The Dictator's Power-Sharing Dilemma: Balancing Elite and External Threats

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Abstract

Coups d'etat pose imminent survival threats for dictators, creating a power-sharing dilemma. How do dictators manage elite threats—with and without the presence of external threats—and what are the consequences for coup likelihood? This paper analyzes a game in which a dictator chooses whether or not to share power with another elite, followed by bargaining. The baseline model shows that strong rebellion threat is necessary for power-sharing because of predatory exclusion incentives. Overall threat capabilities, commitment ability, and constraints on exclusion exert countervailing effects on equilibrium coup probability by affecting (1) the elite's coup incentives conditional on inclusion in power and (2) the dictator's incentives to share power. Extending the model, a stronger external threat non-monotonically affects coup prospects by raising the dictator's tolerance to facing coup attempts while also decreasing the elite's coup incentives (a partial "guardianship dilemma"). The latter effect also implies that stronger external threats can enhance regime durability.

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Coups d'etat pose imminent survival threats for dictators. Successful coups accounted for 68% of nonconstitutional leadership removals in authoritarian regimes between 1945 and 2002 (Svolik, 2009, 478). One possible strategy to counteract coup attempts is to narrow the ruling coalition by excluding threatening elites from power. For example, Uganda inherited a ruling coalition at independence that shared power broadly among different ethnic groups. In 1966, the northern prime minister purged southern officers and cabinet ministers from power. However, narrowly constructed coalitions often cause powerless groups to violently rebel (Goodwin and Skocpol, 1989; Cederman et al., 2013; Francois et al., 2015; Roessler, 2016), as occurred in Uganda starting in the 1970s. Similarly, in Cuba, Fulgencio Batista tightly concentrated power around himself and a small cadre of military officers prior to the Cuban Revolution, excluding other elites (large landowners and businesspeople) from positions of power. Elites' rebellion threat constrains dictators' coup-proofing strategies, creating a power-sharing dilemma.

External actors deepen the power-sharing dilemma. In cases ranging from the Hyksos in Ancient Egypt to mass demonstrators in Tahrir Square in 2011, and from Mongols in pre-modern China to communists in 1949, external threats have directly participated in overthrowing authoritarian rulers. But external threats also alter the dictator's interaction with elites and affect coup prospects. On the one hand, external threats may hasten regime overthrow by creating a "guardianship dilemma" (Finer, 2002; Acemoglu et al., 2010; Besley and Robinson, 2010; Svolik, 2013). Rulers often choose to build bigger militaries and to create more inclusive elite coalitions in reaction to external threats, which enables elites to overthrow the ruler via a coup d'ètat, as occurred frequently in Iraq prior to the rise of Saddam Hussein. On the other hand, McMahon and Slantchev (2015) argue that the guardianship dilemma does not exist because external threats lower the value of holding office, which diminishes coup incentives. For example, in pre-1994 South Africa, British and Dutch descendants formed a ruling coalition among whites—despite stark regional differences that triggered civil war in the late colonial period—to counter the perceived African threat from below (Lieberman, 2003).

How do dictators resolve their power-sharing dilemma with elites? What are the consequences for coup attempts? How do external threats change the elite power-sharing calculus? This paper analyzes a game theoretic model that jointly evaluates these contending strategic considerations, contrary to existing research that analyzes the rebellion risk posed by excluded elites and the menace of external threats in isolation. More broadly, it provides a formal theoretic attempt to understand conditions in which elite power-sharing can be self-enforcing, building off insightful non-formal contributions such as Roessler and Ohls (Forthcoming).

The baseline model studies an interaction between a dictator and elite faction, without an external threat. The dictator decides whether to share power at the center with elites (include) or not (exclude), followed by a bargaining interaction in which the elite faction can accept a proposed division of state revenues or fight. The dictator faces limitations to how much it can transfer to the elite, conceptualized as imperfect commitment ability. The fighting technology is denoted as a "coup" for an included elite, and as a "rebellion" for an excluded elite. The key power-sharing tradeoff is that although sharing power raises in expectation the amount the dictator can commit to offer, power-sharing also enables elites to attempt a coup—which is assumed to succeed at a higher rate than a rebellion by excluded elites. The setup draws from conflict bargaining models that focus on commitment problems (Fearon, 2004; Powell, 2004; Krainin, 2017). However, it offers new insights by formalizing ideas from non-formal research on power-sharing, such as Roessler (2016), and assuming that the player making the offers can choose between two institutional settings in which to conduct bargaining. This contrasts with the standard conflict bargaining setup in which the offerer faces only one type of threat.

Two motives affect the dictator's incentives to share power. First, the dictator faces predatory exclusion incentives. A lower probability with which rebellions succeed compared to coup attempts implies that exclusion lowers the elite's bargaining leverage and enables higher consumption for the dictator. Second, the power-sharing decision also affects the equilibrium likelihood that conflict occurs, although this probability may be higher under either inclusion or exclusion. Intriguingly, predatory exclusion incentives imply that the dictator might exclude the elite even if this choice raises the probability of conflict occurring or of overthrow—contrary to the common notion that governments necessarily view low commitment ability as *problematic*.

The baseline model advances debates about how various risk factors affect equilibrium power-sharing prospects. Existing research produces opposing conclusions about the consequences of increasing elites' threat capabilities for power-sharing. Some argue that dictators share power with strong groups because they pose an ominous rebellion threat.[1] However, a large literature counters that rulers are more likely to ex-

[1]Roessler and Ohls (Forthcoming) argue that rulers are more likely to share power with numerically large ethnic groups that reside close to the capital, given their high rebellion threat. Francois et al. (2015)

clude strong groups and purge competent officers to coup-proof their regimes (Horowitz, 1985; Quinlivan, 1999).[2] Because coups pose a starker threat than outsider rebellions, why would higher threat capability necessitate inclusion rather than exclusion?

The model provides two findings that inform this debate. First, a strong rebellion threat is necessary to compel inclusion. High rebellion capability diminishes the magnitude of the predatory exclusion effect, and raises the probability of a rebellion under exclusion relative to the probability of a coup attempt under inclusion. Second, high *overall* threat rebellion capability is not sufficient for power-sharing because this capacity can also facilitate coup attempts. I derive a condition that explains which effect dominates depending on whether the elite has a comparative advantage in mobilization or a comparative advantage in military positions. Existing arguments implicitly only analyze one part of the parameter space, rather than identify general conditions in which dictators trade off between coups and rebellions. Additional comparative statics analysis shows that—beyond threat capabilities—high government commitment ability and exogenous constraints on excluding elites,[3] presented in an extension, can also foster equilibrium power-sharing. In fact, constraints on exclusion can substitute for high rebellion capabilities.

The baseline model also derives counterintuitive implications for the equilibrium likelihood of coup attempts. Factors that increase the probability of conflict under exclusion raise equilibrium coup prospects by inducing power-sharing. Factors that decrease the probability of a coup under inclusion also can *raise* the equilibrium probability of a coup by inducing power-sharing, although the overall effect is non-monotonic. Conversely, factors that increase the probability of a coup under inclusion can *lower* the equilibrium probability of a coup by inducing exclusion, although also generate a non-monotonic overall effect. These strategic selection effects carry implications for empirically analyzing causes of coups and civil wars, discussed in the conclusion.

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provide theory and evidence that African rulers share cabinet positions in proportion to ethnic group size to minimize rebellion risk. More broadly, this argument is consistent with the possibility that "governments tend to calibrate the level of exclusion to what they can get away with" (Fearon, 2010, 19), which is also consistent with implications from Svolik (2009).

[2] Sudduth (2017, 1770-2) provides additional references.

[3] Sudduth (2017) explains how attempts to exclude elites can trigger the very coups that coup-proofing seeks to prevent.

The model then incorporates an external threat. It assumes there is a positive probability that a (non-strategic) external actor will gain political power, but peaceful power-sharing decreases this probability. A more severe external threat alters the dictator's and elite's optimal choices. It diminishes the elite's expected utility to a coup because a coup attempt increases the probability of external takeover. More severe threats also make the dictator more willing to face coup attempts because the probability of external takeover is lower under power-sharing than exclusion.

This extension produces two main results. First, contributing to existing debates about the "guardianship dilemma," the analysis shows that the effects of external threats on the dictator's and elite's optimal strategies generate a non-monotonic relationship between external threat severity and the equilibrium probability of a coup attempt. If the elite's rebellion threat is weak enough that the dictator does not share power absent an external threat (as analyzed in the baseline model), then a large enough external threat causes the ruler to share power—because of its higher tolerance to face coup attempts—which increases the equilibrium coup probability from 0 to positive. This is the standard guardianship logic. However, further increases in external threat severity strictly decrease equilibrium coup propensity until it hits 0 by diminishing the elite's incentives to stage a coup. This effect supports McMahon and Slantchev's (2015) argument that the traditional guardianship logic is flawed by not accounting for the endogenous effect of external threats on the expected utility of attempting a coup. These results show that neither arguments for or against the guardianship dilemma convincingly characterize the overall effect of external threats on coups by not incorporating these countervailing effects.[4]

[4]This is not the first model to generate a non-monotonic relationship between external threats and equilibrium coup probabilities, although the logic differs by evaluating the standard guardianship logic in combination with allowing the external threat to endogenously affect the value of holding office. Acemoglu et al. (2010) show that large threats induce rulers to choose large militaries, and assume that governments can commit to continually pay large militaries (but not smaller militaries). Svolik (2013) shows that the contracting problem between a government and its military dissipates as the military becomes large—which also arise in equilibrium in reaction to large threats—because the military can control policy without actually intervening (what he calls a "military tutelage" regime). Both these models assume that more extreme external threats increase the military's bargaining leverage relative to the government, and that the size of the external threat does not affect the military's consumption. By contrast, here, the non-monotonic rela-

Second, the extended model with external threats produces a counterintuitive result about expected regime durability, shifting the focus from coup attempts. Despite the ambiguous coup effect, the dictator's and elite's strategic reactions to an external threat can contribute to stable power-sharing and durable authoritarian regimes in weakly institutionalized environments. Although the direct effect of stronger external threats increases the probability of overthrow, indirect effects that cause the dictator and elites to cooperate can decrease the overall probability of the dictator being overthrown (i.e., by either the elite or the external actor) relative to a counterfactual scenario without an external threat. This regime-preserving effect occurs when peaceful power-sharing greatly reduces the probability of external takeover. Case evidence from South Africa and Southeast Asia illustrates the mechanism. This result also highlights that incorporating an external threat can change a ruler's coup-civil war tradeoff in ways not examined by Roessler (2016), Roessler and Ohls (Forthcoming), or the rest of the conflict literature—specifically, highlighting a path to peaceful, self-enforcing power-sharing even absent strong rebellion threat by the elite.

1 Baseline Model

This section presents and solves the baseline model in which a dictator and elite interact without an external threat.

1.1 Setup

A dictator D and a distinct elite actor E compete over state revenues normalized to 1. D moves first and chooses whether to share power with E or not, i.e., choosing inclusion or exclusion. Parameters affected by this choice are indexed by $j \in \{i, e\}$. D then makes a transfer offer $x \geq 0$ subject to an upper bound described below, and E chooses whether to accept the offer or to fight. If E accepts, then it consumes x and G consumes $1 - x$. If instead E fights, then the winner consumes $1 - \phi$ and the loser consumes 0, and $\phi \in (0, 1)$ expresses the destructiveness of fighting. E's probability of winning equals $p_j(\alpha) \in (0, 1)$. The parameter α denotes E's threat capabilities and satisfies $p'_j(\alpha) > 0$.

The following assumptions generate D's power-sharing dilemma. On the one hand, D has greater commitment ability under power-sharing. Formally, the maximum transfer that D can propose depends on two fac-

tionship emerges specifically because greater external threats endogenously lower the value of challenging and *diminish* elites' bargaining leverage.

tors. First, a systematic component θ_j that is larger under inclusion than exclusion: $0 < \theta_e < \theta_i < 1$. Second, a stochastic factor ϵ drawn from a smooth density function $F(\cdot)$ with continuous support on $[0, 1-\theta_i]$. Nature chooses the value of ϵ after D's power-sharing choice but before D's transfer proposal. Although reduced form, this setup captures commitment ability in a simple and intuitive way. If E has access to power at the center, then, in expectation, D can transfer more spoils to E without being able to renege. However, D does not know the exact extent of spoils to which it can commit under either arrangement.[5]

On the other hand, E wins with higher probability if included rather than excluded: $p_i > p_e$. If included, I refer to E's fighting technology as a "coup," whereas if excluded I refer to it as a "rebellion" or "civil war." Roessler (2016, 37) distinguishes between coup conspirators' partial control of the state and insurgents' lack of such power access and need to build a private military organization. "This organizational distinction helps to account for why coups are often much more likely to displace rulers from power than rebellions."[6]

Figure 1 presents the game tree.

