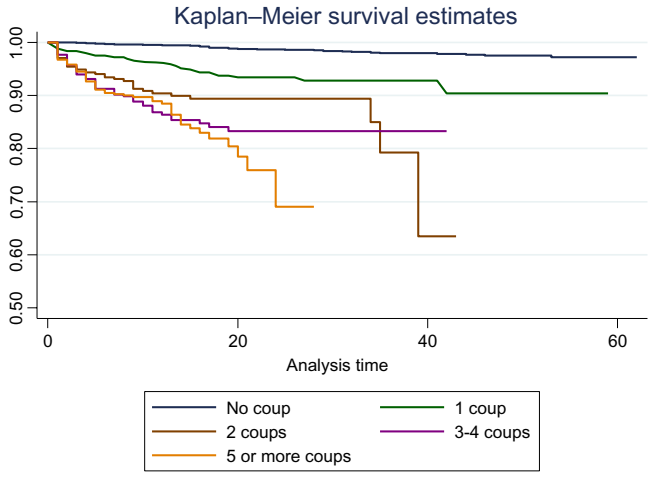
Figure 1 exhibits the Kaplan–Meier estimate of survival curves based on the number of previous coup years. The figure shows a long and almost flat line for the no coup year group, indicating that countries without prior coup experiences are unlikely to experience a coup at any time. In contrast, countries with prior coup episodes have shorter survival time (i.e., time without a coup). That means that once a country experiences a coup, it will face a higher coup risk in subsequent years, and the risk becomes higher with each subsequent coup. Countries' coup risk thus differs depending upon their prior coup experiences.

Consequently, using event history analysis, we modeled coups as recurrent events (Box-Steffensmeier and Jones 2004). In this model, the risk set at time t for the kth occurrence of an event is limited to those observations at time t that

[13] We also considered totalitarian regimes of the Soviet and East European countries. However, due to lack of data on their independent variables, most of these countries are not included in our analysis before the collapse of the communist regimes. We also reestimated our analysis with a dummy variable for East European communists, which was not statistically significant.

[14] Results remain the same when models are estimated without regional dummy variables.

Figure 1.
Time to Coup by the Number of Previous Coup Years



have already experienced *k*-1 events. This means, for example, that a country is not at risk of a second coup until it has already experienced a first coup. In practice, estimates are stratified by the number of prior coup years. This model allows baseline hazards to vary depending on the number of prior events, but covariate effects are assumed to be constant across strata (Box-Steffensmeier and Jones 2004, 160-1). The repeatable events model does not include prior coups as one of its independent variables because the model is already stratified on the number of prior coup years. We use a Cox regression since it does not assume a particular form of a baseline hazard function (Box-Steffensmeier and Jones 2004).

Data Analysis and Results

Table 1 presents the estimation results on the entire sample, which includes all cases regardless of their regime types. Using urban population as a proxy, Model 1 tests modernization's curvilinear hypothesis, whereas Model 2 examines its more conventional, linear hypothesis. The tests of the proportional-hazards assumption on the basis of Schoenfeld residuals indicated that the social instability, Cold War, and Africa variables have nonproportional effects over time. We, therefore, interacted these variables with the natural logarithm of time to correct for the problem of violation of the proportional hazards assumption. Both models yielded comparable results with one exception: in Model 2, urban population has a hypothesized negative relationship with coup risk, while in Model 1, neither urban population nor its

Table 1. Event History Analysis of *Coups d'état*, 1962-2007 (All Cases)

