The Threat-Enhancing Effect of Authoritarian Power Sharing

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December 22, 2025

Abstract

Power-sharing deals can potentially solve the commitment problem inherent to authoritarian bargaining, but often fail to prevent conflict. This article develops a dynamic model to examine a largely overlooked friction: Sharing power within an authoritarian regime bolsters the opposition's coercive capabilities. The resultant threat-enhancing effect creates two distinct commitment problems for the opposition, which determine if and when power sharing occurs. First, the opposition cannot commit to refrain from leveraging its enhanced threat. Consequently, the ruler may prefer to incur a revolt than peacefully share power. Second, the threat-enhancing effect tempts the opposition to wait for future power-sharing deals, rather than revolt today if the ruler does not share power. Undercutting the opposition's commitment to revolt creates new dynamic implications. Delayed power sharing, conflict, or increased willingness by the ruler to share power are all possible. This analysis contrasts with the predominant existing focus on the authoritarian ruler's commitment problem.

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1 Introduction

Autocrats are often compelled to share power with opposition actors. Power-sharing deals are common following civil war (Nomikos 2021), both in cases of negotiated settlements (Hartzell and Hoddie 2003) and rebel victory (Clarke et al. 2025). For example, Chad's civil war ended in 1979 with the formation of a transitional government in which the leaders of the three main factions held the top three positions in the government: Goukouni Oueddei as president (FAP rebel group), Wadel Abdelkader Kamougu as vice president (a leading figure in the prior military government), and Hissène Habré as Minister of Defense (FAN rebel group). Popular uprisings and unexpectedly strong electoral performances by the opposition can also prompt negotiations that yield high-ranking positions for opposition leaders, even if they do not gain the executive post. For example, following the contested 2008 election in Zimbabwe, President Robert Mugabe (ZANU) struck a deal to name opposition leader Morgan Tsvangirai (MDC-T) to the newly created post of Prime Minister. Countries such as Lebanon and Burundi have constructed more complicated confessional power-sharing relationships.

Power-sharing deals carry the potential to solve the commitment problem inherent to bargaining with autocrats. The opposition, at times it poses a high threat, can compel the ruler to offer valued policy concessions (e.g., public-sector jobs, subsidies, preferred cultural policies).[1] But opportunities to remove an autocrat are inherently transitory. Once a moment of vulnerability has passed, an unconstrained ruler lacks incentives to perpetuate policy concessions. This creates the autocrat's commitment problem. A forward-looking opposition actor recognizes that the ruler cannot commit to future redistribution. Therefore, the opposition might reject *temporary* concessions offered during a fleeting moment in the sun. Instead, the autocrat's commitment problem prompts the opposition to demand access to political power, for example, in the form of high-level political positions. Such power-sharing deals facilitate more *durable* concessions.[2]

[1]See, for example, the response of the Saudi state to Arab Spring protesters in 2011; https://www.irishtimes.com/news/saudi-king-announces-huge-spending-to-stem-dissent-1.576600.

[2]This is the core mechanism in models like Acemoglu and Robinson (2000, 2001, 2006) and Castañeda Dower et al. (2018), although their means of power sharing is elections that determine agenda-setting powers, as opposed to

Nonetheless, sharing power is perilous for a ruler because of the *threat-enhancing effect*. The defining element of a *power*-sharing deal — as opposed to temporary policy concessions — is a reallocation of *power* toward the opposition (Meng et al. 2023). Shifting power can facilitate commitment ability for the ruler by enabling the opposition to defend its control over promised concessions. But an opposition actor strong enough to defend its concessions is also strong enough to offensively strike against the ruler. Actors with a foothold in central governance institutions and who develop networks in the state military pose a potential threat to the ruler (Roessler 2011). Two common features of authoritarian politics disable an empowered opposition from committing to refrain from leveraging its enhanced threat: weak institutions and the available recourse to violence (Svolik 2012). This source of offensive prowess — the threat-enhancing effect — is a common consequence of sharing power within authoritarian regimes.

The threat-enhancing effect widely empirically applicable, but underappreciated in existing work on authoritarian power-sharing relationships. I explain two distinct commitment problems for the opposition triggered by the threat-enhancing effect. These frictions determine if and when power sharing occurs. The present focus on how the *opposition's* limited commitment can unravel an authoritarian power-sharing arrangement contrasts with the standard focus on either the *autocrat's* commitment problem or the problems inherent to *ceding* the executive position to the opposition (often labeled as democratization).

To develop these ideas formally, I analyze an infinite-horizon interaction in which a Ruler bargains over state revenues with an Opposition actor who periodically poses a threat of revolt ("high threat"; the other periods are "low threat"). In any high-threat period, the Ruler can offer a continuous amount of temporary concessions, which confer a transfer to the Opposition in the current period only. But, as is standard in this class of models, temporary concessions might not suffice to buy off the Opposition because the Ruler cannot commit to make such concessions in future low-threat periods. The Ruler has another means of co-optation, a continuous choice over how much power to share.

redistributing power within the incumbent authoritarian regime. I discuss this more later.

Sharing power exerts two consequences. First, sharing more power yields a larger permanent concession for the Opposition; the Ruler can perfectly commit to uphold the deal. By deliberately eliminating the most commonly studied type of commitment problem that scholars have invoked to explain conflict and the failure of institutional reforms, I can isolate the novel consequences of the threat-enhancing effect — the second effect in the model of sharing power. Specifically, sharing more power raises the Opposition's probability of winning a revolt above its baseline coercive capabilities. A key quantity is $p^{\max} - p^{\min}$, which expresses the magnitude of the threat-enhancing effect. The Opposition's probability of winning absent any power sharing is $p^{\min}$ (i.e., minimum), and the positive gap $p^{\max} - p^{\min}$ determines how much stronger the Opposition is when incorporated into the central government (i.e., maximum). Throughout, I assume the Opposition poses a credible threat to revolt in a high-threat period if it *never* gains power-sharing concessions. This requires sufficiently high baseline capabilities $p^{\min}$.

The threat-enhancing effect triggers two distinct commitment problems, which determine if and when power sharing occurs. The first arises because the Opposition cannot commit to refrain from leveraging the coercive advantage facilitated by a power-sharing deal, captured by $p^{\max} - p^{\min}$. A severe-enough threat-enhancing effect makes the *Ruler unwilling* to share power. In that case, the Ruler prefers to countenance an imminent revolt — fought from a stronger position — rather than share power and guarantee peace from a weaker position. If instead Ruler Willingness holds, then the Ruler offers the *minimally acceptable power-sharing level* that secures acquiescence from the Opposition. Thus, Ruler Willingness determines *if* power sharing occurs.

The second commitment problem arises from the intersection of the threat-enhancing effect and the dynamic structure of the model. Even if the Ruler does not share power today, he can do so tomorrow. The Opposition may be willing to wait for the "reward" of future power sharing because the alternative choice to revolt now would eliminate the possibility of later entering a power-sharing arrangement. The Opposition would thus miss out on a discrete benefit by which its consumption would become a function of $p^{\max} - p^{\min}$ rather than $p^{\min}$. Only a *dynamically credible*

Opposition can commit to revolt today if not offered the minimally acceptable power-sharing level. In this case, the equilibrium has a straightforward bang-bang structure: if Ruler Willingness holds, the Ruler will share power today; otherwise, conflict occurs immediately.

But power sharing is delayed if the Opposition's threat to revolt lacks dynamic credibility. Thus, the Dynamic Opposition Credibility condition determines *when* power sharing occurs. One possibility is a mixed-strategy equilibrium with probabilistic delay. The Ruler mixes between sharing the minimally acceptable power-sharing level (i.e., the same as in the bang-bang equilibrium just discussed) and offering purely temporary concessions. To enforce these actions, the Opposition's mixes between accepting or rejecting purely temporary concessions. Along the equilibrium path, immediate power sharing, long-lasting negotiations, and conflict are all possible. Alternatively, delays can occur deterministically along a pure-strategy path whereby the Ruler gradually raises the power-sharing level while converging to the minimally acceptable level, or steady state. This structure broadens prospects for a peaceful equilibrium: the Opposition never revolts, and the gradual evolution of the power-sharing level may make the Ruler more willing to share power in the first place. In either equilibrium, though, power sharing is delayed (at least in expectation).

In sum, a natural addition to canonical models yields qualitatively distinct insights into central questions in authoritarian politics and conflict studies. The threat-enhancing effect determines if and when authoritarian power-sharing deals occur by creating commitment problems for the Opposition. The failure of Ruler Willingness yields conflict. The failure of Dynamic Opposition Credibility implies that power sharing is delayed, either deterministically (gradual steps) or probabilistically (but also with the possibility of conflict). The frictions created by the threat-enhancing effect apply to a wide range of authoritarian regimes and nascent democracies. After the formal analysis, I discuss a specific application to civil war settlements in Africa.

2 Contributions to Existing Research

The main theoretical contribution of this article is to explain how the threat-enhancing effect — and the consequent commitment problems faced by the Opposition — can undermine power sharing.

Autocrat's commitment problem. Failed power sharing resulting from the Ruler's unwillingness to buy off the Opposition differs from mechanisms examined in most existing theories. Most accounts focus on the *autocrat's* commitment problem that lingers even after sharing power. Powell (2024) assumes that the Ruler can pay a cost to block the implementation of a power-sharing deal. However, when this cost is low — which Powell associates with "weak states" — the Opposition refuses any power-sharing deal because the risk of a reversal is too high. Powell's conceptualization of weak states draws from theories highlighting the difficulties of settling civil wars (Walter 1997; Fearon and Laitin 2008). Rebels are reluctant to put down their arms because they fear the government will renege on any proposed power-sharing deal. Similarly, Acemoglu and Robinson (2001; 2006, Ch. 7) consider the possibility that elites can stage coups to reverse democratic transitions, and Acemoglu and Robinson (2008) allow elites to "capture" democracy. I intentionally assume away the autocrat's commitment problem in the present model to isolate a distinct mechanism.

Sharing versus ceding power. Many well-known theories focus on frictions that arise when the Ruler's institutional-reform instrument is *ceding* power (i.e., Opposition becomes the agenda setter), rather than *sharing* power within the incumbent regime. In Acemoglu and Robinson (2006), the wealthy elite block franchise expansion when economic inequality is high because they anticipate that the poor majority would redistribute too much under democratic rule. Allowing the incumbent to make a continuous choice over the probability with which the opposition becomes the agenda setter, though, smooths away this friction (Castañeda Dower et al. 2018, 2020). Enshrining countermajoritarian protections into a democratic constitution offers another possible solution to protect elites, but only if the majority can credibly commit to retain elite-biased institutions (Alberts et al. 2012; Albertus and Menaldo 2018; Fearon and Francois 2021). Incumbent elites are, potentially, more willing to hand over power to a limited franchise dominated by the relatively wealthy capitalist class. But they fear a "slippery slope" whereby capitalists pursue economic reforms that empower workers, which prompts more expansive franchises in the future (Acemoglu et al. 2012, 2021).

Although insightful, none of these mechanisms capture the core idea of the present article: sharing power enhances the Opposition's threat. This friction can cause potential power-sharing deals to unravel even when the Ruler retains agenda-setting powers.[3]

New dynamic implications. Surprisingly, immediate and peaceful power sharing is not guaranteed even when the Ruler faces no frictions to how much he can offer *and* favors peaceful bargaining under power sharing over incurring conflict. Instead, delayed power sharing and/or conflict are possible. The dynamic structure of the game and the repeated opportunities to share power can undermine the Opposition's commitment to revolt if not offered a power-sharing deal today — which I call the failure of dynamic credibility. One possible consequence is a mixed-strategy equilibrium with a positive probability of conflict. This is not the first model of conflict and endogenous institutional reform to yield a mixed-strategy equilibrium, but the mechanism differs. In closely related models, a discrete choice over how much power to share yields a mixed-strategy equilibrium (Acemoglu and Robinson 2017) whereas a continuous choice does not (Castañeda Dower et al. 2020).[4] As shown here, though, the threat-enhancing effect creates a wedge that yields a mixing equilibrium despite a continuous power-sharing choice. In Appendix A.2.4, I formally compare the distinct mechanisms across models.

The Opposition's limited commitment to revolt also yields the possibility of gradual increases in

[3] In an extension, I show that the threat-enhancing effect can disrupt democratic transitions in settings otherwise amenable to peaceful bargaining (Castañeda Dower et al. 2018, 2020). I also show that the core insights from the model apply to cases of separatist threats and regional autonomy.

[4] See also Gibilisco (2023) and Luo and Xi (2025).

the power-sharing level. In many existing models, the Ruler can raise the power-sharing level only once (Acemoglu and Robinson 2006, 2017; Castañeda Dower et al. 2018, 2020). In others, any equilibrium is bang-bang even when the Ruler can revise the power-sharing level multiple times (Luo 2024; Powell 2024). Here, the Ruler prefers to gradually share power to backload as much as possible the increases in the Opposition's threat. This contrasts with other settings in which the Ruler gains an advantage from up-front changes in the state variable as well as from Acemoglu et al. (2012), in which gradual concessions can create a slippery slope that the initial incumbent is unwilling to countenance. In the present model, by contrast, gradual shifting can occur in equilibrium only when the Opposition lacks dynamic credibility — which increases the Ruler's tolerance to share power. Moreover, perfectly patient players (as studied in Acemoglu et al. 2012) enable very slow, peaceful transitions to a high power-sharing level, as opposed to creating a slippery slope that precludes peaceful transitions. Finally, unlike models such as Gibilisco (2021) and Luo and Przeworski (2023), here the Ruler does not gamble as the state variable evolves; the path of play is deterministic, with increasingly small upward jumps in every high-threat period.[5]

The present model also has analogs to legislative bargaining models with an endogenous status quo. For example, in Dziuda and Loeper (2016), representatives of a Left and Right party agree on the (static) optimal policy in some states of the world. However, once enacted, that policy becomes the status quo for future periods and can be overturned only if both parties subsequently agree to change the policy. To see how an analog of the opposition's commitment problem arises, suppose the status quo entering today's period is R (the usually-preferred policy of the Right). Even if today's consumption would be higher under policy L (the usually-preferred policy of the Left), Right might nonetheless reject this policy because the "opposition" (Left) cannot commit to necessarily reinstate R tomorrow if the Right would then again prefer that policy.[6]

[5]The Ruler gambles that the Opposition will not revolt, though, in the mixing equilibrium in the present model.

[6]For related models with bargaining and an endogenous status quo or endogenous commitment, see Fershtman and Seidmann (1993); Ellingsen and Miettinen (2008); Duggan and Kalandrakis (2012); Gibilisco (2015).

Other models with an analog of the threat-enhancing effect. Earlier seminal theories of institutions in authoritarian regimes do not incorporate an analog of the threat-enhancing effect (e.g., Geddes 1999; Gandhi 2008; Svolik 2012). Instead, this idea resonates more closely with the ethnic conflict literature, in particular the coup/civil war trade off (Roessler 2011, 2016; Roessler and Ohls 2018; Harkness 2018; Paine 2019) and the formal IR literature on endogenous shifts in the distribution of power (Fearon 1996; Chadefaux 2011; Powell 2013; Debs and Monteiro 2014; Spaniel 2019). Some existing formal models of domestic politics contain a mechanism analogous to the threat-enhancing effect, which can result from either sharing power, concentrating power, or repressing (Dal Bó and Powell 2009; Francois et al. 2015; Meng 2020; Paine 2021, 2022; Kenkel and Paine 2023; Christensen and Gibilisco 2024; Luo 2024).

Relative to these models, the present analysis offers three new contributions. First, it offers a more natural conceptualization of power *sharing* by assuming the Opposition gains a tangible concession in such a deal, as opposed to a boost only in coercive capacity. Second, the Ruler Willingness mechanism is starker here because I strip out additional possible frictions. The Ruler may refuse to share power even when the Opposition poses an imminent threat of revolt (unlike in Paine 2022) and there is no uncertainty that failing to share power will trigger the revolt (unlike in Paine 2021). Third, and most important, the present model yields new, richer dynamics. The dynamic structure of the present model with multiple opportunities to share power (unlike in the two aforementioned models, where power sharing is one-shot) creates a temptation for the Opposition to wait for future power-sharing deals, which can undermine its commitment to revolt today. The conditions under which power sharing is bang-bang — when the Opposition threat to revolt is dynamically credible — are proven rather than assumed. And when the Opposition lacks dynamic credibility, delays occur in the form of a mixed equilibrium or gradual power sharing. This dynamic friction is not present in existing models, and modeling this element yields new insights into the promises and perils of authoritarian power sharing.

3 MODEL

3.1 SETUP

A Ruler and Opposition actor bargain over state revenues across an infinite-horizon interaction in a game of complete and perfect information. Periods are denoted by $t = 1, 2, 3\ldots$ and both players discount future payoffs by a common factor $\delta \in (0, 1)$. In each period, total assets equal 1. The Ruler begins every period with control over a fraction $1 - \pi_{t-1}$ of state revenues, with π_{t-1} comprising previously determined power-sharing concessions for the Opposition. At the outset of the game, $\pi_0 = 0$.

At the beginning of every period, Nature draws an iid threat posed by the Opposition, which is high with probability $r \in (0, 1)$ and low with complementary probability. In a low-threat period, no strategic moves occur and $\pi_t = \pi_{t-1}$. The Ruler consumes $1 - \pi_t$ and the Opposition consumes π_t, and they move to period $t + 1$ while retaining their respective positions, with continuation values $V_R(\pi_t)$ and $V_O(\pi_t)$.

In a high-threat period, the Ruler makes the first strategic move by proposing concessions to the Opposition, which consist of both a power-sharing component and a temporary component. I evaluate three different cases of restrictions on the power-sharing choice. All entail $\pi_t \geq \pi_{t-1}$, meaning the Ruler can never lower the power-sharing level. The three cases instead differ with regard to the frequency of opportunities for the Ruler to raise the power-sharing level.

Case 1. The Ruler sets $\pi \in [0, 1]$ in the first high-threat period, and afterwards cannot revise the power-sharing level (it is fixed forever at π). Formally, if we index high-threat periods by z, then the Ruler's power-sharing choice is

$$\pi_z = \begin{cases} \pi \in [0,1] & \text{if } z = 1 \\ \{\pi\} & \text{if } z > 1. \end{cases}$$

Case 2. The Ruler can raise the power-sharing level exactly once, although this can occur after the first high-threat period,

$$\pi_z = \begin{cases} \pi \in [0,1] & \text{if } \pi_{z-1} = 0 \\ \{\pi\} & \text{if } \pi_{z-1} > 0. \end{cases}$$

Case 3. The Ruler can always raise the power-sharing level, choosing $\pi_z \geq \pi_{z-1}$ in every high-threat period.

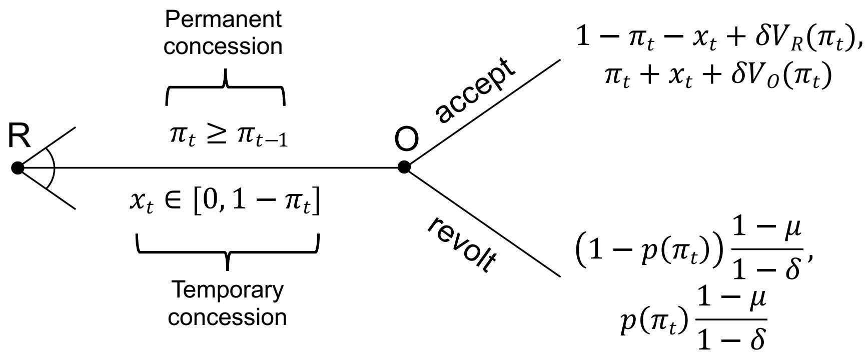
Case 1 constitutes a simplified baseline case. Case 2 has some verisimilitude: it is difficult to constantly adjust power-sharing deals, once enacted, especially if enshrined into a constitution. Finally, Case 3 is the most general.

The temporary policy concessions are $x_t \in [0, 1 - \pi_t]$ and convey additional transfers in period t only. Between the two instruments, the joint lower bound of 0 ensures that the Ruler cannot demand a net transfer to himself, and the upper bound of 1 is a limited-liability constraint: the Ruler cannot give away more than all contemporaneous state revenues.

After observing the Ruler's proposal (π_t, x_t) in a high-threat period, the Opposition responds by accepting or revolting. Accepting yields peaceful consumption with $1 - \pi_t - x_t$ for the Ruler and $\pi_t + x_t$ for the Opposition. Afterwards, they move to period $t+1$, again with continuation values $V_R(\pi_t)$ and $V_O(\pi_t)$. A revolt ends the game. The winner consumes $1 - \mu$ in the period of the conflict and every subsequent period, with $\mu \in (0, 1)$ capturing the costliness of conflict; and the loser consumes 0 in the current and every subsequent period. A revolt succeeds with probability $p(\pi_t) \in (0, 1]$, and the Ruler survives with complementary probability. Figure 1 presents the stage game for a high-threat period.

Sharing more power creates a *threat-enhancing effect* by raising the Opposition's probability of succeeding in a revolt, with $p(\pi_t) = p^{\text{min}} + \alpha(\pi_t)(p^{\text{max}} - p^{\text{min}})$. The parameter $p^{\text{min}} \in (0, 1)$ captures the Opposition's baseline capabilities (absent power sharing) and $p^{\text{max}} \in (p^{\text{min}}, 1]$ expresses the Opposition's maximum probability of wining a revolt under power sharing. The parameter $\alpha(\pi_t) \in [0, 1]$ determines the relative weight on the minimum and maximum probability-of-winning terms, placing all weight on p^{min} if the Ruler shares no power, $\alpha(0) = 0$, and placing all weight on

Figure 1: Stage Game for a High-Threat Period



Notes: The choice $\pi_t \geq \pi_{t-1}$ is permissible in all high-threat periods only in Case 3 of restrictions on the Ruler's power-sharing choice; in Cases 1 and 2, this choice is fixed at a previously determined level π in certain periods.