1.2 Equilibrium

Solving backwards enables characterizing the set of subgame perfect Nash equilibria. E accepts any offer satisfying:

$$x \geq p_j \cdot (1-\phi) \tag{1}$$

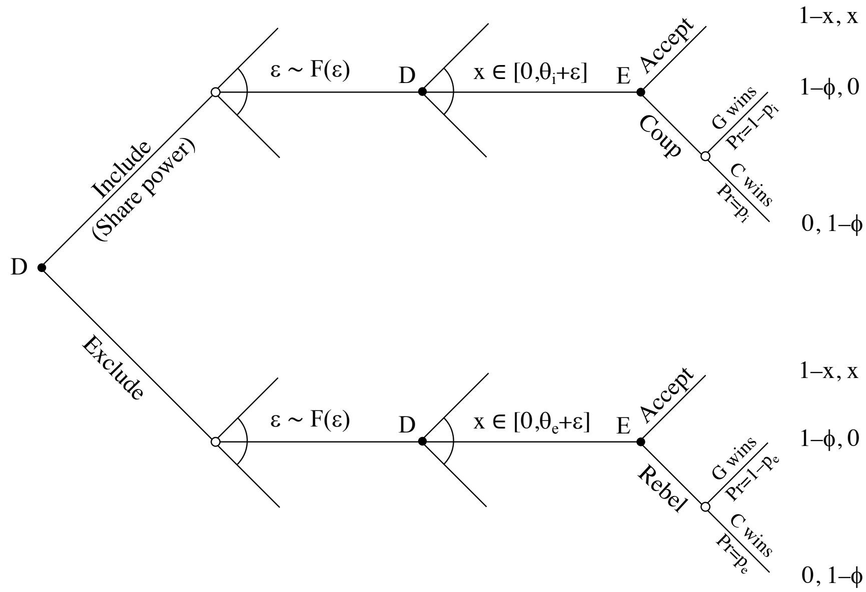
The destructiveness of fighting ensures that D prefers to buy off E if possible at its last information set. However, D cannot offer more than $\theta_j + \epsilon$. Given the Nature draw for ϵ, the probability that D's maximum possible offer does not satisfy Equation 1 is $F(\tilde{\epsilon}_j)$, for:

$$\tilde{\epsilon}_j \equiv p_j \cdot (1-\phi) - \theta_j \tag{2}$$

[5]Below, I show this enables a positive probability of a coup attempt under inclusion and of a rebellion under exclusion, creating the core strategic tradeoff in the model.

[6]Broadly, this setup builds off important considerations raised in non-formal research such as Roessler (2016). However, as demonstrated below, the implications differ from those discussed in existing work. Furthermore, existing accounts of a ruler's coup-civil war tradeoff do not analyze the mitigating effect of external threats, which I consider in a model extension.

Figure 1: Game Tree



This enables writing G's power-sharing constraint:

$$\underbrace{\big[1 - F\big(\tilde{\epsilon}_i\big)\big] \cdot \big[1 - p_i \cdot (1-\phi)\big]}_{\text{Inclusion, deal}} + \underbrace{F\big(\tilde{\epsilon}_i\big) \cdot (1-p_i) \cdot (1-\phi)}_{\text{Inclusion, coup}} \geq$$

$$\underbrace{\big[1 - F\big(\tilde{\epsilon}_e\big)\big] \cdot \big[1 - p_e \cdot (1-\phi)\big]}_{\text{Exclusion, deal}} + \underbrace{F\big(\tilde{\epsilon}_e\big) \cdot (1-p_e) \cdot (1-\phi)}_{\text{Exclusion, rebellion}} \tag{3}$$

If G includes, then with probability $1 - F\big(\tilde{\epsilon}_i\big)$, D can make a transfer large enough to buy off E, in which case it sets x to satisfy Equation 1 with equality. With complementary probability, E will attempt a coup in response to any offer. The terms are similar under exclusion. Equation 3 simplifies to:

$$\Omega \equiv \underbrace{-\big[p_i(\alpha) - p_e(\alpha)\big] \cdot (1-\phi)}_{\text{Predatory exclusion incentive}} + \underbrace{\Big[F\Big(\tilde{\epsilon}_e\big(p_e(\alpha),\phi,\theta_e\big)\Big) - F\Big(\tilde{\epsilon}_i\big(p_i(\alpha),\phi,\theta_i\big)\Big)\Big] \cdot \phi}_{\text{Conflict prevention incentive}} \geq 0 \tag{4}$$

Two distinct factors affect D's incentives to share power. These factors relate to claims from existing non-formal research, but also more clearly explain a dictator's strategic incentives. Equation 4 disaggregates D's power-sharing incentive compatibility constraint into "predatory exclusion" and "conflict prevention" motives. The predatory incentive is strictly negative, making power-sharing less likely. Because E wins with lower probability if excluded, $p_e < p_i$, it has less bargaining leverage. This enables D to consume a higher share of revenues (in expectation) by excluding. The conflict prevention incentive can cut in either direction. E's lower probability of winning under exclusion decreases its bargaining leverage, which makes Equation 2 more likely to hold. However, D also has less commitment ability under exclusion, $\theta_e < \theta_i$, making Equation 2 less likely to hold. Consequently, $F(\tilde{\epsilon}_e)$ may be either smaller or larger than $F(\tilde{\epsilon}_i)$. Notably, the conflict prevention effect concerns the probability of conflict *occurring* under either inclusion or exclusion, in which case surplus is destroyed—but not the probability of *overthrow*, in which case the $F(\tilde{\epsilon}_j)$ terms would be multiplied by p_j. The reason is that $F(\tilde{\epsilon}_j) \cdot p_j$ not only affects D's probability of overthrow (see the second term in either line of Equation 3), but also affects D's consumption if E accepts the equilibrium offer (see the first term). These effects cancel out.

Proposition 1 characterizes the equilibrium, which is unique with respect to payoff equivalence.[7]

Proposition 1 (Equilibrium)**.**

- *Equilibrium strategy profile:*
  - *If $\Omega > 0$, then D shares power with E. Otherwise, D excludes E.*
  - *D offers $x = \min\{p_i \cdot (1-\phi), \theta_i + \epsilon\}$ if E is included. D offers $x = \min\{p_e \cdot (1-\phi), \theta_e + \epsilon\}$ if E is excluded.*
  - *E accepts any $x \geq p_i \cdot (1-\phi)$ if included and attempts a coup otherwise. E accepts any $x \geq p_e \cdot (1-\phi)$ if excluded and rebels otherwise.*
- *Equilibrium path of play and outcomes:*
  - *If $\Omega > 0$, then D shares power. The probability of a coup attempt is $F(\tilde{\epsilon}_i)$, and the probability of a rebellion is 0.*
  - *If $\Omega < 0$, then D excludes E. The probability of a coup attempt is 0, and the probability of a rebellion is $F(\tilde{\epsilon}_e)$.*

2 Power-Sharing without External Threats

What factors foster equilibrium power-sharing? How do these factors affect coup likelihood? This section performs comparative statics for E's rebellion capabilities p_e, E's overall threat capabilities α, and G's com-

[7]Technically, there are a continuum of equilibria because D is indifferent among all offers if E's reservation value $p_j \cdot (1-\phi)$ exceeds the budget constraint $\theta_j + \epsilon$. However, all equilibria strategy profiles in which fighting occurs along the equilibrium path are payoff equivalent.

mitment ability under power-sharing θ_i. It also extends the model such that attempted exclusion fails with probability γ. Table 1 summarizes the different effects regarding whether a higher value of the parameter increases or decreases D's incentives to share power, and the effect on the equilibrium probability of a coup attempt. The counterintuitive implications for the equilibrium probability of coup attempts arise because of indirect effects on D's incentives to share power. Below, each proposition states the effect of the parameter on equilibrium power-sharing and the equilibrium probability of a coup attempt. Select corollaries address other effects such as the probability of any type of conflict or the probability of overthrow.

Table 1: Summary of Comparative Statics

Parameter	Power-sharing	Equilibrium Probability of a Coup Attempt
p_e	Increases	Increases (jumps from 0 to a constant positive amount)
α	Ambiguous	Ambiguous
θ_i	Increases	Non-monotonic (jumps from 0 to a positive amount that eventually declines to 0)
γ	Increases	Either increasing, or non-monotonic (increasing until drops to a constant positive amount)

2.1 Rebellion Capabilities: Necessary Condition for Power-Sharing

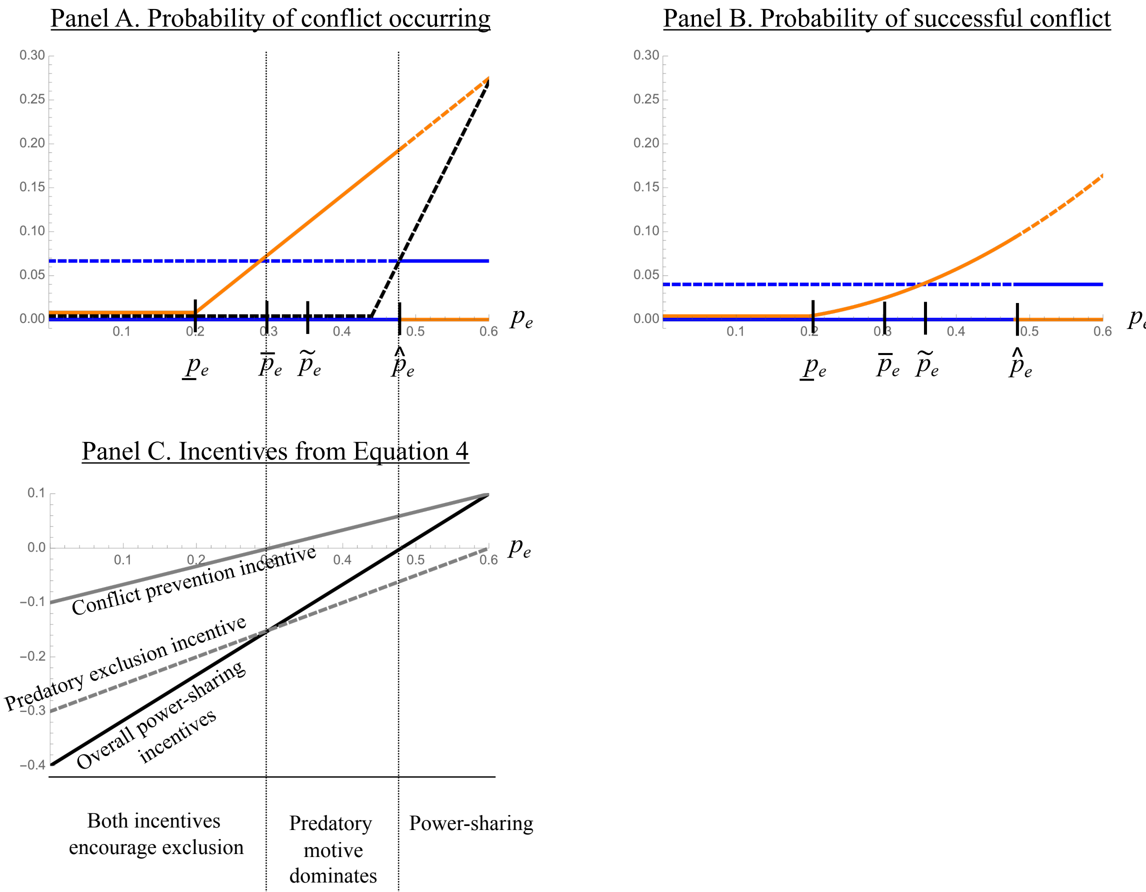
High rebellion capabilities are a necessary condition to compel power-sharing in the baseline model. Furthermore, even when holding fixed the probability of succeeding in a coup attempt, higher rebellion capability increases the equilibrium probability of a coup attempt by inducing power-sharing.

Figure 2 depicts key quantities as a function of p_e.[8] In Panel A, the solid blue line is the *equilibrium* probability of a coup attempt (i.e., taking into account D's power-sharing choice), and the dashed blue line is the coup probability conditional on inclusion for parameter values in which D optimally excludes. The solid orange line is the *equilibrium* probability of a rebellion (i.e., taking into account D's power-sharing choice), and the dashed orange line is the rebellion probability conditional on exclusion for parameter values in which D optimally shares power. The dashed black line is the maximum probability of a coup attempt that D is willing to tolerate to share power.[9] Panel B uses the same color scheme as Panel A, except it depicts the probabilities of *successful* coup attempts or rebellions, i.e., of overthrowing the dictator. In Panel C, the solid gray line is the conflict prevention incentive, the dashed gray line is the predatory exclusion incentive, and the black line is the overall power-sharing incentive compatibility constraint (Equation 4).