	Coefficients	
Variables	Model 1	Model 2
GDP per capita	–.244 (.063)***	–.258 (.066)***
Urban population	.013 (.020)	–.014 (.006)**
Urban population^2	–.0003 (.0003)	—
Party fractionalization	–.0004 (.004)	–.0008 (.004)
Full democracy	–.782 (.278)**	–.845 (.283)**
Full autocracy	–.591 (.190)**	–.603 (.194)**
GDP growth	–.173 (.216)	–.156 (.193)
Social instability	1.173 (.263)***	1.182 (.261)***
Social instability*ln(time)	–.314 (.101)**	–.314 (.102)**
Transitional regimes	.089 (.040)**	.092 (.039)**
Cold War	4.363 (.962)***	4.423 (.954)***
Cold War*ln(time)	–1.309 (.305)***	–1.321 (.302)***
Military leader	.408 (.237)*	.392 (.236)*
Africa	.303 (.286)**	2.090 (.734)**
Africa*ln(time)	–.881 (.241)***	–.835 (.239)***
Latin America and Caribbean	.242 (.328)	.255 (.324)
No. of observations	5,152	5,152
No. of coup years	270	270
Log pseudo-likelihood	–1,150.09	–1,152.55
Wald chi-square	441.91	456.28

Notes: *** p < .01; ** p < .05; * p < .10. Significance is based on two-tailed tests.
The model is stratified by the number of prior coup years. The Efron method is used to handle the tied events. Huber (robust) standard errors are used for significance tests to address country-specific heteroskedasticity problems.
GDP, gross domestic product.

squared term is significant. The joint significance test also indicates that these terms are not significant. We, therefore, focus on the interpretation of the results obtained in Model 2.

Of the long-term structural causes, as hypothesized, poverty (Hypothesis 1, measured by GDP per capita) and social backwardness (Hypothesis 2a, measured by urbanization) raise a country's coup risk. By contrast, contrary to the hypothesis, political pluralism measured by party system fractionalization does not raise coup risk (Hypothesis 3). The most interesting finding is with the differential impacts of political regime types. As hypothesized, coups are more likely to occur in hybrid regimes than in full democracies or full autocracies (Hypothesis 4).

Some hypotheses concerning short-term causes also bear support in the empirical analysis. While GDP growth rates do not have a statistically significant impact (Hypothesis 5), coups are more likely to occur in transitional

Table 2. Substantive Effects of Statistically Significant Variables on *Coups d'état* (Model 2)

Independent Variable	% Change in Hazard Rate
GDP per capita (21.2→25.6)	–68.3
Urban population (23.7→71.3)	–48.6
Full democracy (0→1)	–57.0
Full autocracy (0→1)	–45.3
Social instability (0→3.1)	1683.0
Transitional regimes (0→1.8)	17.7
Cold War (0→1)	434.6
Military leader (0→1)	48.0
Africa (0→1)	42.6

Notes: Substantive effects are based on the change in the values of the independent variables from one standard deviation below the mean to one standard deviation above the mean for continuous variables, and from zero to one for dichotomous variables. We hold other variables at their mean (continuous variables) or at zero (dichotomous variables), and set time at the mean of the coup cases (eight years).

regimes (Hypothesis 7). In addition, our analysis also shows that social instability significantly raises a country's coup risk (Hypothesis 6), but this effect wanes over time.

Findings on the control variables are as expected. Coup risk was higher during the Cold War era. In addition, coups are more likely if the chief executive officer of the government is military. Finally, Africa is more vulnerable to coups, but not necessarily Latin America and the Caribbean countries.

Since the coefficients of event history analysis are not directly interpretable, we show in Table 2 substantive effects of the statistically significant variables. Substantive effects are calculated in terms of the percent change in the hazard rate when the value of each independent variable changes from one standard deviation below the mean to one standard deviation above the mean, or from 0 to 1 in the case of dichotomous variables.[15] When calculating substantive effects, all other continuous variables are held at their means and dichotomous variables at 0. For the variables interacted with log of time, we set

[15] The percent change in the hazard rate is calculated based on the following formula (Box-Steffensmeier and Jones 2004, 60):

$$\%\Delta h(t) = \left[\frac{e^{\beta(x_i = X_1)} - e^{\beta(x_i = X_2)}}{e^{\beta(x_i = X_2)}} \right] \times 100.$$

time at the mean of the coup cases, which is eight years. Substantive effects are computed based on Model 2.

