

# Power Sharing and Leadership Dynamics in Authoritarian Regimes

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*I examine a fundamental problem of politics in authoritarian regimes: the dictator and the ruling coalition must share power and govern in an environment where political influence must be backed by a credible threat of violence. I develop a model of authoritarian politics in which power sharing is complicated by this conflict of interest: by exploiting his position, the dictator may acquire more power at the expense of the ruling coalition, which may attempt to deter such opportunism by threatening to stage a coup. Two power-sharing regimes, contested and established dictatorships, may emerge as a result of strategic behavior by the dictator and the ruling coalition. This theory accounts for the large variation in the duration of dictators' tenures and the concentration of power in dictatorships over time, and it contributes to our understanding of the dynamics of power sharing and accountability in authoritarian regimes.*

Why do some authoritarian leaders stay in power for only months while others persist for decades? Fidel Castro ruled Cuba for half a century until his retirement in 2008, whereas at least nine different authoritarian leaders were the effective heads of government in Haiti during the 1950s. Interestingly, large differences in the duration of leader tenures can be observed even within a single country. Hafiz al-Asad held power in Syria for almost 30 years (1971 to 2000), whereas during the three decades before him, 15 different leaders ruled Syria. What explains such divergent patterns of authoritarian leadership duration within the same country? And finally, why is power narrowly concentrated around a single individual in some authoritarian regimes, while it is shared among several groups or individuals in others? In this article, I present a new theory of authoritarian politics that answers these questions.

Most existing work on the politics of authoritarian regimes frames the central political conflict in these polities as one between a small authoritarian elite and the much larger population over which it rules. This was the focus of the now classic literature on totalitarianism (Arendt 1973; Friedrich and Brzezinski 1965). More recently, Wintrobe (1998) argues that the authoritarian

elite successfully rules by repressing some in the population while nurturing the loyalty of others. Similarly, the threat of a rebellion by the opposition compels the dictator to share rents in Gandhi and Przeworski (2006). And while Acemoglu and Robinson (2001) and Boix (2003) focus on transitions to democracy, they also identify the possibility of a popular uprising as the central threat to a dictator's power and emphasize the role of repression in precluding a regime change.

However, if leadership dynamics are any indicator of the central political conflict in authoritarian regimes, this focus on the problem of deterring popular opposition may not be appropriate. I examined all 316 authoritarian leaders who held office for at least one day and lost power by nonconstitutional means between 1945 and 2002. Nonconstitutional means include any exits from office that did *not* follow a natural death or a constitutionally mandated process, such as an election, a vote by a ruling body, or a hereditary succession. As Table 1 shows, among the 303 leaders for whom I was able to unambiguously ascertain the manner in which they lost power, only 32 were removed by a popular uprising and another 30 stepped down under public pressure to democratize. Twenty more leaders lost power by an assassination that

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**TABLE 1 Nonconstitutional Exits of Leaders in Dictatorships<sup>a</sup>**

Nature of Exit <sup>b</sup>	Frequency (Percentage)			
	At Least One Day in Office		At Least One Year in Office	
<i>Coup d'état</i>	205	(67.66)	151	(63.71)
<i>Popular uprising</i>	32	(10.56)	30	(12.66)
<i>Transition to democracy</i>	30	(9.90)	30	(12.66)
<i>Assassination</i>	20	(6.60)	17	(7.17)
<i>Foreign intervention</i>	16	(5.28)	9	(3.80)
<i>Total</i>	303	(100.00)	237	(100.00)

Source: Svolic and Akcinaroglu (2006).

<sup>a</sup>Exits of interim leaders and leader exits during civil wars are not included.

<sup>b</sup>Unambiguous determination of the nature of exit was not possible for 13 leaders.

was not part of a coup or a popular uprising, whereas 16 were removed by foreign intervention. But the remaining 205 dictators—more than two-thirds—were removed by government insiders, such as other government members or members of the military or the security forces, an event typically referred to as a *coup d'état*. This pattern holds even when we exclude those leaders who stayed in office for less than a year. Thus, as far as nonconstitutional transfers of power are concerned, an overwhelming majority of authoritarian leaders lose power as a result of a successful coup rather than a popular uprising.

This evidence strongly suggests that in order to understand authoritarian politics, we need to examine the politics *among* the governing authoritarian elites. In this article, I present such a theory of authoritarian politics. My starting point is the observation that the joint desire of the dictator and the ruling coalition to share power as they govern is complicated by a conflict of interest between them. At the heart of this conflict is the dictator's ability and desire to acquire more power at the expense of the ruling coalition—those individuals who support the government and, jointly with the dictator, hold enough power to be both necessary and sufficient for its survival. The ruling coalition may attempt to deter the dictator's opportunism by threatening to stage a coup. However, the credibility of this threat is tenuous because the ruling coalition has only imperfect information about the dictator's actions and because coups may fail and are therefore costly. Consequently, the evolving balance of power among the governing authoritarian elites as well as the temptation by the ruling coalition to reconsider a coup that it has threatened critically affect its ability to deter the dictator's opportunism.

My central theoretical result and contribution is that two authoritarian power-sharing regimes, *contested* and *established* dictatorships, occur as a result of strategic behavior by both the dictator and the ruling coalition. In a contested dictatorship, politics is one of a power struggle between the dictator and the ruling coalition and coups occur frequently. By contrast, established dictators cannot be credibly threatened by a coup. If they are removed from office by nonconstitutional means, it is because of factors exogenous to the dynamics between the dictator and the ruling coalition, such as an unlikely popular uprising or foreign intervention. Thus this theoretical difference between a contested and an established dictatorship corresponds to the empirical difference between oligarchy and autocracy.

One possible, although unlikely, power trajectory that my theory explains is one in which an authoritarian leader assumes office as the “first among equals” and, despite the fact that the ruling coalition acts optimally, succeeds over time in accumulating enough power to become an invincible autocrat. Paradoxically, this possibility is an essential element of the credibility of *any* coup threatened by the ruling coalition: put simply, after the ruling coalition has threatened a coup in order to deter the dictator's opportunism, it may be tempted to reconsider it, given the costliness of coups as well as the fact that the dictator's actions are not perfectly observable. Since a coup may fail, the ruling coalition would prefer to stage one only if the dictator is in fact attempting to acquire more power. Therefore, the threat of a coup will be credible only if the possibility that the dictator accumulates more power is real—that is, the dictator must behave opportunistically with a positive probability. If a contested dictator succeeds in several such power grabs without the ruling coalition attempting a coup, he may accumulate enough power that the ruling coalition will no longer be able to stage a successful coup. It is precisely this kind of dynamic that allows for the rare transition from a contested to an established dictatorship.

My argument therefore suggests a novel explanation of the process of consolidation of power in authoritarian regimes. Geddes (1999) notably distinguishes among personalist, military, single-party, and hybrid regimes. In her data, the process of consolidation of power that culminates in personal rule can be observed across authoritarian regimes characterized by various political institutions (see also Hadenius and Teorell 2007). Prominent examples include both military (Francisco Franco, Augusto Pinochet) and single-party regimes (Joseph Stalin, Saddam Hussein). The theory that I present here provides the theoretical microfoundations that explain why autocracies in which power is highly concentrated in the hands

of the dictator may occur across all types of dictatorships yet should be rare.

The theory I propose also contributes to the quantitative, empirical study of authoritarian politics. In the fourth section, I show that the long-run statistical distributions of several quantities of political interest—including the duration of tenure before a dictator is removed by a coup and the time in office until a dictatorship becomes established, among others—can be derived directly from my theoretical model. For instance, the time that a dictator stays in office before he is removed by a coup follows the Weibull distribution, but it must be estimated using a technique that allows for the possibility that a fraction of dictators may be established, that is not subject to the risk of a coup (e.g., the so-called “split-population” survival model). The theoretical claims advanced in this article can therefore be evaluated within a well-specified statistical framework.

While a complete, self-standing data analysis is beyond the scope of this article, I do discuss how existing empirical research and data support my findings. For instance, my theoretical model implies a probability density of the time that a dictator stays in office before he is removed by a coup that closely mirrors the actual distribution of dictators’ tenures. My theory also suggests that the likelihood that a leader will be removed from office by a coup initially increases but declines after some threshold point in time. This is indeed the case when methods that allow for a nonmonotonic hazard dynamic are used to examine actual data on dictators’ tenures. And finally, the theory presented in this article indicates that the longer a leader is in office, the less likely he is to be removed by a coup as opposed to by alternative means, such as natural death, foreign intervention, or transition to democracy. This result is also supported by existing data. Thus available empirical research and data offer broad, preliminary support for my theoretical results.

Finally, while research on dictatorships increasingly investigates the role of political institutions in these regimes, I focus on the noninstitutional threat of a coup as the unique coercive mechanism available to a ruling coalition facing an opportunistic dictator. Nonetheless, at the heart of my theory is a moral hazard problem that is closely related to accountability problems frequently addressed in the context of institutionalized, democratic politics. In the latter, voters are concerned that elected politicians may use their office for personal gain rather than for public good (Barro 1973; Ferejohn 1986; Myerson 2006; Przeworski, Stokes, and Manin 1999). Meanwhile, in the present theory of authoritarian power sharing, the ruling coalition is concerned that the dictator may attempt to acquire more

power at the expense of other members of the ruling coalition.<sup>1</sup>

A key feature that distinguishes this theory from those of democratic accountability is that political power in dictatorships, even when nominally exercised through political institutions, must be ultimately backed by a credible threat of violence. In contested dictatorships, the ruling coalition is capable of using the threat of a coup d’état to deter the dictator’s opportunism to some extent. In this sense, the dictator is responsive, if not accountable, to the ruling coalition. However, once established, the dictator is no longer deterred by the threat of a coup. This dynamic is very different from settings in which political conflict is resolved institutionally, rather than through violence or the threat thereof, as in the case of democratic politics.