[8]The next section analyzes the threat capacity parameter α that underlies p_e.

[9]This can be calculated by setting $\Omega = 0$ from Equation 4 and solving for $F(\tilde{\epsilon}_i)$.

Figure 2: Rebellion Capabilities



Notes: Each panel uses the parameter values $p_i = 0.6$, $\theta_e = 0.1$, $\theta_i = 0.25$, and $\phi = 0.5$, and assumes $\epsilon \sim U[0, 1 - \theta_i]$.

For low values $p_e < \overline{p}_e$, the conflict prevention incentive encourages exclusion because the probability of a coup under inclusion, $F\left(\tilde{\epsilon}_i\right)$, exceeds the low probability of a rebellion under exclusion, $F\left(\tilde{\epsilon}_e\right)$, which Panels A and C show. In fact, for low enough values $p_e < \underline{p}_e$, E is completely powerless under exclusion (Panel A). Combined with the negative predatory exclusion effect, low p_e implies that D optimally excludes E. This logic also indicates that $F\left(\tilde{\epsilon}_e\right) > F\left(\tilde{\epsilon}_i\right)$ is a necessary condition for D to share power in the baseline model.

Higher probability of winning under exclusion, $p_e \in \left(\overline{p}_e, \hat{p}_e\right)$, flips the conflict prevention effect to positive because $F\left(\tilde{\epsilon}_e\right) > F\left(\tilde{\epsilon}_i\right)$. Higher p_e raises the rebellion probability under exclusion sufficiently to exceed the coup probability under inclusion (Panels A and C). However, in this parameter range, the magnitude of the conflict prevention effect is sufficiently small that the predatory exclusion incentive dominates, although higher p_e also diminishes the magnitude of the predatory exclusion incentive because excluding E shifts power in D's favor by less.

This intermediate p_e range exhibits two intriguing findings. First, D tolerates a higher probability of conflict—which destroys surplus—to gain larger expected rents (Panel A). Second, for higher p_e values within this parameter range, $p_e \in (\tilde{p}_e, \hat{p}_e)$, D tolerates a higher probability of *overthrow* for more rents (Panel B). This contrasts with the common presumption that dictators prioritize political survival above all other goals.

Only if $p_e > \hat{p}_e$ is the conflict prevention effect positive and large enough in magnitude, and the predatory incentive small enough in magnitude, that D shares power. In Panel A, the blue line switches from dashed to solid and the orange line switches from solid to dashed, and the dashed black line intersects the blue line. In Panel C, the black line becomes positive. Proposition 2 and Corollary 1 formalize this discussion.

Proposition 2 (Rebellion capabilities)**.**

- ***Power-sharing.*** *There exists a unique threshold $\hat{p}_e \in (0, p_i)$ such that if $p_e < \hat{p}_e$, then D excludes E. Otherwise, D shares power.*
- ***Coup.*** *If $p_e < \hat{p}_e$, then the equilibrium probability of a coup attempt equals 0. Otherwise, this probability equals $F(\tilde{\epsilon}_i) > 0$.*

Corollary 1 (Probability of conflict events)**.**

- ***Positive rebellion probability under exclusion.*** *There exists a unique threshold $\underline{p}_e \in (0, \hat{p}_e)$ such that if $p_e < \underline{p}_e$, then $F(\tilde{\epsilon}_e) = 0$. Otherwise, $F(\tilde{\epsilon}_e) > 0$.*
- ***Probability of conflict under inclusion/exclusion.*** *There exists a unique threshold $\overline{p}_e \in (\underline{p}_e, \hat{p}_e)$ such that if $p_e < \overline{p}_e$, then $F(\tilde{\epsilon}_e) < F(\tilde{\epsilon}_i)$. Otherwise, $F(\tilde{\epsilon}_e) > F(\tilde{\epsilon}_i)$.*
- ***Probability of successful conflict under inclusion/exclusion.*** *There exists a unique threshold $\tilde{p}_e \in (\overline{p}_e, p_i)$ such that if $p_e < \tilde{p}_e$, then $F(\tilde{\epsilon}_e) \cdot p_e < F(\tilde{\epsilon}_i) \cdot p_i$. Otherwise, $F(\tilde{\epsilon}_e) \cdot p_e > F(\tilde{\epsilon}_i) \cdot p_i$. The threshold $\tilde{p}_e$ may be larger or smaller than $\hat{p}_e$.*

This analysis also clarifies mechanisms proposed in related non-formal research. Drawing on Fearon (2010) and Wucherpfennig et al. (2016), Roessler (2016, 60-61) first discusses "instrumental" exclusion incentives in which rulers "bid to keep economic rents and political power concentrated in their hands [and] build the smallest winning coalition necessary ...to maintain societal peace." The predatory exclusion effect in the present model relates to this consideration, but does not condition on the probability of societal peace. Instead, it separately expresses D's gains from lowering E's bargaining leverage. Furthermore, as intermediate p_e values show, the predatory incentive may dominate and encourage exclusion over inclusion even when this choice *raises* the equilibrium probability of conflict occurring, $p_e \in \left(\overline{p}_e, \hat{p}_e\right)$, or even the equilibrium probability of overthrow, $p_e \in \left(\tilde{p}_e, \hat{p}_e\right)$.

Roessler (2016, 61) also discusses a strategic effect resulting from fear that "sharing power with members of other ethnic groups will lower the costs they face to capturing sovereign power for themselves." This effect relates to the conflict prevention effect and the assumption $p_e < p_i$. However, contrary to the premise that this motive for exclusion necessarily stems from a threat "to undo [a ruler's] hold on power" (61), in the present model, the probability of overthrow does not directly enter D's power-sharing constraint. Instead, D directly cares about the probability of conflict occurring because fighting destroys surplus. As in related models, all else equal, D strictly prefers to buy off E if possible at the bargaining stage because—as the player making the bargaining offers—it pays the cost of fighting in equilibrium.[10]

2.2 Ambiguous Consequences of Overall Threat Capabilities

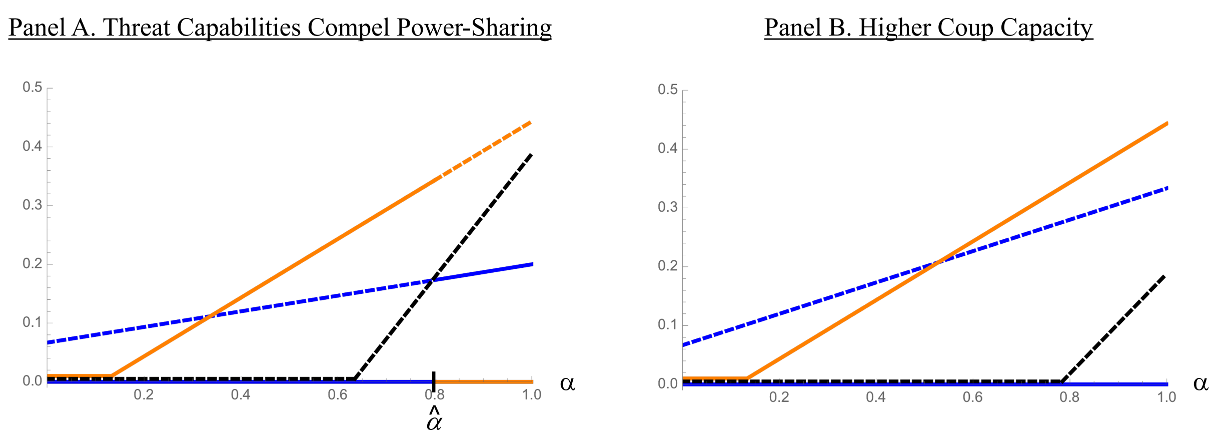
Although higher *rebellion* capabilities are necessary to compel power-sharing, the effects of higher *overall* threat capability α on power-sharing incentives are ambiguous. That is, the previous section implicitly isolated an aspect of an elite that affects their probability of winning a rebellion, but not of succeeding at a coup attempt. However, in reality, capacity to conduct either type of conflict are positively correlated. This has inspired debates on whether high threat capacity either facilitates (Francois et al., 2015; Roessler and Ohls, Forthcoming) or deters power-sharing by creating incentives to coup-proof the regime (Horowitz, 1985; Quinlivan, 1999). The section derives a straightforward condition to understand which effect dominates, and connects this condition to empirical cases based on whether the elites have a comparative advantage in mobilization or a comparative advantage in military positions. These results also show that higher threat capacity for one type of conflict can decrease the likelihood of that conflict type in equilibrium because of D's strategic inclusion/exclusion reaction. Overall, existing non-formal arguments highlight important considerations, but are incomplete because they do not clearly consider the different channels through which threat capabilities affect D's power-sharing incentive compatibility constraint (α appears four times in Equation

[10]By contrast, E's utility is unaffected by whether or not fighting occurs in equilibrium. E consumes its expected utility to fighting for all parameter values because it either fights, or D sets its bargaining offer to equal E's expected utility to fighting.

3), or isolate conditions in which D fears coups more than rebellions (or vice versa).

Figure 3 plots the relationship between E's threat capabilities, $\alpha \in [0,1]$, and equilibrium fighting probabilities using the same coloring scheme as Panel A of Figure 2. In both panels of Figure 3, $p_e(0) = 0$, whereas $p_i(0) > 0$. This captures the sensible premise that weak groups cannot organize an outsider rebellion to challenge the government, whereas weak groups with a foothold in the government may be able to succeed at a coup. However, in the figure, the rebellion winning probability $F(\tilde{\epsilon}_e)$ increases faster in α than the coup success probability $F(\tilde{\epsilon}_i)$. This is a necessary but not sufficient condition to compel power-sharing at high α. Panel A depicts parameter values in which the probability of rebellion under exclusion rises fast enough relative to the probability of a coup attempt under inclusion that there exists $\hat{\alpha} < 1$ such that G shares power for $\alpha > \hat{\alpha}$. Although the probability of a coup attempt under inclusion is higher than for α values at which G excludes, E's rebellion threat compels inclusion.

Figure 3: Threat Capabilities



Notes: Both panels use the parameter values $m_{0i} = 0.6$, $m_{1e} = 0.75$, $\theta_e = 0.05$, $\theta_i = 0.25$, and $\phi = 0.5$, and assume $\epsilon \sim U[0, 1 - \theta_i]$, $p_i(\alpha) = (1-\alpha) \cdot m_{0i} + \alpha \cdot m_{1i}$, and $p_e(\alpha) = \alpha \cdot m_{1e}$. In Panel A, $m_{1i} = 0.8$. In Panel B, $m_{1i} = 1$. Section 2.1 describes the coloring scheme.

By contrast, Panel B captures the standard coup-proofing argument that dictators exclude threatening groups. Panel B uses identical parameter values and functional form assumptions as Panel A except it increases the slope of $p_i(\alpha)$. Consequently, although α increases E's rebellion threat, higher threat capabilities also increase the probability of coup success by a high enough amount that D excludes E for all $\alpha \in [0,1]$.

Another possibility (not depicted) using the functional form assumptions for Figure 3 is that $F(\tilde{\epsilon}_i)$ increases faster in α than $F(\tilde{\epsilon}_e)$. This implies that Ω from Equation 4 decreases in α which, like Panel B, implies that

D does not share power for any α.

Proposition 3 states a general condition for higher threat capabilities to compel power-sharing. If $p_e'(\alpha)$ is large enough relative to $p_i'(\alpha)$, then D's incentives to share power increase in α. Furthermore, if $p_e(1)$ is large enough relative to $p_i(1)$, then D prefers to share power at $\alpha = 1$. Proposition 3 also presents a result for a special case with linear contest functions and uniformly distributed ϵ, and enables stating a simpler condition in terms of a single parameter. Finally, the assumed functional form assumptions for $p_e(\alpha)$ and $p_i(\alpha)$ imply that their ratio is strictly monotonic in α for all parameter values. Appendix Section B.1 shows that higher threat capability can exert a non-monotonic effect on power-sharing among a broader class of probability of winning functions in which medium threat capability compels power-sharing, but higher threat capability causes exclusion because the threat of a coup attempt is too great.