The table indicates that economic development reduces a country's coup risk by 68 percent. An increase in urbanization also reduces coup vulnerability by 49 percent. Thus our analysis supports the conventional wisdom that both economic development and social development reduce political instability. Furthermore, we also find substantively large regime effects as we posited: Hybrid regimes' coup risk is 57 percent higher than that for democracies and 45 percent higher than that for autocracies. We, therefore, have evidence that not all nondemocratic countries are equally vulnerable to coups; hybrid regimes are much more likely to experience a coup than either democracies or more autocratic countries.

Among the short-term triggers, we note the especially pronounced effects of social instability. Even though social instability's coup-triggering impact diminishes over time, at the eighth year of no coup, social instability still increases coup risk for a country by nearly 16-fold. Furthermore, countries that are experiencing regime transitions are at higher risk of a coup (18 percent higher) than those that are stable. Thus each of these independent variables has strong, substantive impact on the likelihood that a coup will occur.

In Table 3, we explore the possibility that the effects of independent variables, especially short-term triggers, are conditional on political regime types. We do so by reestimating models using three subsamples: full autocracies, full democracies, and hybrid regimes. For each regime type, two model specifications are initially used to test for the curvilinear versus linear relationship between social modernization and coups. This time, we find support for the curvilinear relationship in the sample of autocracies based on a joint significance test and the coefficients of urban population and its squared term. The coefficient of the squared term of urban population for the democracy subsample is also weakly significant, but a joint significant test does not support the curvilinear relationship. For hybrid regimes, urban population does not affect coup risk in either way. Hence, we interpret results based on the curvilinear model for autocracy (Model 3), and the linear models for hybrid regimes and democracy (Models 6 and 8, respectively).

As seen in Table 3, the results are largely consistent with the ones for the overall model. Among the structural causes, poverty significantly raises the risk of a *coup d'état* regardless of political regime types; the coefficients of GDP per capita are negative and significant in all regime types. Table 4 presents the substantive effects of statistically significant variables estimated in Table 3. The substantive impact of economic development is also large in all regime types, ranging from 53 percent reduction in the hazard rate (autocracy) to 93 percent reduction (democracy).

Party fractionalization once again does not have a statistically significant impact in all regime types, however. Since some scholars have argued that party fractionalization is especially politically destabilizing in presidential

Table 3. Event History Analysis of *Coups d'état* by Political Regime Type, 1962-2007

	Full Autocracy		Hybrid Regime		Full Democracy	
Variables	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
GDP per capita	−.171** (.084)	−.165** (.080)	−.482*** (.133)	−.471*** (.127)	−.667** (.249)	−.603** (.264)
Urban population	.038* (.020)	−.006 (.008)	−.031 (.034)	−.019 (.012)	−.140** (.064)	−.038** (.017)
Urban population^2	−.0006** (.0003)	—	.0002 (.0004)	—	.001* (.0006)	—
Party fractionalization	−.006 (.009)	−.004 (.008)	.007 (.005)	.007 (.005)	−.0007 (.013)	−.0003 (.011)
GDP growth	−.059 (.506)	−.063 (.423)	−.224 (.233)	−.223 (.229)	−2.504 (1.698)	−1.762 (1.832)
Social instability	.275 (.200)	.294 (.188)	1.369*** (.308)	.332** (.162)	1.695** (.791)	.605** (.248)
Social instability*ln(time)	—	—	−.509 (.159)	—	−.438 (.286)	—
Transitional regimes	.128** (.063)	.123** (.059)	.138** (.066)	.153** (.066)	.023 (.121)	.152** (.068)
Cold War	6.895** (3.304)	6.961** (3.336)	2.107*** (.404)	2.081*** (.387)	2.086*** (.621)	2.127*** (.620)
Cold War*ln(time)	−2.279** (.886)	−2.270** (.891)	—	—	—	—
Military leader	.385 (.286)	.334 (.283)	1.269** (.522)	1.567*** (.468)	—	—
Africa	1.862 (1.330)	1.953 (1.358)	−.120 (.439)	−.210 (.418)	−.364 (.936)	−.274 (.988)
Africa*ln(time)	−.368 (.436)	−.357 (.440)	—	—	—	—
Latin America and Caribbean	1.160* (.430)	1.139* (.632)	−.143 (.500)	−0,206 (.512)	1.557 (1.666)	−.994 (1.041)
Latin America and Caribbean*ln(time)	—	—	—	—	−1.157** (.579)	—
No. of observations	1,775	1,775	1,185	1,185	2,192	2,192
No. of coup years	127	127	100	100	43	43
Log pseudo-likelihood	−430.26	−433.28	−326.06	−337.27	−130.90	−138.80
Wald chi-square	151.73	151.83	133.70	128.93	122.20	71.50