A better understanding of authoritarian politics when only such crude, noninstitutional, coercive mechanisms are available may in turn lead to more complete theories of formal political institutions in dictatorships. A growing literature examines the role of parties (Brownlee 2007; Geddes 1999; Magaloni 2006; Smith 2005), legislatures (Boix and Svobik 2007; Gandhi and Przeworski 2006; Myerson 2008; Wright 2008), elections (Blaydes 2007; Lust-Okar 2006), or the bureaucracy (Slater 2003) in authoritarian regimes. The equilibrium dynamics in contested and established dictatorships that I examine here may be considered a benchmark for feasible authoritarian power sharing in settings that lack political institutions with any independent power. The effects of formal institutions on leadership dynamics in dictatorships can then be compared to this noninstitutional benchmark.

To summarize, the theory that I develop in this article accounts for the variation in both the concentration of power and the duration of leaders’ tenures in dictatorships over time. More generally, it contributes to our understanding of authoritarian power sharing and accountability. In the next section, I present the main theory. In the third section, I study a game-theoretic model that I use to generate the key theoretical results. I examine the empirical implications of the theory in the fourth section. In the fifth section, I summarize my central findings and conclude with a discussion of their implications for future research.

## A Theory of Authoritarian Power Sharing

I study a political setting with two key players, the *dictator* and the *ruling coalition*. As I mentioned earlier, the

<sup>1</sup>Debs (2008) and Egorov and Sonin (2005) study a related moral hazard problem: the possibility of treason by a subordinate and its implications for the performance of dictatorships.

ruling coalition consists of individuals who support the government and, jointly with the dictator, hold enough power to be both necessary and sufficient for the survival of the government. For instance, the Syrian government of Hafiz al-Asad (1971–2000) relied on the support of two groups, military officers of the Alawi sect and al-Asad's family and friends, throughout most of its existence (Ziser 2001, chap. 2). In another case, Leonid Brezhnev's position at the helm of the Soviet government depended on loyal followers from his former posts in Dnepropetrovsk and Moldova, whom he elevated into key positions in the Politburo, the Central Committee, and various government ministries (Zemtsov 1989). Thus my concept of the ruling coalition parallels the concept of the "winning coalition" in Bueno de Mesquita et al. (2003).

I assume that governing requires that the ruling coalition delegates executive powers to the dictator. Although these powers could in principle be shared between the dictator and the ruling coalition, I assume that control over the key executive posts ultimately rests in the hands of the dictator. I do not explicitly model the mechanism that determines who becomes the dictator. Instead, I take the identity of the dictator as given and study the problem of authoritarian rule, assuming some initial balance of power between the dictator and the ruling coalition. I use the term "power" very broadly and politically: both the dictator and the members of the ruling coalition may derive power from economic or military resources, or by having a large number of loyal followers. Loyalty may in turn be the result of ethnic, sectarian, or tribal ties, patronage, or personal charisma.

I argue that a conflict of interest between the dictator and the members of the ruling coalition is the central problem of authoritarian governance: once they have delegated executive powers to the dictator, the members of the ruling coalition are concerned that the dictator could use those powers to strengthen his position and later eliminate them from the ruling coalition. For instance, the dictator may attempt to divert economic or military resources in order to expand the ranks of his loyal followers. Once the dictator has acquired a sufficient amount of additional power, he may eliminate members of the ruling coalition whose support is no longer necessary for the government to remain in power. If enough members of the ruling coalition are eliminated, the remaining members may be left with too little power to credibly threaten to stage a coup and thereby lose all influence over the dictator's actions. Although some members of the ruling coalition may attempt to strengthen their position as well, the dictator's control of the executive presents him with the greatest opportunity to do so. I therefore propose that the dictator's potential

opportunism will be the central concern of the ruling coalition.

At the heart of this moral hazard problem is the possibility that an attempt to consolidate power by the dictator could go undetected by those in the ruling coalition. The autonomy that is associated with delegated power in most political systems is intensified in dictatorships by the secrecy and back-channel politics that characterize these regimes. For instance, during the struggle for Soviet leadership after Vladimir Lenin's health deteriorated (between 1921 and 1924), Joseph Stalin's maneuvers to accumulate influence by securing key appointments for himself and his loyal followers in the party hierarchy at first went unnoticed by many powerful figures (Suny 1998, 143–48).

In my formal setting, the ruling coalition observes an informative yet imperfect signal of whether the dictator is attempting to strengthen his position. In bureaucratic or single-party dictatorships, for instance, the dictator's attempt to solidify power may manifest itself as the ruling coalition members' loss of influence within the bureaucracy or party hierarchy. One example of such an attempt took place during the struggle for Soviet leadership after Stalin's death in 1953, when Beria took control of internal security by merging the ministries of Internal Affairs (NKVD) and State Security (MGB), appointing men loyal to him, and moving large contingents of the secret police to Moscow and other major cities. The danger of too much power in the hands of one man prompted a reaction so strong that even his ally Malenkov joined Khrushchev's party faction and Marshal Zhukov in organizing a coup against Beria. Within a few months, Beria was arrested, tried, and executed (Suny 1998, chap. 17). Several years later, in 1957, Khrushchev was the survivor of a failed coup attempt that united Molotov, Malenkov, and Kaganovich out of fear of his rise to power (Taubman 2004, chap. 12).

Since most politics in dictatorships is informal and secretive, in many settings the relevant signal about the dictator's actions will be the loyalty of the individuals within the bureaucracy rather than formal changes in the bureaucratic hierarchy. Such loyalties often develop institutionally (e.g., in the case of military dictators), but may also be tribal, ethnic, or sectarian. In such a case, the bureaucratic appointment of an individual whose primary loyalty is to the dictator rather than to the regime or party can be interpreted as a signal of an attempt to consolidate power by the dictator. For example, an important step in Saddam Hussein's rise in power was the gradual elimination of the Bath party's influence on the regime via the appointment of individuals from the loyal Tikriti clan into key positions in the bureaucracy. In the late 1970s, the entrenchment of the Tikriti clan in the government

reached such large proportions that Hussein felt the need to conceal it from public view by abolishing family names denoting place of origin (Karsh 2002, 182).

Finally, in some dictatorships, attempts to consolidate power by the dictator may take the form of extending the ranks of his clients by awarding individuals from outside the ruling coalition with patronage. Diversion of patronage may therefore decrease the income or influence of the members of the ruling coalition. However, those in the ruling coalition understand that some decline in their bureaucratic influence or perks may not be intended or completely under the control of the dictator. A signal indicating a ruling coalition member's decline in political influence therefore breeds suspicion, but not certainty, that the dictator is making steps toward strengthening his position vis-à-vis the ruling coalition.

### Coup d'État as a Credible Threat

When the members of the ruling coalition suspect that the dictator is making steps toward strengthening his position at their expense, they may stage a *coup d'état* in order to stop him.<sup>2</sup> I argue that establishing *credibility* is the key problem that the members of the ruling coalition face when they threaten a coup to discourage the dictator from diverting resources. The threat of a coup may lack credibility for two reasons. First, if the balance of power between the dictator and the ruling coalition favors the dictator to the extent that a coup will most likely fail, then the ruling coalition will prefer to be at the mercy of the dictator to staging a coup. I refer to this aspect of coup credibility as the *ex ante* credibility of the coup threat.

Second, however, the threat of a coup also lacks credibility in a more fundamental, *strategic* sense, which is at the heart of the argument developed in this article. The threat of a coup may lack credibility even if the dictator and the ruling coalition do expect a coup to succeed if it were staged. More specifically, deterring the dictator's opportunism via the threat of a coup is complicated by two conditions: a coup is potentially very costly and the ruling coalition only observes an imperfect signal of the dictator's actions. Therefore, the ruling coalition has a strong incentive not to carry out a coup that it has threatened if it thinks that it has already deterred the dictator, while the dictator understands that this incentive exists.

Consider a dictator who expects that a coup will be staged should the members of the ruling coalition observe,

say, a decline in their rents from patronage. Faced with that threat, he would reasonably not promote his loyal followers as a means of gaining power because this would increase the likelihood that the ruling coalition observes a decline in their rents. If their rents decline, however, the members of the ruling coalition must conclude that it is not because of any attempts by the dictator to acquire more power. The ruling coalition therefore prefers to avoid staging a coup since coups are potentially costly *and* the dictator must not have diverted. Importantly, if the dictator anticipates this line of reasoning by the ruling coalition, the threat of a coup will not be credible from the outset. Therefore, what undermines the credibility of the coup threat is the ruling coalition's temptation to reconsider staging a costly coup after an imperfect signal of the dictator's actions. I refer to this aspect of coup credibility as the *ex post* credibility of the coup threat.

A coup is costly because it may fail even if it is expected to succeed with a high probability, and if it fails, the consequences are usually dire. By far the most frequent fate of unsuccessful coup plotters is death. More fortunate failed coup plotters may get away with house arrest (e.g., Armengol Ondo Nguema, the head of internal security and the half-brother of the president of Equatorial Guinea, after the last in a series of failed coups against him in 2004), ambassadorship to Outer Mongolia (e.g., Vyacheslav Molotov after a failed coup against Khrushchev in 1957), or "rustication" (Mobutu's method of punishing suspicious government officials by exiling them to their home village).