Proposition 3 (Threat capabilities)**.**

> ***Power-sharing (general).*** *Suppose $p_e(0) = 0$. The following two conditions imply the existence of a unique $\hat{\alpha} \in (0,1)$ such that D excludes if $\alpha < \hat{\alpha}$ and includes otherwise (thresholds defined in appendix).*
>
> - *$p_e' > \tilde{p}_e'(p_i')$ for all $\alpha \in [0,1]$.*
> - *$p_e(1) > \tilde{p}_e(p_i)$*
>
> ***Power-sharing (specific case).*** *Suppose $F \sim U[0, 1-\theta_i]$, $p_i(\alpha) = m_{0i} \cdot (1-\alpha) + m_{1i} \cdot \alpha$, and $p_e(\alpha) = m_{1e} \cdot \alpha$. All the m terms are strictly bounded between 0 and 1, and $\alpha \in [0,1]$. Then there exists a unique $\hat{\alpha}_{sc} \in (0,1)$ such that D excludes if $\alpha < \hat{\alpha}_{sc}$ and includes otherwise if and only if $m_{1e} > \tilde{m}_{1e} \equiv m_{1i} + \frac{(\theta_i - \theta_e)\cdot\phi}{1-\theta_i+\phi}$.*
>
> ***Coup.*** *The equilibrium probability of a coup attempt equals 0 if $\alpha < \hat{\alpha}$. Otherwise, the probability equals $F\big(\tilde{\epsilon}_i(\alpha)\big) > 0$, which strictly increases in α.*

Understanding whether higher threat capabilities increase or decrease prospects for power-sharing depends on the source of threat capacity, in particular, whether the elites have a comparative advantage in mobilization or a comparative advantage in military positions. Roessler and Ohls (Forthcoming) posit a theoretical effect consistent with Panel A of Figure 3. This is sensible given their conceptualization of high threat capabilities as large numerical size and close proximity to the capital, analyzing ethnic groups as the unit of the analysis. In particular for distance to the capital, it is quite plausible that this would affect a group's ability to rebel more than to stage a coup—generating a comparative advantage in mobilization.

By contrast, high threat capacity in the form of colonial military privileges likely corresponds with Panel

B of Figure 3 or the $\alpha > \hat{\alpha}$ range of Figure A.1—i.e., comparative advantage in military positions. Many colonizers pursued a "martial race" policy of military recruitment that caused overrepresentation of favored groups in the colonial military relative to their numerical preponderance. Controlling key military positions created high threat capabilities after independence, but high capacity more greatly affected their prospects of succeeding at coups than at rebellions because their advantages stemmed specifically from military positions. Countries that inherited "split domination" regimes at independence—in which different ethnic groups controlled military and civilian political institutions (Horowitz, 1985)—exhibited particularly high coup risk from high-capability groups in the military because commitment ability θ_i was low. For example, Britain favored Karens in the military and bureaucracy in colonial Burma, but the ethnic majority Burmese controlled key political institutions after Britain regained control of the colony following World War II. Therefore, Karen officers exhibited high threat capacity, but more directly in the form of coup prowess given their favorable colonial position rather than launching a rebellion that could topple the regime, especially given their small size (7% of the population compared to 68% for Burmans).

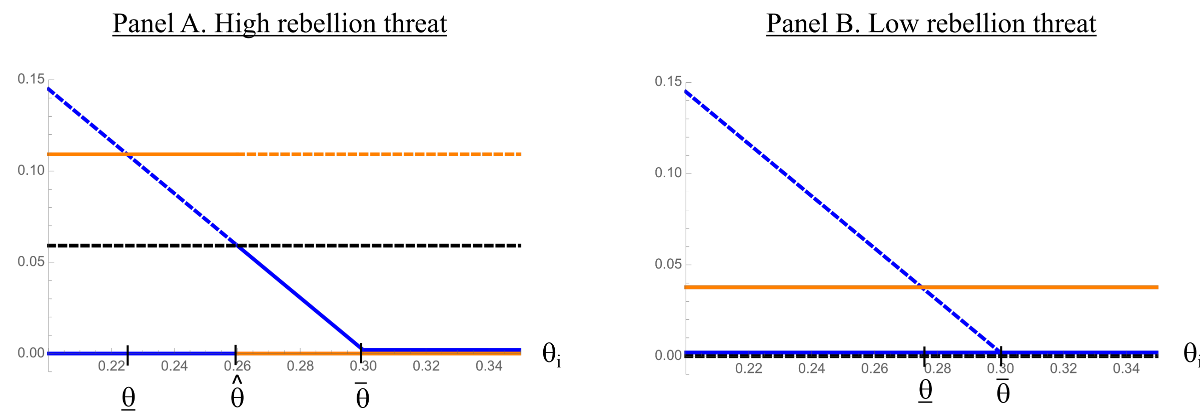
2.3 Commitment Institutions

Another possible factor to foster power-sharing is stronger government institutions, or commitment ability, θ_i. However, this factor only facilitates power-sharing when coupled with high enough rebellion capabilities due to "pure predatory" exclusion incentives. Furthermore, stronger commitment institutions can make equilibrium coup attempts more likely, although the overall effect is non-monotonic.

Figure 4 plots the relationship between θ_i and equilibrium fighting probabilities. The coloring scheme is identical to Panel A of Figure 2. The two panels differ only in E's probability of winning a rebellion, p_e, which is higher in Panel A than Panel B.

Panel A demonstrates a non-monotonic relationship between institutional quality and the equilibrium probability of a coup attempt, contrary to the intuitive presumption that these variables should exhibit a strictly decreasing relationship. If institutions are weak $(\theta_i < \hat{\theta})$, then there is *no* risk of a coup. D excludes E precisely because an included E poses a strong coup risk if θ_i is low. However, the equilibrium probability of a coup becomes positive at $\theta_i = \hat{\theta}$ because D switches to power-sharing. Generating the non-monotonic coup relationship, the probability of a coup attempt strictly decreases for $\theta_i > \hat{\theta}$ until it hits 0 at $\theta_i = \overline{\theta}$ greater commitment ability diminishes E's incentives to stage a coup.

Figure 4: Commitment Institutions



Notes: Both panels use the parameter values $p_i = 0.6$, $\theta_e = 0.2$, $\phi = 0.5$, and assume $\epsilon \sim U[0, 0.7]$. In Panel A, $p_e = 0.55$. In Panel B, $p_e = 0.45$. Section 2.1 describes the coloring scheme.

However, Panel B highlights that a strong rebellion threat is necessary for higher θ_i to induce power-sharing. Even if θ_i is large—making the equilibrium probability of a coup attempt under inclusion low or even 0—the equilibrium probability of a rebellion under exclusion is low enough that D prefers to strengthen its bargaining position by excluding E. The dashed black line reflects this calculus because it is constant at 0. Intriguingly, for high enough θ_i, it is *possible* for D to drive down the equilibrium probability that E challenges D to 0, by sharing power. However, D instead chooses to exclude E to accrue the larger rents associated with E's diminished bargaining leverage under exclusion—despite creating a positive rebellion possibility. This is naturally conceived as "pure predatory" exclusion incentives, since power-sharing carries no risk of overthrow. Proposition 4 formalizes this discussion.

Proposition 4 (Commitment institutions)**.**

- ***Power-sharing.*** *There exists a unique* $p_e^\dagger \in (0, p_i)$ *with the following properties. If* $p_e < p_e^\dagger$*, then* D *excludes for all* $\theta_i \in (0, 1)$*. If* $p_e > p_e^\dagger$*, then there exists a unique* $\hat{\theta}_i \in (0, 1)$ *such that* D *excludes if* $\theta < \hat{\theta}_i$*, and otherwise shares power.*
- ***Coups.*** *If* $\theta_i < \hat{\theta}$*, then the equilibrium probability of a coup attempt is 0. If* $\theta_i > \hat{\theta}$*, then the equilibrium probability of a coup attempt equals* $F\big(\tilde{\epsilon}_i\big)$*. There exists a unique* $\overline{\theta}_i \in (0, 1)$ *such that* $F\big(\tilde{\epsilon}_i\big) > 0$ *if* $\theta_i < \overline{\theta}_i$*, and otherwise* $F\big(\tilde{\epsilon}_i\big) = 0$*.*

Niger provides an illustrative example of how better institutions can facilitate coup attempts. In the mid-1990s, Niger "appeared to many to be among the successful cases of democratic transitions" in Africa (Villalon and Idrissa, 2005, 28). However, democratization expanded the number of ethnic groups with access to power at the center. Whereas former dictators "carefully balanced political appointments in an effort to manage the ethnic issue, [t]his balance was to be upset with the advent of the transition" (35). The military overthrew the elected government via a coup in 1996.

Furthermore, the finding for p_e highlights that even given strong institutions, additional factors are needed to promote political access for coercively weak groups. In established democracies, legal protections may be sufficient, but laws are political constructs and politically enforced, and therefore more difficult to achieve in weakly institutionalized environments. The next section considers an alternative path to power-sharing that does not require high rebellion capability.

2.4 Constraints on Exclusion

Another aspect of the ruler's power-sharing calculus is that attempting to exclude another group can itself provoke a coup attempt. Countering the large coup-proofing literature summarized above, Sudduth (2017, 1771) argues that existing arguments about dictators excluding rivals from power amid high coup risk are incomplete because they do not take into account how elites will react in anticipation of exclusion, specifically, by launching a preventive coup.[11] This section incorporates this consideration by assuming that if D attempts to exclude E, then there is a $\gamma \in (0, 1)$ percent chance that D fails to dislodge E from power and that E attempts a coup.[12] Constraints on exclusion can substitute for high rebellion capabilities to foster power-sharing, unlike in the baseline model with $\gamma = 0$. However, this comes at the cost of raising the equilibrium probability of a coup attempt, and in some cases the overall probability of conflict occurring.

The power-sharing constraint in this extension is:

$$\Omega_\gamma(\gamma) \equiv \underbrace{-(1-\gamma)\cdot(p_i - p_e)\cdot(1-\phi)}_{\text{Predatory exclusion effect}} + \underbrace{\Big[(1-\gamma)\cdot F\big(\tilde{\epsilon}_e\big) + \gamma - F\big(\tilde{\epsilon}_i\big)\Big]\cdot\phi}_{\text{Conflict reduction effect}} \geq 0 \qquad (5)$$

The predatory exclusion effect is weaker in magnitude than in the baseline model because of the possibility that exclusion fails, in which case D does not reap the gains of E's lower bargaining leverage under exclusion. The conflict reduction effect is also more heavily tilted toward sharing power because the probability

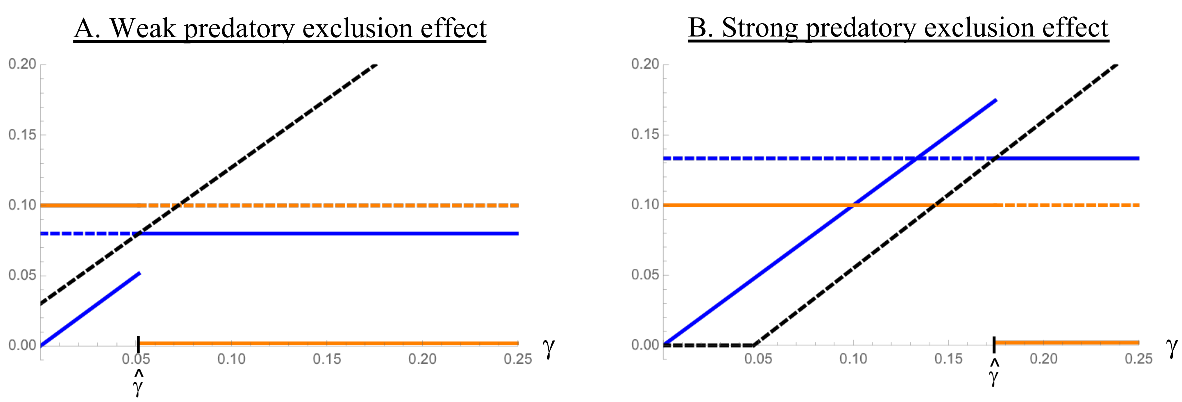
[11]However, I depart from Sudduth (2017) by not assuming that the dictator can perfectly calibrate the extent of power loss by elites—implying that coups never occur in equilibrium in her model.

[12]This behavior is optimal under the sensible premise that failed exclusion implies $x = 0$.

of fighting (and, therefore, of destroying surplus) under exclusion is now $(1-\gamma)\cdot F(\tilde{\epsilon}_e)+\gamma$ rather than $F(\tilde{\epsilon}_e)$.

Figure 5 illustrates the tradeoffs using the same coloring scheme as the previous figures and plotting γ on the horizontal axis. At $\gamma = 0$, this extension is identical to the baseline model, and in the parameter values shown in both panels, D excludes E. The difference between panels is the magnitude of the predatory exclusion effect, which is smaller in Panel A than in Panel B. In both panels, as γ increases above 0, the equilibrium coup probability increases despite D continuing to choose exclusion because of possibility that exclusion fails to dislodge E. However, for $\gamma < \hat{\gamma}$, the coup probability γ is low enough that D prefers exclusion.