Notes: *** p < .01; ** p < .05; * p < .10. Significance is based on two-tailed tests.
The model is stratified by the number of prior coup years. The Efron method is used to handle the tied events. Huber (robust) standard errors are used for significance tests to address country-specific heteroskedasticity problems.
GDP, gross domestic product.

Table 4. Substantive Effects of Statistically Significant Variables on *Coups d'état* by Political Regime Type

	% Change in Hazard Rate		
Independent Variable	Autocracy Model 3	Hybrid Regime Model 6	Democracy Model 8
GDP per capita (21.2→25.6)	–53.3	–87.7	–93.2
Urban population (23.7→71.3)	–62.7	ns	–83.3
Social instability (0→3.1)		184.4	568.6
Transitional regimes (0→1)	25.2	30.9	30.6
Cold War (0→1)	765.2	701.9	739.6
Military leader (0→1)	ns	379.3	—
Africa (0→1)	ns	ns	ns
Latin America and Caribbean (0→1)	219.7	ns	ns

Notes: Substantive effects are based on the change in the values of the independent variables from one standard deviation below the mean to one standard deviation above the mean for continuous variables, and from zero to one for dichotomous variables. We hold other variables at their mean (continuous variables) or at zero (dichotomous variables), and set time at the mean of the coup cases (eight years). The mean values used to calculate the marginal effect of each independent variable and time are based on the entire sample to allow for comparability across different models.
GDP, gross domestic product.

democracies (e.g., Mainwaring 1993),[16] we reestimated our model by interacting party fractionalization with presidential systems in the democracy subsample (the results are not shown). These variables still did not show statistically significant effects.

Findings for short-term triggers indicate that social instability significantly raises the risk of a *coup d'état* only in democracies and hybrid regimes, but not in autocracies. The absence of a statistically significant effect for autocracies is as expected; even though autocrats should rely on performance legitimacy, they are less vulnerable to coups because either they control information or their threat of punishment is credible, or both. However, these conditions are relatively weak or not credible under hybrid regimes, making rulers of these regimes particularly vulnerable to coups when they face the crisis of performance legitimacy.

Contrary to our expectation, we find a relatively large coup effect of social instability for democracies. While an increase in social instability from zero to one standard deviation above the mean raises coup risk by 184 percent in hybrid regimes, the same degree of change in democracies has much higher effects. This

[16] This view has nevertheless been contested by various recent studies. For example, see Hiroi and Omori (2009).

is puzzling given that democracies enjoy popular legitimacy in addition to performance legitimacy. This unexpected result may be caused by the limitation of the dataset we use, that is, the counts of demonstrations, riots, and strikes may be more accurate for democracies than for nondemocracies, so imprecise measurements of the variable in nondemocratic countries may result in underestimating the variable's impact in the latter. Yet we may also have overestimated the importance of popular legitimacy in democracies, especially in young ones. Until democratic norms and institutions are consolidated, democratic leaders and governments may have to rely exclusively on performance legitimacy, and opposition groups may be tempted to seize the opportunity to overthrow the government when they observe widespread antigovernment demonstrations.