Given these considerations, can a coup be a credible threat at all? The dictator understands that the ruling coalition can always reconsider staging a coup that it has threatened. For the threat of a coup to be *ex post* credible then, the possibility that the dictator has attempted to strengthen his power must be real even *after* the threat of a coup had been issued and the dictator acted. This obtains when the dictator does attempt to consolidate power with a positive probability. Only in that case does the ruling coalition have an interest in staging a coup that it has threatened, since it knows that the imperfect signal of the dictator's action may indeed indicate an actual attempt to gain power.

### Established and Contested Dictatorships

The argument that I lay out above implies that the credibility of a coup threat is tenuous in two distinct ways. It is tenuous in a direct sense, because the ruling coalition may be too weak to stage a successful coup. But, as we have seen, the coup threat is also tenuous in an indirect, strategic sense, since in order for it to be used credibly, the

<sup>2</sup>For the purposes of the present argument, I refer to any attempt to seize executive power by the members of the ruling coalition via the threat or use of force as a coup. For an excellent discussion of the various terms associated with a couplike removal of the government, see Luttwak (1968, chap. 1).

behavior it serves to deter must occur with a positive probability. Thus even if the ruling coalition acts optimally, the dictator may be sufficiently lucky to accumulate enough power to eliminate the ruling coalition altogether.

I investigate this possibility in a dynamic setting where the dictator's success in acquiring more power determines the balance of power between him and the ruling coalition. The balance of power evolves endogenously as a result of optimal behavior by both the dictator and the ruling coalition. In some periods, the dictator will be fortunate enough that either a coup will not be staged even when he behaved opportunistically or that a staged coup will fail. This shifts the balance of power in the dictator's favor. Since the balance of power between the dictator and the ruling coalition determines the likely outcome of a coup, it also determines its *ex ante* credibility as a threat. If the dictator succeeds in several power grabs, he may accumulate enough power that the ruling coalition will no longer be able to stage a coup. In that case, even if the ruling coalition knew that the dictator was attempting to strengthen his position, the likelihood of the coup failing would be too high and the ruling coalition would not stage one.

My claim that the balance of power between the dictator and the ruling coalition is a vital element in the decision to stage a coup is widely documented in historical evidence about the immediate concerns of coup plotters. Nordlinger's (1977, 105) summary of this evidence is that "[the] decision of the uncommitted officers—whether to resist the praetorians, to join them, or to remain neutral—is almost always based upon a single consideration: Will the coup succeed or fail?"<sup>3</sup> And Zemtsov's observation about the balance of power between the general secretary of the Communist party and the Politburo is a nice illustration of the intuition in my argument:

The general secretary's power or potential is inversely proportional to the influence of the Politburo members, who aim at maintaining a delicate balance between his power and theirs. They cannot let the general secretary accumulate too much power, for they would find themselves devoid of influence in decision-making. . . . Thus while according the general secretary the levers of power, the members of the Politburo attempt to keep the transmission chains in their own hands. (Zemtsov 1991, 133)

In the formal model that I examine later, I show how two possible regimes, contested and established dictator-

ships, emerge on the equilibrium path of this authoritarian power-sharing game. In a *contested* dictatorship, a coup staged by the ruling coalition succeeds with a likelihood that is large enough to credibly threaten the dictator. In this regime, coups occur when the ruling coalition suspects that the dictator is attempting to strengthen his position, while the dictator may indeed be doing so. Thus a contested dictatorship is an equilibrium in which authoritarian politics is characterized by power sharing, albeit imperfect, between the dictator and the ruling coalition. Although the dictator may be the most powerful member of the ruling coalition, he rules in the shadow of the threat of a coup.

A nice description of the incentives that shape the ruling coalition's actions in a contested dictatorship can be found in another of Zemtsov's (1991) observations about the position of the general secretary in the Soviet Union:

After Stalin's death the party apparatus tried to prevent the general secretary from holding the reigns of power too firmly. The drive of the general secretary to autocracy is opposed by attempts to disperse power among people who are pillars of the Soviet regime. The ingenious device for ensuring such dispersal is called, in party jargon, "collective leadership." For a time, before he finds himself in a position to establish his absolute rule, every new general secretary has to bow to the "collective leadership." During that period, the general secretary has to keep balancing between rival factions in the split Politburo. . . . The ensuing maneuvering will decide the fateful question of survival for each Politburo member. Some will fall; others will achieve reasonably secure power and prestige. (Zemtsov 1991, 133)

Among the possible power trajectories implied by this theory is one in which an authoritarian leader assumes office as the "first among equals," but over time, as a result of opportunism and luck, he succeeds in bolstering his power to the extent that he can no longer be credibly threatened by the ruling coalition. I call this outcome an *established* dictatorship. In this regime, coups do not occur and the dictator has effectively eliminated the ruling coalition, which is no longer necessary for the survival of the government. The transition from a contested to an established dictatorship can therefore be seen as one from oligarchy to autocracy: instead of allies, who share power with the dictator and may constrain his choices, the members of the ruling coalition become administrators

<sup>3</sup>See also Luttwak (1968, chap. 2) and O'Kane (1981, 294).

or personnel, who are fully subservient to the dictator and do not share power with him in any meaningful sense.

Perhaps the most prominent example of such a trajectory is Stalin's rise to power from the position of an "obscure party functionary" (Suny 1998, 49) in the 1920s to an indomitable autocrat by the 1940s. By the end of the 1920s, Stalin eliminated from the Communist Party the key opposition groups associated with Trotsky, Zinoviev, and Bukharin (Suny 1998, 165–66). In 1924, when the terminally ill Lenin warned that Stalin had accumulated too much power, the Party ignored him, and Stalin was retained as the general secretary (Suny 1998, 146–48). Ten years later, in another push to consolidate his power, Stalin's purges transformed the Communist Party from an ideological organization of elites and intellectuals whose primary political interest was the promotion of communism into a party in which power rested in the hands of people of low-class origins whose primary, personal loyalty was to Stalin. Stalin eliminated more than one-half of the 1,961 delegates and more than two-thirds of the 139 Central Committee members elected at the 17th Party Congress in 1934, the last such Congress before the purges. He purged about one-half of the officer corps from the army and executed more Soviet generals than would be killed in World War II (Suny 1998, 261–68). Thus the elimination of the Communist Party and the army as independent political forces were key steps in Stalin's rise to power.

Additionally, the equilibrium behavior on the path from a contested to an established dictatorship explains why a sudden change in incentives is frequently observed after a new individual advances to the position of a dictator. Observers are often puzzled how, typically in several distinct stages, the dictator's old allies become his new enemies. My theory provides an explanation for this dynamic: after every successful power grab by the dictator, members of the ruling coalition become more anxious about the possibility that the dictator will become established and eliminate them. As I demonstrate in the next section, the dictator's appetite for power grows as he strengthens his position, and the ruling coalition counters this expanding appetite by staging a coup with increasing probability. Thus power sharing is less likely to be successful as the dictator acquires more power vis-à-vis the ruling coalition.

This paradox of the rise to authoritarian power is nicely exemplified by Efraim Karsh's characterization of Saddam Hussein's position as the apparent successor of Ahmad Hasn al-Bakr, after the latter resigned his presidency:

[Saddam] was not content with the comfortable majority he enjoyed in the state's ruling institutions. . . . He was at once far more powerful than all his comrades put together, and far more vulnerable to attack from them. (Karsh 2002, 113)

While the transition from a contested to an established dictatorship happens with a positive, if small, probability, there is no return from an established to a contested dictatorship. In terms of the dictator's tenure, an established dictatorship is one where all ends are tied up ("atado y bien atado"), to paraphrase Franco's assurance about the continuity of his regime.

In the next section, I present a game-theoretical model of authoritarian power sharing that generates the key results that I have presented so far.

## The Formal Model

Consider a polity governed by a *ruling coalition* and a *dictator*. Jointly with the dictator, the members of the ruling coalition hold enough power to be both necessary and sufficient for the survival of the government. Normalize this amount of power to one. I denote the dictator's share of power by  $b \in (0, 1)$  and the ruling coalition's share of power by  $1 - b$ . Thus the term  $b$  measures the balance of power between the dictator and the ruling coalition.

The dictator's position allows him to *divert* government resources and increase his share of power relative to the power of the ruling coalition. Once he acquires enough power, he may eliminate members of the ruling coalition who are no longer necessary for the survival of the government. Therefore, the ruling coalition prefers to deter such behavior and have the dictator *comply* with the status quo.

However, the ruling coalition observes only an imperfect signal  $\theta \in \{H, L\}$  of the dictator's actions. In particular, the conditional probability that the observed signal  $\theta$  is *high* ( $H$ ) or *low* ( $L$ ) is  $\pi_{\theta a}$ , where  $a \in \{c, d\}$  denotes the dictator's actions, comply and divert, respectively. For instance, if the dictator diverts, the probability that the ruling coalition observes a high signal is  $\pi_{Hd}$ . I assume that the signal  $\theta$  is informative about the dictator's actions in the sense of the monotone likelihood ratio property and thus  $\pi_{Hd} > \pi_{Hc}$ . In other words, when the signal is  $H$ , the ruling coalition knows that it is more likely that the dictator has diverted than complied, and vice versa. Setting  $0 < \pi_{\theta a} < 1$  for all  $\theta$  and  $a$  ensures that the dictator's actions cannot be perfectly inferred from the observed signal.