Figure 5: Constraints on Exclusion



Notes: Both panels use the parameter values $p_e = 0.55$, $\theta_i = 0.25$, $\theta_e = 0.2$, $\phi = 0.5$, and assume $\epsilon \sim U[0, 1-\theta_i]$. In Panel A, $p_i = 0.7$. In Panel B, $p_i = 0.62$. Section 2.1 describes the coloring scheme.

Large enough γ induces D to share power. The probability that exclusion fails is too high—and, consequently, the probability of a coup attempt if D attempts to exclude—to justify exclusion. Unlike for the effect of increasing θ_i discussed in the previous section, the existence of a unique $\hat{\gamma} \in (0,1)$ that generates power-sharing is independent of the value of p_e (see Proposition 4). For $\gamma > \hat{\gamma}$, the equilibrium probability of a coup attempt remains constant at $F(\tilde{\epsilon}_i)$, the same term from the baseline model.

Comparing the two panels shows that higher γ can either strictly increase the equilibrium coup probability, or exert a non-monotonic effect. In Panel A, small predatory exclusion motives cause D to prioritize conflict prevention over rent-seeking, and therefore D shares power for a γ value below $F(\tilde{\epsilon}_i)$, causing a discrete increase in the equilibrium coup probability at $\gamma = \hat{\gamma}$. If instead predatory exclusion motivates are high (Panel B), then there exists an intermediate parameter range, $\gamma \in \left(F(\tilde{\epsilon}_i), \hat{\gamma}\right)$, such that D attempts to exclude E

even though γ is high enough that the probability of a coup attempt under exclusion *exceeds* the coup probability under inclusion. Strong predatory exclusion incentives drive this effect: conditional on exclusion succeeding, E has less bargaining leverage if excluded than included. This generates a non-monotonic relationship between constraints on exclusion and the equilibrium coup probability. This parameter range also exhibits D sharing power despite $F(\tilde{\epsilon}_i) > F(\tilde{\epsilon}_e)$, which is not possible if $\gamma = 0$ (Corollary 1). Proposition 5 formalizes these claims.

Proposition 5 (Constraints on exclusion). *Suppose* $\Omega_\gamma(\gamma = 0) < 0$.

- ***Power-sharing.*** *There exists a unique* $\hat{\gamma} \in (0, 1)$ *such that* D *excludes if* $\gamma < \hat{\gamma}$*, and shares power otherwise.*
- ***Coup.***
  - *If* $\gamma < \hat{\gamma}$*, then the equilibrium probability of a coup attempt equals* γ*. If* $\gamma > \hat{\gamma}$*, then the equilibrium probability of a coup attempt equals* $F\big(\tilde{\epsilon}_i\big)$.
  - *If* $(p_i - p_e) \cdot (1 - \phi) < F\big(\tilde{\epsilon}_i\big) \cdot \phi$*, then the equilibrium probability of a coup attempt increases at* $\gamma = \hat{\gamma}$ *(Panel A of Figure 5). Otherwise, the equilibrium probability of a coup attempt decreases at* $\gamma = \hat{\gamma}$ *(Panel B).*

Panel B also shows although enacting constraints to exclusion can enable power-sharing, this policy may not reduce conflict. The equilibrium probability of either a coup, or of any type of fight, is strictly higher for all $\gamma > 0$ than at $\gamma = 0$. For $\gamma > \hat{\gamma}$, D includes E, but the equilibrium probability of a coup attempt under inclusion exceeds the equilibrium probability of a rebellion under exclusion, as Corollary 2 shows.

Corollary 2 (Constraints on exclusion). *If* $(p_i - p_e) \cdot (1 - \phi) > F\big(\tilde{\epsilon}_i\big) \cdot \phi$*, then the equilibrium probability of either type of conflict is minimized at* $\gamma = 0$.

In empirical cases, γ may exceed 0 because of the inherent risks from trying to purge top officials and rival ethnic groups. This result also highlights potential pitfalls of external interventions to promote power-sharing by increasing γ. For example, international organizations often promote power-sharing deals to end civil wars (Hartzell and Hoddie, 2003). Enabling groups access to power at the center might deter exclusion by raising their coup threat. However, in weakly institutionalized environments where the coup threat under inclusion is high, raising γ might succeed at the immediate goal of fostering power-sharing without solving the underlying tensions that yield fighting in equilibrium. For example, following a power-sharing agreement in Burundi, an opposition party member stated: "It's a question of whether this army can be trusted, given its past. They know they are close to power and can at any moment launch one more coup d'etat" (Lacey 2001, A10; quoted in Hartzell and Hoddie (2003, 321)). Additionally, in cases with strong predatory exclusion incentives, raising γ may simply raise the probability of a coup attempt without making exclusion self-enforcing (Panel B of Figure 5).

3 Power-Sharing with External Threats

Introducing an external threat alters actors' calculus: decreasing E's willingness to attempt a coup and increasing D's willingness to face coup attempts. Combining these effects shows that arguments for and against a "guardianship dilemma" are only partially correct: stronger external threats can raise equilibrium coup likelihood by encouraging power-sharing, but decrease equilibrium coup likelihood conditional on D sharing power. The analysis also shows how external threats may underpin inclusive and durable authoritarian regimes in weakly institutionalized environments.

3.1 Setup

This section introduces an exogenous external threat to the baseline model. If D excludes E and/or if E fights, then with probability $q \in (0, 1)$, a non-strategic external threat takes power. By contrast, the exogenous takeover probability is $\kappa \cdot q$ if E is included and accepts D's offer, for $\kappa \in (0, 1)$. Most of the analysis assumes that D and E each consume 0 following external takeover, although later I consider more general consumption amounts $\omega_D > 0$ and $\omega_E > 0$.

This setup incorporates two important ideas. First, actors in society can be differentiated based on whether they are "elites" or "external." External could refer to a foreign actor, but domestic actors also meet the current conceptualization of external as long as D and E fear their takeover. For example, D and E could be different factions of the same ethnic group (e.g., Malay in Malaysia), whereas the exogenous threat is masses from a different ethnic group (e.g., Chinese-dominated communist movement). Alternatively, D and E could compose agricultural and industrial elites that have differing preferences about public good provision but are distinguished from the masses (Ansell and Samuels, 2014).

The second consequential assumption is that disruptions at the center, and narrowly constructed regimes with minimal societal support, create openings for external actors to control the government—whereas these openings are less likely to arise if the dictator and other elites present a united front. For example, Goodwin

(2001) argues that ruling elites who undermine their military and state capacity by coup-proofing their regimes create openings for revolutionary social movements (49). Snyder (1998, 56) claims that sultanistic regimes in Haiti, Nicaragua, and Romania successfully co-opted a broad range of societal elites for long periods and that the regimes fell to societal uprisings amid an "increase in the exclusion of political elites." Harkness (2016, 588) argues: "Compelling evidence exists that coups also ignite insurgencies by weakening the central government and thereby opening up opportunities for rebellion . . . In the midst of Mali's March 2012 coup, for example, Tuareg rebels launched a powerful military offensive. They and Islamic rebel groups proceeded to capture much of the country before French intervention forces drove them back."

3.2 Power-Sharing Constraint

With an external threat, E's acceptance constraint under inclusion is:

$$\big(1 - \kappa \cdot q\big) \cdot x \geq (1 - \phi) \cdot (1 - q) \cdot p_i \tag{6}$$

and the probability of acceptance is $F\big(\tilde{\epsilon}_i(q)\big)$, for:

$$\tilde{\epsilon}_i(q) \equiv \frac{(1 - \phi) \cdot (1 - q) \cdot p_i}{1 - \kappa \cdot q} - \theta_i \tag{7}$$

External threats raise E's acceptance incentives if D shares power. Equation 6 shows that acceptance lowers the probability of external takeover from q to $\kappa \cdot q$, and therefore higher q decreases E's expected utility to a coup attempt by a greater amount than it decreases E's expected utility to accepting D's offer. Deriving Equation 7 with respect to q shows that a stronger external threat increases E's probability of acceptance.

However, q does not affect E's probability of acceptance under exclusion. This constraint is:

$$(1 - q) \cdot x \geq (1 - \phi) \cdot (1 - q) \cdot p_i \tag{8}$$

Because the probability of external takeover is q regardless of whether E accepts or fights, the external threat does not affect E's incentives, and the equilibrium probability of acceptance is the same term $F(\tilde{\epsilon}_e)$

as defined in Equation 2. D's revised power-sharing incentive compatibility constraint is:

$$\Omega_q(q) \equiv \underbrace{q \cdot \Big[1 - F\big(\tilde{\epsilon}_i(q)\big)\Big] \cdot (1-\kappa)}_{\text{External threat effect}} + (1-q) \cdot \Bigg[\underbrace{-(p_i - p_e) \cdot (1-\phi)}_{\text{Predatory exclusion effect}} + \underbrace{\Big[F\big(\tilde{\epsilon}_e\big) - F\big(\tilde{\epsilon}_i(q)\big)\Big] \cdot \phi}_{\text{Conflict prevention effect}}\Bigg] \geq 0 \tag{9}$$

Equation 9 highlights two effects of q that increase D's incentives to share power. The first is the direct external threat effect: inclusion lowers the probability of external takeover. The magnitude of this effect depends on (1) the probability of no coup attempt under inclusion, $1 - F\big(\tilde{\epsilon}_i(q)\big)$, and (2) the extent to which peaceful power-sharing diminishes the probability of external takeover, $1 - \kappa$. The second, indirect effect of q, follows because higher q lowers the coup attempt probability under inclusion, $F\big(\tilde{\epsilon}_i(q)\big)$. This tilts the conflict prevention effect in Equation 9 toward power-sharing, and increases the magnitude of the external threat effect.

Panel A of Figure 6 depicts these effects by plotting the same terms as the previous figures as a function of q. At $q = 0$, the probability of rebellion is low enough that D optimally excludes E even if the probability of a coup under inclusion is 0, as the dashed black line shows.[13] Furthermore, the probability of a coup under inclusion exceeds the probability of a rebellion under exclusion at $q = 0$. However, increasing q creates two effects. First, D becomes more tolerant of facing coup attempts under inclusion because sharing power lowers the probability of external takeover from q to $\Big\{F\big(\tilde{\epsilon}_i(q) + \Big[1 - F\big(\tilde{\epsilon}_i(q)\big)\Big] \cdot \kappa\Big\} \cdot q$. Increases in the dashed black line depict this effect. Second, E becomes less likely to stage a coup under inclusion (see Equation 7), which the dashed blue line shows. For $q > \hat{q}$, these two effects combine to induce D to share power.

Notably, in the figure, the probability of a coup attempt under inclusion exceeds the probability of a rebellion under exclusion for parameter values in which D shares power. Although this is not possible in the baseline game because of predatory exclusion incentives (see Corollary 1), in this extension, the external threat effect in Equation 9 can dominate the predatory exclusion effect.

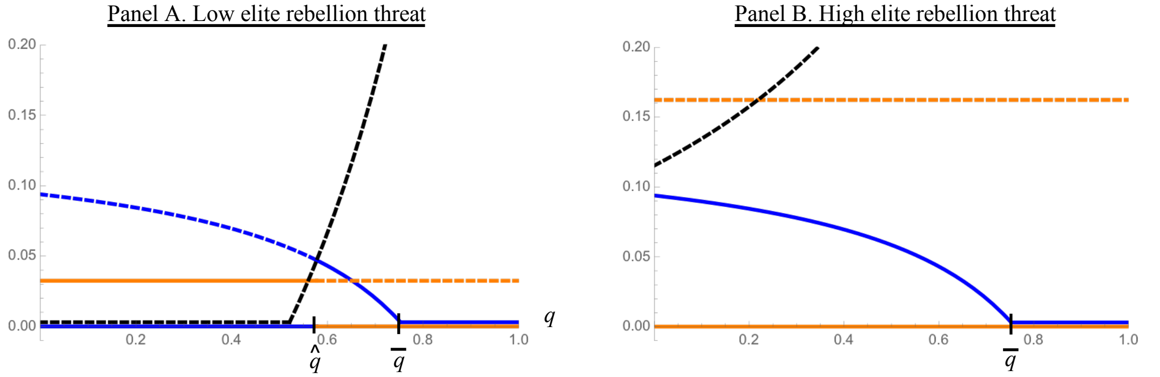
Proposition 6 (External threats and power-sharing)**.**

Part a. *If* $\Omega_q(0) < 0$*, then there exists a unique threshold* $\hat{q} \in (0, 1)$ *such that if* $q < \hat{q}$*, then D excludes, and otherwise D shares power.*

Part b. *If* $\Omega_q(0) > 0$*, then D shares power for all* $q \in [0, 1]$*.*

[13] This corresponds with the parameter values in Panel B of Figure 4.