$p^{\max}$ if the Ruler cedes all resources to the Opposition, $\alpha(1) = 1$. Sharing more power strictly bolsters the Opposition's probability of winning at a weakly decreasing rate, $\alpha'(\pi_t) > 0$ and $\alpha''(\pi_t) \leq 0$. The linear functional form $\alpha(\pi) = \pi$ is of special interest (and discussed throughout) because it facilitates explicit solutions and clarifies the core insights. Furthermore, the formal results corresponding with Case 3 of restrictions on the Ruler's power-sharing choice impose the linear restriction.

3.2 Key Assumptions

The key tradeoff in the model is that sharing power bolsters the Ruler's commitment to concessions while increasing the Opposition's revolt threat. The idea that sharing power would enhance the Opposition's threat is natural. In authoritarian regimes with weak commitment and a viable recourse to violence (Svolik 2012), access to high-level positions creates a palpable coup threat as ministers are able to draw from their own networks and develop new relationships with specialists in violence (Roessler 2011).

The other key assumption of permanent power-sharing concessions, $\pi_t \geq \pi_{t-1}$, is intentionally stark. Assuming full commitment ability for the Ruler eliminates the main mechanism leading to conflict examined in existing theories. Qualitatively, what matters is that power-sharing concessions are more difficult to reverse than mere policy concessions. Later, in the empirical section, I discuss high-level cabinet positions and competitive elections as proxies for this idea. The Opposition should be better positioned to defend promised concessions when incorporated into high-level positions in the central government (even if the Ruler retains agenda-setting powers). Thus, the threat-enhancing effect implicitly has a defensive component as well as the offensive component — higher probability of winning a revolt — discussed throughout. The same idea holds for regional autonomy deals, in which the Opposition can leverage its position in a regional government and some control over security forces to either defend promised concessions or to go on the offensive to gain greater autonomy or outright independence.

3.3 Equilibrium Concept

The equilibrium concept is Markov Perfect Equilibrium (MPE). A Markov strategy allows a player to condition its actions only on the current-period state of the world and prior actions in the current period. An MPE is a profile of Markov strategies that is subgame perfect. There are two state variables: a random variable, high/low threat, $\eta \in \{H, L\}$; and a dynamic variable, the extant level of power sharing, $\pi_{t-1} \in [0,1]$. Strategic moves occur only in high-threat periods. Thus, if $\eta = H$, a pure strategy for the Ruler is a mapping $(\pi, x) : [0,1] \mapsto [0,1]^2$, and a pure strategy for the Opposition is a mapping $a : [0,1]^2 \mapsto \{0,1\}$, where $a = 1$ denotes acceptance and $a = 0$ denotes revolt.[7] A mixed strategy entails a probability distribution over the pure strategies. Throughout, for all actions, I use the index z for high-threat periods.

4 Will the Ruler Share Power?

I first analyze Case 1 of restrictions on the power-sharing choice, in which the Ruler can choose $\pi_z = \pi \in [0,1]$ only in the first high-threat period. Afterwards, the level of power sharing is permanently fixed at π.[8]

[7] Although recall that the power-sharing choice is trivial ($\pi_t = \pi_{t-1}$) in some high-threat periods in Cases 1 and 2 of restrictions on the Ruler's power-sharing choice. The Opposition's strategy responds only to (π_t, x_t), as π_{t-1} is payoff-irrelevant for the Opposition.

[8] Appendix A.1 presents supporting technical details.

4.1 Opposition Credibility and Bargaining Along a Peaceful Path

How much does each player consume along a peaceful path of play, assuming π has already been set? The Opposition has the permanent concession π and gains an additional temporary concession x in every high-threat period. Consequently, in terms of per-period averages, the Opposition's lifetime expected consumption in a high-threat period is $\pi + (1 - \delta(1-r))x$.[9] The temporary concession is weighted by $1 - \delta + \delta r$ because the current period is high threat, $1 - \delta$; as are a fraction r of future periods, δr. The efficiency of peaceful bargaining implies that the corresponding term for the Ruler is total surplus minus the Opposition's share, $1 - \pi - (1 - \delta(1-r))x$.[10]

The Opposition's option to revolt creates a reservation value that a peaceful consumption stream must satisfy,

No-revolt constraint.

$$\underbrace{\pi}_{\text{Permanent}} + \underbrace{(1-\delta(1-r))x}_{\text{Temporary concessions in H periods}} \geq \underbrace{\overbrace{\left(p^{\min} + \alpha(\pi)(p^{\max} - p^{\min})\right)}^{p(\pi)}(1-\mu)}_{\text{Revolt}}. \tag{1}$$

Opposition Credibility. The no-revolt constraint fails at $\pi = 0$ if the Opposition rejects highest-possible consumption stream from purely temporary concessions: 1 in every high-threat period and 0 in every low-threat period. I assume throughout that the Opposition has a *credible* threat to revolt when the power-sharing level is permanently fixed at 0.

Assumption 1 (Opposition Credibility holds)**.**

$$\underbrace{p^{min}(1-\mu)}_{\textit{Reservation value to revolting}} > \underbrace{1-\delta(1-r)}_{\textit{Consume 1 in H periods}}.$$

[9]This consumption term can equivalently be expressed as $(1-\delta)(\pi + x + \delta V_O(\pi))$, which explicitly incorporates the Opposition's recursively defined future continuation value $V_O(\pi) = \pi + rx + \delta V_O(\pi)$.

[10]This consumption term can equivalently be expressed as $(1-\delta)(1-\pi-x+\delta V_R(\pi))$, which explicitly incorporates the Ruler's recursively defined future continuation value $V_R(\pi) = 1 - \pi - rx + \delta V_R(\pi)$.

Given Opposition Credibility, peaceful bargaining requires that π is at least as large as the *minimally acceptable* power-sharing level $\underline{\pi} \in (0, 1)$, implicitly defined as

$$\underline{\pi} + (1 - \delta(1 - r))(1 - \underline{\pi}) = (p^{\text{min}} + \alpha(\underline{\pi})(p^{\text{max}} - p^{\text{min}}))(1 - \mu). \tag{2}$$

Appendix A.1.2 shows the solution graphically and provides additional intuition using the linear functional form.

Bargaining along a peaceful path. Given a power-sharing level $\pi \geq \underline{\pi}$, the Ruler chooses x to satisfy Equation 1 with equality, which makes the Opposition indifferent between accepting and revolting.[11] The Opposition must accept such an offer with probability 1 in any equilibrium. Any other tie-breaking rule with a lower probability of acceptance would create an open-set problem because the Ruler could profitably deviate to an infinitesimally higher temporary concession to induce sure acceptance.

$$\underbrace{\pi + (1 - \delta(1 - r))x^*(\pi) = p(\pi)(1 - \mu)}_{\text{Equation 1 set to equality}} \implies \underbrace{x^*(\pi) = \frac{-\pi + p(\pi)(1 - \mu)}{1 - \delta(1 - r)}}_{\text{Interior-optimal temporary concession}}. \tag{3}$$

The Ruler prefers to concede $x^*(\pi)$ than incur a revolt because, by virtue of holding the Opposition down to indifference, he consumes the entire surplus saved by preventing costly conflict. Substituting $x^*(\pi)$ into the Ruler's consumption stream yields

$$1 \overbrace{-\pi}^{\text{Direct cost}} -(1 - \delta(1 - r)) \underbrace{\frac{\overbrace{-\pi}^{\text{Indirect benefit}} + p(\pi)(1 - \mu)}{1 - \delta(1 - r)}}_{x^*(\pi)} = 1 - p(\pi)(1 - \mu). \tag{4}$$

The Opposition consumes its reservation value to revolting, $p(\pi)(1 - \mu)$, whereas the Ruler con-

[11] Corner solutions occur when π is high. I discuss these in the Appendix, but they are irrelevant along any equilibrium path.

sumes the total surplus of 1 minus this quantity. Consequently, the only element of the power-sharing level π that affects consumption along a peaceful path is the Opposition's probability of winning a revolt; the fact that the Opposition permanently gains π does not matter. To see why, the Ruler loses π in every period, the *direct cost* of higher permanent concessions. However, higher π *indirectly benefits* the Ruler by increasing the Opposition's consumption along a peaceful path. By raising the opportunity cost of revolting, the Ruler can buy off the Opposition with a smaller temporary concession in high-threat periods. Thus, the Opposition compensates the Ruler for higher permanent concessions by demanding fewer temporary concessions. The direct cost and indirect benefit perfectly offset each other because the Ruler and Opposition identically weight the stream of temporary concessions, which occur in the current high-threat period (weight $1-\delta$) and a fraction r of future periods (weight δr). Thus, the threat-enhancing effect is the sole friction.

4.2 THE POWER-SHARING CHOICE AND RULER WILLINGNESS

In the first high-threat period, the Ruler chooses how much power to share. If the Ruler decides to share enough power to secure peace, he will do so with the minimally acceptable power-sharing level $\underline{\pi}$. This follows from Equation 4, and implies that the Opposition consumes 1 in every high-threat period, as $x^*(\underline{\pi}) = 1 - \underline{\pi}$.

But the Ruler may not be willing to share enough power to achieve peaceful bargaining; he does so if and only if his consumption stream along a peaceful path exceeds his utility to incurring an immediate revolt. The threat-enhancing effect can undercut what would otherwise be a foregone conclusion to share power. The relevant comparison in a high-threat period is between

1. Sharing the minimum amount of power to induce peace and thereby buying off an Opposition who wins with probability $p(\underline{\pi})$.

2. Refusing to share power and incurring a revolt that succeeds with probability $p^{\min}$.

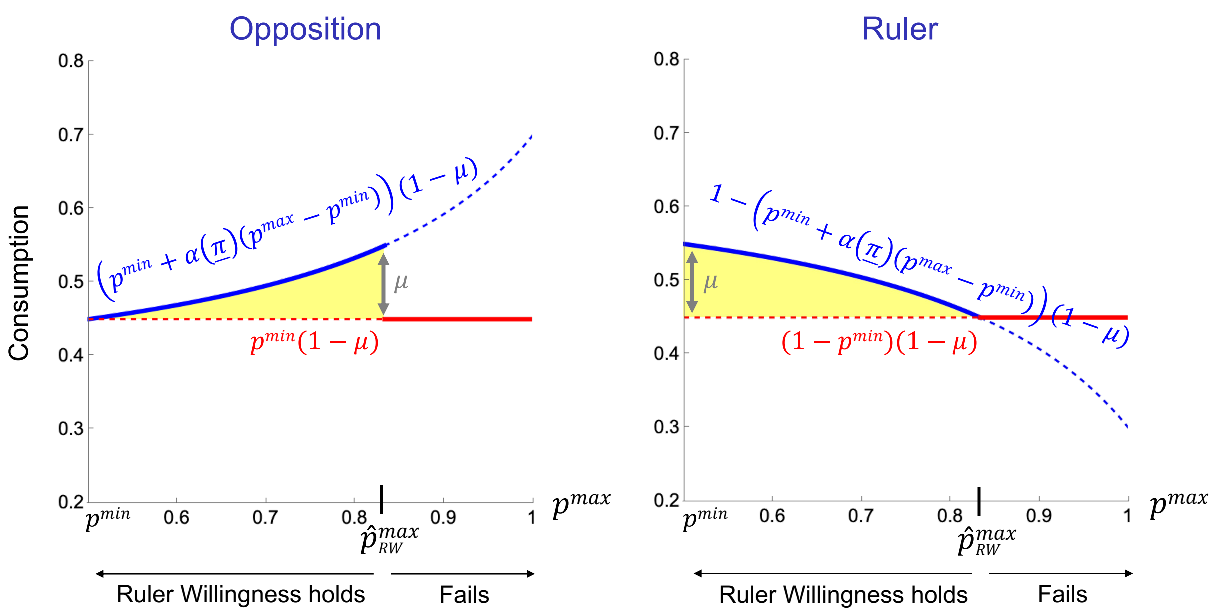
The incentive-compatibility constraint for the Ruler to share power is

$$\underbrace{1 - p(\underline{\pi})(1-\mu)}_{\text{Share power and buy off a stronger Opposition}} \geq \underbrace{(1-p^{\text{min}})(1-\mu)}_{\text{Fight a weaker Opposition}},$$

which can be rewritten to clearly highlight the main mechanisms

$$\textbf{Ruler Willingness.} \quad \underbrace{\alpha(\underline{\pi})(p^{\text{max}} - p^{\text{min}})}_{\text{Threat-enhancing effect}}(1-\mu) \leq \underbrace{\mu}_{\text{Cost of revolt}}. \tag{5}$$

Figure 2: Ruler Willingness



Notes: Along the x-axis, the threat-enhancing effect increases in magnitude. The y-axis shows each player's lifetime average expected consumption, from the perspective of the first high-threat period.
Parameter values: $\delta = 0.9$, $r = 0.25$, $\mu = 0.1$, $p^{\text{min}} = 0.5$, $\alpha(\pi) = \pi$.

Figure 2 highlights the main intuitions. Setting $p^{\text{max}} = p^{\text{min}}$ recovers a standard model in which the probability of revolt success is fixed. The Ruler, by virtue of making the offers, consumes the entire surplus from preventing fighting, μ. Therefore, he necessarily chooses to buy off the Opposition.[12] However, as p^{max} increases, so does the Opposition's bargaining leverage under

[12]Formally, $1 - p^{\text{min}}(1-\mu) - (1-p^{\text{min}})(1-\mu) = \mu$.

power sharing. The Ruler still makes the bargaining offers and holds the Opposition down to indifference, but only *after power has shifted in the Opposition's favor*. Two effects operate: a direct effect because higher $p^{\max}$ strengthens the Opposition for any level of power sharing, and an indirect effect because higher $p^{\max}$ prompts the Opposition to demand more under a power-sharing arrangement (resulting in higher $\underline{\pi}$). Consequently, a large-enough threat-enhancing effect can violate Ruler Willingness. The Ruler refuses to share power, as he would rather fight a weaker Opposition than buy off a stronger Opposition. This logic yields a unique threshold value of $p^{\max}$ that determines whether Ruler Willingness holds.

Lemma 1 (Threshold for Ruler Willingness)**.** *A unique value $\hat{p}^{max}_{RW} > p^{min}$ exists such that Ruler Willingness holds if and only if $p^{max} < \hat{p}^{max}_{RW}$.*

4.3 Opposition's Commitment Problem #1

Ruler Willingness can fail because the threat-enhancing effect creates a commitment problem for the Opposition. A standard result in conflict bargaining models is that conflict occurs because the player making offers (here, the Ruler) cannot commit to give enough away. However, in this case, conflict occurs because the player who responds to the offers, the Opposition, cannot commit to refrain from leveraging its higher probability of winning a revolt. Whenever Ruler Willingness fails, a Pareto-improving deal exists. Suppose the parameter values are as in Figure 2 and that $p^{\max} = 0.9$, which violates Ruler Willingness. If instead the Opposition could have bargained as if $p^{\max} = 0.7$, conflict would be averted and both the Opposition and Ruler would consume strictly more than their baseline reservation values to a revolt occurring. However, the Opposition's inability commit to deals such as this after the shift in power has occurred creates the possibility of Ruler Willingness failing.

Consequently, although sharing power enables the *Ruler* to commit to deliver concessions in low-threat periods, the *Opposition's* commitment problem — which stems from the threat-enhancing effect — may dissuade the Ruler from doing so. This creates a commonly overlooked source of intractability inherent to power-sharing deals. This mechanism is particularly stark in the present model because the revolt would *surely* occur *right away*, unlike related models with uncertainty (Paine 2021) or in which the revolt does not occur imminently (Paine 2022). The threat-enhancing effect is the sole friction here which makes conflict possible. The equilibrium path of play (which is unique with respect to payoff equivalence) is as follows.

Proposition 1 (Equilibrium path of play for Case 1)**.**

- ***Peaceful power sharing if Ruler Willingness holds.*** *If $p^{max} < \hat{p}_{RW}^{max}$, then the Ruler shares $\pi = \underline{\pi}$ in the first high-threat period and a revolt never occurs.*
- ***Conflict if Ruler Willingness fails.*** *If $p^{max} > \hat{p}_{RW}^{max}$, then the Ruler shares $\pi = 0$ in the first high-threat period, when a revolt occurs.*

5 Dynamic Commitment Problems and Delayed Power Sharing

Ruler Willingness determines if, but not when, a power-sharing deal will arise. Allowing the Ruler multiple opportunities to share power (i.e., Cases 2 or 3 of restrictions on the Ruler's power-sharing choice) yields new dynamic considerations. If the Ruler can choose to raise π_z in periods after the first high-threat period, the conjunction of Opposition Credibility and Ruler Willingness no longer suffice for a bang-bang equilibrium in which the Ruler jumps to the minimally acceptable power-sharing level in the first high-threat period. The repeated opportunities for the Ruler to share power create a temptation for the Opposition to wait for future power-sharing deals. In the next high-threat period, the Ruler again has the option to raise the power-sharing level. Doing so would create a reward for waiting because the threat-enhancing effect discretely raises the Opposition's reservation value. Only a *dynamically credible* Opposition can commit to revolt today if not offered a power-sharing deal. If so, the equilibrium (endogenously) has the same bang-bang structure as just characterized.[13] By contrast, when the Opposition lacks dynamic credibility, power sharing is

[13] In Case 1 of restrictions on the Ruler's power-sharing choice, the Opposition Credibility condition suffices to make credible the Opposition's threat to revolt in the first high-threat if not offered a power-sharing deal; this is the Ruler's only opportunity to share power.

delayed and can occur either probabilistically or in gradual steps.

5.1 Dynamic Opposition Credibility

To derive the Dynamic Opposition Credibility condition, we relax the restriction that the Ruler can choose to raise π_z only in the *first* high-threat period. Suppose we are in a period z such that $\pi_{z-1} = 0$, with z indexing high-threat periods. A dynamically credible Opposition revolts in response to an offer of purely temporary concessions, $(\pi_z, x_z) = (0, 1)$, even if the Ruler will offer the minimally acceptable power-sharing level $(\pi_{z+1}, x_{z+1}) = (\underline{\pi}, 1 - \underline{\pi})$ in the next high-threat period $z + 1$. This requires

$$\underbrace{1 - \delta}_{\text{Consume 1 today}} + \delta\Bigg(\underbrace{\Big(1 - \frac{r}{1 - \delta(1 - r)}\Big)0}_{\text{Consume } \pi_z = 0 \text{ until next H period}} + \underbrace{\frac{r}{1 - \delta(1 - r)} p(\underline{\pi})(1 - \mu)}_{\text{Increase to } p(\underline{\pi}) \text{ in next H period}} \Bigg) < \underbrace{p^{\min}(1 - \mu)}_{\text{Revolt at } \pi_z = 0}. \quad (6)$$

The Opposition can revolt today, which means forgoing a consumption path of (a) the entire budget today, (b) no consumption in any low-threat period until the next high threat, and (c) the reward of waiting for the next high-threat period: a power-sharing deal and discrete jump in consumption. Rearranging this inequality yields

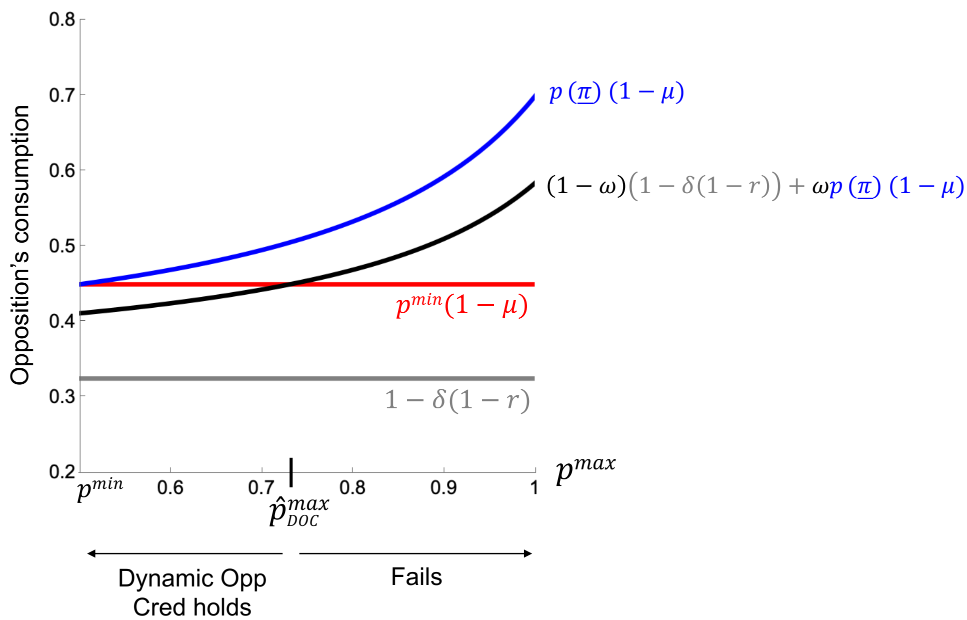
Dynamic Opposition Credibility. $$-\Big(\underbrace{p^{\min}(1 - \mu) - (1 - \delta(1 - r)}_{\text{Opposition Credibility}}\Big) + \underbrace{\gamma}_{\text{Wedge}} < 0,$$

$$\text{for} \quad \gamma \equiv \frac{\delta r}{1 - \delta} \underbrace{\alpha(\underline{\pi})(p^{\max} - p^{\min})}_{\text{Threat-enhancing effect}}(1 - \mu). \quad (7)$$

This inequality encompasses the Opposition Credibility condition plus an additional term $\gamma > 0$ for the consumption boost conferred by a future power-sharing deal. Thus, γ creates a wedge between the thresholds at which the Opposition revolts (a) if *never* offered a power-sharing deal (Opposition Credibility) and (b) if *not always* offered a power-sharing deal (Dynamic Opposition Credibility). The threat-enhancing effect $p^{\max} > p^{\min}$ is necessary for this wedge to be positive, and the size of the wedge increases in the magnitude of the threat-enhancing effect. With a linear functional form $\alpha(\pi) = \pi$, the conditions under which Opposition Credibility holds but Dynamic Opposition Credibility fails can be written even more simply:

$$\underbrace{(p^{\max} - p^{\min})(1-\mu) \quad < \quad \delta(1-r)}_{\text{Always holds (because of Opposition Credibility)}} \overbrace{\quad < \quad \left(1 + \frac{\delta r}{1-\delta}\right)(p^{\max} - p^{\min})(1-\mu)}^{\text{If Dynamic Opposition Credibility fails}} \tag{8}$$

Figure 3: Dynamic Opposition Credibility



Notes: Along the x-axis, the threat-enhancing effect increases in magnitude. The y-axis shows the Opposition's lifetime average expected consumption, from the perspective of a high-threat period with $\pi_{z-1} = 0$. The solid consumption curves do not necessarily reflect equilibrium outcomes, unlike Figure 2. The "weight" term that determines the black curve is $\omega \equiv \frac{\delta r}{1-\delta(1-r)}$. Finally, recall that $p(\underline{\pi}) = p^{\min} + \alpha(\underline{\pi})(p^{\max} - p^{\min})$.