In order to deter the dictator from diverting, the ruling coalition may threaten to stage a *coup*. Whether the coup succeeds depends on the balance of power between the dictator and the ruling coalition. I denote the probability that a coup succeeds by  $\rho \in (0, 1)$ . To keep the model tractable, I assume  $\rho = 1 - b$ .<sup>4</sup> Thus the stronger the ruling coalition is relative to the dictator, the more likely a coup is to succeed. In order to best examine how the balance of power between the dictator and the ruling coalition affects the latter's ability to deter the dictator's opportunism, I assume away any collective action problems that the ruling coalition members may face when staging a coup.<sup>5</sup>

The payoffs to the dictator and the ruling coalition depend on three consecutive outcomes: whether the dictator diverts, whether the ruling coalition stages a coup, and whether the coup succeeds. If the dictator complies and is not removed by a coup, the status quo is maintained and he receives the payoff  $b$ . Ideally, however, the dictator would divert and not be removed by a coup. I denote the extent of the dictator's diversion by  $\mu > 0$ .<sup>6</sup> Then if the dictator diverts and a coup is either not staged or fails, his power (and payoff) grows from  $b$  to  $b + \mu b$ .<sup>7</sup> Since the amount of power that the dictator can hold is at most one,  $\mu$  must be such that  $b + \mu b \leq 1$ . Finally, if a coup succeeds, the dictator is removed from power and receives the payoff zero.

Each member of the ruling coalition would ideally like to preserve the status quo and share power with the dictator. This occurs when the dictator complies and a coup is not staged or when a coup is staged and succeeds, regardless of whether the dictator diverted.<sup>8</sup> In that case, each member of the ruling coalition obtains a payoff one. If a coup fails, the entire ruling coalition is eliminated and each member receives the payoff zero. Finally, if the dictator diverts and a coup is not staged, the dictator eliminates a member of the ruling coalition with the probability  $\epsilon \in (0, 1)$ . In that case, the expected payoff to each member of

<sup>4</sup>Hirshleifer (1989) and Skaperdas (1996) discuss more general forms for a contest success function.

<sup>5</sup>Boix and Svulik (2007) develop a model of authoritarian power sharing that examines the collective action problem of replacing a dictator.

<sup>6</sup>We may think of  $\mu$  as the upper threshold on how much the dictator can divert, while assuming that this will be the dictator's choice. Alternatively, we may think of  $\mu$  as the maximum amount of diversion that is not perfectly observable.

<sup>7</sup>Thus if the dictator diverts and a coup fails, the dictator still needs a ruling coalition with the power  $1 - (b + \mu b)$  in order for his regime to stay in power.

<sup>8</sup>If a coup is staged and succeeds, the ruling coalition renegotiates the power-sharing agreement and chooses a new dictator.

the ruling coalition is  $1 - \epsilon$ . Thus I allow for the possibility that a member of the ruling coalition survives even if the dictator diverts and a coup is not staged. More precisely,  $1 - \epsilon > 0$  implies that a member of the ruling coalition prefers being at the mercy of a dictator who diverted to participating in a failed coup.

Figure 1 portrays the timing of the actions and the payoffs in this authoritarian power-sharing game. First, the dictator chooses whether to divert or comply. Second, the ruling coalition observes an imperfect signal of the dictator's action and decides whether to stage a coup. Finally, if the coup is staged, then it either succeeds or fails.

### Authoritarian Power Sharing

Can the ruling coalition deter the dictator's opportunism using only the threat of a coup d'état? The threat of a coup would certainly deter the dictator's opportunism if the dictator's actions were *perfectly observable*. The dictator would anticipate that if he diverted, the ruling coalition would plainly observe his actions and have no choice but to stage a coup. He would therefore always comply.

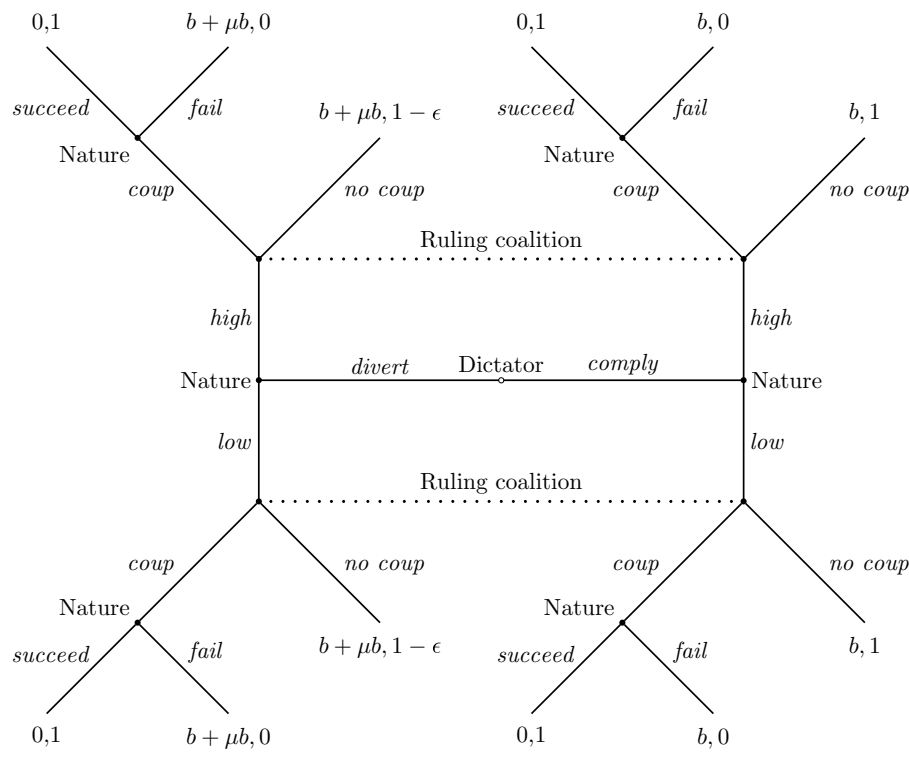
This reasoning does not extend to the present setting, where the dictator's actions are not perfectly observable. Recall that the likelihood of a successful coup depends on the balance of power between the dictator and the ruling coalition. Thus staging a coup is costly to the ruling coalition because a coup may fail. As a result, the ruling coalition would prefer to threaten a coup if it observes a high signal of diversion, have the dictator believe this threat and therefore comply from the outset, but ultimately *not* carry out the coup despite having observed a high signal. Of course, believing such a threat on the dictator's part would not be consistent with the ruling coalition's strategy. Instead, the dictator would anticipate the ruling coalition's line of reasoning, not consider the threat of a coup credible, and thus divert.

The threat of a coup will be credible only if the ruling coalition has an incentive to carry out its threat *after* the dictator has acted and the ruling coalition has observed an imperfect signal of his action. This incentive will exist only if the possibility that the dictator diverted is real. In other words, the threat of a coup is *credible* only if the dictator diverts with a positive probability. This logic can be verified by examining the perfect Bayesian equilibrium of this authoritarian power-sharing game.

Allowing for mixed strategies, we can think of this game as proceeding in four stages. First, the dictator diverts with probability  $\alpha$ . Second, depending on the dictator's action, nature determines the realization of the signal  $\theta$  with probability  $\pi_{\theta a}$ . Third, the ruling coalition stages a



**FIGURE 1 Authoritarian Power-Sharing Game in Extensive Form**



coup with probability  $\beta_\theta$  after it observes the signal  $\theta$ . For example,  $\beta_H$  is the probability that the ruling coalition stages a coup when it observes a high signal. And finally, if a coup is staged, it succeeds with probability  $\rho$ .

First, consider the ruling coalition's equilibrium strategy  $\beta_\theta$ . Based on the discussion above, we may verify that there is no equilibrium in which the dictator uses a pure strategy *and* the ruling coalition conditions its decision to stage a coup on the observed signal.<sup>9</sup> In a mixed-strategy equilibrium, the ruling coalition stages a coup with probability  $\beta_\theta$  such that, given the correlation between his actions and the signal  $\theta$ , the dictator is indifferent between diverting and complying. Thus we have

$$\begin{aligned} & \sum_{\theta \in \{H,L\}} \pi_{\theta c} [\beta_\theta(1 - \rho)b + (1 - \beta_\theta)b] \\ &= \sum_{\theta \in \{H,L\}} \pi_{\theta d} [\beta_\theta(1 - \rho)(b + \mu b) \\ & \quad + (1 - \beta_\theta)(b + \mu b)], \end{aligned}$$

<sup>9</sup>As is the case with many extensive games with imperfect information, this game also has an implausible equilibrium in which the ruling coalition ignores the information conveyed by the signal  $\theta$ , stages a coup with probability one, and the dictator diverts with probability one.

or equivalently

$$\sum_{\theta \in \{H,L\}} \pi_{\theta c}(1 - \beta_\theta \rho)b = \sum_{\theta \in \{H,L\}} \pi_{\theta d}(1 - \beta_\theta \rho)(b + \mu b). \tag{1}$$

Solving (1) for  $\beta_H$ , we obtain

$$\beta_H = \frac{\mu}{\pi_{Hd}(1 + \mu) - \pi_{Hc}} \left( \frac{1}{\rho} - \beta_L \right) + \beta_L,$$

which implies that  $\beta_H > \beta_L$ . Intuitively, the ruling coalition stages a coup with a greater probability after observing a high signal than after observing a low signal. Among the possible pairs  $(\beta_L, \beta_H)$  that satisfy equality (1), only the pairs  $(\beta_L = 0, \beta_H > 0)$  and  $(\beta_L > 0, \beta_H = 1)$  constitute an equilibrium.<sup>10</sup> Moreover, the equilibrium in which  $\beta_L = 0$  and  $\beta_H > 0$  is focal from the point of view of a dictator and a ruling coalition who would like to share power: *both* actors prefer this equilibrium to that in which  $\beta_L > 0$  and  $\beta_H = 1$ .<sup>11</sup> In the rest of the article, I

<sup>10</sup>In any equilibrium in mixed strategies, the ruling coalition is indifferent between staging and not staging a coup after observing a high signal or after observing a low signal, but not both. Therefore, in an equilibrium in mixed strategies, either  $\beta_L = 0$  or  $\beta_H = 1$ .