Figure 6: External Threats



Notes: Both panels use the parameter values $p_i = 0.6$, $\theta_i = 0.23$, $\theta_e = 0.15$, $\phi = 0.5$, and $\kappa = 0.9$, and assume $\epsilon \sim U[0, 1 - \theta_i]$. In Panel A, $p_e = 0.35$. In Panel B, $p_e = 0.55$. The notes for Figure 2 describe the coloring scheme.

3.3 The Ambiguous Guardianship Dilemma

Adding an external threat to the model contributes to debates about whether or not a guardianship dilemma exists. Neither proponents (Acemoglu et al., 2010; Besley and Robinson, 2010; Svolik, 2013) nor opponents (McMahon and Slantchev, 2015) correctly characterize the full range of effects because the overall effect is non-monotonic: increasing and then decreasing in q. On the one hand, *conditional on D sharing power*, stronger external threats reduce E's coup incentives. Therefore, large enough external threats enable power-sharing without coup risk ($q > \overline{q}$).

On the other hand, external threats generate equilibrium coups by causing G to share power. At the threshold $\hat{q}$ where D switches from excluding to including E, the equilibrium probability of a coup attempt jumps from 0 to positive. This is, in essence, the guardianship logic: external threats encourage building a military (or, here, power-sharing) that generates coup risk.[14]

Stronger external threats only fail to create a guardianship dilemma if E's rebellion threat under exclusion compels D to optimally share power *absent* the external threat ($q = 0$). Panel B of Figure 6 highlights this consideration by raising the value of p_e compared to Panel A.[15] The positive gap between the black and

[14]This conclusion is identical when considering the broader concept of an elite challenge, i.e., either a rebellion or a coup attempt. This probability exhibits a discrete upward jump at $q = \hat{q}$, as shown by the positive distance between the blue and orange lines.

[15]E's greater rebellion threat yields parameter values that lie in the $\theta_i > \hat{\theta}$ range in Panel A of Figure 4

blue lines at $q = 0$ in Panel B of Figure 6 depicts this calculation. The severe external threat does not affect D's power-sharing decision because D includes E for all q. This eliminates the mechanism by which larger external threats could raise the equilibrium probability of a coup attempt in Panel A of Figure 6. Instead, the only effect of the external threat in Panel B is to diminish D's equilibrium probability of a coup attempt under inclusion until $q = \overline{q}$, where this probability hits 0.[16]

Proposition 7 (External threats and coup propensity)**.** *Given $\hat{q}$ from Proposition 6, there exists a unique $\overline{q} < 1$ such that:*

- *If $q < \hat{q}$, then the equilibrium probability of a coup attempt equals 0.*
- *If $q \in (\hat{q}, \overline{q})$, then the equilibrium probability of a coup attempt equals $F\big(\tilde{\epsilon}_i(q)\big) > 0$.*
- *If $q > \overline{q}$, then the equilibrium probability of a coup attempt equals 0.*

The necessary condition for eliminating the guardianship dilemma in this model is a strong enough rebellion threat by E that D shares power absent an external threat. This result is not possible in existing models of coups, either those highlighting the guardianship logic (e.g., Besley and Robinson, 2010) or arguing against it (McMahon and Slantchev, 2015). In these models, if there is no external threat, then the dictator can simply choose not to build a military—and therefore faces no coup risk. In McMahon and Slantchev (2015), this would entail the ruler not delegating national defense to a specialized military agent.[17] By contrast, the present model presumes that a dictator always faces a threat from other elites. The threat of a rebellion can compel power-sharing—despite creating a coup risk—even absent an external threat.

3.4 External Threats and Durable Authoritarian Regimes

Although external threats ambiguously affect the equilibrium probability of a coup attempt, it is possible for strong external threats to not only facilitate peaceful power-sharing among D and E, but to lower the

at $q = 0$.

[16]There is also a trivial case in which external threats do not affect equilibrium power-sharing or the equilibrium probability of a coup attempt. If θ_i is high enough, then at $q = 0$, D shares power and E attempts coups with probability 0 (see the $\theta > \overline{\theta}$ range in Panel A of Figure 4).

[17]They explicitly only analyze parameter values in which the external threat is sufficiently large that the ruler optimally chooses to delegate to a military agent—creating positive coup risk—but the present argument holds when considering the full range of parameter values in their model.

overall probability of overthrow. This is striking when considering that the only direct effect of an external threat in the model is to raise the exogenous probability of regime overthrow, and highlights a counterintuitive path to durable and peaceful regimes in weakly institutionalized states. This finding is consistent with several cases discussed at the end of the section, but contrasts with existing arguments focused solely on domestic conditions for generating self-enforcing power-sharing. For example, Roessler and Ohls (Forthcoming) argue that power-sharing regimes—which, in their framework, only arise if the elites have high threat capabilities—are necessarily highly vulnerable to coups. By contrast, the present model shows how external threats can generate the opposite effect on coups in power-sharing regimes.

Equation 10 states the equilibrium probability of overthrow, ρ^*, as a function of q. The expressions disaggregate the equilibrium probability of overthrow by E and the equilibrium probability of overthrow by the external threat (conditional on no elite overthrow).

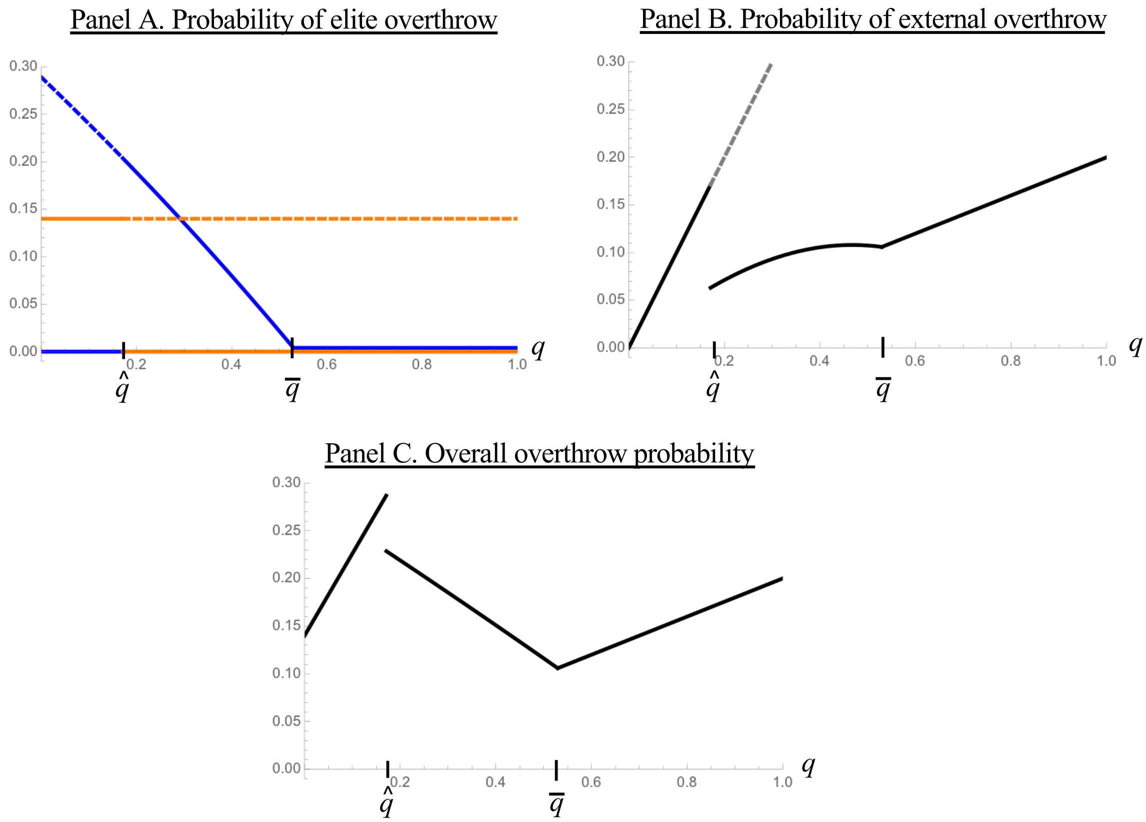
$$\rho^*(q) = \begin{cases} \overbrace{F(\tilde{\epsilon}_e)\cdot p_e}^{\text{elite}} + \overbrace{\Big[F(\tilde{\epsilon}_e)\cdot(1-p_e)+1-F(\tilde{\epsilon}_e)\Big]\cdot q}^{\text{external if no elite overthrow}} & \text{if } q<\hat{q} \\ F(\tilde{\epsilon}_i(q))\cdot p_i + \Big[F(\tilde{\epsilon}_i(q))\cdot(1-p_i)+\big[1-F(\tilde{\epsilon}_i(q))\big]\cdot\kappa\Big]\cdot q & \text{if } q\in(\hat{q},\overline{q}) \\ \kappa\cdot q & \text{if } q>\overline{q} \end{cases} \tag{10}$$

Figure 7 depicts the equilibrium probability of overthrow by the elite either via coup or rebellion (Panel A), by the external actor (Panel B),[18] or by either (Panel C). The parameter values are qualitatively similar to the $\theta_i < \hat{\theta}$ range in Panel A of Figure 4 because D excludes E at $q = 0$. In Panel A, the color scheme follows that in the previous figures, and most directly corresponds with Panel B of Figure 2 by depicting equilibrium probabilities of *successful* overthrow rather than equilibrium attempts (as in most of the preceding figures). The dashed gray line in Panel B shows what the external overthrow probability would be under exclusion in parameter ranges for which, in equilibrium, D shares power.

Each panel in Figure 7 depicts low q values, $q < \hat{q}$; intermediate q values, $q \in (\hat{q}, \overline{q})$; and high q values, $q > \overline{q}$. In the low q range, D excludes E from power, generating a positive probability of overthrow via elite

[18] Panel B depicts the unconditional probability of external overthrow, which differs from the corresponding term in Equation 10 that conditions on no overthrow by E. Therefore, the terms in Panel C do not sum the terms from Panels A and B.

Figure 7: External Threats and Equilibrium Overthrow Probability



Notes: Both panels use the parameter values $p_i = 0.95$, $p_e = 0.7$, $\theta_i = 0.25$, $\theta_e = 0.2$, $\phi = 0.5$, $\kappa = 0.2$, and assume $\epsilon \sim U[0, 1-\theta_i]$. Section 2.1 describes the coloring scheme for Panel A, although in Figure 7 these are the probability of overthrow rather than of the event (either rebellion or coup) occurring.

rebellion but a 0 probability of a coup (Panel A). The rebellion overthrow probability, $F(\tilde{\epsilon}_e)$, is constant in q. However, the overall overthrow probability strictly increases in this parameter range (Panel C) because the probability of external overthrow equals q (Panel B).

At $q = \hat{q}$, there are two countervailing discrete shifts. First, the probability of elite overthrow increases from $F(\tilde{\epsilon}_e) \cdot p_e$ to $F(\tilde{\epsilon}_i(q)) \cdot p_i$ (Panel A). D shifts from exclusion to inclusion, and the probability of a successful coup under inclusion exceeds the probability of a successful rebellion under exclusion at $q = \hat{q}$. Second, the probability of external overthrow declines from q to $\Big[F(\tilde{\epsilon}_i(q)) + \big[1 - F(\tilde{\epsilon}_i(q))\big] \cdot \kappa\Big] \cdot q$. Under power-sharing, if E does not attempt a coup, then the probability of external overthrow equals $\kappa \cdot q$ (Panel B). The overall effect causes a discrete drop in the probability of overthrow at $q = \hat{q}$.

Three effects interact in the intermediate q range. The probability of elite overthrow, $F(\tilde{\epsilon}_i(q))$, strictly decreases in q because E's threat is a coup, and higher q deters coup attempts (Panel A). The probability of external overthrow, $\Big[F(\tilde{\epsilon}_i(q)) + \big[1 - F(\tilde{\epsilon}_i(q))\big] \cdot \kappa\Big] \cdot q$, reflects two countervailing effects (Panel B). Higher q exerts a direct effect that increases the probability of external overthrow. However, an indirect effect counteracts the positive direct effect. Lower coup probability $F(\tilde{\epsilon}_i(q))$ decreases the likelihood that the external actor overthrows with probability q rather than $\kappa \cdot q$. These countervailing effects result in a non-monotonic relationship between q and the probability of external overthrow for intermediate q values, and the overall effect of q on overthrow probability is negative (Panel C).