Parameter values: $\delta = 0.9$, $r = 0.25$, $\mu = 0.1$, $p^{\min} = 0.5$, $\alpha(\pi) = \pi$.

Figure 3 visualizes the intuition. Opposition Credibility ensures that the Opposition will revolt (red line) rather than accept permanent purely temporary concessions (gray line). If the Ruler shares power in the *current* period, then the Opposition gains a discrete boost from consuming $p(\underline{\pi})(1-\mu)$ rather than $p^{\min}(1-\mu)$. Thus, comparing the blue and red lines highlights the same logic as Figure 2. However, if instead the Ruler offers purely temporary concessions today and shares power in the *next* high-threat period, the Opposition's consumption is a weighted average between permanent temporary concessions (gray line) and sharing power today (blue curve). A low value of $p^{\max}$ yields a low reward to waiting, which makes the Opposition's threat to revolt today dynamically credible (black line less than red line). By contrast, high $p^{\max}$ raises this reward and makes the Opposition willing to wait (black line exceeds red line). This logic creates a unique threshold value of $p^{\max}$ at which Dynamic Opposition Credibility fails.

Lemma 2 (Threshold for Dynamic Opposition Credibility)**.** *A unique value $\hat{p}_{DOC}^{max} > p^{min}$ exists such that Dynamic Opposition Credibility holds if and only if $p^{max} < \hat{p}_{DOC}^{max}$. In the linear case $\alpha(\pi) = \pi$, this threshold can be written as*

$$\delta(1-r) = \Big(1 + \frac{\delta r}{1-\delta}\Big)(\hat{p}_{DOC}^{max} - p^{min})(1-\mu).$$

If Dynamic Opposition Credibility holds, the equilibrium has the same structure as in Proposition 1. The self-enforcing nature of the Opposition's revolt threat creates identical incentives. If Dynamic Opposition Credibility fails, though, the structure of the equilibrium differs.

5.2 Delayed Power Sharing in Mixed Strategies

In Case 2 of the restrictions on the Ruler's power-sharing choice, the Ruler can raise π_z only once. Thus, if he chooses a positive power-sharing level, it must equal $\underline{\pi}$ because he cannot subsequently raise it. However, reflecting the dynamic considerations just discussed, the Ruler can dangle the possibility of sharing $\underline{\pi}$ in the future. If Ruler Willingness holds and Dynamic Opposition Credibility fails, then the unique equilibrium is in mixed strategies.[14]

Why does no equilibrium exist in pure strategies? If the Ruler *never* shares power, the Opposition must *always* revolt, given Opposition Credibility. But because Ruler Willingness holds, the Ruler would prefer to share power. And if the Ruler *always* shares power, then in any high-threat period, the Opposition would accept a one-off proposal of purely temporary concessions because

[14] Appendix A.2 provides supporting technical details and formally defines the mixed strategies. In Appendix A.2.4, I discuss differences between the present analysis of mixed strategies and that in Acemoglu and Robinson (2017) and Castañeda Dower et al. (2020).

Dynamic Opposition Credibility fails. But if the Opposition *never* revolts in response to purely temporary concessions, then we're back to square one — the Ruler would *never* share power because he prefers temporary over permanent concessions. This cycle of contradictions implies that the players must mix their actions.[15]

In the mixing equilibrium, in every high-threat period in which $\pi_{z-1} = 0$, the Ruler probabilistically shares $\underline{\pi}$ with an interior probability σ_R^*, and offers purely temporary concessions with complementary probability. The Opposition surely accepts if the Ruler shares $\underline{\pi}$, but accepts with an interior probability σ_O^* if offered purely temporary concessions. The equilibrium mixing probabilities make each player indifferent between its two actions. Thus, slightly adapting Equation 7, the mixed probability of sharing power satisfies

$$1 - \delta + \frac{\delta r}{1 - \delta(1-r)} \Big(p^{\text{min}} + \sigma_R^* \alpha(\underline{\pi})(p^{\text{max}} - p^{\text{min}}) \Big)(1-\mu) = p^{\text{min}}(1-\mu). \tag{9}$$

The linear functional form $\alpha(\pi) = \pi$ permits an explicit solution:

$$\sigma_R^* = \frac{\delta(1-r) - (p^{\text{max}} - p^{\text{min}})(1-\mu)}{\frac{\delta r}{1-\delta}(p^{\text{max}} - p^{\text{min}})(1-\mu)}. \tag{10}$$

The lower bound $\sigma_R^* > 0$ follows from Opposition Credibility holding, and the upper bound $\sigma_R^* < 1$ follows from Dynamic Opposition Credibility failing, as can be seen by comparing the expression for σ_R^* to Equation 8. A larger gap $p^{\text{max}} - p^{\text{min}}$ lowers the mixing probability by raising the Opposition's reward to waiting for $\underline{\pi}$ (i.e., pushes Dynamic Opposition Credibility farther away from holding). Appendix A.2.3 provides visual intuition.

Finally, the Ruler Willingness condition is unchanged from before. The Ruler cannot tie his hands to commit ex ante to the mixed strategy; when Nature calls upon the Ruler to share power, he must be willing to immediately jump from 0 to $\underline{\pi}$. The equilibrium (which is unique with respect to payoff equivalence) has the following structure.

[15] See also Appendix Lemma A.5.

Proposition 2 (Equilibrium path of play for Case 2)**.**

- ***Dynamic Opposition Credibility holds.*** *If* $p^{max} < \hat{p}^{max}_{DOC}$*, then the equilibrium path of play is identical to that described in Proposition 1.*
- ***Ruler Willingness fails.*** *If* $p^{max} < \hat{p}^{max}_{RW}$*, then the equilibrium path of play is identical to that described in the conflict case of Proposition 1.*
- ***Mixed strategies if Ruler Willingness holds and Dynamic Opposition Credibility fails.*** *If* $p^{max} \in (\hat{p}^{max}_{DOC}, \hat{p}^{max}_{RW})$*, then in each high-threat period with* $\pi_{z-1} = 0$*, the Ruler shares* $\pi_z = \underline{\pi}$ *with probability* σ^*_R *and the contemporaneous probability of a revolt is* $(1 - \sigma^*_R)(1 - \sigma^*_O)$*.*

5.3 Delayed Power Sharing in Gradual Steps

In Case 3 of the restrictions on the Ruler's power-sharing choice, the Ruler can set $\pi_z \geq \pi_{z-1}$ in any high-threat period. This creates the possibility of choosing positive power-sharing levels less than $\underline{\pi}$, as the Ruler can again revise this level upward in the future. If Dynamic Opposition Credibility fails, then a pure-strategy equilibrium exists with gradual increases in the power-sharing level. These steps converge to the steady state $\underline{\pi}$.[16]

Characterizing the gradual steps. Consider a path of play with a pure-strategy offer $(\pi_z, 1-\pi_z)$ in every high-threat period z, and the sequence of power-sharing levels $\{\pi_z\}_{z=1}^{\infty}$ satisfies $0 \leq \pi_{z-1} \leq \pi_z \leq \underline{\pi}$ for all z, with $\pi_0 = 0$. Given this sequence, the no-revolt constraint in any high-threat period is

$$\underbrace{1-\delta}_{\text{Consume 1 today}} + \delta\Bigg(\underbrace{\left(1 - \frac{r}{1-\delta(1-r)}\right)\pi_z}_{\text{Consume } \pi_z \text{ until next H period}} + \underbrace{\frac{r}{1-\delta(1-r)} p(\pi_{z+1})(1-\mu)}_{\text{Increase to } p(\pi_{z+1}) \text{ in next H period}}\Bigg) \geq \underbrace{p(\pi_z)(1-\mu)}_{\text{Revolt}}. \tag{11}$$

This constraint has the same structure and interpretation as Equation 7. As always, the Ruler sets the offers to hold the Opposition down to indifference. Equation 11 set to equality constitutes a

[16] Appendix A.3 provides supporting technical details.

linear difference equation when also setting $\alpha(\pi) = \pi$,[17] and can be re-expressed as

$$\pi_{z+1} = \beta\underline{\pi} + (1-\beta)\pi_z \ , \quad \text{with} \quad \beta \equiv \frac{\delta(1-r) - (p^{\max} - p^{\min})(1-\mu)}{\frac{\delta r}{1-\delta}(p^{\max} - p^{\min})(1-\mu)}. \tag{12}$$

The unique steady state is $\underline{\pi}$, as can be seen from substituting in $\pi_{z+1} = \pi_z = \underline{\pi}$. Strikingly, the minimally acceptable power-sharing level is identical regardless of whether this level is characterized by the *static* trade off presented in Equation 2 or the *dynamic* trade off analyzed here. Thus, the more complicated model perfectly recovers this insight from the simpler one. In both settings, the steady-state power-sharing level must make the Opposition's permanent concession commensurate with its improved fighting prowess.

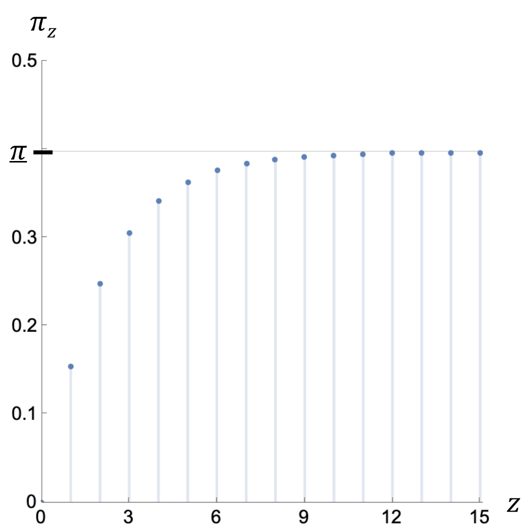
Dynamic Opposition Credibility. A dynamically credible Opposition demands immediate convergence to $\underline{\pi}$. The resultant bang-bang solution is identical to that in Proposition 1, despite the richer space of power-sharing options afforded here. A dynamically credible Opposition, by definition, is unwilling to accept $\pi_1 = 0$ even if $\pi_2 = \underline{\pi}$. Thus, the Ruler must make *some* up-front permanent concessions $\pi_1 > 0$. We might imagine that these could be less than $\underline{\pi}$ because the Ruler can later revise $\pi_2 > \pi_1$. However, raising π_1 bolsters both the Opposition's consumption (making him easier to buy off) and his probability of winning (making him harder to buy off). The only value of π_1 that balances these countervailing forces is $\pi_1 = \underline{\pi}$, which yields a bang-bang solution. More formally, because Dynamic Opposition Credibility holding is equivalent to $\beta > 1$, the sequence formed by Equation 12 diverges for any $\pi_z < \underline{\pi}$.

If instead Dynamic Opposition Credibility fails, then the Opposition tolerates gradual convergence to $\underline{\pi}$ (see Figure 4). Every subsequent offer π_{z+1} gets closer to $\underline{\pi}$, which induces the Opposition to accept an even lower value π_z today. Consequently, the Ruler offers an infinite series of escalating steps that asymptotically converge to $\underline{\pi}$. More formally, the failure of Dynamic Opposition Credibility is equivalent to $\beta < 1$. This property makes $\beta\underline{\pi} + (1-\beta)\pi_z$ a contraction. The sequence of

[17] This is the only part of the entire analysis that imposes the linear functional form, without which it is unclear how to identify sufficient conditions to apply the contraction mapping theorem (as used in Appendix Lemma A.7).

offers therefore satisfies $\pi_{z+1} \geq \pi_z$ and converges monotonically to the unique steady state.

Figure 4: Gradual Power Sharing



Notes: The x-axis lists the number of high-threat periods that have elapsed and the y-axis shows the size of the power-sharing concession in each high-threat period. Note that the value of $\underline{\pi}$ in this figure is identical to that in Figure A.1. *Parameter values:* $\delta = 0.9$, $r = 0.25$, $\mu = 0.1$, $p^{\text{min}} = 0.5$, $p^{\text{max}} = 0.9$, $\alpha(\pi) = \pi$.

Strikingly, the coefficient β from Equation 12 is *identical* to the probability of power sharing derived in the mixed equilibrium (σ_R^* from Equation 10). Slightly adapting Equation 12 and using $\pi_0 = 0$, the first of the gradual steps, π_1, must satisfy

$$1 - \delta + \frac{\delta r}{1 - \delta(1 - r)} \Big(p^{\text{min}} + \pi_1 (p^{\text{max}} - p^{\text{min}})(1 - \mu) \Big) = p^{\text{min}}(1 - \mu). \tag{13}$$

This shows that π_1 is constructed in a nearly identical manner as σ_R^* (see Equation 9 while setting $\alpha(\pi) = \pi$). The only difference is that the mixed equilibrium features an all-or-nothing lottery over $\underline{\pi}$ whereas the gradual path yields a fixed fraction of $\underline{\pi}$ for the Opposition. Thus, in the first high-threat period, the actual power-sharing level in the gradual-steps equilibrium, $\beta\underline{\pi}$, is identical to the expected power-sharing level in the mixed equilibrium, $\sigma_R^*\underline{\pi}$.

Ruler Willingness. As before, a peaceful equilibrium requires the Ruler to willingly share enough power to buy off the Opposition. If Dynamic Opposition Credibility holds, the needed concession is unchanged from that characterized earlier; the Ruler must share $\underline{\pi}$ up front. However, if Dynamic Opposition Credibility fails, the lower up-front concession $\beta\underline{\pi}$ may make Ruler Willingness easier to satisfy.[18]

Another implication is that a very high discount factor $\delta \to 1$ ensures a peaceful, but very slow, transition path. A perfectly patient Opposition actor is willing to wait an arbitrarily long period of time to gain the discrete boost in consumption from higher power-sharing levels, which the Ruler is willing to countenance. This peacefulness of this gradual path contrasts with the "slippery slope" dynamics that can undermine prospects for institutional reform, characterized in Acemoglu et al. (2012).[19]

The equilibrium has the following structure.

Proposition 3 (Equilibrium path of play for Case 3)**.**

- ***Dynamic Opposition Credibility holds.*** *If $p^{max} < \hat{p}^{max}_{DOC}$, then the equilibrium path of play is identical to that described in Proposition 1.*
- ***Dynamic Opposition Credibility and Ruler Willingness both fail.*** *If $p^{max} < \hat{p}^{max}_{DOC}$, and also either $\hat{p}^{max}_{DOC} > \hat{p}^{max}_{RW}$ or $\beta\underline{\pi}(p^{max} - p^{min})(1-\mu) > \mu$ (see Appendix A.3), then the equilibrium path of play is identical to that described in the conflict case of Proposition 1.*
- ***Gradual steps if Dynamic Opposition Credibility fails and Ruler Willingness holds.*** *If $p^{max} > \hat{p}^{max}_{DOC}$, $\hat{p}^{max}_{DOC} < \hat{p}^{max}_{RW}$, and $\beta\underline{\pi}(p^{max} - p^{min})(1-\mu) \leq \mu$, then in each high-threat period z, the Ruler shares $\pi_z = \beta\underline{\pi} + (1-\beta)\pi_{z-1}$ and a revolt never occurs.*

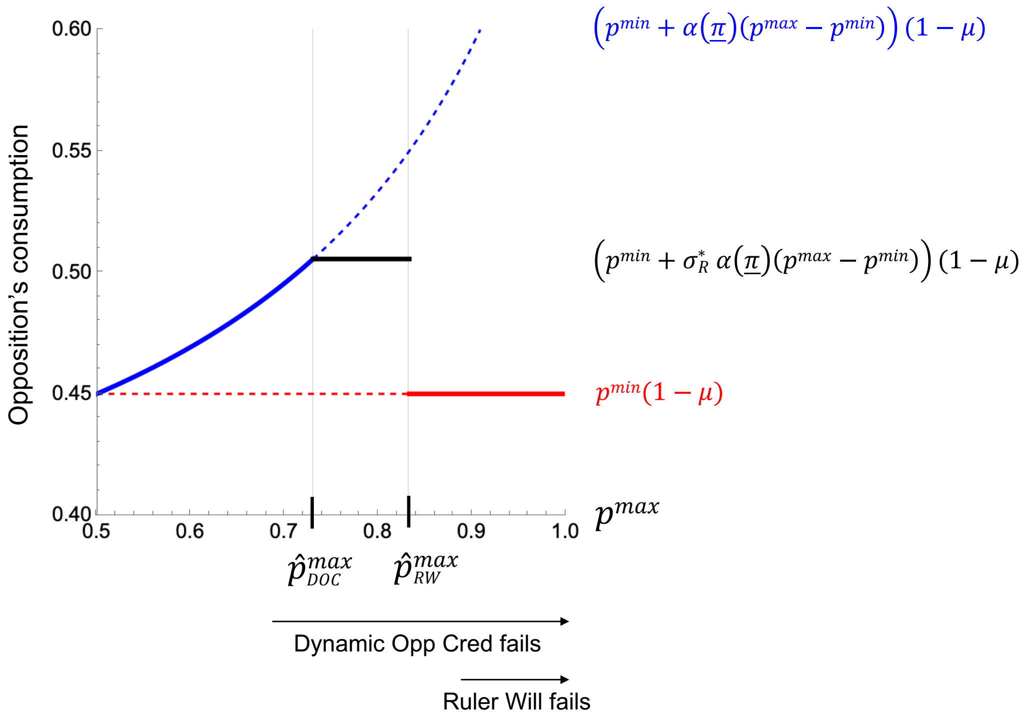
5.4 Opposition's Commitment Problem #2

Figure 5 illustrates the Opposition's two commitment problems. For small values of $p^{\max}$, the Opposition's consumption strictly increases in $p^{\max}$ because neither Ruler Willingness nor Dynamic Opposition Credibility binds. Consequently, the Ruler shares $\underline{\pi}$ in today's high-threat period and the Opposition's reservation value increases.

[18] Although it is also possible for Ruler Willingness to fail for all parameter values in which Dynamic Opposition Credibility fails; Appendix A.3.1 provides details.

[19] Appendix A.3.3 provides details.

Figure 5: The Opposition's Commitment Problems



Notes: Along the x-axis, the threat-enhancing effect increases in magnitude. The y-axis shows the Opposition's lifetime average expected consumption, from the perspective of a high-threat period with $\pi_{z-1} = 0$. The outlines of the blue and red lines are identical to those in Figure 2.
Parameter values: $\delta = 0.9$, $r = 0.25$, $\mu = 0.1$, $p^{\text{min}} = 0.5$, $\alpha(\pi) = \pi$.

When p^{max} crosses $\hat{p}^{\text{max}}_{\text{DOC}}$, the Opposition's threat to revolt in response to purely temporary concessions lacks dynamic credibility. Consequently, in the mixed-strategy equilibrium, the Ruler pivots to probabilistic power sharing. This makes the Opposition's consumption flat in p^{max}, as the Ruler calibrates the mixing probability to make the Opposition indifferent between either revolting or accepting purely temporary concessions while waiting for a future power-sharing deal.[20] As illustrated by the dashed blue line, the Opposition would benefit from tying its hands and mimicking a crazy type who always revolts when the Ruler does not share $\underline{\pi}$. This hypothetical threat would compel the Ruler to surely share power today — but it is incredible, which enables the Ruler to get away with a lesser concession. Hence the Opposition's second commitment problem.