<sup>11</sup>A detailed proof of this claim as well as of all the propositions that follow can be found in an online appendix at the author's website.

therefore restrict attention to the relevant equilibrium, in which  $\beta_L = 0$  and  $\beta_H > 0$ .

In this equilibrium, the ruling coalition stages a coup with a positive probability *only* after observing a high signal,

$$\beta_L^* = 0 \text{ and } \beta_H^* = \frac{\mu}{\rho [\pi_{Hd}(1 + \mu) - \pi_{Hc}]} > 0. \quad (2)$$

Furthermore, (2) implies that the equilibrium probability that the ruling coalition stages a coup after observing a high signal  $\beta_H^*$  is decreasing in both the probability that a coup succeeds ( $\rho$ ) and in the informativeness of the signal  $\theta$  about the dictator's actions ( $\pi_{Hd} - \pi_{Hc}$ ), while it is increasing in the extent of the dictator's diversion  $\mu$ . This raises the possibility that  $\mu$  could be so large that the dictator would divert even if  $\beta_H = 1$ . That is, the dictator would divert even if the ruling coalition *always* staged a coup after observing a high signal. In order to focus on settings where the dictator is potentially deterrable, I make the following assumption:

**Assumption 1** (Temptation to Consolidate Power). *The extent of the dictator's diversion  $\mu$  cannot be so large that the dictator diverts for all  $\beta_H \leq 1$ ,*

$$\mu < \frac{\rho(\pi_{Hd} - \pi_{Hc})}{1 - \rho\pi_{Hd}}.$$

Assumption 1 admits a larger extent of diversion  $\mu$  by the dictator when the signal  $\theta$  is more informative about the dictator's actions and when the probability that a coup succeeds  $\rho$  is larger.

Finally, what is the dictator's equilibrium strategy  $\alpha$ ? In a mixed-strategy equilibrium,  $\alpha$  must be such that the ruling coalition is indifferent between staging and not staging a coup after observing a high signal. Although the ruling coalition does not directly observe the dictator's actions, we can compute the conditional probability that the dictator diverted given the signal that the ruling coalition observes. I denote this probability  $\Pr(a | \theta)$ . For example,  $\Pr(d | H)$  is the probability that the dictator diverted given that the ruling coalition observes a high signal. Using Bayes's rule we see that

$$\Pr(d | H) = \frac{\pi_{Hd}\alpha}{\pi_{Hd}\alpha + \pi_{Hc}(1 - \alpha)}. \quad (3)$$

Then the ruling coalition is indifferent between staging and not staging a coup after observing a high signal whenever

$$\rho = \Pr(d | H)(1 - \epsilon) + 1 - \Pr(d | H),$$

where  $\rho$  is the expected payoff to the ruling coalition from staging a coup, whereas  $\Pr(d | H)(1 - \epsilon) + 1 - \Pr$

$(d | H)$  is the expected payoff from no coup. Substituting  $\Pr(d | H)$  from (3), the equilibrium probability with which the dictator diverts is

$$\alpha^* = \frac{\pi_{Hc}}{\pi_{Hc} + \pi_{Hd}\left(\frac{\epsilon}{1-\rho} - 1\right)}. \quad (4)$$

### Balace of Power and Authoritarian Power Sharing

I intentionally reserved the discussion of the effect of the balance of power between the dictator and the ruling coalition on their equilibrium behavior until now because it is central to the dynamics of authoritarian power sharing. I find that, depending on the balance of power between the dictator and the ruling coalition, two distinct power-sharing regimes may emerge.

First, a *contested* dictatorship is an equilibrium in which a coup staged by the ruling coalition succeeds with a sufficiently high probability to credibly threaten the dictator. Despite the fact that the dictator diverts with a positive probability and coups do occur, the dictator's opportunism is at least partially deterred in this equilibrium. On the other hand, in an *established* dictatorship, the balance of power between the dictator and the ruling coalition favors the dictator to the extent that a coup is so unlikely to succeed that he anticipates that the ruling coalition will not stage one. In this regime, coups do not occur and the dictator has effectively eliminated the ruling coalition.

Equilibrium conditions (2) and (4) imply that as the balance of power between the dictator and the ruling coalition shifts in favor of the dictator, the ruling coalition stages a coup and the dictator diverts with increasing probability. That is, as the dictator becomes more powerful, his appetite for power grows and the ruling coalition counters the dictator's increasing attraction to diversion by staging a coup with greater probability. This dynamic can be seen by substituting  $\rho = 1 - b$  into (4),

$$\alpha^* = \frac{\pi_{Hc}}{\pi_{Hc} + \pi_{Hd}\left(\frac{\epsilon}{b} - 1\right)}.$$

How much power must the dictator acquire before the ruling coalition can no longer credibly threaten a coup? We may say that the threat of a coup lacks *ex ante credibility* when the balance of power favors the dictator to the extent that the ruling coalition would not stage a coup even if it were certain that the dictator actually diverted. Thus the threat of a coup will be *ex ante* credible as long as, after a diversion, the ruling coalition's expected payoff from a coup is greater than the expected payoff from no coup,  $\rho \geq 1 - \epsilon$ , or equivalently,  $\epsilon \geq b$ . When the threat of a coup lacks *ex ante* credibility, each member

of the ruling coalition would rather do nothing and hope that the dictator does not eliminate him than stage a coup that would most likely fail.

Thus  $b = \epsilon$  is the largest share of power held by the dictator under which the threat of a coup is *ex ante* credible. Then as long as  $b \in (0, \epsilon]$ , the strategies of the dictator and the ruling coalition summarized by expressions (2) and (4) constitute an equilibrium of this power-sharing game. We can check that, given the equilibrium probability with which the dictator diverts  $\alpha^*$  and as long as  $\rho \geq 1 - \epsilon$ , the ruling coalition prefers not to stage a coup when it observes a low signal,

$$\rho \leq \Pr(d | L)(1 - \epsilon) + 1 - \Pr(d | L).$$

Thus the ruling coalition has no incentive to deviate from its equilibrium strategy of staging a coup with a positive probability only when it observes a high signal ( $\beta_L^* = 0, \beta_H^* > 0$ ) as long as the threat of a coup is *ex ante* credible. This condition also guarantees that  $0 < \alpha^* \leq 1$ . I call this equilibrium a *contested* dictatorship.

Now consider the case when  $b > \epsilon$ . In this case, the success of a coup is so unlikely that the ruling coalition would not stage one even if it knew that the dictator diverted. Thus we have  $\beta_L^* = \beta_H^* = 0$ . In turn, there is nothing to deter the dictator from diverting and  $\alpha^* = 1$ . I call this equilibrium an *established* dictatorship. I summarize these results in the following proposition.

**Proposition 1** (Authoritarian Power Sharing). *In a perfect Bayesian equilibrium of the authoritarian power-sharing game,*

$$\alpha^* = \frac{\pi_{Hc}}{\pi_{Hc} - \pi_{Hd}(\frac{\epsilon}{1-\rho} - 1)}, \quad \beta_L^* = 0$$

and

$$\beta_H^* = \frac{\mu}{\rho [\pi_{Hd}(1 + \mu) - \pi_{Hc}]} \quad \text{if } b \in (0, \epsilon];$$

and  $\alpha^* = 1, \beta_L^* = \beta_H^* = 0$  if  $b \in (\epsilon, 1]$ .

Does the ability of the dictator and the ruling coalition to share power in a contested dictatorship deteriorate as the dictator acquires more power? Power sharing is successful when the dictator complies and the ruling coalition does not stage a coup,

$$\begin{aligned} &\Pr(\text{Successful Power Sharing}) \\ &= (1 - \alpha^*)[\pi_{Hc}(1 - \beta_H^*) + (1 - \pi_{Hc})]. \end{aligned}$$

With some algebra, it can be shown that the probability of successful power sharing declines in the dictator's power. In other words, the moral hazard associated with authoritarian power sharing intensifies as the dictator gains more power.

Furthermore, we have seen that in a contested dictatorship, both the probability that the dictator diverts and the probability that the ruling coalition stages a coup increase as the balance of power shifts in the dictator's favor. But does the probability that the dictator diverts *successfully* also increase when he has accumulated more power? In a contested dictatorship, the dictator diverts successfully when he diverts and (1) the ruling coalition observes a low signal, or (2) the ruling coalition observes a high signal but does not stage a coup, or (3) the ruling coalition observes a high signal and stages a coup that fails. Thus the probability of a successful diversion is

$$\begin{aligned} &\Pr(\text{Successful Diversion}) \\ &= \alpha^*[\pi_{Ld} + \pi_{Hd}(1 - \beta_H^*) + \pi_{Hd}\beta_H^*(1 - \rho)]. \end{aligned}$$

We may easily check that the probability of successful power sharing is decreasing in the dictator's power.