Finally, in the high q range, the probability of elite overthrow is 0 because the strong external threat deters coup attempts (Panel A). The probability of external overthrow is $\kappa \cdot q$ (Panel B). Therefore, the overall overthrow probability strictly increases in q (Panel C).

Figure 7 highlights the striking finding that stronger external threats can enhance regime durability: $q = \overline{q}$ yields a lower probability of overthrow than $q = 0$ (Panel C). Although the only direct effect of q in the model is to raise the probability of external overthrow, a countervailing indirect effect lowers the probability of elite overthrow by (1) inducing D to share power and (2) reducing the elite overthrow probability under power-sharing. Proposition 8 shows that the indirect effect dominates the direct effect (for at least a range of the parameter space) if peaceful power-sharing has a strong enough deterrent effect on the external actor. Lower κ decreases E's incentives to stage a coup (Equation 6), which decreases the smallest q value at which the probability of a coup attempt under inclusion equals 0—hence decreasing the probability of overall overthrow, $\kappa \cdot \overline{q}$, for this interior value of q. By contrast, for higher κ, $q = 0$ may minimize the probability of overthrow.

Proposition 8 (External threats and regime durability)**.** *If peaceful power-sharing has a strong enough deterrent effect, then $q = 0$ does not minimize the equilibrium probability of overthrow. Formally, there exists a unique $\tilde{\kappa} \in (0, 1)$ such that if $\kappa < \tilde{\kappa}$, then $\rho^*(\overline{q}) < \rho^*(0)$.*

Finally, this cooperative effect of large external threats only holds when D and E *agree* that they face a pernicious threat. This condition hold for the preceding results because each actor consumes 0 following external takeover. Examining a more general case in which E consumes $\omega_E \geq 0$ following external takeover demonstrates this point. As ω_E converges to the consumption amount that E would receive in equilibrium in the baseline game, Equation 6 converges to Equation 1 and higher q does not affect E's coup behavior. This eliminates the indirect effect of q that reduces ρ^* in the $q \in (\hat{q}, \overline{q})$ range in Figure 7.

3.5 Examples from South Africa and East Asia

South Africa prior to 1994 illustrates how larger external threats can contribute to regime stability. The Union of South Africa gained independence in 1910 as an amalgam of four regionally distinct colonies. Among the European population, two regions were dominated by British descendants and two by Dutch descendants. Despite sharing European heritage, South Africa exhibited severe political divisions at independence between British and Boer. In fact, the territory experienced a major domestic war between the British and Boer factions less than a decade before independence. "When South Africans spoke of the 'race question' in the early part of the [20th] century, it was generally accepted that they were referring to the division between Dutch or Afrikaners on the one hand and British or English-speakers on the other" (Lieberman, 2003, 76). This division created debates among English settlers (who were victorious in the Boer War) about how widely to share power with Afrikaners when writing the foundational constitution. In terms of the model, commitment ability θ_i was relatively low. However, whites also faced a grave potential threat from the African majority that composed roughly 80% of the population at independence, which corresponds with high q. Furthermore, despite their numerical deficiency, South African whites invested heavily in their armed forces, which were highly capable at repressing (Truesdell, 2009), resulting in low κ. This implied that, if elites cooperated at the center, then the likelihood of external overthrow would be low.[19] This case exemplifies how external threats can facilitate power-sharing in a case that otherwise might have featured factional conflict among British and Boers.

This logic also provides strategic foundations for Slater's (2010) discussion of authoritarian regimes that originate from "protection pacts." Such regimes exhibit broad elite coalitions that support heightened state power amid a threat that they agree is particularly severe and threatening. He argues that such regimes—featured in Malaysia and Singapore since independence—feature strong states, robust ruling parties, cohesive militaries, and durable authoritarian regimes. This argument corresponds with conditions in which D and E experience low consumption under external takeover, high q, and low κ.

[19] Although high repression costs eventually compelled whites to share power with Africans in 1994, this occurred 84 years after independence.

4 Conclusion

Coups d'etat pose imminent survival threats for dictators, creating a power-sharing dilemma. How do dictators manage elite threats—with and without the presence of external threats—and what are the consequences for coup likelihood? This paper analyzes a game in which a dictator chooses whether or not to share power with another elite, followed by bargaining. The baseline model shows that strong rebellion threat is necessary for power-sharing because of predatory exclusion incentives. Overall threat capabilities, commitment ability, and constraints on exclusion exert countervailing effects on equilibrium coup probability by affecting (1) the elite's coup incentives conditional on inclusion in power and (2) the dictator's incentives to share power. Extending the model, a stronger external threat non-monotonically affects coup prospects by raising the dictator's tolerance to facing coup attempts while also decreasing the elite's coup incentives (a partial "guardianship dilemma"). The latter effect also implies that stronger external threats can enhance regime durability.

Overall, the model suggests three possible paths to self-enforcing power-sharing regimes, although with different consequences for coups. High rebellion capability is necessary for power-sharing in the simplest setting considered here—although, to be sufficient for power-sharing, groups with overall high threat capabilities must exhibit a comparative advantage in mobilization rather than in military positions. Even strong institutions on their own are not sufficient to induce power-sharing if rebellion capabilities are low. However, the rebellion capacity path to power-sharing is relatively conflictual because *higher probability of conflict under exclusion* rather than lower probability of conflict under inclusion causes the dictator to strategically share power. Assuming that exclusion might fail yields a distinct path to power-sharing that does not require high threat capabilities. Faced with coup threats if sharing power, and if trying to exclude other elites, high enough constraints on exclusion induce dictators to share power. Like the high rebellion capacity path, this path to power-sharing generates high equilibrium conflict prospects. Finally, large external threats provide another possible path to power-sharing that does not require high rebellion capabilities. By inducing cooperation between the dictator and elites, this factor can create relatively *peaceful* power-sharing regimes—which is striking because the only direct effect of external threats in the model is to exogenously increase the probability of overthrow.

The model also generates implications for empirical tests. Most important, many risk factors exert countervailing effects on the equilibrium likelihood of a coup attempt that empirical tests must account for. Higher quality institutions and larger external threats each diminish the elite's incentive to stage a coup, but the overall predicted relationship with coup prospects is non-monotonic because these factors also affect the dictator's power-sharing decision—which increases coup prospects. Overall, understanding how risk factors affect *both* dictators' and elites' optimal strategies should improve empirical conflict research.

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Online Appendix

A Proofs for Formal Results

Proof of Proposition 1. Follows trivially from the equations in the text. ■

Proof of Proposition 2. Showing that the conditions for the intermediate value theorem apply characterizes the existence of at least one $\hat{p}_e \in (0, p_i)$ such that $\Omega(\hat{p}_e) = 0$:

- $\Omega(0) = -p_i \cdot (1 - \phi) - F\big(p_i \cdot (1 - \phi) - \theta_i\big) \cdot \phi < 0$
- $\Omega(p_i) = \Big[F\big(p_i \cdot (1 - \phi) - \theta_e\big) - F\big(p_i \cdot (1 - \phi) - \theta_i\big)\Big] \cdot \phi > 0$
- Continuity follows from the assumed smoothness of $F(\cdot)$

Showing that Ω strictly increases in p_e establishes the unique threshold claim:

$$\frac{d\Omega}{dp_e} = (1 - \phi) \cdot \big[1 + f(\tilde{\epsilon}_e) \cdot \phi\big] > 0$$

■

Proof of Corollary 1, positive rebellion probability under exclusion. Equation 2 easily enables deriving:

$$\underline{p}_e = \frac{\theta_e}{1 - \phi} > 0$$

To show that $\underline{p}_e < \hat{p}_e$, suppose not and that $\underline{p}_e \geq \hat{p}_e$. This assumption implies that $F\big(\tilde{\epsilon}_e(\hat{p}_e)\big) = 0$, which implies:

$$\Omega(\hat{p}_e) = -\big(p_i - \hat{p}_e\big) \cdot (1 - \phi) - F\big(p_i \cdot (1 - \phi) - \theta_i\big) \cdot \phi < 0,$$

which contradicts $\Omega(\hat{p}_e) = 0$.

Probability of conflict under inclusion/exclusion. Define:

$$\overline{\Theta}(p_e) \equiv F\big(p_e \cdot (1 - \phi) - \theta_e\big) - F\big(p_i \cdot (1 - \phi) - \theta_i\big)$$

Showing that the conditions for the intermediate value theorem apply characterizes the existence of at least one $\overline{p}_e \in \big(\underline{p}_e, \hat{p}_i\big)$ such that $\overline{\Theta}(\overline{p}_e) = 0$.

- $\overline{\Theta}\big(\underline{p}_e\big) = -F\big(p_i \cdot (1 - \phi) - \theta_i\big) < 0$
- $\overline{\Theta}(p_i) = F\big(\hat{p}_e \cdot (1 - \phi) - \theta_e\big) - F\big(p_i \cdot (1 - \phi) - \theta_i\big)$. This term must be strictly positive to satisfy $\Omega(\hat{p}_e) = 0$.
- Continuity follows from the assumed smoothness of $F(\cdot)$

Showing that $\overline{\Theta}$ strictly increases in p_e establishes the unique threshold claim:

$$\frac{d\Theta}{dp_e} = f\big(p_e \cdot (1-\phi) - \theta_e\big) \cdot (1-\phi) > 0$$

Probability of successful conflict under inclusion/exclusion. Define:

$$\tilde{\Theta}(p_e) \equiv F\big(p_e \cdot (1-\phi) - \theta_e\big) \cdot p_e - F\big(p_i \cdot (1-\phi) - \theta_i\big) \cdot p_i$$

Showing that the conditions for the intermediate value theorem apply characterizes the existence of at least one $\tilde{p}_e \in \big(\overline{p}_e, \hat{p}_i\big)$ such that $\tilde{\Theta}(\tilde{p}_e) = 0$.

- $\tilde{\Theta}\big(\overline{p}_e\big) = F\big(\overline{p}_e \cdot (1-\phi) - \theta_e\big) \cdot \overline{p}_e - F\big(p_i \cdot (1-\phi) - \theta_i\big) \cdot p_i < 0$, where strict negativity stems from $F\big(\overline{p}_e \cdot (1-\phi) - \theta_e\big) = F\big(p_i \cdot (1-\phi) - \theta_i\big)$ and $p_e < p_i$.
- $\tilde{\Theta}(p_i) = F\big(p_i \cdot (1-\phi) - \theta_e\big) \cdot p_i - F\big(p_i \cdot (1-\phi) - \theta_i\big) \cdot p_i > 0$
- Continuity follows from the assumed smoothness of $F(\cdot)$

Showing that $\tilde{\Theta}$ strictly increases in p_e establishes the unique threshold claim:

$$\frac{d\tilde{\Theta}}{dp_e} = F\big(p_e \cdot (1-\phi) - \theta_e\big) + f\big(p_e \cdot (1-\phi) - \theta_e\big) \cdot (1-\phi) \cdot p_e > 0$$

■

Proof of Proposition 3, general case. Showing that the conditions for the intermediate value theorem hold implies the existence of at least one $\hat{\alpha} \in (0,1)$ such that $\Omega(\hat{\alpha}) = 0$.

- Assuming $p_e(0) = 0$ implies $\Omega(0) < 0$.
- Setting $\Omega(1) > 0$ enables defining the threshold $\tilde{p}_e(1)$ stated in the proposition:

  $$-\big[p_i(1) - \tilde{p}_e(1)\big] \cdot (1-\phi) + \Bigg[F\Big(\tilde{p}_e(1) \cdot (1-\phi) - \theta_e\Big) - F\Big(p_i(1) \cdot (1-\phi) - \theta_i\Big)\Bigg] \cdot \phi > 0,$$

  which is assumed to hold.
- Continuity is satisfied.

Establishing conditions in which Ω strictly increases in α yields the unique threshold claim:

$$\frac{d\Omega}{d\alpha} = -\big[p_i'(\alpha) - \tilde{p}_e'(\alpha)\big] \cdot (1-\phi) + \Bigg[f\Big(p_e \cdot (1-\phi) - \theta_e\Big) \cdot \tilde{p}_e'(\alpha) \cdot (1-\phi) - f\Big(p_i \cdot (1-\phi) - \theta_i\Big) \cdot p_i'(\alpha) \cdot (1-\phi)\Bigg] \cdot \phi > 0$$

Proof of specific case. Showing that the conditions for the intermediate value theorem hold implies the existence of at least one $\hat{\alpha}_{sc} \in (0,1)$ such that $\Omega(\hat{\alpha}_{sc}) = 0$.

- $m_{0i} > 0$ implies $\Omega(0) < 0$.