Finally, when p^{max} crosses $\hat{p}^{\text{max}}_{\text{RW}}$, Ruler Willingness fails and the Opposition's consumption jumps

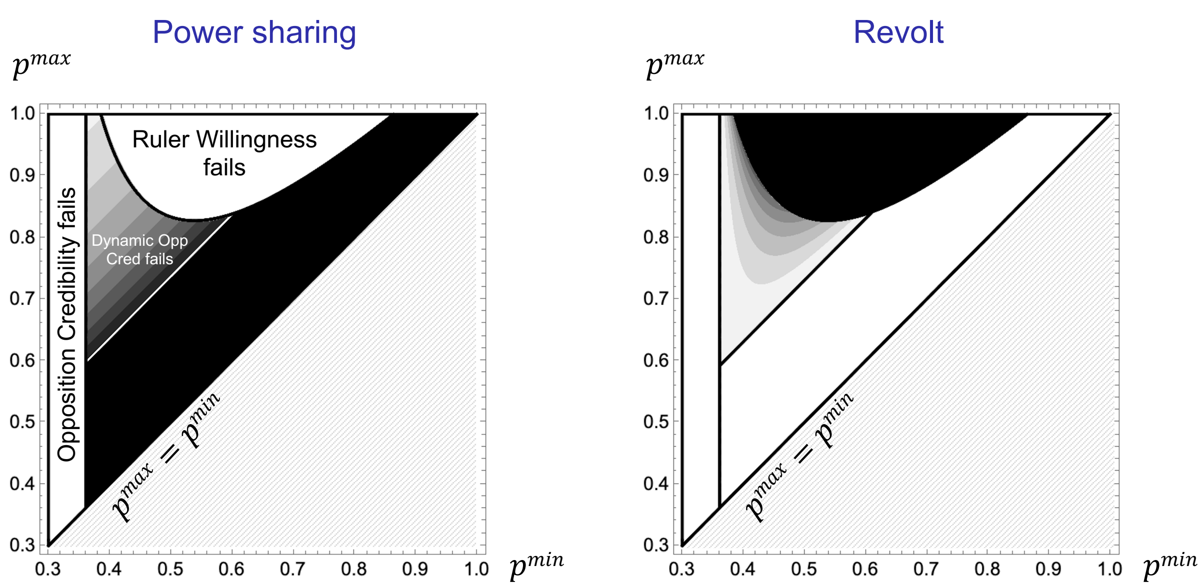
[20]The same is true in the gradual-steps equilibrium.

back down to $p^{\min}(1-\mu)$. Thus, even when the Opposition's second commitment problem is operative, he still wishes he could solve the first commitment problem caused by the coercive advantage gained via the threat-enhancing effect (see Figure 2). Probabilistic power sharing is better than no power sharing.

5.5 SUMMARIZING THE EQUILIBRIUM PATHS

Figure 6 illustrates the possible equilibrium outcomes for different values of $p^{\min}$ and $p^{\max}$. Darker colors indicate higher probabilities of either power sharing or a rebellion, with white corresponding with probability 0 and black with probability 1.[21]

Figure 6: Equilibrium Probability of Power Sharing and Revolt



Notes: Darker colors indicate higher probabilities of the specified outcome in any high-threat period such that $\pi_{z-1} = 0$. The region to the bottom-right of $p^{\max} = p^{\min}$ is shaded out because these parameter values violate $p^{\max} \geq p^{\min}$. *Parameter values*: $\delta = 0.9$, $r = 0.25$, $\mu = 0.1$, $\alpha(\pi) = \pi$.

When the threat-enhancing effect is very small in magnitude ($p^{\max}$ close to $p^{\min}$), the Ruler shares power as long as $p^{\min}$ is not so low that Opposition Credibility fails (Assumption 1). Moreover, if $p^{\min}$ is very high, then peaceful power sharing is guaranteed for a mechanical reason: high $p^{\min}$ restricts the magnitude of the threat-enhancing effect, which is determined by $p^{\max} - p^{\min}$. How-

[21]The figure shows the mixing equilibrium. The gradual-steps equilibrium is qualitatively similar, although the Ruler Willingness range may be wider and the probability of a revolt is 0 whenever Ruler Willingness holds.

ever, for all values of p^{min} in between these extremes, raising p^{max} can undercut Ruler Willingness (Equation 5) and/or Dynamic Opposition Credibility (Equation 7).

6 Extensions

6.1 Alternative Power-Sharing Settings

The model presumes that the *central government* controls the bargaining object and that sharing power does not entail the Ruler ceding *agenda-setting control*. However, the tensions created by the threat-enhancing effect apply beyond this specific power-sharing setting. In Appendix A.4.1, I explain why the insights are qualitatively similar when the Ruler and Opposition can alternate in power via elections or if the Ruler can grant regional autonomy in response to separatist challenges.

6.2 Delayed Shifts in Power

In the baseline model, the entire power boost gained by the Opposition occurs when a power-sharing deal is enacted. This assumption is natural when we think of power sharing as encompassing a longer-term process that occurs at the beginning of a period; and, after absorbing that concession, the Ruler and Opposition then bargain over temporary concessions in the shadow of an (elevated) revolt threat. In Appendix A.4.2, I show that the present findings do not require that the *entire* shift occurs instantaneously. Ruler Willingness can fail as long as a high-enough fraction of the shift occurs when the power-sharing deal is initiated.

The flipside of this implication is that peaceful bargaining is guaranteed if the Opposition's power boost is delayed *entirely* until the next high-threat period. Thus, it is not simply the size of the shift that matters, but also the speed. This finding aligns with other conflict bargaining models (Powell 2004, 2012). In fact, the speed parameter can be interpreted as the Opposition's ability to tie his hands to refrain from immediately taking full advantage of his greater coercive leverage — hence addressing the Opposition's first commitment problem.

7 Application to Civil War Settlements

The threat-enhancing effect of sharing power is common in settings of authoritarian regimes and nascent democracies. Allowing actors access to power at the center creates a palpable coup threat when institutions are not sufficiently strong to obviate violent challenges to power. Given the premise that actors are stronger on the inside than the outside, captured in the model with $p^{\text{max}} > p^{\text{min}}$, the present model illuminates various implications that frustrate attempts at peaceful power sharing.

Although the central ideas of the model apply more generally, civil war settings are a particularly good place to uncover evidence of the mechanism. A rebel group that can coercively pressure the government has met Opposition Credibility. In the real world, this is not a trivial constraint to satisfy because states have an inherent advantage in coercion. But even when outsiders have a reasonably high value of p^{min}, governments often fear the alternative even more — legitimizing the enemy by giving rebel leaders meaningful positions within the government and incorporating their militias into the state military. This circumstance corresponds with a large-magnitude threat-enhancing effect, $p^{\text{max}} - p^{\text{min}}$.

This is a qualitatively distinct type of commitment problem that impedes the ending of civil wars than discussed in existing research (Walter 1997; Fearon and Laitin 2008), which instead focuses on the rebels' fear of the government reneging (Powell 2024 develops a related mechanism). Although limited commitment ability by the government is undoubtedly an important problem empirically, solely focusing on the government leaves unaddressed certain pressing considerations. A government may strategically *choose* to circumscribe its concessions to the rebels, but this should not be interpreted as an *inability* to confer more meaningful power-sharing concessions, captured by π in the model. Governments, in principle, can give away quite a lot to the rebels: high-ranking positions in the cabinet, competitive elections that offer the opportunity to gain control of the state, incorporation into the state military, and the maintenance of regional armed units. However, because such concessions enhance the Opposition's threat, the present analysis anticipates why the government might choose to forgo meaningful power sharing even when facing intense pressure from rebels. Thus, I focus on the less scrutinized flipside of the *government's* commitment problem: if offered meaningful power-sharing concessions, the *rebels* cannot commit to refrain from leveraging the strength conveyed from incorporation and access to central (or regional) power.[22]

Angola's long-running civil war from before independence in November 1975 through 2002 illustrates the perils of the threat-enhancing effect.[23] In early 1975, the main rebel groups that had fought the Portuguese government for over a decade — MPLA, UNITA, and FNLA — failed to establish a viable power-sharing arrangement. Following the Carnation Revolution in Portugal, which brought the Portuguese government to the bargaining table, the Alves Agreement of January 1975 constructed a framework for sharing power. An executive committee consisted of the leaders of the three rebel parties, plus a representative for the Portuguese government; and the twelve ministries were split evenly among the four groups. The power-sharing deal also called for military integration. However, each side feared that the others would leverage their position at the center to consolidate power. Acting in anticipation of the threat-enhancing effect, fighting resumed in the capital of Luanda shortly after the parties signed the Alves Agreement. MPLA unilaterally gained military control over Luanda and became the internationally recognized government upon independence in November 1975 — but subsequently had to combat a rebellion by UNITA that lasted for more than a quarter century.

In the late 1980s, as international involvement ratcheted down, serious negotiations began but the government and rebels could not agree on a power-sharing arrangement as the war persisted in a costly and destructive stalemate. UNITA leader Jonas Savimbi pushed for multi-party elections

[22] In the following, I focus primarily on the first Opposition's commitment problem developed in the model analysis. In the Conclusion, I discuss possibilities for empirically assessing the second Opposition's commitment problem.

[23] The main sources for the following are Warner (1991); Rothchild (1997); Kambwa et al. (1999); Hartzell and Hoddie (2007, Ch. 5).

and his inclusion within a coalition government. By contrast, President José dos Santos sought to exile Savimbi while incorporating some of his followers into a MPLA-dominated state military and party. Fear of triggering the threat-enhancing effect helps to explain why the government would be unwilling to relinquish positions of control, despite facing a major threat. Dos Santos changed his stance only after the U.S. demonstrated its resolve to continue to assist UNITA until a peace agreement was reached. The government finally made a major concession in the Bicesse Accords, and in 1992 held multi-party elections deemed largely free and fair by outside observers. Nonetheless, UNITA rejected its electoral loss and returned to war.

During the next round of negotiations, international brokers pushed for additional power-sharing provisions that would lower the stakes of the next election by ensuring the loser would retain a stake in the government. As a correspondent noted, "The agreement is premised on a power-sharing arrangement that will give UNITA enough to keep it within the government orbit but not enough in terms of regional power-bases to seek to redivide the country. That is why the negotiations over which provincial governments were given to UNITA were so protracted" (Africa Confidential 1994). As a secret provision, dos Santos may have agreed to name Savimbi as a Vice President (Inter Press Service 1994). This indicates that the government conscientiously sought to offer sufficient concessions to UNITA while simultaneously minimizing the risk of the threat-enhancing effect. Nonetheless, UNITA also broke from the Lusaka protocol, and the war ended in 2002 only after the government killed Savimbi and compelled UNITA's surrender. UNITA's fear that the government would renege (the more standard focus in the civil war literature) certainly mattered in this case. But it is difficult to explain the government's hedging on offering meaningful power-sharing concessions — amid an extremely deadly civil war — without appealing to the threat-enhancing effect and the rebels' limited commitment ability.

Sudan's first civil war (1963–72) illustrates similar considerations in the context of a separatist civil war between the northern-dominated government in Khartoum and Southerners (contemporary South Sudan).[24] A key sticking point in the negotiations was the staffing of the state military, in

[24] In Appendix A.4.1, I show that the mechanics of the model are identical in the case of separatist threats.

particular the units stationed in the South. Southerners pushed to control forces in their region, given a well-substantiated fear that the government would otherwise renege on regional autonomy concessions. But, conversely, the government feared that Southerners would use a military under its control not simply to safeguard its regional autonomy, but instead to push for full independence. In the account of Abel Alier, a prominent Southern politician who held a Vice President position in the central government and framed the 1972 Addis Ababa Agreement, the government "fear[ed] that the people of the South could use their limited autonomy backed by a huge security force, to establish, through violent means, a fully sovereign entity. Northern Sudanese would not be willing to relinquish their control of security which was equally vital to them" (Alier 1990, 106). The final agreement created an elected regional government in the South with various autonomous powers as well as a Southern Command with 6,000 troops recruited from the North and 6,000 from the South (p. 137). The fragile peace lasted only slightly more than a decade, though, when the government reneged on regional autonomy and the South returned to war.

The Angolan and Sudanese cases illustrate a common Catch-22. Governments confront a major insurgency they cannot defeat outright, and sharing power offers a way out. But it is difficult to share power in a way that satisfies both sides, and the threat-enhancing effect feeds the government's trepidation. Beyond these two cases, Appendix B summarizes every major civil war fought in Sub-Saharan Africa since independence that ended with a power-sharing provision involving the rebels. Some form of power sharing is fairly common in these cases, 28 of 81 (35%). But sharing power with armed actors is perilous and often breaks down into renewed war (18 of the 28 power-sharing cases). In numerous cases, rebels took advantage of the leverage gained from their incorporation into the government to renew combat and ultimately defeat the government. Failed power sharing and renewed fighting is also common following rebel victory, when fractured coalitions attempt to share power among disparate armed members.

8 Conclusion

Sharing power is hard, especially when the opposition is armed. Although most existing theories focus on the Ruler's limited commitment ability, the Opposition also faces commitment problems that affect if and when power-sharing deals occur. Incorporation into the center (or gaining regional autonomy) enables the Opposition to gain a coercive advantage. The realization or expectation of the *threat-enhancing effect* can unravel prospects for peaceful power sharing. Sometimes, the Ruler is unwilling to share power and weaken its bargaining position, as the Opposition cannot commit to refrain from leveraging its enhanced threat. Other times, the threat-enhancing effect can delay power-sharing deals because the Opposition cannot commit to revolt in response to purely temporary concessions. Only a dynamically credible Opposition avoids the temptation to wait for a future power-sharing deal. Existing theories overlook how these commitment problems on the part of the Opposition can delay or completely inhibit peaceful bargaining.

Future work could extend additional aspects of the Opposition's and Ruler's commitment problems. Here I highlighted a mechanism by which the Opposition never becomes the agenda setter, yet still faces a commitment problem because of the threat-enhancing effect. In other manifestations, the Opposition's commitment problem bites because the incumbent *hands off power* to actors who, as the new ruling class, cannot commit to promises they make to ex-government actors. Frictions arise if the new majority itself prefers high redistribution (Acemoglu and Robinson 2006), pursues economic policies that empower poorer classes who prefer high redistribution (Acemoglu et al. 2012), or cannot commit to retain countermajoritarian protections meant to protect the elite (Fearon and Francois 2021). It would be productive in future work to study these related mechanisms in the joint context of the Opposition's commitment problem.

On the empirical side, I highlighted how the threat-enhancing effect $p^{\max} - p^{\min}$ is often large in magnitude for major civil wars. This mechanism can contribute to the frictions inherent in settling civil wars when neither side is able to win outright, or in which a fractured rebel coalition jointly seizes power and then needs to share power among its constituent members. Future empirical work may also be able to assess certain dynamic implications from the model. As shown, it is possible in theory to gradually buy off an Opposition whose threat to revolt lacks dynamic credibility. Although this is an intuitively appealing theoretical result, empirically, it might presume an unreasonably large amount of commitment power on the part of the Ruler to continually make small, calibrated power-sharing concessions. Alternatively, allowing for other forms of future shocks could make this equilibrium path non-viable. The mixing equilibrium may have greater empirical verisimilitude because it can explain why a Ruler might suddenly agree to make a substantial power-sharing concession without any notable change in the political environment. This logic might have contributed to the delays in power sharing we observed in the Angola and Sudan cases; although, empirically, it is difficult to ascertain when Dynamic Opposition Credibility holds or fails. Further theoretical and empirical developments along these lines should yield new insights into the promises and perils of authoritarian power sharing and regime transitions.

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Online Appendix for "The Threat-Enhancing Effect of Authoritarian Power Sharing"

Table of Contents

A Supporting Information for Formal Model

The first three sections in Appendix A provide supporting information for each of the three distinct restrictions on the Ruler's power-sharing choice, respectively, described in the model setup. The last section provides supporting information for the extensions. Throughout, for choices, I use the subscript z which indexes high-threat periods (as non-trivial actions occur only in such periods), rather than the subscript t that indexes all periods.

A.1 Case 1 of Restrictions on the Power-Sharing Choice

Case 1 of restrictions on the power-sharing choice is: The Ruler sets $\pi \in [0,1]$ in the first high-threat period, and afterwards cannot revise the power-sharing level (it is fixed forever at π),

$$\pi_z = \begin{cases} \pi \in [0,1] & \text{if } z = 1 \\ \{\pi\} & \text{if } z > 1. \end{cases}$$

This is the version of the model solved in Section 4 of the article. The following provides a full equilibrium characterization.

A.1.1 Bargaining with a Fixed Power-Sharing Level

After the first high-threat period, the power-sharing level is fixed at π. The optimal choice of temporary concessions has an interior solution if and only if $\pi \in (\underline{\pi}, \overline{\pi})$, for unique thresholds formally characterized and proved in the next two lemmas. For each, there are two cases depending on whether marginal increases in π relax the no-revolt constraint for all values of π (Case A), or whether the threat-enhancing effect dominates at low values of π and therefore a high-enough value of π is needed (Case B). In the final lemma of this section, I show that the equilibrium involves conflict if $\pi < \underline{\pi}$, and a corner-solution temporary concession of 0 if $\pi > \overline{\pi}$.

Lemma A.1 (Peaceful Power-sharing Threshold $\underline{\pi}$)**.**

Case A. *If $\alpha'(0)(p^{max} - p^{min})(1-\mu) < \delta(1-r)$, then a unique threshold $\underline{\pi} \in (0, \overline{\pi})$ exists such that*

$$\Theta(\pi) \begin{cases} < 0 & \textit{if } \pi < \underline{\pi} \\ = 0 & \textit{if } \pi = \underline{\pi} \\ > 0 & \textit{if } \pi > \underline{\pi}, \end{cases}$$

for $\underline{\pi}$ implicitly defined as $\Theta(\underline{\pi}) = 0$ with

$$\Theta(\pi) = \pi + (1 - \delta(1-r))(1-\pi) - (p^{min} + \alpha(\pi)(p^{max} - p^{min}))(1-\mu) = 0,$$

and for $\overline{\pi}$ defined and characterized in Lemma A.2.

Case B. *If $\alpha'(0)(p^{max} - p^{min})(1-\mu) > \delta(1-r)$, then a unique threshold $\underline{\pi} \in (\pi_0, \overline{\pi})$ exists, for the same $\underline{\pi}$ characterized in Case A and a unique threshold $\pi_0 \in (0, \overline{\pi})$ implicitly defined as $p'(\pi_0)(1-\mu) = \delta(1-r)$.*

Proof. Two derivatives used throughout the proof are

$$\frac{d\Theta(\pi)}{d\pi} = \delta(1-r) - \alpha'(\pi)(p^{\max} - p^{\min})(1-\mu) \tag{A.1}$$

$$\text{and} \quad \frac{d^2\Theta(\pi)}{d\pi^2} = -\alpha''(\pi)(p^{\max} - p^{\min})(1-\mu) \geq 0. \tag{A.2}$$

For the strictly concave case, Equation A.1 is ambiguous in sign and Equation A.2 is strictly positive. For the linear case, Equation A.2 is 0 and Equation A.1 is strictly positive. The last claim follows from $\alpha'(\pi) = 1$ for all π, and Opposition Credibility (Assumption 1) implies $\delta(1-r) > (p^{\max} - p^{\min})(1-\mu)$.

Case A. Applying the intermediate value theorem demonstrates existence for $\underline{\pi}$. *Lower bound:* $\Theta(0) < 0$ by Opposition Credibility. *Upper bound:* $\Theta(\overline{\pi}) = (1 - \delta(1-r))(1-\overline{\pi}) > 0$ because $\overline{\pi} = p(\overline{\pi})(1-\mu)$ (Lemma A.2). *Continuity:* The continuity of $\Theta(\pi)$ follows from the assumed continuity of $\alpha(\pi)$. *Uniqueness*: In the linear case, uniqueness follows from the strict positivity of Equation A.1. In the strictly concave case, uniqueness follows from the strict positivity of Equation A.1 at $\pi = 0$ (the defining assumption for Case 1) combined with the strict positivity of Equation A.2.

Case B. Applying the intermediate value theorem establishes existence for π_0

- *Lower bound:* $\left.\frac{d\Theta(\pi)}{d\pi}\right|_{\pi=0} < 0$ is the assumed scope condition for this case, $\alpha'(0)(p^{\max} - p^{\min})(1-\mu) > \delta(1-r)$.
- *Upper bound:* The following string of inequalities establishes $\alpha'(\overline{\pi})(p^{\max} - p^{\min})(1-\mu) < \delta(1-r)$
  - o $\alpha'(\overline{\pi})(p^{\max} - p^{\min})(1-\mu) < \int_0^{\overline{\pi}} \alpha'(\pi)(p^{\max} - p^{\min})(1-\mu)d\pi$ because $\alpha'' < 0$.
  - o $\int_0^{\overline{\pi}} \alpha'(\pi)(p^{\max} - p^{\min})(1-\mu)d\pi = (\alpha(\overline{\pi}) - \underbrace{\alpha(0)}_{=0})(p^{\max} - p^{\min})(1-\mu)$ by the fundamental theorem of calculus.
  - o $\alpha(\overline{\pi})(p^{\max} - p^{\min})(1-\mu) = \overline{\pi} - p^{\min}(1-\mu)$ by the definition of $\overline{\pi}$.
  - o $\overline{\pi} - p^{\min}(1-\mu) < \overline{\pi} - (1 - \delta(1-r))$ by Opposition Credibility.
  - o $\delta(1-r) - (1-\overline{\pi}) < \delta(1-r)$ because $\overline{\pi} < 1$.
- *Continuity:* The continuity of $\frac{d\Theta(\pi)}{d\pi}$ follows from the assumed continuity of $p'(\pi)$.

The uniqueness of π_0 follows from Equation A.2. Given this, we can apply the intermediate value theorem to establish existence for $\underline{\pi}$. *Lower bound:* $\Theta(\pi_0) < 0$ follows from Opposition Credibility and $\alpha'(\pi)(p^{\max} - p^{\min})(1-\mu) > \delta(1-r)$ for all $\pi < \pi_0$. *Upper bound:* Same as Case A. *Continuity:* Same as Case A. *Uniqueness*: $\alpha'(\pi_0)(p^{\max} - p^{\min})(1-\mu) = \delta(1-r)$ combined with Equation A.2 implies $\alpha'(\pi)(p^{\max} - p^{\min})(1-\mu) < \delta(1-r)$ for all $\pi > \pi_0$. ■

Lemma A.2 (No-Transfer Threshold $\overline{\pi}$)**.**

> ***Case A.*** *If* $\alpha'(0)(p^{max} - p^{min})(1-\mu) < 1$*, then a unique threshold* $\overline{\pi} \in (0,1)$ *exists such that*
> $$x^*(\pi) \begin{cases} > 0 & \text{if } \pi < \overline{\pi} \\ = 0 & \text{if } \pi = \overline{\pi} \\ < 0 & \text{if } \pi > \overline{\pi}, \end{cases}$$
> *for* $\overline{\pi}$ *implicitly defined as* $\overline{\Theta}(\overline{\pi}) = 0$*, with*
> $$\overline{\Theta} \equiv \pi - (p^{min} + \alpha(\pi)(p^{max} - p^{min}))(1-\mu).$$
>
> ***Case B.*** *If* $\alpha'(0)(p^{max} - p^{min})(1-\mu) > 1$*, then a unique threshold* $\overline{\pi} \in (\overline{\pi}_0, 1)$ *exists, for the same* $\overline{\pi}$ *characterized in Case A and a unique threshold* $\overline{\pi}_0 \in (0,1)$ *implicitly defined as* $\alpha'(\overline{\pi}_0)(p^{max} - p^{min})(1-\mu) = 1$.