**Proposition 2** (Balance of Power). *If  $b \in (0, \epsilon]$ , then  $\alpha^*, \beta_H^*$ , and  $\Pr(\text{Successful Diversion})$  are all increasing in  $b$ , while  $\Pr(\text{Successful Power Sharing})$  is decreasing in  $b$ .*

We may also examine how the likelihood of successful power sharing and the dictator's successful diversion depend on the precision of the signal  $\theta$  about the dictator's actions. We can check that the equilibrium probability of diversion  $\alpha^*$  is decreasing in  $\pi_{Hd}$  and increasing in  $\pi_{Hc}$ . Therefore, when the signal  $\theta$  about the dictator's actions is more informative ( $\pi_{Hd} - \pi_{Hc}$  increases), the likelihood of successful power sharing is greater. On the other hand, the relationship between the dictator's successful diversion and the informativeness of the signal  $\theta$  is nonmonotonic.

**Proposition 3** (Transparency). *If  $b \in (0, \epsilon]$ , then  $\Pr(\text{Successful Power Sharing})$  is increasing in the informativeness of the signal  $\theta$  about the dictator's actions,  $\pi_{Hd} - \pi_{Hc}$ .*

Finally, observe that the equilibrium probability of the dictator's diversion  $\alpha^*$  is decreasing in  $\epsilon$ , the probability with which the dictator eliminates a member of the ruling coalition if he successfully diverts. Although not an explicit part of this model, if larger ruling coalitions are associated with a lower probability of any ruling coalition member being eliminated, and therefore a lower  $\epsilon$ , then larger ruling coalitions may be better able to deter the dictator's opportunism and thus successfully share power.<sup>12</sup>

In order to illustrate the findings in this section, consider the following numerical example. When  $\pi_{Hd} = 0.8$ ,

<sup>12</sup>I would like to thank an anonymous referee for suggesting this implication.

$\pi_{Hc} = 0.2$ ,  $\mu = 0.2$ ,  $b = 0.45$ ,  $\epsilon = 0.5$ , a coup succeeds with the probability  $\rho = 0.55$ , the ruling coalition never stages a coup when the signal  $\theta$  is low ( $\beta_L^* = 0$ ), but stages a coup when the signal  $\theta$  is high with the probability  $\beta_H^* = 0.48$ , and the dictator diverts with the probability  $\alpha^* = 0.69$ . The probability of successful power sharing under these conditions is 0.28 and the probability of a successful diversion by the dictator is 0.55. This is an example of a contested dictatorship, since  $b < \epsilon$ . However, if the dictator successfully diverts, his power grows to  $b = 0.54 > \epsilon = 0.5$ . In that case, this dictatorship becomes established with  $\beta_L^* = \beta_H^* = 0$  and  $\alpha^* = 1$ .

### A Model with Endogenously Evolving Balance of Power

Although my results so far are based on a single-period extensive game, they suggest a dynamic interpretation of the dictator's power trajectory. That is, we could conceive of a repeated game in which the balance of power between the dictator and the ruling coalition in each period depends on whether the dictator successfully diverted in the previous period. Proposition 1 implies that in a contested dictatorship, the dictator will act opportunistically with a positive probability and the ruling coalition will stage a coup with a positive probability as well. Proposition 2 implies that the probability that the dictator indeed acquires more power is always positive, and in fact increases with that power. Any contested dictator may therefore become an established dictator if he succeeds in acquiring a sufficient amount of power through diversion, although such a trajectory is unlikely.

I now examine such a multiperiod game. In an equilibrium of this game, the balance of power between the dictator and the ruling coalition evolves *endogenously*. The dynamic in this multiperiod game is qualitatively identical to that in the single-period game. In the next section, I use this multiperiod game to examine the implications of my theory for the statistical analysis of leader tenures in authoritarian regimes.

I index periods by  $t = \{T, T - 1, \dots, 1, 0\}$  so that in any period,  $t$  is the number of times the dictator must successfully divert in order to become an established dictator. Thus I denote by  $t = 1$  the period in which a single successful diversion by the dictator turns a contested dictatorship into an established one. The game ends in period  $t = 0$  in which  $b_0 > \epsilon$  and the ruling coalition's threat to stage a coup is no longer *ex ante* credible.

In each period, the dictator and the ruling coalition receive one of their three possible payoffs portrayed in Figure 1. Recall that these payoffs depend on whether

the dictator diverts, whether the ruling coalition stages a coup, and whether a staged coup succeeds. In any period, the existing balance of power  $b_t$  summarizes the payoff-relevant history of play. Then

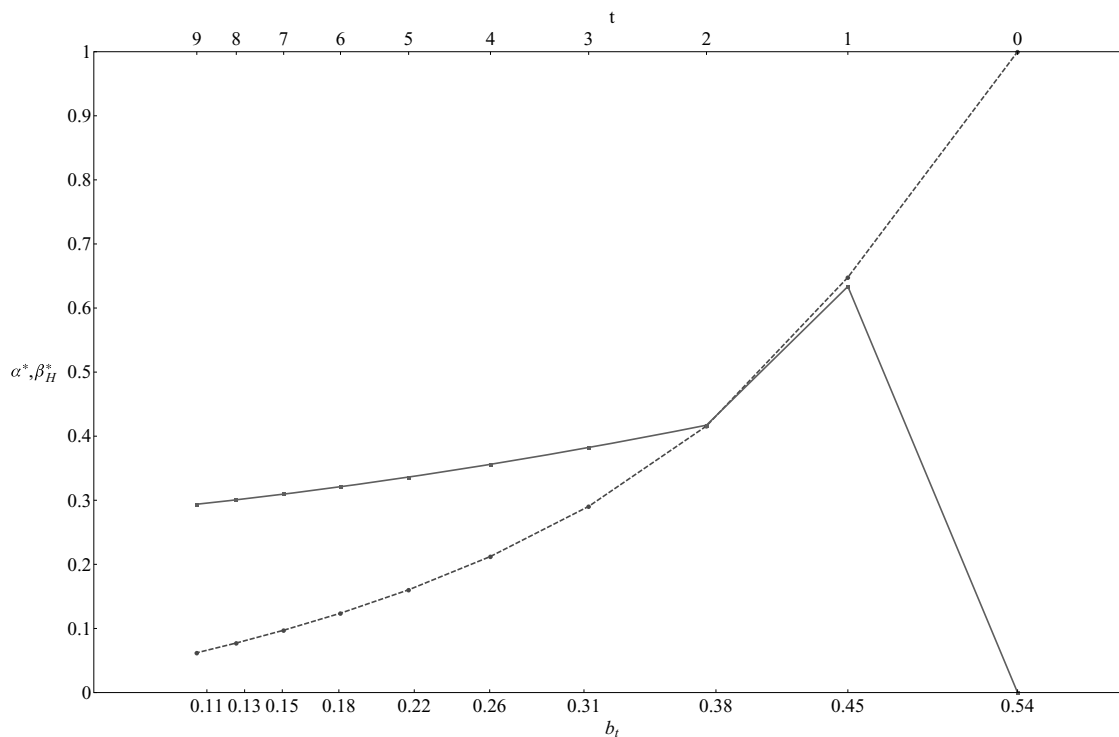
$$\begin{aligned} V^t &= (b_t + \delta V^t)(1 - \alpha_t) [\pi_{Hc}\beta_t(1 - \rho_t) \\ &\quad + \pi_{Hc}(1 - \beta_t) + 1 - \pi_{Hc}] \\ &\quad + (b_t + \mu b_t + \delta V^{t-1})\alpha_t [\pi_{Hd}\beta_t(1 - \rho_t) \\ &\quad + \pi_{Hd}(1 - \beta_t) + 1 - \pi_{Hd}], \text{ and} \\ U^t &= (1 + \delta U^t) [\alpha_t\pi_{Hd}\beta_t\rho_t + (1 - \alpha_t)\pi_{Hc}\beta_t\rho_t \\ &\quad + (1 - \alpha_t)\pi_{Hc}(1 - \beta_t) + (1 - \alpha_t)(1 - \pi_{Hc})] \\ &\quad + (1 - \epsilon + \delta U^{t-1}) [\alpha_t\pi_{Hd}(1 - \beta_t) + \alpha_t(1 - \pi_{Hd})] \end{aligned}$$

are the discounted expected payoffs to the dictator and any member of the ruling coalition in period  $t$ , respectively, and  $\delta \in (0, 1)$  is a discount factor. Because payoffs  $V^t$  and  $U^t$  may become quite large in a multiperiod game,  $\delta$  needs to be very close to zero so that  $\alpha_t, \beta_t \in (0, 1)$ . When the dictator becomes established,  $V^0 = 1$  and  $U^0 = 1 - \epsilon$ .

I examine a Markov perfect equilibrium of this multiperiod authoritarian power-sharing game. I assume that given an existing balance of power, the ruling coalition employs the threat of a coup in a way that is optimal from that period onward and ignores any previous history of play. Optimal strategies can be computed using backward induction, starting in period  $t = 1$  and then recursively for the remaining periods. Explicit solutions obtained in this way are far too complicated algebraically to be useful. I therefore present a numerical example here instead.