The periods of political transitions have significant, positive effects on coup risk in all three regime types. Its effect is smaller for autocracies (25 percent increase in risk) than for democracies (30.6 percent increase in risk) or hybrid regimes (30.9 percent increase in risk). Finally, consistent with the full model, we find no evidence that macroeconomic deterioration raises coup vulnerability for any of the three regime types.

Among the control variables, we find an interesting pattern for the effect of military rulers. That is, military leader raises the hazard of coups only in hybrid regimes, but not in autocracies. Thus military governments in full autocracies are not more vulnerable to coups than other types of autocratic leaders, such as totalitarian dictators and monarchs. However, military governments in hybrid regimes are more susceptible to coups than other forms of governments. This difference may be explained by the level of repression used by these governments: military rulers in autocracies do not hesitate to control and conquer both opposition and allies alike, while their counterparts in hybrid regimes may hesitate to use force, and their grip on political and information control may be weaker.

Conclusion

One of the aims of this article was to test various explanations for coups using event history analysis by modeling coups as repeatable events. Prior research on this topic largely focuses on the structural conditions of coups. In an attempt to explain both long-term and immediate causes, we included in the empirical analysis structural variables, such as economic development, social modernization, and political fractionalization, and short-term performance variables, such as economic growth, social instability, and political transitions. Our theoretical contribution is with our focus on the effects of different political regime types. We argued that political regimes have both direct and indirect impacts on a country's coup propensity. We hypothesized that hybrid regimes are more vulnerable to coups in general, relative to their fully autocratic or

democratic counterparts. Furthermore, we hypothesized that hybrid regimes are especially coup-prone when they face crises of performance legitimacy.

The event history analysis of the global coup data from 1962 to 2007 indicates that poverty and social backwardness are the major underlying structural causes of coups. As for the immediate causes, social instability and regime transitions significantly increase the risk of a coup occurring. In addition, the present analysis provided support for the hypothesis that hybrid regimes are in general more vulnerable to coups than autocracies or democracies. The data analysis also showed that both democracies and hybrid regimes are more likely to experience coup than autocracies when social instability occurs.

There are some promising venues for future research. First, future studies investigating why democracies are vulnerable to coups during the periods of social unrest would be useful. We expected that democracies would be more vulnerable than autocracies but less vulnerable than hybrid regimes because democratic governments rest on both popular legitimacy as well as performance legitimacy. As discussed, this puzzle may be an artifact of the limitation of the dataset we use, that is, the counts of demonstrations, riots, and strikes may be more accurate for democracies than for nondemocracies, so imprecise measurements of the variable in nondemocratic countries may have resulted in underestimating the variable's impact on the latter. However, we may also have overestimated the importance of popular legitimacy in democracies. Social instability may be especially damaging to young, unconsolidated democracies, where popular demand for government is high and uncontrolled, but norms of democratic conduct are yet to develop. Yet democratic norms and popular legitimacy should be strongly internalized by consolidated democracies, and these regimes may be less vulnerable to coups in times of social unrest.

The second possible venue for research is to look into the differences within autocracies. Some autocracies, such as hereditary monarchies and totalitarian systems, may be more durable and less susceptible to political instability caused from within, such as coups. Such studies would make an important contribution to the growing research agenda on nondemocratic regimes.

Finally, there is a possibility that the nature and dynamics of coups have evolved over time. The present research did not distinguish between different modes of coups. It nevertheless appears that coups instigated by institutions, such as Peruvian President Fujimori's *autogolpe* in 1992 and Honduras' 2009 coup carried out by the military, legislature, and court in collaboration, are becoming increasingly common. This also seems to be a promising area for future coup research.

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