Proof. Two derivatives used throughout the proof are

$$\frac{d\overline{\Theta}(\pi)}{d\pi} = 1 - \alpha'(\pi)(p^{\max} - p^{\min})(1-\mu) \tag{A.3}$$

$$\text{and} \quad \frac{d^2\overline{\Theta}(\pi)}{d\pi^2} = -\alpha''(\pi)(p^{\max} - p^{\min})(1-\mu) > 0. \tag{A.4}$$

For the strictly concave case, Equation A.3 is ambiguous in sign and Equation A.4 is strictly positive. For the linear case, Equation A.4 is 0 and Equation A.3 is strictly positive. The last claim follows from $\alpha'(\pi) = 1$ for all π, and therefore we have $1 > (p^{\max} - p^{\min})(1-\mu)$.

Case A. Applying the intermediate value theorem establishes existence for $\overline{\pi}$. *Lower bound:* $\overline{\Theta}(0) = -p^{\min}(1-\mu) < 0$. *Upper bound:* $\overline{\Theta}(1) = 1 - p^{\max}(1-\mu) > 0$. *Continuity:* The continuity of $\overline{\Theta}(\pi)$ follows from the assumed continuity of $p(\pi)$. *Uniqueness*: In the linear case, uniqueness follows from the strict positivity of Equation A.3. In the strictly concave case, uniqueness follows from the strict positivity of Equation A.3 at $\pi = 0$ (the defining assumption for Case A) combined with the strict positivity of Equation A.4.

Case B. Applying the intermediate value theorem establishes existence for $\overline{\pi}_0$

- *Lower bound:* $\left.\frac{d\overline{\Theta}(\pi)}{d\pi}\right|_{\pi=0} < 0$ is equivalent to the assumed scope condition of this case, $\alpha'(0)(p^{\max} - p^{\min})(1-\mu) > 1$.
- *Upper bound:* To show $\alpha'(1)(p^{\max} - p^{\min})(1-\mu) < 1$, suppose not and $\alpha'(1)(p^{\max} - p^{\min})(1-\mu) > 1$. Because $\alpha''(\pi) < 0$, this implies $\alpha'(\pi)(p^{\max} - p^{\min})(1-\mu) > 1 > 1-\mu$ for all $\pi \in [0,1]$; and thus $\int_0^1 \alpha'(\pi)(p^{\max} - p^{\min})(1-\mu)d\pi > 1$. Applying the fundamental theorem of calculus yields the contradiction because $\int_0^1 \alpha'(\pi)(p^{\max} - p^{\min})(1-\mu)d\pi = (\underbrace{\alpha(1)}_{1} - \underbrace{\alpha(0)}_{0})(p^{\max} - p^{\min})(1-\mu) < 1$.
- *Continuity:* The continuity of $\frac{d\overline{\Theta}(\pi)}{d\pi}$ follows from the assumed continuity of $\alpha(\pi)$.

Uniqueness: Follows from the strict monotonicity in Equation A.4.

Given this, we can apply the intermediate value theorem to establish existence for $\overline{\pi}$. *Lower bound:* $\overline{\Theta}(\overline{\pi}_0) < 0$ follows from $\overline{\Theta}(0) < 0$ and $p'(\pi) > \frac{1}{1-\mu}$ for all $\pi < \overline{\pi}_0$. *Upper bound:* Same as Case A. *Continuity:* Same as Case A. *Uniqueness*: $\alpha'(\overline{\pi}_0)(p^{\max} - p^{\min})(1-\mu) = 1$ combined with Equation A.4 implies $\alpha'(\pi)(p^{\max} - p^{\min})(1-\mu) < 1$ for all $\pi > \overline{\pi}_0$. ∎

The following lemma presents a partial equilibrium strategy profile for all periods following the first high-threat period, after which π is permanently fixed. If $\pi \geq \underline{\pi}$, the equilibrium is unique. If $\pi < \underline{\pi}$, the equilibrium is unique with respect to payoff equivalence; the Ruler is indifferent among any offer $x = [0, 1-\pi]$ because the Opposition will surely reject. For payoff-equivalent equilibria with conflict, I assume the Ruler sets the temporary concession to its maximum feasible level.

Lemma A.3 (Equilibrium strategy profiles and outcomes for fixed π)**.** *Assume $\pi_z = \pi$ for all z. The following actions constitute an equilibrium strategy profile, which is unique with respect to payoff equivalence. For the Opposition:*

$$a(\pi, x_z) = \begin{cases} 1 & \textit{if } \pi \geq \underline{\pi} \textit{ and } x_z \geq x^*(\pi) \\ 0 & \textit{if } \pi < \underline{\pi} \textit{ or } x_z < x^*(\pi). \end{cases}$$

For the Ruler:

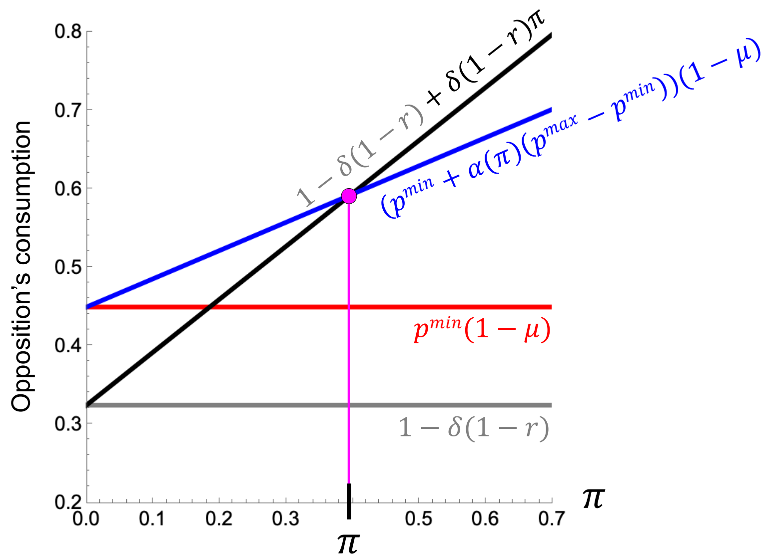
- ***Case A.*** *If $\pi < \underline{\pi}$, then $x = 1 - \pi$. Along the equilibrium path, a revolt occurs in the first high-threat period; and in this period, the Ruler's average per-period expected consumption is $(1 - p(\pi))(1-\mu)$ and the Opposition's is $p(\pi)(1-\mu)$.*
- ***Case B.*** *If $\pi \in [\underline{\pi}, \overline{\pi})$, then $x = x^*(\pi)$, as defined in Equation 3. Along the equilibrium path, revolts never occur; and from the perspective of any high-threat period, the Ruler's average per-period expected consumption is $1 - p(\pi)(1-\mu)$ and the Opposition's is $p(\pi)(1-\mu)$.*
- ***Case C.*** *If $\pi \geq \overline{\pi}$, then $x = 0$. Along the equilibrium path, revolts never occur; and from the perspective of any high-threat period, the Ruler's average per-period expected consumption is $1 - \pi$ and the Opposition's is π.*

The proof follows almost directly from the construction of the various threshold values of π stated in the proposition. The two additional pieces are: (1) The Opposition must accept with probability 1 any offer that satisfies the no-revolt constraint (Equation 1) with equality. Otherwise, the constraint set on the Ruler's optimization problem would be open, which would always permit a profitable deviation. (2) In Case 2, the Ruler prefers to buy off the Opposition with an interior-optimal temporary concession rather than incur a revolt because $\underbrace{1 - p(\pi)(1-\mu)}_{\text{Peace}} > \underbrace{(1 - p(\pi))(1-\mu)}_{\text{Revolt}} \implies \mu > 0$.

A.1.2 Intuition for Minimally Acceptable Power-Sharing Level

Figure A.1 characterizes $\underline{\pi}$ graphically for specific parameter values. Opposition Credibility ensures that the Opposition will revolt (red line) rather than accept purely temporary concessions (gray line). Thus, the Ruler must set a positive level of π to buy off the Opposition. Increases in π have two effects. First, higher π raises the Opposition's consumption along a peaceful path, which entails 1 in every high-threat period and π in every low-threat period (black line). Second, higher π increases the Opposition's reservation value to fighting (blue line). Because revolts are costly and the Opposition does not win with probability 1 even at $p(1) = p^{\text{max}}$, a high-enough level of π ensures acquiescence from the Opposition. The result is a unique interior value $\underline{\pi} \in (0, 1)$ at which the Opposition is indifferent between accepting and revolting.

Figure A.1: Minimally Acceptable Power-Sharing Level



Notes: Along the x-axis, the power-sharing level increases. The y-axis shows the Opposition's lifetime average expected consumption, from the perspective of the first high-threat period.
Parameter values: $\delta = 0.9$, $r = 0.25$, $\mu = 0.1$, $p^{\text{min}} = 0.5$, $\alpha(\pi) = \pi$.

With the linear functional form, $\underline{\pi}$ can be written explicitly in an easily interpretable form:

$$\underline{\pi} = \frac{p^{\text{min}}(1-\mu) - (1 - \delta(1-r))}{\delta(1-r) - (p^{\text{max}} - p^{\text{min}})(1-\mu)}. \tag{A.5}$$

This term is strictly positive because both the numerator and denominator are positive. The numerator is the expression for Opposition Credibility, which is positive by Assumption 1. The denominator equals the net marginal effect of π on promoting acceptance,

$$\frac{d}{d\pi}\Big(\underbrace{\pi + (1-\delta(1-r))(1-\pi)}_{\text{Accept}} - \underbrace{\big(p^{\text{min}} + \pi(p^{\text{max}} - p^{\text{min}})(1-\mu)\big)}_{\text{Revolt}}\Big) = \delta(1-r) - (p^{\text{max}} - p^{\text{min}})(1-\mu) > 0,$$

the sign of which follows directly from the inequality for Opposition Credibility. To see this, Opposition Credibility can be re-expressed as $\delta(1-r) > 1 - p^{\min}(1-\mu)$, and the claim follows from $1 - p^{\min}(1-\mu) > p^{\max}(1-\mu) - p^{\min}(1-\mu) = (p^{\max} - p^{\min})(1-\mu)$.

To see that $\underline{\pi} < 1$, this inequality simplifies to $p^{\max}(1-\mu) < 1$, a true statement. This reflects the logic discussed for Figure A.1: revolts are costly and the Opposition does not win with probability 1 even at $p(1) = p^{\max}$.

A.1.3 The Power-Sharing Choice and Ruler Willingness

I first prove the existence of a unique threshold value of $p^{\max}$ that determines whether Ruler Willingness holds, which the article stated as Lemma 1.

Proof of Lemma 1. If we define

$$\Theta_{\text{RW}}(p^{\max}) \equiv \mu - \alpha(\underline{\pi}(p^{\max}))(p^{\max} - p^{\min})(1-\mu),$$

then the implicit characterization of the threshold is $\Theta_{\text{RW}}(\hat{p}^{\max}_{\text{RW}}) = 0$. The following two steps prove the statement.

1. $\Theta_{\text{RW}}(p^{\min}) = \mu > 0$.
2. $$\frac{d\Theta_{\text{RW}}(p^{\max})}{dp^{\max}} = -\Bigg(\underbrace{\alpha(\underline{\pi})}_{\text{Direct}} + \underbrace{\alpha'(\underline{\pi})\frac{d\underline{\pi}}{dp^{\max}}(p^{\max} - p^{\min})}_{\text{Indirect}}\Bigg)(1-\mu) < 0.$$

   The sign for the indirect effect follows from applying the implicit function theorem to yield
   $$\frac{d\underline{\pi}}{dp^{\max}} = \frac{\alpha(\pi)(1-\mu)}{\delta(1-r) - \alpha'(\underline{\pi})(p^{\max} - p^{\min})(1-\mu)} > 0. \tag{A.6}$$

   Lemma A.1 ensures the denominator is positive; in Case A of the lemma, the denominator is positive for any value of π, whereas in Case B, the denominator is positive for all π greater than a threshold $\pi_0 < \underline{\pi}$.

   The indirect and direct effect each make Ruler Willingness harder to hold. Intuition for direct effect: for a fixed value of π, higher $p^{\max}$ reduces the Ruler's probability of surviving a revolt under power sharing. Intuition for indirect effect: higher $p^{\max}$ raises $\underline{\pi}$ because an Opposition who wins with higher probability demands more permanent concessions. ■

The remaining result needed to establish the equilibrium is to show that $\pi \in \{0, \underline{\pi}\}$ are the only possible choices of the power-sharing level.

Lemma A.4 (Eliminating suboptimal power-sharing choices)**.** *In any equilibrium strategy profile, the Ruler can profitably deviate from choosing any* $\pi \in (0, \underline{\pi}) \cup (\underline{\pi}, 1]$.

Proof. Each case can be proved by establishing a contradiction.

Step 1. $\boldsymbol{\pi_t \in (0, \underline{\pi})}$**.** The construction of $\underline{\pi}$ implies $a(\pi, x) = 0$ for any $\pi < \underline{\pi}$. The Ruler can profitably deviate to $(\pi_t, x_t) = (0, 1)$ because $\arg\max_{\pi \geq 0} \; (1 - p(\pi))(1 - \mu) = 0$.

Step 2. $\boldsymbol{\pi_t \in (\underline{\pi}, \overline{\pi})}$**.** The construction of $\underline{\pi}$ implies $a(\pi, x) = 1$ for any $\pi \geq \underline{\pi}$ and $x \geq x^*(\pi_t)$. The Ruler can profitably deviate to $(\pi_t, x_t) = (\underline{\pi}, 1 - \underline{\pi})$ because $p'(\pi) > 0$ implies $\arg\max_{\pi \geq \underline{\pi}} \; 1 - p(\pi)(1 - \mu) = \underline{\pi}$.

Step 3. $\boldsymbol{\pi_t \geq \overline{\pi}}$**.** Given Step 2 of the present proof, it suffices to prove that the Ruler's expected consumption function is continuous at $\pi = \overline{\pi}$: $\lim_{\pi \to \overline{\pi}^-} \; 1 - p(\pi)(1 - \mu) = 1 - \overline{\pi} = \lim_{\pi \to \overline{\pi}^+} \; 1 - \pi$. ■

The following proposition formally characterizes the equilibrium strategy profile associated with the paths of play described in Proposition 1. For payoff-equivalent equilibria with conflict, I assume the Ruler sets the temporary concession to its maximum feasible level.

Proposition A.1 (Equilibrium strategy profile for Case 1)**.** *Assume Case 1 of restrictions on the Ruler's power-sharing choice. The following actions constitute an equilibrium strategy profile, which is unique with respect to payoff equivalence.*

$$a(\pi_z, x_z) = \begin{cases} 1 & \textit{if } \pi_z \geq \underline{\pi} \textit{ and } x_z \geq x^*(\pi_z) \\ 0 & \textit{otherwise}. \end{cases}$$

$$(\pi(\pi_{z-1}), x) = \begin{cases} (\underline{\pi}, 1 - \underline{\pi}) & \textit{if } p^{max} < \hat{p}_{RW}^{max} \\ (\pi_{z-1}, 1 - \pi_{z-1}) & \textit{otherwise}. \end{cases}$$

A.2 Case 2 of Restrictions on the Power-Sharing Choice

Case 2 of restrictions on the power-sharing choice is: The Ruler can raise the power-sharing level exactly once, although this can occur after the first high-threat period,

$$\pi_z = \begin{cases} \pi \in [0,1] & \text{if } \pi_{z-1} = 0 \\ \{\pi\} & \text{if } \pi_{z-1} > 0. \end{cases}$$

This is the version of the model solved in Section 5.2 of the article.

A.2.1 Characterizing the Mixed Equilibrium

The first step is to prove the lemma from the article characterizing a unique threshold value of p^{max} that determines whether Dynamic Opposition Credibility holds.

Proof of Lemma 2. If we define

$$\Theta_{\text{DOC}}(p^{\text{max}}) \equiv 1 - \delta(1-r) - p^{\text{min}}(1-\mu) + \frac{\delta r}{1-\delta}\alpha(\underline{\pi}(p^{\text{max}}))(p^{\text{max}} - p^{\text{min}})(1-\mu),$$

then the implicit characterization of the threshold is $\Theta_{\text{DOC}}(\hat{p}^{\text{max}}_{\text{DOC}}) = 0$. The following two steps prove the statement.

1. $\Theta_{\text{DOC}}(p^{\text{min}}) = 1 - \delta(1-r) - p^{\text{min}}(1-\mu) < 0$ (Assumption 1).

2. $$\frac{d\Theta_{\text{DOC}}(p^{\text{max}})}{dp^{\text{max}}} = \frac{\delta r}{1-\delta}\Bigg(\underbrace{\alpha(\underline{\pi})}_{\text{Direct}} + \underbrace{\alpha'(\underline{\pi})\frac{d\underline{\pi}}{dp^{\text{max}}}(p^{\text{max}} - p^{\text{min}})}_{\text{Indirect}}\Bigg)(1-\mu) > 0, \quad \text{(A.7)}$$

   where the sign of $\frac{d\underline{\pi}}{dp^{\text{max}}}$ follows from Equation A.6.

   The indirect and direct effects of p^{max} each make Dynamic Opposition Credibility harder to hold. Direct effect: for a fixed value of π, higher p^{max} raises the Opposition's probability of winning a revolt under power sharing, which makes him more willing to wait. Indirect effect: higher p^{max} raises $\underline{\pi}$ because an Opposition who wins with higher probability demands more permanent concessions; which makes him more willing to wait. ■

The equilibrium characterization differs between Cases 1 and 2 of restrictions on the Ruler's power-sharing choice if and only if Ruler Willingness holds and Dynamic Opposition Credibility fails. When the latter is true, I first prove that no equilibrium exists in pure strategies.

Lemma A.5 (No equilibrium in pure strategies)**.** *If Ruler Willingness holds and Dynamic Opposition Credibility fails, then no equilibrium exists in pure strategies.*

Proof. Given Lemma A.4, it suffices to establish that at least one player has a profitable one-shot devision in a strategy profile with any of the following pairs of pure strategies. Recall that we have already established $a(\underline{\pi}, 1-\underline{\pi}) = 1$ in any equilibrium strategy profile.

1. $(\pi, x) = (0, 1)$ and $a(0, 1) = 1$. Opposition Credibility implies that in any high-threat period y, the Opposition has a profitable one-shot deviation to rejecting $(\pi_y, x_y) = (0, 1)$.

2. $(\pi, x) = (0, 1)$ and $a(0, 1) = 0$. Ruler Willingness implies that in any high-threat period y, the Ruler has a profitable one-shot deviation to offering $(\pi_y, x_y) = (\underline{\pi}, 1-\underline{\pi})$.

3. $(\pi, x) = (\underline{\pi}, 1-\underline{\pi})$ and $a(0, 1) = 1$. The Ruler's preference for temporary over power-sharing concessions (which itself follows from Opposition Credibility) implies that in any high-threat period y, the Ruler has a profitable one-shot deviation to offering $(\pi_y, x_y) = (0, 1)$. The needed inequality is

$$\frac{1 - p(\underline{\pi})(1-\mu)}{1-\delta} < \delta V_R, \quad \text{for} \quad V_R = (1-r)(1+\delta V_R) + r\frac{1-p(\underline{\pi})(1-\mu)}{1-\delta}.$$

   Algebraic rearrangement reduces the inequality to $p^{\text{min}}(1-\mu) - (1-\delta(1-r)) > -\alpha(\pi)(p^{\text{max}} - p^{\text{min}})(1-\mu)$. Opposition Credibility implies the left-hand side is strictly positive, which ensures this inequality holds.

4. $(\pi, x) = (\underline{\pi}, 1-\underline{\pi})$ and $a(0, 1) = 0$. The failure of Dynamic Opposition Credibility implies that in any high-threat period y, the Opposition has a profitable one-shot deviation to accepting $(\pi_y, x_y) = (0, 1)$. ■

The profitable one-shot deviation for the fourth pair is subtle. The strategy profile posits $(\pi, x) = (\underline{\pi}, 1-\underline{\pi})$, and therefore the offer $(\pi_y, x_y) = (0, 1)$ would not arise along the equilibrium path in any period y. However, the Opposition's best-response function requires specifying a reaction to *every* possible offer (i.e., at every information set), even those which do not arise along the equilibrium path. Thus, the Opposition's profitable one-shot deviation to accept an offer of purely temporary concessions suffices to eliminate as an equilibrium a strategy profile with the fourth pair of actions.