Suppose  $\pi_{Hd} = 0.8$ ,  $\pi_{Hc} = 0.2$ ,  $\mu = 0.2$ ,  $\epsilon = 0.5$ ,  $\delta = 0.1$  and the initial balance of power is 0.11. In this case, it would take nine successful diversions for the dictator to become established,  $T = 9$  and  $b_t = (0.11, 0.13, 0.15, 0.18, 0.22, 0.26, 0.31, 0.38, 0.45)$  for  $t = 9, \dots, 1$ . The equilibrium probabilities of a diversion and a coup,  $\alpha_t^*$  and  $\beta_{Ht}^*$ , are portrayed in Figure 2. The horizontal axis denotes both the periods  $t$  (upper axis) and the balance of power  $b_t$  in these periods (lower axis.) We see that the equilibrium probabilities that the dictator diverts and the ruling coalition stages a coup are increasing as the dictator acquires more power until period one when  $b_1 = 0.45$ . If the dictator successfully diverts in that period, he becomes established and the ruling coalition prefers to be at the mercy of the dictator to staging a coup. This numerical example can be easily generalized to any number of periods  $T$ .

**FIGURE 2 The Probability of the Dictator’s Diversion,  $\alpha^*$  (Dashed Line), and the Probability That the Ruling Coalition Stages a Coup If It Observes a High Signal,  $\beta_h^*$  (Solid Line), in an Equilibrium of the Multiperiod Authoritarian Power-Sharing Game**



### Implications for the Empirical Study of Dictator Tenures

Some of my key theoretical results so far have been stated with respect to the balance of power between the dictator and the ruling coalition—a variable that is very hard to measure in large-N data. In this section, I examine the statistical implications of my theory in terms of a variable that is easily observable and of substantial political interest: the time that a dictator stays in power. I derive the statistical distribution of time until a successful coup, the time until a dictator becomes established, and the distribution of the time that a dictator is expected to spend at each step of his power trajectory. A nice feature of the equilibrium in mixed strategies examined in the last section is that statistical distributions of these quantities can be derived *directly* from the multiperiod model. Crucially, these distributions correspond to standard survival distributions. The claims advanced earlier can therefore be evaluated within a well-specified statistical framework. I conclude this section with a discussion of existing quantitative and qualitative support for my theoretical predictions.

As previously, I denote by  $T > 0$  the number of times that the dictator must successfully divert in order to become established and I index periods by  $t = \{T, T - 1, \dots, 1, 0\}$ . Then along the dictator’s equilibrium power trajectory, three possible outcomes—successful power sharing, a successful coup, and successful diversion—occur with the following probabilities:

$$\begin{aligned} & \Pr(\text{Successful Power Sharing}_t) \\ &= (1 - \alpha_t)(1 - \pi_{Hc} + \pi_{Hc}[1 - \beta_{Ht} + \beta_{Ht}(1 - \rho_t)]), \\ & \Pr(\text{Successful Coup}_t) \\ &= [\alpha_t \pi_{Hd} + (1 - \alpha_t) \pi_{Hc}] \beta_{Ht} \rho_t, \\ & \Pr(\text{Successful Diversion}_t) \\ &= \alpha_t(1 - \pi_{Hd} + \pi_{Hd}[\beta_{Ht}(1 - \rho_t) + 1 - \beta_{Ht}]) \\ & \quad \text{for } t = T, \dots, 1. \end{aligned}$$

The probability of each of the three outcomes depends only on the current balance of power between the dictator and the ruling coalition,  $b_t$ . Therefore, the equilibrium path in this game can be statistically represented by a discrete-time absorbing Markov chain where the

states  $t = T, \dots, 1$  are transient, while the states *established* and *coup* are absorbing. Using the canonical form, the transition matrix

$$\mathbf{P} = \begin{pmatrix} \mathbf{Q} & \mathbf{C} \\ \mathbf{0} & \mathbf{I} \end{pmatrix},$$

where  $\mathbf{Q}$  is a  $T \times T$  matrix of transition probabilities for the states  $t = T, \dots, 1$ ,  $\mathbf{C}$  is a  $T \times 2$  matrix of transition probabilities from the  $T$  transient into the two absorbing states,  $\mathbf{0}$  is a  $2 \times T$  matrix of zeros, and  $\mathbf{I}$  is a  $2 \times 2$  identity matrix.

The fundamental matrix  $\mathbf{M} = (\mathbf{I} - \mathbf{Q})^{-1}$  exists (see, e.g., Trivedi 2002, chap. 7) and its first row denotes the expected time the dictator spends at each step of the power trajectory before he is either removed by a coup or becomes established. Continuing with the numerical example in the previous section, these expected times are 8.98, 3.49, 1.47, 0.67, 0.32, 0.16, 0.08, 0.04, 0.02 for states  $t = T, \dots, 1$ , respectively. The distribution of these expected times illustrates how the ruling coalition's concern that the dictator may become established intensifies as he acquires more power. In terms of the expected time that the dictator spends at each step of his power trajectory, his transition from one step to the next accelerates as he acquires more power. Adding up these expected times, we obtain the total expected time before the dictator is removed by a coup or becomes established; in our numerical example, this time is 15.23.

The first row of the product  $\mathbf{MC}$  contains the long-run distribution of the two absorbing states *established* and *coup*. In the numerical example, we should expect that only 1% of dictators will become established while the remaining 99% will be removed by a coup. However, this distribution depends on the number of steps that the dictator must take in order to become established. In our numerical example  $T = 9$ , but as many as 23% of dictators would become established if only four successful diversions were required in order to do so.

One important implication of the above result for the statistical analysis of dictator tenures is that a positive fraction of dictators may stay in office for an arbitrarily long period of time.<sup>13</sup> In real-world cases, of course, a dictator may not only be removed by a coup but also via alternative forms of exit, such as a natural death, foreign intervention, transition to democracy, etc. Nonetheless, a positive fraction of existing dictators may at any time no longer be at risk of losing power through a coup. Ignoring this possibility may lead to incorrect inferences

<sup>13</sup>For statistical analyses of dictator tenures, see, e.g., Bueno de Mesquita et al. (2003), Londregan and Poole (1990), and Svulik (2006).

about the effects of covariates on leader survival. Survival techniques that account for the possibility that a fraction of observations may not be subject to the relevant risk—such as cure rate or split-population models—have been applied in political science by Box-Steffensmeier, Radcliffe, and Bartels (2005) and Svulik (2008).

Given the available data on the timing of coups in authoritarian regimes, the probability distribution of time-to-coup implied by the present model is of particular empirical interest and can be obtained using the power method. For time  $\tau = \{1, 2, \dots, \infty\}$ , the probability distribution of time-to-coup is given in position  $T + 2$  of the vector  $\mathbf{p}_0 \mathbf{P}^\tau$ , where  $\mathbf{p}_0$  is the initial  $1 \times (T + 2)$  probability vector  $\mathbf{p}_0 = (1, 0, \dots, 0)$ .<sup>14</sup> Thus in contested dictatorships, the distribution of time-to-coup follows a generalized geometric distribution with a probability of success that decreases for  $t = T, \dots, 1$ . Its continuous-time analogue is the Weibull distribution with an increasing hazard rate (Ali Khan, Khalique, and Abouammoh 1989).<sup>15</sup> On the other hand, the probability density of time-to-established dictatorship is given in position  $T + 1$  of the vector  $\mathbf{p}_0 \mathbf{P}^\tau$ . It follows the generalized negative binomial distribution with  $T$  successes and a probability of success that decreases with  $t = T, \dots, 1$ . The equivalent continuous-time distribution is the generalized Gamma distribution (Gerber 1991).

To illustrate these results, I continue with the numerical example from the last section and plot the probability density of time-to-coup and time-to-established dictatorship in the top and middle parts of Figure 3, respectively. We may compare this numerical illustration with the actual distribution of successful coups in authoritarian regimes based on the data of Svulik and Akcinaroglu (2006) in the bottom part of Figure 3. We see that the theoretical model that I propose in this article implies a distribution of successful coups that closely reflects real-world data.

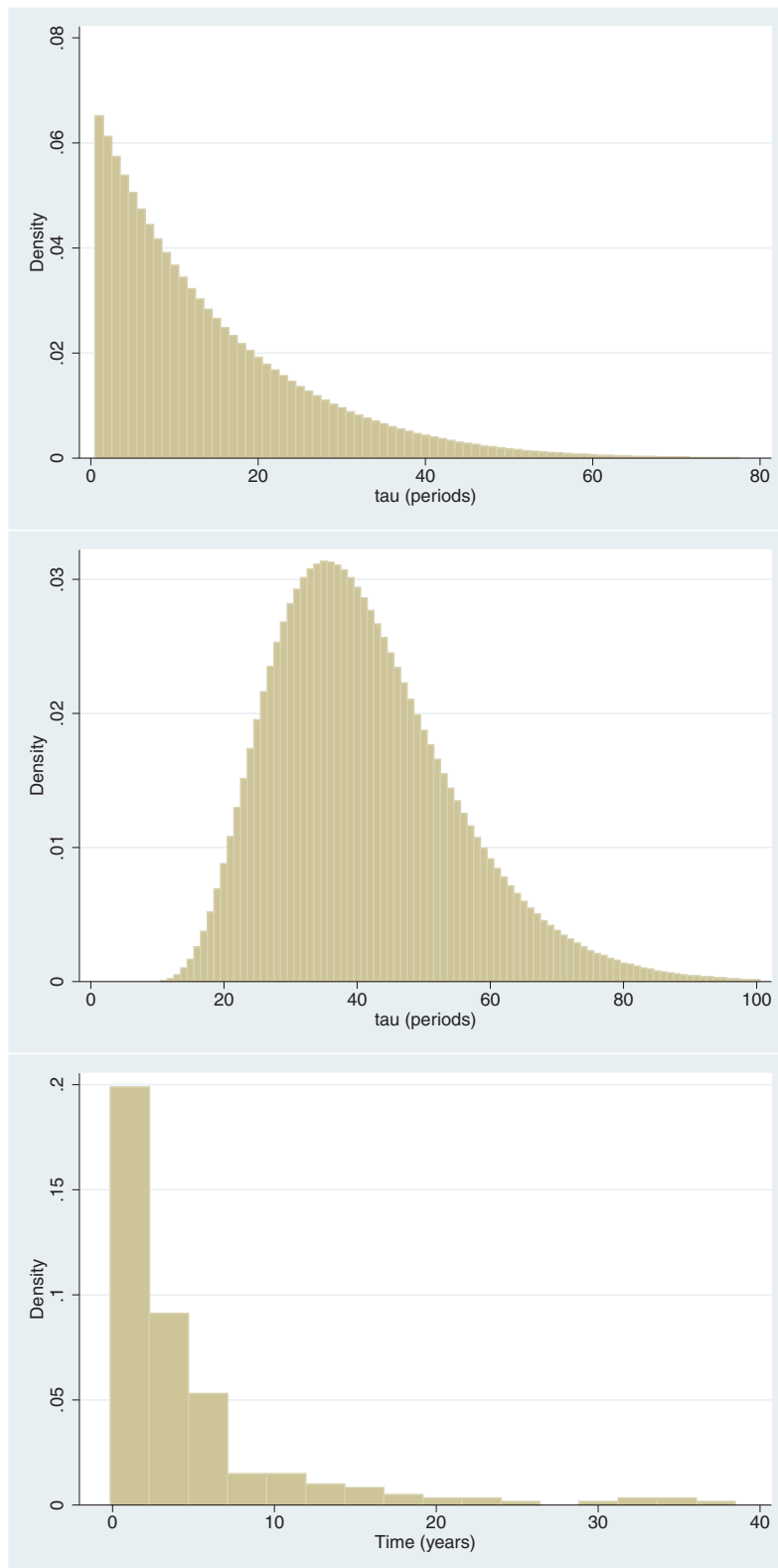
However, because existing large-N data do not code whether a dictator is contested or established, we should expect that the observed data on the tenure of dictators contain both contested and established dictators.<sup>16</sup> While