- Setting $\Omega(1) > 0$ and doing algebra yields the condition stated in the proposition, for:

$$\Omega(1) = -(m_{1i} - m_{1e}) \cdot (1-\phi) + \frac{m_{1e} \cdot (1-\phi) - \theta_e - \big[m_{1i} \cdot (1-\phi) - \theta_i\big]}{1-\theta_i} \cdot \phi$$

- Continuity is satisfied.

Showing that Ω strictly increases in α yields the unique threshold claim. Deriving Ω with respect to α yields:

$$\frac{1 + f(\tilde{\epsilon}_e) \cdot \phi}{1 + f(\tilde{\epsilon}_i) \cdot \phi} \cdot \frac{p_e'(\alpha)}{p_i'(\alpha)} > 1$$

Substituting in functional form assumptions $\big($and noting $f(\cdot) = \frac{1}{1-\theta_i}$ because of the uniform assumption$\big)$ yields $m_{1e} > m_{1i}$. Because $\theta_i > \theta_e$ and $\theta_i < 1$, if $m_{1e} > \tilde{m}_{1e}$, then $m_{1e} > m_{1i}$.

To establish necessity, if instead $m_{1e} < \tilde{m}_{1e}$, then $\Omega(1) < 0$. The linear function form assumption implies that if this is true, $\Omega(\alpha) < 0$ for all $\alpha < 1$.

Proof of Proposition 4.

Power-sharing. If $\theta_i = 1$, then $F\big(p_i \cdot (1-\phi) - \theta_i\big) = F\big(p_i \cdot (1-\phi) - 1\big) = 0$. Given this, can show the conditions for the intermediate value theorem apply to characterize the existence of at least one $p_e^\dagger \in (0,1)$ such that $\Omega(\theta_i = 1, p_e^\dagger) = 0$.

- $\Omega(\theta_i = 1, p_e = 0) = -p_i \cdot (1-\phi) < 0$
- $\Omega(\theta_i = 1, p_e = p_i) = F\big(p_i \cdot (1-\phi) - \theta_e\big) \cdot \phi > 0$
- Continuity follows from the assumed smoothness of $F(\cdot)$

Showing that Ω strictly increases in p_e establishes the unique threshold claim:

$$\frac{d\Omega}{dp_e} = 1 - \phi + f\big(p_e \cdot (1-\phi) - \theta_e\big) \cdot (1-\phi) \cdot \phi > 0$$

If $p_e > p_e^\dagger$, can show the conditions for the intermediate value theorem apply to characterize the existence of at least one $\hat{\theta}_i \in (\theta_e, 1)$ such that $\Omega(\hat{\theta}_i) = 0$.

- $\Omega(\theta_i = \theta_e) = -\big(p_i - p_e\big) \cdot (1-\phi) + \Big[F\big(p_e \cdot (1-\phi) - \theta_e\big) - F\big(p_i \cdot (1-\phi) - \theta_e\big)\Big] \cdot \phi < 0$, which follows from $F\big(p_e \cdot (1-\phi) - \theta_e\big) < F\big(p_i \cdot (1-\phi) - \theta_e\big)$
- $\Omega(\theta_i = 1) = -\big(p_i - p_e\big) \cdot (1-\phi) + \Big[F\big(p_e \cdot (1-\phi) - \theta_e\big) - F\big(p_i \cdot (1-\phi) - 1\big)\Big] \cdot \phi > 0$, which follows from $F\big(p_i \cdot (1-\phi) - 1\big) = 0$ and from assuming $p_e > p_e^\dagger$.
- Continuity follows from the assumed smoothness of $F(\cdot)$

Showing the Ω strictly increases in θ_i establishes the unique threshold claim:

$$\frac{d\Omega}{d\theta_i} = f\big(\tilde{\epsilon}_i\big) \cdot \phi > 0$$

Coup. Define $\overline{\theta}_i = p_i \cdot (1-\phi) \in (0,1)$, which follows from $p_i \in (0,1)$ and $\phi \in (0,1)$. Because the lower bound of the support for $F(\cdot)$ is 0, this implies that $F\big(p_i \cdot (1-\phi) - \theta_i\big) > 0$ for any $\theta_i < \overline{\theta}_i$, and $F\big(p_i \cdot (1-\phi) - \theta_i\big) = 0$ for any $\theta_i > \overline{\theta}_i$. ∎

Proof of Proposition 5, power-sharing. Showing that the conditions for the intermediate value theorem hold demonstrate the existence of at least one $\hat{\gamma} \in (0,1)$ such that $\Omega_\gamma(\hat{\gamma}) = 0$:

- $\Omega_\gamma(0) < 0$ by assumption
- $\Omega_\gamma(1) = \big[1 - F(\tilde{\epsilon}_i)\big] \cdot \phi > 0$
- Continuity holds

Showing that $\Omega_\gamma(\gamma)$ strictly increases in γ establishes the unique threshold claim:

$$\frac{d\Omega_\gamma}{d\gamma} = (p_i - p_e) \cdot (1-\phi) + \Big[1 - F\big(\tilde{\epsilon}_e\big)\Big] \cdot \phi > 0$$

Coup. Can explicitly solve for:

$$\hat{\gamma} = \frac{-(p_i - p_e) \cdot (1-\phi) + \Big[F\big(\tilde{\epsilon}_e\big) - F\big(\tilde{\epsilon}_i\big)\Big] \cdot \phi}{-(p_i - p_e) \cdot (1-\phi) - \Big[1 - F\big(\tilde{\epsilon}_e\big)\Big] \cdot \phi}$$

Algebra shows that $\hat{\gamma} > F\big(\tilde{\epsilon}_i\big)$ if $F\big(\tilde{\epsilon}_e\big) \cdot \phi < (p_i - p_e) \cdot (1-\phi)$, and $\hat{\gamma} < F\big(\tilde{\epsilon}_i\big)$ otherwise. ∎

Proof of Corollary 2. Follows directly from Proposition 5. ∎

Proof of Proposition 6, part a. Showing that the conditions for the intermediate value theorem hold demonstrate the existence of at least one $\hat{q} \in (0,1)$ such that $\Omega_q(\hat{q}) = 0$:

- $\Omega_q(0) < 0$ follows by assumption in Part a.
- $\Omega_q(1) = 1 - \kappa > 0$.
- Continuity follows from the assumed continuity of the constituent functions.

Demonstrating that $\Omega_q(q)$ strictly increases in q if $\Omega_q(0) < 0$ establishes the unique threshold claim:

$$\underbrace{-\Big[-(p_i - p_e) \cdot (1-\phi) + \big[F(\tilde{\epsilon}_e) - F(\tilde{\epsilon}_i(q))\big]\Big] \cdot \phi}_{1}$$

$$\underbrace{+\big[1 - F(\tilde{\epsilon}_i(q))\big] \cdot (1-\kappa)}_{2} \underbrace{-(1-q) \cdot \phi \cdot f(\tilde{\epsilon}_i(q)) \cdot \frac{d\tilde{\epsilon}_i}{dq}}_{3} \underbrace{-q \cdot (1-\kappa) \cdot f(\tilde{\epsilon}_i(q)) \cdot \frac{d\tilde{\epsilon}_i}{dq}}_{4} > 0$$

The strict positivity of 1 follows from $\Omega_q(0) < 0$. The weak positivity of 2 follows by assumption. The strict positivity of 3 and 4 follows from:

$$\frac{d\tilde{\epsilon}_i}{dq} = -(1-\phi) \cdot p_i \cdot \frac{1-\kappa}{(1-\kappa \cdot q)^2} < 0$$

Proof of part b. Because $F(\tilde{\epsilon}_i(q))$ weakly decreases in q, if $\Omega_q(0) > 0$, then $-(p_i - p_e) \cdot (1-\phi) + \Big[F\big(\tilde{\epsilon}_e\big) - F\big(\tilde{\epsilon}_i(q)\big)\Big] \cdot \phi > 0$ for all $q \in [0,1]$. The result then follows from $q \cdot \Big[1 - F\big(\tilde{\epsilon}_i(q)\big)\Big] \cdot (1-\kappa) \geq 0$ for all $q \in [0,1]$. ■

Proof of Proposition 7. Given Equation 7, it is straightforward to implicitly define $\overline{q}$:

$$\frac{(1-\phi) \cdot (1-\overline{q}) \cdot p_i}{1-\kappa \cdot \overline{q}} - \theta_i = 0$$

The boundary claim follows because the left-hand side of this equation equals $-\theta_i < 0$ if $q = 1$. Showing that the left-hand side strictly decreases in q establishes uniqueness, which the proof for Proposition 6 shows. ■

Proof of Proposition 8. Setting $q = 0$ in the first line of Equation 10, and comparing it to the second line of Equation 10 at $q = \overline{q}$ enables implicitly characterizing $\tilde{\kappa}$:

$$\Theta(\tilde{\kappa}) \equiv \tilde{\kappa} \cdot \overline{q}(\tilde{\kappa}) - F(\tilde{\epsilon}_e) \cdot p_e = 0$$

Showing that the conditions for the intermediate value theorem hold establishes the existence of at least one such $\tilde{\kappa}$:

- $\Theta(0) = -F(\tilde{\epsilon}_e) \cdot p_e < 0$
- $\Theta(1) = 1 - F(\tilde{\epsilon}_e) \cdot p_e > 0$
- Continuity follows from the assumed continuity of the constituent functions.

Uniqueness follows from showing that Θ strictly increases in κ:

$$\frac{d\Theta}{d\kappa} = \overline{q} + \kappa \cdot \frac{d\overline{q}}{d\kappa} > 0,$$

which follows from:

$$\frac{d\overline{q}}{d\kappa} = \frac{(1-\overline{q}) \cdot \overline{q} \cdot (1-\kappa \cdot \overline{q})^2}{1-\kappa} > 0$$

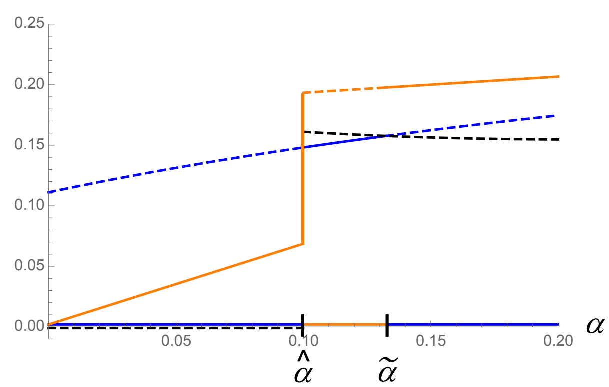
■

B Additional Results

B.1 Non-Monotonic Effect of Threat Capabilities

The condition derived in Proposition 4 assumes that an ordering condition relating $p_e(\alpha)$ to $p_i(\alpha)$ holds for all $\alpha \in [0, 1]$. However, if this is not the case, then additional possibilities arise. Figure A.1 uses a different functional form assumption for $p_e(\alpha)$. It shows that raising E's threat capabilities by an intermediate amount can cause D to share power, but further increases in α yield exclusion because the probability of a coup is too high. Specifically, as before, E's probability of winning a rebellion equals 0 if $\alpha = 0$. Although p_e strictly increases in α, it exhibits a discrete jump at $\alpha = 0.1$.[20] This jump raises the probability of a rebellion under exclusion by a large enough amount that D optimally shares power. However, past this point, the probability of a coup attempt under inclusion increases more steeply, causing D to exclude E for any $\alpha > \tilde{\alpha}$. Substantively, this captures the idea that sufficient group size or related metrics of rebellion capacity might be necessary to achieve certain rebellion aims, but further increases in capabilities do not dramatically increase the probability of success.

Figure A.1: Non-Monotonic Effect of Threat Capabilities



Notes: Both panels use the parameter values $m_{0i} = 0.2$, $m_{1i} = 0.6$, $\theta_e = 0.2$, $\theta_i = 0.25$, and $\phi = 0.5$, and assume $\epsilon \sim U[0, 1 - \theta_i]$. Equation A.1 presents the functional form for $p_e(\alpha)$. Section 2.1 describes the coloring scheme.

Figure A.1 also highlights a non-monotonic relationship between threat capabilities and the equilibrium probability of a coup attempt. At $\alpha = \hat{\alpha}$, this probability increases discretely because D switches from exclusion to inclusion, and it continues to rise for $\alpha \in (\hat{\alpha}, \tilde{\alpha})$ because D shares power and E's probability of succeeding at a coup attempt increases. However, at $\alpha = \tilde{\alpha}$, higher threat capabilities *decrease* the equilibrium probability of a coup attempt by causing D to exclude.

[20]The assumed functional form is:

$$p_e(\alpha) = \begin{cases} 0.4 + \alpha & \text{if } \alpha \leq 0.1 \\ 0.67 + \frac{\alpha}{5} & \text{if } \alpha > 0.1 \end{cases} \tag{A.1}$$