Lemma A.6 (Optimal mixing probabilities)**.** *If Ruler Willingness holds and Dynamic Opposition Credibility fails, then unique values $\sigma_R^* \in (0,1)$ and $\sigma_O^* \in (0,1)$ satisfy the Ruler's and Opposition's respective indifference conditions.*

Proof: Ruler's probability of sharing power. The Ruler calibrates its probability of sharing power in any high-threat period to make the Opposition indifferent between revolting today and accepting purely temporary concessions while waiting for a future power-sharing deal. This pins down a unique mixing probability, denoted $\sigma_R^* \in (0,1)$:

$$\underbrace{\frac{p^{\min}(1-\mu)}{1-\delta}}_{\text{Revolt}} = \underbrace{1+\delta V_O(0)}_{\text{Wait}}, \tag{A.8}$$

with the recursively defined continuation value

$$V_O(0) = r\Bigg(\underbrace{\sigma_R^* \frac{p(\underline{\pi})(1-\mu)}{1-\delta}}_{\text{Move to power sharing}} + \underbrace{(1-\sigma_R^*)\frac{p^{\min}(1-\mu)}{1-\delta}}_{\text{Revolt or wait}}\Bigg) + \underbrace{(1-r)\delta V_O(0)}_{\text{No power sharing}}. \tag{A.9}$$

To prove the existence and uniqueness of $\sigma_R^* \in (0,1)$, we can implicitly characterize $\Omega_R(\sigma_R^*) = 0$ by solving Equation A.9 for V_O, substituting into Equation A.8, and rearranging

$$\Omega_R(\sigma_R) = \underbrace{-\big(p^{\max}(1-\mu) - (1-\delta(1-r))\big)}_{\text{Opposition Credibility}} + \underbrace{\frac{\delta r}{1-\delta}\alpha(\underline{\pi})(p^{\max} - p^{\min})(1-\mu)}_{\gamma \text{ from Dynamic Opp Cred (Eq. 7)}}\sigma_R. \tag{A.10}$$

Applying the intermediate value theorem establishes existence. The lower bound $\Omega_R(0) < 0$ is equivalent to the Opposition Credibility condition (Assumption 1) holding, the upper bound $\Omega_R(1) > 0$ is equivalent to Dynamic Opposition Credibility failing (Equation 7), and $\Omega_R(\cdot)$ is continuous. Uniqueness follows from

$$\frac{d\Omega_R}{d\sigma_R} = \underbrace{\frac{\delta r}{1-\delta}\alpha(\underline{\pi})(p^{\max} - p^{\min})(1-\mu)}_{\gamma > 0 \text{ from Equation 7}} > 0. \tag{A.11}$$

The intuition for the sign is that the Opposition benefits from a higher probability of the Ruler sharing power; see Appendix A.2.3 for a lengthier discussion of the intuition.

Opposition's probability of accepting purely temporary concessions. The Ruler strictly prefers to share power than surely incur a revolt, given the present assumption that Ruler Willingness holds. But the Ruler gambles if the Opposition might accept a contemporaneous offer that lacks a power-sharing provision. The Opposition calibrates its probability of accepting a purely temporary concessions to make the Ruler indifferent between sharing power and not. This pins down a unique mixing probability, denoted $\sigma_O^* \in (0,1)$:

$$\underbrace{\frac{1-p(\underline{\pi})(1-\mu)}{1-\delta}}_{\text{Share power}} = \underbrace{\overbrace{\sigma_O^*\delta V_R(0)}^{\text{No power sharing}} + (1-\sigma_O^*)\overbrace{\frac{(1-p^{\min})(1-\mu)}{1-\delta}}^{\text{Opposition revolts}}}_{\text{Wait}}, \tag{A.12}$$

$$\text{for} \quad V_R(0) = \underbrace{(1-r)(1+\delta V_R(0))}_{\text{No power sharing}} + r\underbrace{\frac{1-p(\underline{\pi})(1-\mu)}{1-\delta}}_{\text{Share power or wait}}. \tag{A.13}$$

To prove the existence and uniqueness of $\sigma_O^* \in (0,1)$, we implicitly characterize $\Omega_O(\sigma_O^*) = 0$ by solving Equation A.13 for V_R, substituting into Equation A.12, and rearranging

$$\Omega_O(\sigma_O) = -\big(\mu - \alpha(\underline{\pi})(p^{\max} - p^{\min})(1-\mu)\big)(1-\sigma_O) + \frac{1-\delta}{1-\delta(1-r)}\Big(\delta(1-r) - \big(1-p(\underline{\pi})(1-\mu)\big)\Big)\sigma_O. \tag{A.14}$$

Applying the intermediate value theorem establishes existence. The lower bound $\Omega_O(0) < 0$ is equivalent to the Ruler Willingness condition (Equation 5) holding; the upper bound $\Omega_O(1) > 0$ follows from Opposition Credibility, which creates a strict preference for the Ruler to make temporary rather than permanent concessions; and $\Omega_O(\cdot)$ is continuous. Uniqueness follows from

$$\frac{d\Omega_O}{d\sigma_O} = \underbrace{\mu - \alpha(\underline{\pi})(p^{\max} - p^{\min})(1-\mu)}_{>0 \text{ b/c Ruler Willingness}} + \frac{1-\delta}{1-\delta(1-r)}\underbrace{\Big(\delta(1-r) - \big(1-p(\underline{\pi})(1-\mu)\big)\Big)}_{>0 \text{ b/c Ruler prefers temporary concessions}} > 0. \tag{A.15}$$

The intuition for the sign is that the Ruler benefits from a higher probability of the Opposition accepting; see Appendix A.2.3 for a lengthier discussion of the intuition. ■

A.2.2 Equilibrium Strategy Profile

The following proposition formally characterizes the equilibrium strategy profile associated with the paths of play described in Proposition 2. For payoff-equivalent equilibria with conflict, I assume the Ruler sets the temporary concession to its maximum feasible level.

Proposition A.2 (Equilibrium strategy profile for Case 2)**.** *Assume Case 2 of restrictions on the Ruler's power-sharing choice. The following actions constitute an equilibrium strategy profile, which is unique with respect to payoff equivalence.*

For any parameter values:

$$a(\pi_z, x_z) = \begin{cases} 1 & \textit{if } \pi_z \geq \underline{\pi} \textit{ and } x_z \geq x^*(\pi_t) \\ 0 & \textit{if } x_z < x^*(\pi_z) \\ 0 & \textit{if } \pi_z \in (0, \underline{\pi}) \\ 0 & \textit{if } \pi_z = 0 \textit{ and } x_z < 1. \end{cases}$$

If Ruler Willingness (RW) fails, $p^{max} > \hat{p}^{max}_{RW}$***:***

$$(\pi(\pi_{z-1}), x) = (\pi_{z-1}, 1 - \pi_{z-1}) \quad \textit{and} \quad a(0, 1) = 0.$$

If Dynamic Opposition Credibility (DOC) holds, $p^{max} < \hat{p}^{max}_{DOC}$***:***

$$a(0, 1) = 0.$$

If RW and DOC both hold:

$$(\pi(\pi_{z-1}), x) = (\underline{\pi}, 1 - \underline{\pi}).$$

If RW holds and DOC fails:

$$(\pi(\pi_{z-1}), x) = \begin{cases} (\underline{\pi}, 1 - \underline{\pi}) & \textit{with probability} = \sigma_R^* \\ (0, 1) & \textit{with probability} = 1 - \sigma_R^* \end{cases}$$

$$a(0, 1) = \begin{cases} 1 & \textit{with probability} = \sigma_O^* \\ 0 & \textit{with probability} = 1 - \sigma_O^*. \end{cases}$$

A.2.3 Comparative Statics on Maximum Threat

Lemmas 1 and 2 showed that higher values of $p^{\max}$ make both Ruler Willingness and Dynamic Opposition Credibility strictly harder to hold. Proposition A.3 formally characterizes how $p^{\max}$ affects the interior mixing probabilities.

Proposition A.3 (Comparative statics on interior mixing probabilities)**.**

- ***Part A.*** *Raising* p^{max} *strictly decreases* σ_R^**, the equilibrium probability of power sharing in the mixed equilibrium (characterized in Lemma A.6).*
- ***Part B.*** *Raising* p^{max} *strictly increases* $(1 - \sigma_R^*)(1 - \sigma_O^*)$*, the equilibrium probability of a revolt in the mixed equilibrium (characterized in Lemma A.6).*

Proof of Part A. Need to show

$$\frac{d\sigma_R^*}{dp^{\max}} = -\frac{\frac{\partial \Omega_R(\sigma_R^*)}{\partial p^{\max}}}{\frac{\partial \Omega_R(\sigma_R^*)}{\partial \sigma_R^*}} < 0.$$

Equation A.11 established that the denominator is strictly positive, and therefore it suffices to show

$$\frac{\partial \Omega_R(\sigma_R^*)}{\partial p^{\max}} = \frac{\delta r}{1 - \delta} \Big(\underbrace{\alpha(\underline{\pi})}_{\text{Direct}} + \underbrace{\alpha'(\underline{\pi}) \frac{d\underline{\pi}}{dp^{\max}} (p^{\max} - p^{\min})}_{\text{Indirect}} \Big) (1 - \mu) > 0.$$

Proof of Part B. The relevant derivative is

$$\frac{d}{dp^{\max}}\Big((1-\sigma_R^*)(1-\sigma_O^*)\Big) = -\Bigg((1-\sigma_R^*)\frac{d\sigma_O^*}{dp^{\max}} + (1-\sigma_O^*)\frac{d\sigma_R^*}{dp^{\max}}\Bigg).$$

The proof of part a established $\frac{d\sigma_R^*}{dp^{\max}} < 0$, and therefore we need to show

$$\frac{d\sigma_O^*}{dp^{\max}} = -\frac{\frac{\partial \Omega_O(\sigma_O^*)}{\partial p^{\max}}}{\frac{\partial \Omega_O(\sigma_O^*)}{\partial \sigma_O^*}} < 0.$$

Equation A.15 established that the denominator is strictly positive, and therefore it suffices to show

$$\frac{\partial \Omega_O(\sigma_O^*)}{\partial p^{\max}} = \frac{1-\delta(1-r(1-\sigma_O^*))}{1-\delta(1-r)}\Bigg(\underbrace{\alpha(\underline{\pi})}_{\text{Direct}} + \underbrace{\alpha'(\underline{\pi})\frac{d\underline{\pi}}{dp^{\max}}(p^{\max}-p^{\min})}_{\text{Indirect}}\Bigg)(1-\mu) > 0.$$

■

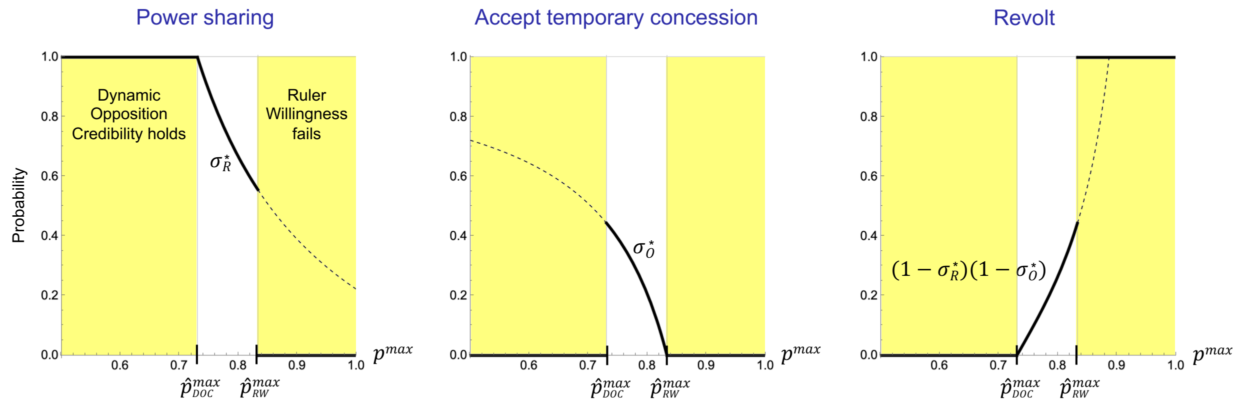
Visual intuition. Figure A.2 provides visual intuition for Proposition A.3. The present figure uses the same parameter values as Figure 6, but here I present a single-dimensional figure and set $p^{\min} = 0.5$. As Figure 6 shows, at this value of $p^{\min}$, there is peaceful power sharing at low values of $p^{\max}$, interior probabilities of power sharing and revolt for intermediate values of $p^{\max}$ (Dynamic Opposition Credibility fails but Ruler Willingness holds), and no power sharing and conflict for high values of $p^{\max}$ (Ruler Willingness fails). In the present figure, $p^{\max}$ is on the x-axis and the equilibrium probability of the specified outcome is on the y-axis. From left to right in the panels: the outcomes are power sharing, that is, the equilibrium probability the Ruler offers $(\pi_z, x_z) = (\underline{\pi}, 1-\underline{\pi})$; accept temporary concession, that is, the equilibrium probability the Opposition accepts if the Ruler offers $(\pi_z, x_z) = (0, 1)$; and the equilibrium probability of a revolt. The probability of each outcome is degenerate (either 0 or 1) in the regions in which Dynamic Opposition Credibility holds or Ruler Willingness fails, and interior in the intermediate region in which Dynamic Opposition Credibility fails and Ruler Willingness holds: σ_R^* for power sharing, σ_O^* for accepting a purely temporary concession, and $(1-\sigma_R^*)(1-\sigma_O^*)$ for a revolt. These figures highlight visually how the mixing probabilities align with the main incentive-compatibility conditions.

Power sharing. The left panel shows $\sigma_R^* = 1$ for the value of $p^{\max}$ at which the Dynamic Opposition Credibility condition holds with equality. This means that the Opposition is indifferent between rejecting an offer of purely temporary concessions and accepting such an offer if the Ruler shares power with probability 1 in the next period. Thus, analyzing the indifference condition derived earlier in Equation A.10 shows

$$\Omega_R(\sigma_R = 1) = 1-\delta(1-r) - p^{\min}(1-\mu) + \frac{\delta r}{1-\delta}\alpha(\underline{\pi})(p^{\max}-p^{\min})(1-\mu) = 0,$$

which is identical to Equation 7 (Dynamic Opposition Credibility) holding with equality. For slightly higher values of $p^{\max}$, Dynamic Opposition Credibility fails. The magnitude by which this

Figure A.2: Equilibrium Probability of Power Sharing and Revolt



Parameter values: $\delta = 0.9$, $r = 0.25$, $\mu = 0.1$, $p^{\min} = 0.5$, $\alpha(\pi) = \pi$.

condition fails — which depends on the value of $p^{\max}$ — determines the precise probability of future power sharing that makes the Opposition indifferent between accepting purely temporary concessions or revolting. Although σ_R^* strictly decreases in $p^{\max}$, this probability never hits 0. This follows by construction from the Opposition Credibility condition; the Opposition will not accept temporary concessions without a prospect of a future power-sharing concession. Formally,

$$\Omega_R(\sigma_R = 0) = 1 - \delta(1-r) - p^{\min}(1-\mu) = 0,$$

which violates Assumption 1 (Opposition Credibility holds).

Accepting purely temporary concessions. The center panel shows $\sigma_O^* = 0$ for the value of $p^{\max}$ at which the Ruler Willingness condition holds with equality. This means that the Ruler is indifferent between buying off an empowered Opposition and fighting against a weaker one. Thus, analyzing the indifference condition derived earlier in Equation A.14 shows

$$\Omega_O(\sigma_O = 0) = \mu - \alpha(\underline{\pi})(p^{\max} - p^{\min})(1-\mu) = 0,$$

which is identical to Equation 5 (Ruler Willingness) holding with equality. For slightly lower values of $p^{\max}$, Ruler Willingness holds. The magnitude by which this condition holds — which depends on the value of $p^{\max}$ — determines the precise probability of a revolt in response to purely temporary concessions that makes the Ruler indifferent between sharing power and not. Although the mixing probability σ_O^* strictly decreases in $p^{\max}$, it does not reach 1 even at lower values of $p^{\max}$. This follows from the Ruler's strict preference to buy off the Opposition with temporary rather than permanent concessions. To see how this consideration enters the indifference condition derived earlier, if the Ruler buys off the Opposition with purely temporary concessions, he consumes 0 in every high-threat period and 1 in every low-threat period. Thus, from the perspective of a high-threat period, the Ruler's average expected per-period consumption is $\delta(1-r)$. By contrast, if the Ruler buys off the Opposition by sharing power, his consumption term is $1 - p(\underline{\pi})(1-\mu)$. To see that the first term strictly exceeds the second, we start by slightly rearranging the Opposition Credibility condition to $1 - p^{\min}(1-\mu) < \delta(1-r)$. Because $p(\underline{\pi}) > p^{\min}$, it directly follows that

$1-p(\underline{\pi})(1-\mu)<\delta(1-r)$. Thus we cannot have

$$\Omega_O(\sigma_O=1)=\frac{1-\delta}{1-\delta(1-r)}\Big(\delta(1-r)-\big(1-p(\underline{\pi})(1-\mu)\big)\Big)=0.$$

Revolt. The equilibrium mixed probability of a revolt, $(1-\sigma_R^*)(1-\sigma_O^*)$, is a conjunction of the prior two elements. This probability equals 0 if Dynamic Opposition Credibility holds exactly because the Ruler shares power with probability 1. The mixing probability strictly increases in $p^{\max}$ because the probability of the Ruler sharing power (σ_R^*) and the probability of the Opposition accepting a purely temporary concession (σ_O^*) each strictly decrease in $p^{\max}$. And $(1-\sigma_R^*)(1-\sigma_O^*)<1$ even at the value of $p^{\max}$ for which Ruler Willingness holds exactly because $\sigma_R^*>0$.

A.2.4 Distinctiveness of the Mixed-Strategy Equilibrium

The threat-enhancing effect is not the only possible mechanism that can cause Dynamic Opposition Credibility to fail. Instead, when the power-sharing choice is discrete, the Ruler might be forced to choose between sharing a large amount of power to secure peace as opposed to sharing no power while incurring costs of conflict. This observation simultaneously distinguishes the present mechanism from that in existing work and explains why a mixed-strategy equilibrium exists in the Acemoglu and Robinson (2017) model but not in Castañeda Dower et al. (2020).

Formal analysis. I facilitate a formal comparison between my model and existing ones by relaxing my original assumption that the Ruler can choose any power-sharing level $\pi_z\in[0,1]$. Instead, a positive power-sharing choice must be at least as large as an exogenously specified lower bound, $\pi_z\in\{0\}\cup[\pi^{\min},1]$ for $\pi^{\min}\geq 0$. Thus, the Ruler is confined to sharing either no power or a level at least as high as $\pi^{\min}$. In the original model, implicitly, $\pi^{\min}=0$.

Opposition Credibility (Assumption 1) is unchanged in this extension because it pertains to the Opposition's calculus if the Ruler *does not* share power. However, Ruler Willingness and Dynamic Opposition Credibility each differ. These conditions are now

$$\textbf{Ruler Willingness.}\quad (1-p^{\min})(1-\mu)\leq\begin{cases}1-p(\underline{\pi})(1-\mu) & \text{if } \pi^{\min}\leq\underline{\pi}\\ 1-p(\pi^{\min})(1-\mu) & \text{if } \pi^{\min}\in(\underline{\pi},\overline{\pi})\\ 1-\pi^{\min} & \text{if } \pi^{\min}\geq\overline{\pi}.\end{cases}$$

$$\textbf{Dynamic Opposition Credibility.}\quad 1-\delta(1-r)-p^{\min}(1-\mu)+\gamma\leq 0, \tag{A.16}$$

$$\text{for}\quad \gamma\equiv\begin{cases}\frac{\delta r}{1-\delta}\alpha(\underline{\pi})(p^{\max}-p^{\min})(1-\mu) & \text{if } \pi^{\min}\leq\underline{\pi}\\ \frac{\delta r}{1-\delta}\alpha(\pi^{\min})(p^{\max}-p^{\min})(1-\mu) & \text{if } \pi^{\min}\in(\underline{\pi},\overline{\pi})\\ \frac{\delta r}{1-\delta}\big(\pi^{\min}-p^{\min}(1-\mu)\big) & \text{if } \pi^{\min}\geq\overline{\pi}.\end{cases}$$

If $\pi^{\min} \leq \underline{\pi}$, the analysis is unchanged from the original model. The Ruler can set $\pi_z = \underline{\pi}$, as he would do if there were no constraints on $\pi_z \in [0, 1]$. Thus, the players' consumption terms are the *same* as in the baseline model, Ruler Willingness is the same as Equation 5, and Dynamic Opposition Credibility is the same as Equation 7.

If $\pi^{\min} \in (\underline{\pi}, \overline{\pi})$, the Ruler chooses the lowest-possible power-sharing level $\pi^{\min}$, but this exceeds the unconstrained optimal choice $\underline{\pi}$. However, the permanent concessions are low enough that the Opposition requires positive temporary concessions in high-threat periods. The Ruler can use this policy instrument to hold the Opposition down to indifference, which means the players' consumption terms have the *same form* as in the baseline model. The Opposition's reservation value to a revolt determines the amount of redistribution, although now this reservation value is a function of $\pi^{\min}$ rather than $\underline{\pi}$.

If $\pi^{\min} \geq \overline{\pi}$, the analysis is *qualitatively different* than in the baseline model. The temporary concession hits a corner solution of 0, which prevents the Ruler from holding the Opposition down to indifference. The Opposition's reservation value to revolting — and, hence, the threat-enhancing effect — becomes irrelevant for payoffs, which are instead determined solely by the magnitude of the permanent concession, $\pi^{\min}$ (as in Case C of Lemma A.3). When $\pi^{\min}$ is sufficiently high, the Ruler prefers to incur a revolt rather than make large permanent concessions, $1 - \pi^{\min} < (1 - p^{\min})(1 - \mu)$. This *direct distributional effect* causes Ruler Willingness to fail, a distinct mechanism from the threat-enhancing effect studied throughout this article (see Equation 5). Similarly, if Dynamic Opposition Credibility fails, it is because the Opposition is willing to wait to reap the benefit of the direct distributional effect rather than of the threat-enhancing effect.