<sup>14</sup>This result can be easily extended to the case of an arbitrary distribution of starting points by working with an initial vector that describes that distribution.

<sup>15</sup>This is the distribution of successful coups, but it is easy to see that the distribution of failed coups is also Weibull.

<sup>16</sup>In her categorization of authoritarian regimes, Geddes (1999) codes for "personalist" regimes, which closely correspond to the equilibrium of established dictatorship in this article. Unfortunately, she does not temporally distinguish the type of dictatorship that existed prior to any personalist regime (here, contested dictatorship) from the period of the personalist regime proper.

**FIGURE 3** Probability Density of Time-to-Coup (Top) and Time-to-Established Dictatorship (Middle) Based on the Numerical Example, and the Density of Coups Based on the Data in Svolic and Akcinaroglu (2006)



both the hazard of time-to-established dictatorship and time-to-coup are increasing over time, the hazard of a successful coup declines relative to that of the dictator becoming established after a certain threshold time. In my numerical example, that time is 35. We should therefore expect the hazard of successful coups to be first increasing and then decreasing in actual, real-world data. Using survival distributions that allow for the appropriate hazard dynamic (log-normal, log-logistic, generalized Gamma), Svulik (2006) finds that this is indeed the case after controlling for the age of the dictator, GDP per capita, and economic growth.

Moreover, as I anticipated above, we should expect that the longer that a dictator is in office, the less likely it is that he will be removed by a coup instead of exiting by alternative means, such as a natural death, foreign intervention, transition to democracy, etc. Although a self-standing competing risks analysis that fully evaluates this prediction is beyond the scope of this article, preliminary empirical support for it can be obtained by comparing the risk of a coup to that of a natural death for dictators with short versus long tenures. Consider the fact that among leaders who ruled for less than 10 years, 162 were removed by a coup while only 31 died in office. Yet among leaders who stayed in office for at least 10 years, only 41 were removed by a coup while 45 died in office. Thus for dictators who survive in office for at least 10 years, the odds of dying of natural causes rather than being removed by a coup improve from less than one in five to more than one in one! At the same time, leaders who rule for less than 10 years and exit office because of natural causes are about six years older than those who are removed by a coup. Meanwhile, leaders who rule for more than 10 years and exit office because of natural causes are only about nine years older than those who are removed in a coup. The small difference between the average ages in these two groups of leaders (three years) suggests that the greater odds of a natural death among dictators who ruled for more than 10 years are *not* due to an age-related increase in mortality, but are instead due to the potential consolidation of power by the dictator that I explore in this article.<sup>17</sup>

Finally, although the model in this article abstracts from the collective action problem of staging a coup, we may hypothesize that ruling coalitions in military dictatorships have an easier time staging a successful coup than

they would have in other types of dictatorships because of their direct access to the tools of violence and an entrenched, hierarchical chain of command. The model in the third section then implies that, for a given balance of power between the dictator and the ruling coalition, a coup is more likely to succeed in a military dictatorship than in any other type of dictatorship. In turn, propositions 1 and 2 imply that the probability of successful power sharing will be lower in military dictatorships. The present model thus explains why the tenures of military dictators are on average shorter than the tenures of leaders in other types of dictatorships. Using Geddes's (1999) coding of dictatorships, I find that military dictators stay in office for an average of 4.21 years. In contrast, leaders in single-party and personalist dictatorships survive in office for more than twice as long: 11.63 and 10.74 years, respectively.<sup>18</sup>

## Conclusion

In this article, I argue that a central problem of authoritarian governance is the problem of power sharing between the dictator and the ruling coalition. The key elements of this moral hazard problem are (1) the ability and desire of the dictator to acquire more power at the expense of the ruling coalition and (2) the imperfect nature of a coup as the sole deterrent to such behavior that is available to the ruling coalition. I show that two power-sharing regimes, contested and established dictatorships, emerge in equilibrium and correspond closely to our observations about the character and duration of dictators' tenures in actual data. Furthermore, I examine how an endogenously evolving balance of power between the dictator and the ruling coalition affects the credibility of the coup threat and may lead to a transition from a contested to an established dictatorship. This transition can be seen as the devolution of a dictatorship from an oligarchy to an autocracy. The present argument thus also provides a new explanation for the variation in the concentration of power in dictatorships over time.

The theory that I present furthermore offers an important, new rationale for the role of political institutions in authoritarian regimes: formal political institutions may serve to alleviate the moral hazard associated with authoritarian power sharing. In the third section, for instance, I

<sup>17</sup>Nonetheless, there are examples of leaders such as Mobutu in Zaire, Trujillo in the Dominican Republic, or Selassie in Ethiopia, who ruled for an unusually long time, managed to consolidate power in their hands, but were later removed from office in a coup. The theory presented in this article does not account well for these cases.

<sup>18</sup>These quantities are similar when I use the regime coding in Cheibub and Gandhi (2005). Military dictators stay in office for an average of 5.89 years, while civilian dictators and monarchs survive in office for 7.67 and 11.75 years, respectively.



find that the secrecy that generally characterizes dictatorships exacerbates this moral hazard. Political institutions in dictatorships, such as governing councils, legislatures, or parties, may therefore function to allow members of the governing authoritarian elite to reassure each other that none of them is trying to acquire more power at others' expense.

Another important element of my theory of authoritarian power sharing is the number of successful power grabs that a dictator must make in order to effectively eliminate the ruling coalition. The fewer such steps required, the more likely it is that a contested dictator becomes an established one. Existing authoritarian institutions may then play an important role in determining how many such steps are required: dictators who came into power through a revolution or a coup and destroyed preexisting political institutions may be less constrained in their pursuit of power than those who must regularly consult a governing council with established decision-making procedures. The theory I propose in this article thus notably offers a rationale for political institutions that departs from the predominant view that institutions in dictatorships serve to divide and coopt the opposition (see, e.g., Gandhi and Przeworski 2006; Lust-Okar 2006). Instead, I suggest that some political institutions may exist in order to facilitate power sharing among those already in power.

Finally, the theory developed in this article has some new implications for our understanding of democratic accountability. Could the threat of a coup d'état serve to deter the dictator's opportunism in a similar way that the threat of losing an election deters a politician from performing poorly in a democracy? In other words, are dictators similarly accountable to their ruling coalitions as incumbents in democracies are to their electorates?

The analysis here shows that there is a qualitative difference between authoritarian and democratic accountability: while the ruling coalition is capable of deterring the dictator's opportunism in a contested dictatorship, it does so only imperfectly—the dictator still diverts with a positive probability. This outcome is the consequence of two key elements of the setting examined in this article: (1) the ruling coalition observes the dictator's actions only imperfectly and (2) a coup is the only available punishment mechanism and thus potentially very costly to the ruling coalition. Jointly, these two elements imply that the dictator will not be completely deterred from acting opportunistically, even if the possibility of the coup failing is very small. But note that voters in democracies have frequently only imperfect information about the incumbent's performance. Thus it is the second of these two elements, the potentially costly nature of coups, that

more specifically distinguishes the present model from models of electoral accountability. While voters in consolidated democracies need not be concerned that they will be punished should their chosen candidate lose the election, members of the ruling coalition who turn against the dictator stake their lives on the success or failure of any coup that they may stage. A similar concern may exist in many democracies in transition, where those who voted for the losing candidate may be punished through the loss of patronage (see, e.g., Stokes 2005) or postelectoral violence (see, e.g., Ellman and Wantchekon 2000). The present model thus also provides a new perspective on the failure of electoral accountability in transitional democracies by linking it to the moral hazard associated with governance in authoritarian regimes.

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