Discussion. The most closely related existing models do not account for why a mixed-strategy range exists in the present model. A mixed-strategy range exists in Acemoglu and Robinson (2017) because the power-sharing choice is binary: the autocratic elite grants either no political power to the majority, or full franchise expansion and permanent agenda-setting powers (see also Luo and Xi 2025). Because sharing power yields strictly more consumption for the majority than their reservation value to a revolution, a wedge emerges because of a direct distributional effect. This mechanism is analogous to a high value of the lower bound $\pi^{\min}$ in the present extension.

Castañeda Dower et al. (2020) extend the Acemoglu and Robinson model to allow for continuous levels of institutional reform. This alteration eliminates the mixed-strategy range because the ruling elites can perfectly tailor the majority's probability of winning an election to make them indifferent between accepting or revolting, i.e., $\pi^{\min} = 0$. We might expect the Castañeda Dower et al. (2020) result to apply to the present model, as the space of power-sharing options is continuous here as well. The key difference is the wedge created by the threat-enhancing effect. In the present model, the Ruler sets the power-sharing level to make the Opposition indifferent between accepting or revolting. However, this indifference holds for the Opposition's probability of winning only *after power has shifted in its favor*. But compared to the Opposition's baseline reservation value, sharing power yields a discrete boost in consumption. Thus, despite the continuous space of power-sharing options, the threat-enhancing effect creates a discrete wedge that yields a mixed-strategy range, as shown in Equation A.16. Even if $\pi^{\min} = 0$, we thus also need $p^{\max} \approx p^{\min}$ to eliminate a parameter range in which the equilibrium is in mixed strategies.

A.3 Case 3 of Restrictions on the Power-Sharing Choice

Case 3 of restrictions on the power-sharing choice is: The Ruler can always raise the power-sharing level, choosing $\pi_z \geq \pi_{z-1}$ in every high-threat period. This is the version of the model solved in Section 5.3 of the article. Multiple opportunities to raise the power-sharing level change some aspects of the analysis and require reformulating some other components.

A.3.1 Characterizing the Gradual-Steps Equilibrium

Set of acceptable temporary concessions. The set of temporary concessions the Opposition will accept (for a fixed value of today's power-sharing level π_z) depends on the future sequence of power-sharing offers. Thus, today's temporary concession must satisfy

$$(1-\delta)(\pi_z + x) + \delta\left(\left(1 - \frac{r}{1-\delta(1-r)}\right)\pi_z + \frac{r}{1-\delta(1-r)}\left(p^{\text{min}} + \pi_{z+1}(p^{\text{max}} - p^{\text{min}})\right)(1-\mu)\right) \geq \left(p^{\text{min}} + \pi_z(p^{\text{max}} - p^{\text{min}})\right)(1-\mu). \quad \text{(A.17)}$$

This inequality replaces Eq. 1, and set to equality while writing $x^*(\pi_z)$ replaces Eq. 3.

Gradual steps that converge to minimally acceptable power-sharing level. Lemma A.4 no longer applies. Sharing $\pi_t \in (0, \underline{\pi})$ does not necessarily cause conflict because the Ruler can again raise this level in the future. For conditions under which Dynamic Opposition Credibility fails, the path of power-sharing offers can follow a law of motion created by a linear difference equation $\Omega(\pi_z, \pi_{z+1}) = 0$, for

$$\Omega(\pi_z, \pi_{z+1}) \equiv 1-\delta+\delta\left(\left(1-\frac{r}{1-\delta(1-r)}\right)\pi_z + \frac{r}{1-\delta(1-r)}\left(p^{\text{min}} + \pi_{z+1}(p^{\text{max}} - p^{\text{min}})\right)(1-\mu)\right) - (p^{\text{min}} + \pi_z(p^{\text{max}} - p^{\text{min}}))(1-\mu). \quad \text{(A.18)}$$

Lemma A.7 (Contraction mapping)**.** *The unique steady state of* $\Omega(\pi_z, \pi_{z+1}) = 0$ *is* $\underline{\pi}$*. If Dynamic Opposition Credibility fails, then the sequence* $\{\pi_z\}_{z=1}^{\infty}$ *formed by* $\Omega(\pi_z, \pi_{z+1}) = 0$ *exhibits monotonic asymptotic convergence to* $\underline{\pi}$*.*

Proof. For the unique steady state, $\underline{\pi}$ as characterized in Lemma A.1 is the unique fixed-point solution $\Omega(\pi, \pi) = 0$. Dynamic Opposition Credibility failing is equivalent to $\beta < 1$ (from Equation 12), which implies Equation A.18 is a contraction. This enables applying the Contraction Mapping Theorem, which ensures the sequence of power-sharing offers $\{\pi_z^*\}_{z=1}^{\infty}$ converges asymptotically to $\underline{\pi}$. Finally, Opposition Credibility ensures $\beta > 0$. Therefore, the sequence is sign-preserving, which implies monotonicity. ■

To provide more intuition for why the steady state $\underline{\pi}$ is identical to that originally characterized in Equation 2, we can start from the terms in Figure A.1. The consumption term from the black line there can be rewritten as

$$1-\delta(1-r)+\delta(1-r)\pi = 1-\delta+\delta\Bigg(\Big(1-\frac{r}{1-\delta(1-r)}\Big)\pi+\frac{r}{1-\delta(1-r)}p(\pi)(1-\mu)\Bigg).$$

This is simply the consumption term from Equation A.18 while setting $\pi_{z+1}=\pi_z=\pi$. Thus, a graphical depiction of Equation A.18 at the steady state is identical to Figure A.1.

Ruler's strict preference to minimize power-sharing concessions. In the analysis of Case 1 of restrictions on the Ruler's power-sharing choice, I explained why the Ruler strictly prefers to minimize power-sharing concessions vis-á-vis temporary concessions (see Equation 4). The path characterized in Equation A.18 presumes this is true because $x_z = 1-\pi_z$. I now prove that this choice is optimal because the Ruler's objective function strictly decreases in π_z,

$$(1-\delta)\big(1-(\pi_z+x^*(\pi_z))+\delta V_R(\pi_z)\big).$$

Step 1. Characterize $(1-\delta)\big(\pi_z+x^*(\pi_z)\big)$. For a given π_z, the following value $x^*(\pi_z)$ satisfies the Opposition's indifference condition:

$$(1-\delta)\big(\pi_z+x^*(\pi_z)\big)+\delta\Bigg(\Big(1-\frac{r}{1-\delta(1-r)}\Big)\pi_z+\frac{r}{1-\delta(1-r)}\big(p^{\text{min}}+\pi_{z+1}(p^{\text{max}}-p^{\text{min}})\big)(1-\mu)\Bigg)$$
$$=\big(p^{\text{min}}+\pi_z(p^{\text{max}}-p^{\text{min}})\big)(1-\mu).$$

This easily rearranges to

$$(1-\delta)\big(\pi_z+x^*(\pi_z)\big)$$
$$=\big(p^{\text{min}}+\pi_z(p^{\text{max}}-p^{\text{min}})\big)(1-\mu)-\delta\Bigg(\Big(1-\frac{r}{1-\delta(1-r)}\Big)\pi_z+\frac{r}{1-\delta(1-r)}\big(p^{\text{min}}+\pi_{z+1}(p^{\text{max}}-p^{\text{min}})\big)(1-\mu)\Bigg).$$

Step 2. Characterize $\delta V_R(\pi_z)$. The Ruler's continuation value satisfies

$$\delta V_R(\pi_z)=\delta(1-r)(1-\pi_z+\delta V_R(\pi_z))+\frac{\delta r}{1-\delta}\Big(1-\big(p^{\text{min}}+\pi_{z+1}(p^{\text{max}}-p^{\text{min}})\big)(1-\mu)\Big).$$

The recursive equation solves to

$$\delta V_R(\pi_z)=\frac{\delta(1-r)(1-\pi_z)+\frac{\delta r}{1-\delta}\big(1-(p^{\text{min}}+\pi_{z+1}(p^{\text{max}}-p^{\text{min}}))(1-\mu)\big)}{1-\delta(1-r)}.$$

Step 3. Combine and simplify. We can now substitute these terms into $(1-\delta)\big(1-(\pi_z+x^*(\pi_z))+\delta V_R(\pi_z)\big)$ and factor out expressions to write

$$1-\delta-\big(p^{\text{min}}+\pi_z(p^{\text{max}}-p^{\text{min}})\big)(1-\mu)+\delta\Big(1-\frac{r}{1-\delta(1-r)}\Big)\pi_z+\frac{\delta r}{1-\delta(1-r)}\big(p^{\text{min}}+\pi_{z+1}(p^{\text{max}}-p^{\text{min}})\big)(1-\mu)$$
$$+\frac{1-\delta}{1-\delta(1-r)}\delta(1-r)-\frac{1-\delta}{1-\delta(1-r)}\delta(1-r)\pi_z+\frac{\delta r}{1-\delta(1-r)}-\frac{\delta r}{1-\delta(1-r)}\big(p^{\text{min}}+\pi_{z+1}(p^{\text{max}}-p^{\text{min}})\big)(1-\mu).$$

The three terms in green sum to 1, the two terms in red cancel out, and the two terms in blue cancel out. This leaves $1-\big(p^{\min}+\pi_z(p^{\max}-p^{\min})\big)(1-\mu)$, which can equivalently be written as $1-p(\pi_z)(1-\mu)$. This term is thus identical to Equation 4 and strictly decreases in π_z. ■

Ruler Willingness for any π_{z-1}. Before, the Ruler Willingness condition entailed a single comparison between buying off the Opposition with $\underline{\pi}$ or sharing 0 and incurring a revolt. Now, we must specify the Ruler's willingness to jump either to $\underline{\pi}$ or $\beta\underline{\pi}+(1-\beta)\pi_{z-1}$ for any extant power-sharing level π_{z-1}. If Dynamic Opposition Credibility holds, then the Ruler must be willing to share $\underline{\pi}$,

$$1-\big(p^{\min}+\underline{\pi}(p^{\max}-p^{\min})\big)(1-\mu)\geq\Big(1-\big(p^{\min}+\pi_{z-1}(p^{\max}-p^{\min})\big)\Big)(1-\mu).$$

This easily rearranges to

$$\underbrace{(\underline{\pi}-\pi_{z-1})(p^{\max}-p^{\min})}_{\text{Threat-enhancing effect}}(1-\mu)\leq\underbrace{\mu}_{\text{Cost of revolt}}. \tag{A.19}$$

This is identical to Equation 5, except the inherited power-sharing level π_{z-1} may exceed 0.

If Dynamic Opposition Credibility fails and the equilibrium path of play follows the sequence characterized in Equation A.18, then at any π_{z-1}, the next step in the power-sharing sequence is $\pi_z=\beta\underline{\pi}+(1-\beta)\pi_{z-1}$. Ruler Willingness thus requires

$$1-\Big(p^{\min}+\big(\beta\underline{\pi}+(1-\beta)\pi_{z-1}\big)(p^{\max}-p^{\min})\Big)(1-\mu)\geq\Big(1-\big(p^{\min}+\pi_{z-1}(p^{\max}-p^{\min})\big)\Big)(1-\mu).$$

Expanding terms yields

$$1-p^{\min}(1-\mu)-\beta\underline{\pi}(p^{\max}-p^{\min})(1-\mu)-\pi_{z-1}(p^{\max}-p^{\min})(1-\mu)+\beta\pi_{z-1}(p^{\max}-p^{\min})(1-\mu)$$
$$\geq 1-p^{\min}(1-\mu)-\mu-\pi_{z-1}(p^{\max}-p^{\min})(1-\mu).$$

The two terms in red cancel out, as do the two terms in blue. Rearranging the remaining terms enables us to re-express this inequality in the same form as Equation 5:

$$\underbrace{\beta(\underline{\pi}-\pi_{z-1})(p^{\max}-p^{\min})}_{\text{Threat-enhancing effect at step } z}(1-\mu)\leq\underbrace{\mu}_{\text{Cost of revolt}}. \tag{A.20}$$

The difference equation is a contraction; thus, the largest jump occurs in the first high-threat period when the power-sharing level switches from $\pi_0=0$ to $\pi_1=\beta\underline{\pi}$. Thus, if the incentive-compatibility constraint holds for this step, the Ruler is willing to countenance the full sequence of gradually escalating power-sharing levels. Setting $\pi_{z-1}=0$ in Equation A.20 and simplifying yields

$$\frac{1-\delta}{\delta r}\Big(\underbrace{p^{\min}(1-\mu)-\big(1-\delta(1-r)\big)}_{\text{Opposition Credibility}}\Big)\leq\mu. \tag{A.21}$$

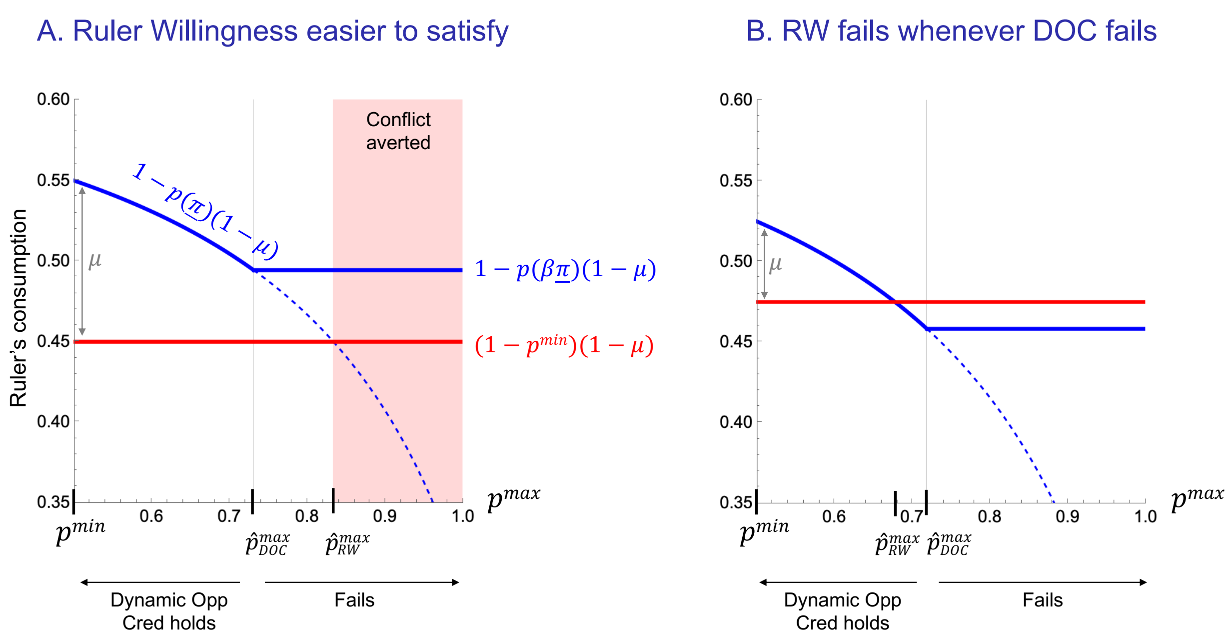
The revised Ruler Willingness condition is relevant only for values of $p^{\max}$ high enough that Dynamic Opposition Credibility fails, $p^{\max} > \hat{p}^{\max}_{\text{DOC}}$. Within this range, though, the modified Ruler Willingness condition is independent of $p^{\max}$. Increasing this parameter raises the steady state $\underline{\pi}$ because Opposition is stronger, but decreases β because the Opposition is more willing to wait for a larger future reward. With the linear functional form $\alpha(\pi) = \pi$, these two effects perfectly cancel out. Consequently, Ruler Willingness hinges entirely on the ordering of $\hat{p}^{\max}_{\text{DOC}}$ and $\hat{p}^{\max}_{\text{RW}}$.

Figure A.3 illustrates the modified Ruler Willingness threshold for specific parameter values. This figure intentionally resembles the Ruler's panel in Figure 2, except that the consumption stream for the Ruler under power sharing switches from $1 - p(\underline{\pi})(1 - \mu)$ to $1 - p(\beta\underline{\pi})(1 - \mu)$ at the point where Dynamic Opposition Credibility switches from holding to failing. For the parameter values in Panel A, a high-enough value of $p^{\max}$ would make the Ruler unwilling to share power if he needed to jump to $\underline{\pi}$ in the first step. However, he is willing to buy off an Opposition who wins with the lower probability $p(\beta\underline{\pi})$. The key parameter restriction that yields this result is $\hat{p}^{\max}_{\text{DOC}} < \hat{p}^{\max}_{\text{RW}}$. By contrast, the lower value of μ in Panel B yields $\hat{p}^{\max}_{\text{DOC}} > \hat{p}^{\max}_{\text{RW}}$. For these parameter values, Ruler Willingness fails for all parameter values in which Dynamic Opposition Credibility fails.

In sum, when Dynamic Opposition Credibility fails,

- If $\hat{p}^{\max}_{\text{DOC}} < \hat{p}^{\max}_{\text{RW}}$, then Ruler Willingness requires that Equation A.21 holds.
- If $\hat{p}^{\max}_{\text{DOC}} > \hat{p}^{\max}_{\text{RW}}$, then Ruler Willingness fails.

Figure A.3: Gradual Power Sharing and Ruler Willingness



Notes: Along the x-axis, the threat-enhancing effect increases in magnitude. The y-axis shows the Ruler's lifetime average expected consumption, from the perspective of a high-threat period with $\pi_{z-1} = 0$.

Parameter values: $\delta = 0.9$, $r = 0.25$, $\mu = 0.1$, $p^{\min} = 0.5$, $\alpha(\pi) = \pi$. In Panel A, $\mu = 0.1$; and in Panel B, $\mu = 0.05$.

Equilibrium strategy profile. The following proposition formally characterizes the equilibrium strategy profile associated with the paths of play described in Proposition 3. For payoff-equivalent equilibria with conflict, I assume the Ruler sets the temporary concession to its maximum feasible level.

Proposition A.4 (Equilibrium strategy profile for Case 3)**.** *Assume Case 3 of restrictions on the Ruler's power-sharing choice. The following actions constitute an equilibrium strategy profile.*

If Dynamic Opposition Credibility holds, $p^{max} < \hat{p}^{max}_{DOC}$:

$$a(\pi_z, x_z) = \begin{cases} 1 & \textit{if } \pi_z \geq \underline{\pi} \textit{ and } x_z \geq x^*(\pi_z) \\ 0 & \textit{otherwise.} \end{cases}$$

$$(\pi(\pi_{z-1}), x) = \begin{cases} (\underline{\pi}, 1 - \underline{\pi}) & \textit{if Equation A.19 holds and } \pi_{z-1} < \underline{\pi} \\ (\pi_{z-1}, 1 - \pi_{z-1}) & \textit{otherwise.} \end{cases}$$

If Dynamic Opposition Credibility fails:

$$a(\pi_z, x_z) = \begin{cases} 1 & \textit{if } \pi_z \geq \beta\underline{\pi} + (1-\beta)\pi_{z-1} \textit{ and } x_z \geq x^*(\pi_z) \\ 0 & \textit{otherwise.} \end{cases}$$

$$(\pi(\pi_{z-1}), x) = \begin{cases} \big(\beta\underline{\pi} + (1-\beta)\pi_{z-1}, 1 - (\beta\underline{\pi} + (1-\beta)\pi_{z-1})\big) & \textit{if } \hat{p}^{max}_{DOC} < \hat{p}^{max}_{RW}\textit{, Eq. A.20 holds, and } \pi_{z-1} < \underline{\pi} \\ (\pi_{z-1}, 1 - \pi_{z-1}) & \textit{otherwise.} \end{cases}$$

A.3.2 Non-Uniqueness of Gradual-Steps Equilibrium

For Cases 1 and 2 of restrictions on the Ruler's power-sharing choice, the equilibrium is unique (with regard to payoff equivalence). This is not true for Case 3 if Dynamic Opposition Credibility fails and Ruler Willingness holds. For example, the mixed equilibrium from Proposition A.2 is also an equilibrium under Case 3, with the addition of appropriately constructed punishment strategies for intermediate power-sharing levels. Suppose that the Ruler chooses $\pi_z = \pi_{z-1}$ in all periods if $\pi_{z-1} \in (0, \underline{\pi})$, and the Opposition revolts in response to any proposal if either $\pi_z \in (0, \underline{\pi})$ or $\pi_{z-1} \in (0, \underline{\pi})$. These strategies are best responses to each other. Given the behavior of the Ruler, the Opposition cannot profitably deviate from revolting; and given the behavior of the Opposition, the Ruler cannot profitably deviate to offering $\pi_z = \underline{\pi}$ if $\pi_{z-1} \in (0, \underline{\pi})$. (Note also that in this strategy profile, the Opposition conditions his action on π_{z-1}, which to this point I have not invoked in any strategies because it is payoff irrelevant). This "punishment phase" when entering the intermediate power-sharing range, in turn, deters the Ruler from ever making such a proposal. Hence neither player can profitably deviate from the strategy profile with mixing.

A.3.3 Comparative Statics on Patience

Increasing players' patience, δ, yields two implications. First, bang-bang power sharing is less likely because it is harder for the original Ruler Willingness condition to hold. Ruler Willingness is premised on a comparison of contemporaneous consumption amounts — smaller share of a larger pie versus larger share of a smaller pie. Thus, there is no direct effect of δ. But the indirect effect makes Ruler Willingness harder to hold: a more patient Opposition demands more permanent concessions because he puts less weight on today's consumption of 1. This yields a larger shift in power away from the Ruler upon sharing power.

Second, as $\delta \to 1$, peace is ensured with an arbitrarily long process of convergence to the steady state under the gradual-steps equilibrium. The reason is that the Opposition puts essentially all its weight on the discrete boost in consumption starting from the period of the power-sharing deal, while almost entirely discounting interim consumption. He can therefore be induced to accept arbitrarily incremental gains. This also makes the Ruler willing to share power.

The most informative comparison with existing results in the literature is to Acemoglu et al. (2012). They analyze only the limiting case of perfect patience, thereby focusing only on the absorbing state and not transition dynamics. Thus, their model breeds the possibility of "slippery slope" dynamics that undercut political transitions: if an expansion in the winning coalition today eventually yields a transition to undesirable steady state, today's incumbent group blocks that transition. By contrast, here, perfect patience *always* facilitates very slow transitions to a steady state with positive power sharing (this finding has some similarity to the main result in Gieczewski 2021). The explicit bargaining process in the present model clarifies the source of the Opposition's bargaining leverage. A perfectly patient Opposition is willing to wait an arbitrarily long period of time to gain the steady-state power-sharing level. This facilitates a slow transition that the Ruler is always willing to countenance, as there is no direct effect of δ in the Ruler Willingness calculus (see Equations 5 and A.20).

Proposition A.5 (Comparative statics on patience)**.**

- ***Part A.*** *Raising δ decreases prospects for bang-bang power sharing by making the original Ruler Willingness condition (Equation 5) strictly harder to hold.*
- ***Part B.*** *Setting $\delta \to 1$ guarantees peace with an arbitrarily long process of convergence to the steady state, in the gradual-steps equilibrium. Specifically, as $\delta \to 1$,*
  - *Dynamic Opposition Credibility is sure to fail.*
  - $\beta \to 0$.
  - *The Ruler is surely willing to share power.*

Proof of Part A: Although I set $\alpha(\pi) = \pi$ when analyzing Case 3 of restrictions on the Ruler's power-sharing choice, here I prove the statement using the general functional form $\alpha(\pi)$.

$$\frac{d}{d\delta}\big(\mu - \alpha(\underline{\pi})(p^{\max} - p^{\min})(1-\mu)\big) = \underbrace{-\alpha'(\underline{\pi})\frac{d\underline{\pi}}{d\delta}(p^{\max} - p^{\min})(1-\mu)}_{\text{Indirect}} < 0,$$

$$\text{with} \quad \frac{d\underline{\pi}}{d\delta} = \frac{(1-r)(1-\underline{\pi})}{\delta(1-r) - \alpha'(\underline{\pi})(p^{\max} - p^{\min})} > 0.$$

Lemma A.1 ensures the denominator of the latter term is positive; in Case A of that lemma, the denominator is positive for any value of π, whereas in Case B of that lemma, the denominator is positive for all π greater than a threshold $\pi_0 < \underline{\pi}$. (Note that Case A of Lemma A.1 is the relevant part of the Lemma for $\alpha(\pi) = \pi$).

Proof of Part B:

- Dynamic Opposition Credibility is sure to fail:

$$\lim_{\delta \to 1} \delta(1-r) - \Big(1 + \frac{\delta r}{1-\delta}\Big)(p^{\max} - p^{\min})(1-\mu) = -\infty.$$

- $\beta \to 0$:

$$\lim_{\delta \to 1} \frac{\delta(1-r) - (p^{\max} - p^{\min})(1-\mu)}{\frac{\delta r}{1-\delta}(p^{\max} - p^{\min})(1-\mu)} = 0.$$

- The Ruler is surely willing to share power: Given part A of the present lemma, it suffices to show (1) The original Ruler Willingness constraint converges to a finite constant, and (2) The limit of the full term in Equation A.21 converges to 0. For the first,

$$\lim_{\delta \to 1} \frac{p^{\min}(1-\mu) - (1 - \delta(1-r))}{\delta(1-r) - (p^{\max} - p^{\min})(1-\mu)}(p^{\max} - p^{\min})(1-\mu) - \mu$$

$$= \frac{p^{\min}(1-\mu) - r}{1 - r - (p^{\max} - p^{\min})(1-\mu)}(p^{\max} - p^{\min})(1-\mu) - \mu = c,$$

  for some $c \in \mathbb{R}$. For the second,

$$\lim_{\delta \to 1} \frac{1-\delta}{\delta r}\Big(p^{\min}(1-\mu) - \big(1 - \delta(1-r)\big)\Big) - \mu = 0.$$

■

A.4 Extensions

The baseline model presumes that the *central government* controls the bargaining object and that sharing power does not entail the Ruler ceding *agenda-setting control*. However, the tensions created by the threat-enhancing effect apply in alternative settings for sharing power. Furthermore, the shift in power induced by the threat-enhancing effect can be delayed somewhat beyond the period in which the power-sharing deal is initiated without qualitatively changing the implications.

A.4.1 Alternative Power-Sharing Settings

Regional autonomy and separatist civil wars. The model carries over almost unchanged when bargaining occurs over resources located with a region controlled by the Opposition (e.g., an ethnic minority group living in a peripheral area of the country). In this setting, bargaining occurs over how much the Center (Ruler) taxes the Periphery (Opposition), as opposed to the reverse direction of transfers in the baseline model. The power-sharing option is a permanent upper bound on the tax rate, which is naturally interpreted as the degree of regional autonomy. And the Periphery's conflict option is to fight a separatist civil war, rather than capture the central government. But incorporating these ideas simply requires relabeling the components of the baseline model; hence, I do not present a formal extension.

One possible qualitative change, which is straightforward to incorporate, is assuming that the Periphery can choose economic exit in response to the Center's demands, which includes physically fleeing or otherwise hiding production from the Center. The would constitute a second outside option besides fighting. The Ruler would never want to tax so high as to trigger the exit option — thereby killing the golden goose. Thus, this exit option would confer a permanent concession to the Opposition even if the Ruler does not grant regional autonomy.

Regime transitions and agenda control. In the baseline model, I conceptualize power sharing as a permanent concession for the Opposition that does not cede agenda-setting control — the Ruler always makes the bargaining offers. The empirical analog is sharing high-ranking positions within the regime without transferring the executive seat itself. However, the core ideas developed apply directly to *regime transitions* as well, which allows for changes over time in who holds the executive position and thereby makes the bargaining offers.

To show this, I add a threat-enhancing effect to the model of regime transitions in Castañeda Dower et al. (2018, 2020). There are three types of periods: (1) the Minority faction (Ruler) is "in power," and the Majority faction (Opposition) is "out of power" and poses a low threat; (2) the Minority is in power and the Majority poses a high threat; and (3) the Minority is out of power, in which case it necessarily poses a low threat. In high-threat periods, the in-power faction makes a bargaining proposal to the out-of-power faction. The power-sharing variable is $\gamma_z \in [0,1]$, which determines the frequency with which the Majority is in power; and unlike my baseline model, there are no permanent concessions. We can think of these as competitive elections with a level of bias chosen by the Minority, with $\gamma_0 = 0$. For simplicity, assume Case 1 of restrictions on power-sharing choice from the present model (can only alter γ_z in the first high-threat period $z = 1$; then the electoral bias is permanently fixed at γ). If the Majority is out of power but poses a high threat, it wins a revolt with probability $p(\gamma)$. This function encompasses the threat-enhancing effect and has the same properties as $p(\cdot)$ in the baseline model. This revises the assumption in Castañeda Dower et al. (2018, 2020) that the Opposition necessarily wins with probability 1 in any period it poses a high threat (as also assumed in related models such as Acemoglu and Robinson 2006 and Powell 2024).

The equilibrium power-sharing level, denoted as $\underline{\gamma}$, is similarly constructed as the threshold $\underline{\pi}$ from the baseline model,

$$\underbrace{1-\delta(1-\underline{\gamma})(1-r)}_{\text{Majority's consumption along peaceful path}} = \underbrace{p(\underline{\gamma})(1-\mu)}_{\text{Revolt}}. \tag{A.22}$$

The Minority contemplates sharing power only when confronting a high threat from the out-of-power Majority. The optimal power-sharing offer equates the Majority's average consumption with its contemporaneous probability of winning a revolt — as in Equation 2. To explain the Majority's consumption term, it retains the entire budget of 1 when in power (frequency γ) because an out-of-power Minority is assumed to never pose a high threat (as in Castañeda Dower et al. 2018, 2020). Furthermore, the Minority can credibly transfer away the entire budget when the Majority is out of power but poses a high threat; frequency $(1-\gamma)r$. But unlike in the baseline model, the Ruler cannot credibly promise *any* concessions whenever the Opposition is out of power and poses a low threat. Thus, the Majority's consumption term subtracts out the fraction $(1-\gamma)(1-r)$ of future periods with no consumption.

The key element of the equilibrium power-sharing level is that the Ruler has to compensate the Opposition for the threat-enhancing effect. Thus, the same tension that inhibits Ruler Willingness is present when sharing power entails alternations in agenda control rather than a permanent concession within the incumbent authoritarian regime. Conflict may occur despite the continuous choice over an institutional reform instrument that, once enacted, is assumed to persist forever (that is, both players can commit to retain the biased elections forever). This contrasts with the unique peaceful equilibrium derived in the Castañeda Dower et al. (2018, 2020) model without a threat-enhancing effect.

A.4.2 Delayed Shifts in Power

To capture delayed shifts in coercive power following a power-sharing deal, assume that in the first high-threat period, $z=1$, sharing π_1 yields a contemporaneous probability that the Opposition wins a revolt of $p^{\min}+s\pi_1(p^{\max}-p^{\min})$, for $s\in[0,1]$ (note that the probability-of-winning term reflects the initial value $\pi_0=0$). The remainder of the power boost kicks in by the second high-threat period, at which point the status quo probability of winning for the Opposition is $p^{\min}+\pi_1(p^{\max}-p^{\min})$. Thus, $s\in[0,1]$ is the fraction of the first shift in power that occurs instantaneously, with $s=1$ corresponding with the baseline model and $s=0$ corresponding with delaying the entire shift until the second high-threat period. In the second and all subsequent high-threat periods, the shift in power is instantaneous, as in the baseline model (the alternative setup of modeling partial shifting in all periods yields a non-convergent second-order difference equation). Assume Case 3 of the restrictions on the power-sharing choice (which means that the Ruler can always revise the power-sharing level upward) and that Dynamic Opposition Credibility holds.

Given the prior analysis, a peaceful path requires setting $\pi_2=\underline{\pi}$. Along a peaceful path, then, the optimal power-sharing choice in the first high-threat period is implicitly characterized as

$$1-\delta+\delta\Bigg(\Big(1-\frac{r}{1-\delta(1-r)}\Big)\pi_1+\frac{r}{1-\delta(1-r)}\big(p^{\min}+\underline{\pi}(p^{\max}-p^{\min})\big)(1-\mu)\Bigg)$$
$$=\big(p^{\min}+s\pi_1(p^{\max}-p^{\min})\big)(1-\mu). \tag{A.23}$$

This solves to $\pi_1 = \kappa(s)\underline{\pi}$, for

$$\kappa(s) \equiv \frac{\delta(1-r) - \left(1 + \frac{\delta r}{1-\delta}\right)(p^{\max} - p^{\min})(1-\mu)}{\delta(1-r) - s\left(1 + \frac{\delta r}{1-\delta}\right)(p^{\max} - p^{\min})(1-\mu)}.$$

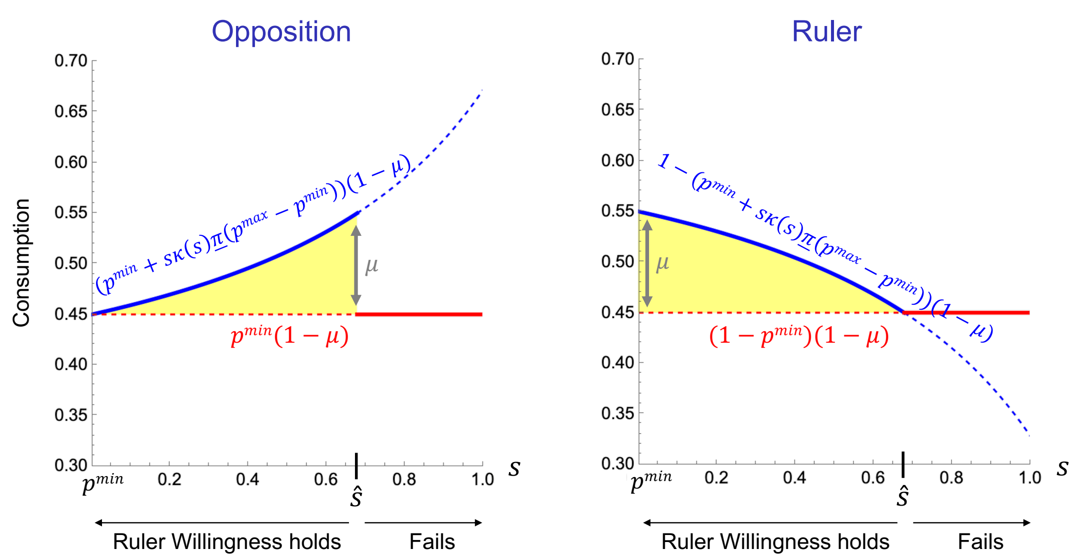
The multiplier $\kappa(s)$ has the following properties: positive numerator because Dynamic Opposition Credibility holds, $\kappa(1) = 1$, $\kappa(s) < 1$ for any $s < 1$, and $\kappa'(s) > 0$. The revised Ruler Willingness condition is

$$s\kappa(s)\underline{\pi}(p^{\max} - p^{\min})(1-\mu) < \mu.$$

If $s = 1$, this is identical to the original Ruler Willingness condition, and if $s = 0$, then this is simply the true expression $\mu > 0$. Figure A.4 depicts the effect of s for parameter values in which Ruler Willingness fails at $s = 1$, i.e., in the original model. The effect of raising s in this extension is nearly identical to the effect of raising $p^{\max}$ in the baseline model, as can be seen by comparing the present figure to Figure 2. Increases in s, just like increases in $p^{\max}$, raise the Opposition's contemporaneous reservation value, which thereby raises its expected consumption while reducing the Ruler's. Because Ruler Willingness fails at $s = 1$ for these parameter values but holds at $s = 0$ for any parameter values, a unique interior threshold value exists that triggers failure. The following lemma presents the main result.

Lemma A.8 (Speed of the power shift and Ruler Willingness)**.** *Assume Dynamic Opposition Credibility holds and the original version of Ruler Willingness fails. In the extension, a unique value $\hat{s} \in (0,1)$ exists such that Ruler Willingness fails in the extension if and only if $s > \hat{s}$.*

Figure A.4: Speed of the Power Shift and Ruler Willingness



Notes: Along the x-axis, the speed of the shift in power increases. The y-axis shows each player's lifetime average expected consumption, from the perspective of any high-threat period in which $\pi_{z-1} = 0$.

Parameter values: $\delta = 0.9$, $r = 0.05$, $\mu = 0.1$, $p^{\min} = 0.5$, $p^{\max} = 0.9$, $\alpha(\pi) = \pi$.

B Supporting Information for African Civil Wars

The Angola and Sudan cases discussed in the article illustrate the perils of the threat-enhancing effect in the context of settling civil wars. Beyond these two cases, in Table B.1, I list every major civil war in Africa since independence that ended with a power-sharing provision. I consider two specific means of sharing power. One is through high-level cabinet positions, in particular a Vice President (VP) or Prime Minister (PM) position. A check in this column requires any of the following: (a) Government retained power but named a rebel leader as VP/PM; (b) Rebels won and named a high-ranking member of the ex-government as VP/PM; (c) A heterogeneous coalition of rebels won and the new rebel president named a member of a different rebel group as VP/PM. The other way to share power is through multi-party elections in which a leading rebel group competes. In cases where the rebels win this election, I denoted the civil war winner as the rebels while marking it in italics. I also tally which of these wars ended with a provision to integrate the existing state military with rebel militia(s), known as military integration (MI), although the table only includes MI cases that also have either cabinet or electoral power sharing. Finally, I denote whether a war involving qualitatively similar actors recurred sometime after a definitive end to the original war (punctuated by a peace agreement and a break in major episodes of fighting).

Several conclusions emerge from this table that substantiate the empirical relevance of key implications from the model. Some form of power sharing is fairly common following major civil wars in Africa. The table includes 28 cases, which comprise 35% of all 81 major civil wars fought in Africa since independence. Although I do not directly compare the frequency of such power-sharing provisions following civil wars to non-conflict years, more than one-third is certainly much higher than the peacetime frequency with which African leaders name opposition leaders as VP/PM or hold a multi-party election following an autocratic spell. Thus, major threats somewhat frequently compel African leaders to share power.

But sharing power with armed actors is perilous and often breaks down into renewed war (18 of the 28 power-sharing cases). Although the reasons for breakdown varied, in numerous cases, rebels took advantage of the leverage gained from their inclusion in the government to renew combat and ultimately defeat the government. Chad's fluctuating governments in the late 1970s and early 1980s illustrate the threat-enhancing effect of sharing power (Collier 1990, 20–31; Nolutshungu 1996). Military dictator Félix Malloum negotiated the incorporation of FAN rebel leader Hissène Habré into a National Union Government in August 1978, naming Habré as Prime Minister. However, when relations broke down in February 1979, Habré seized his position at center to easily displace Malloum and the state military from the capital. Later that year, Habré negotiated his inclusion within another Government of National Unity with members of the ex-government and rival rebel group FAP; Habré served as Minister of Defense. Once again, though, in early 1980, Habré used his position at the center to challenge the FAP president, and became president himself upon winning in 1982.

Similar elements were at play in the Ivory Coast (International Crisis Group 2007; Martin et al. 2022). A civil war began in 2002 in response to the exclusion of Northerners from power in the central government. Although the New Forces rebel group failed to displace President Laurent Gbagbo, their military advances effectively split the country into a government-controlled South and rebel-controlled North. Major fighting ended by May 2003, but a series of proposed ceasefires and power-sharing deals failed to gain buy-in from the rebels until the Ouagadougou Political Agreement of March 2007. A key provision was for the leader of the New Forces, Guillaume Soro, to become Prime Minister, a concession which Gbagbo had resisted for years. Reflecting the perils of the threat-enhancing effect, when Gbagbo attempted to coercively retain power following the rigged 2010 election, the New Forces were well-positioned to depose him.

Failed power sharing and renewed fighting is also common following rebel victory, when fractured coalitions attempt to share power among the leaders of disparate armed groups whose only source of unity had been a negative coalition against a hated incumbent (Clarke et al. 2025). Rebels defeated the Idi Amin government in Uganda in 1979, but the resultant FNLA government was an uneasy coalition between the Kikosi Maalum militia, led by former President Milton Obote; and FRONASA, led by Yoweri Museveni, who served as Minister of Defense in the new government. Thus, multiple armed groups were incorporated into high-level government positions, creating a threat-enhancing effect. Following a rigged election won by Obote in 1980, Museveni split his troops from the state military and fought a renewed war, ultimately defeating the government in 1986. Similar cases with failed power-sharing attempts among formerly allied combatants include breakdown among disparate factions of Séléka in the Central African Republic in 2013, the EPRDF coalition in Ethiopia (which became the new government in 1991 but fractured in 2019, followed by a major civil war), and distinct factions of the SPLM in South Sudan (which broke down in 2013). In all these cases, the new regime leaders effectively had no choice but to incorporate distinct armed groups into the initial government, but they subsequently broke down because of tensions created by the threat-enhancing effect.

Table B.1: African Civil Wars Ending with Power-Sharing Provisions

Country	End	Aims	Winner	Cabinet	Election	MI	Recur
Guinea-Bissau	1999	Center	Rebels	✓	✓	✓	
Mali	2013	Separatist	Government		✓		✓
Ivory Coast	2004	Center	Government	✓		✓	✓
Ivory Coast	2011	Center	Rebels	✓			
Liberia	1996	Center	*Rebels*	✓	✓	✓	✓
Liberia	2003	Center	Rebels	✓	✓	✓	
Sierra Leone	1998	Center	Rebels	✓			✓
Sierra Leone	2001	Center	Government		✓	✓	
CAR	2013	Center	Rebels	✓			✓
Chad	1978	Center	Government	✓			✓
Chad	1979	Center	Rebels	✓		✓	✓
Chad	1990	Center	Rebels	✓			✓
DRC	2003	Center	Government	✓	✓	✓	✓
Uganda	1979	Center	Rebels	✓	✓		✓
Burundi	1998	Center	Government	✓		✓	✓
Burundi	2003	Center	Rebels	✓	✓	✓	
Rwanda	1994	Center	Rebels	✓		✓	✓
Ethiopia	1991	Mixed	Rebels	✓	✓		✓
Angola	1975	Separatist	Rebels	✓		✓	✓
Angola	1991	Center	Government		✓	✓	✓
Mozambique	1994	Center	Government		✓	✓	
Zimbabwe	1979	Center	*Rebels*		✓	✓	
South Africa (Namibia)	1989	Separatist	*Rebels*		✓	✓	
Sudan	1972	Separatist	Government	✓		✓	✓
Sudan	2005	Mixed	Government	✓		✓	
South Sudan	2011	Separatist	Rebels	✓			✓
South Sudan	2015	Center	Government	✓			✓
South Sudan	2020	Center	Government	✓			

Notes: This table is based on data compiled for a broader, unpublished empirical project by the author on power sharing in Africa. The set of major civil wars is sourced from Correlates of War (Sarkees and Wayman 2010; Dixon and Sarkees 2015) and conflicts in the Armed Conflict Dataset (Gleditsch et al. 2002; Davies et al. 2025) with at least one year of at least 1,000 battle deaths; these are also the sources for coding conflict recurrence. Civil war winners and post-war power sharing are coded by author using country-specific historical dictionaries, Library of Congress *Country Studies*, *Elections in Africa: A Data Handbook* (Nohlen et al. 1999), the UCDP Peace Agreement Dataset (Pettersson et al. 2019), and various country-specific monographs and online sources. The civil war winner is whichever side controlled the executive post afterwards; cases in which the rebels gained this position by winning a competitive election are denoted in italics. Military integration is coded using information from Hartzell (2014) and Pettersson et al. (2019).