Accessing the State: Executive constraints and credible commitment in dictatorship

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Abstract

A central finding from research on dictatorships is that institutionalized forms of autocracy are the most stable. A key assumption underlying this argument is that institutions can always credibly constrain leaders. This article unpacks this assumption by examining how and when institutions provide commitment power in dictatorships. We argue that institutions successfully constrain leaders only when they provide other elites with access to the state, thereby empowering potential challengers. We present a game theoretic model where regime institutionalization shifts the future distribution of power in favor of elites, alleviating commitment problems in bargaining. We show that leaders are likely to place constraints on their own authority when they enter power especially weak. Even if a leader receives a particularly "bad" draw of weakness in the initial period, commitment problems that arise in the present swamp future considerations. We illustrate the model's findings through case studies of Cameroon and Côte d'Ivoire.

1 Introduction

> *"Montesquieu observed that, at the birth of new polities, leaders mold institutions, whereas afterwards institutions mold leaders."*
>
> *Robert Putnam,* Making Democracy Work*, 1993, p. 26*

A central finding from research on authoritarian regimes is that institutionalized forms of dictatorship tend to be the most stable. Dominant-party regimes led by established ruling organizations tend to last longer, experience high levels of economic growth, and are less susceptible to popular unrest compared with military or personalist dictatorships (Geddes, 1999; Gehlbach and Keefer, 2012; Magaloni, 2006; Levitsky and Way, 2010; Wright, 2008). Parties help dictators facilitate cooperation within the ruling coalition by solving commitment and monitoring problems (Boix and Svolik, 2013; Brownlee, 2007; Magaloni, 2008; Reuter, 2017; Svolik, 2012) and can channel benefits of state power to elites (Greene, 2007, 2010; Slater, 2010). Legislatures and elections can also serve leaders' strategic interests by providing controlled outlets for bargaining, cooptation, and dissent (Blaydes, 2011; Gandhi, 2008; Gandhi and Przeworski, 2007; Gandhi and Lust-Okar, 2009; Lust-Okar, 2006; Malesky and Schuler, 2010; Truex, 2016). Autocratic constitutions serve as publicly observable signals that help solve coordination and commitment problems in dictatorships (Albertus and Menaldo, 2012; Ginsburg and Simpser, 2013). In sum, institutions that constrain executive authority and codify the distribution of power between leaders and elites provide an important source of stability in authoritarian regimes.

Despite the benefits of autocratic institutions, however, not all dictatorships are institutionalized or have the organizational capacity to carry out such important functions. The extent to which regimes are institutionalized varies quite drastically across leaders[1] and over time. Unlike the often-cited examples of China under the Chinese Communist Party (CCP) or Mexico under the *Partido Revolucionario Institucional* (PRI), many authoritarian regimes are quite unconstrained and personalist. The Democratic Republic of Congo under the dictatorship of Mobutu Sese Seko, for instance, lacked formal institutionalized rules and elites were routinely purged at the will of the leader. Power was concentrated around Mobutu alone, from the time he seized power via a coup, throughout his 28-year rule.

In fact, the *appearance* of democratic-like institutions, such as ruling parties, often obscures the true lack of constraints on the executive. Mobutu promoted and glorified his ruling party (the *Mouvement Populaire de la Revolution* (MPR)) and declared the regime a one-party state. Yet the MPR was entirely subservient to Mobutu and served only to amplify his arbitrary power and cult of personality, rather than act as a vehicle for elite power-sharing (Jackson and Rosberg, 1982).

Regimes that resemble the Democratic Republic of Congo under Mobutu are not simply outliers, but often, the modal story for autocracies. In fact, the *appearance* of formal institutions, such as ruling parties, often obscures the true lack of constraints on the executive. Almost half of all ruling parties that are coded as part of a dominant-party regime from 1946-2008 were not able to outlive the death or departure of the founding leader, placing doubt on the true autonomy and organizational strength of the party (Meng, 2017). Yet the scholarly assumption that institutions *can* always credibly constrain dictators remains black boxed.

Under what conditions do *successful* and *credible* executive constraints become established in authoritarian regimes? This article explains why we see differences in the organizational capacity of autocracies by examining the conditions under which leaders choose to institutionalize their regimes along the highest echelons of power.

[1]Leaders of autocratic regimes often refer to themselves as the president. In this article, we will use the terms "leader" and "president" interchangeably.

We define regime institutionalization as the creation of rules and procedures that structure the distribution of power and resources within the ruling coalition. Examples of this include establishing rules governing elite promotion or leadership succession and the appointment of elites to key positions of power within the state. Within the context of autocratic regimes, institutionalization is the process that reduces the personal authority of individual leaders by empowering other elites.

We formalize the argument in a game theoretic model in which an autocrat decides the extent to which she will institutionalize the regime by implementing executive constraints at the start of a two-period bargaining game. In the model, the creation of executive constraints functions to shift the *future* distribution of power in favor of elites, therefore alleviating commitment problems in bargaining by enhancing elites' ability to overthrow the leader in future periods.

A main finding from the model is that autocratic leaders are likely to place constraints on their own authority when they *enter power* weak and susceptible to being deposed. Because per-period transfers are often insufficient to buy quiescence from exceptionally strong elites, initially weak leaders remain in power by making themselves even weaker by providing other elites access to the state in return for their support. Even if the leader receives a particularly "bad" draw of weakness in the first period and is, on average, quite strong relative to elites, the need to alleviate commitment problems in the first period swamp future considerations. As Montesquieu observed, leaders make decisions about institutions at the start of their tenure, and these institutional decisions shape the rest of their rule.

Importantly, this article addresses the key question of *how certain types of institutions constrain leaders*. After all, a leader who can create an institution can also disassemble it as well. How do institutions have any bite in dictatorships? We argue that institutions can credibly constrain leaders only when they change the underlying distribution of power between leaders and elites. When an elite is given a key cabinet position, such as vice president or the minister of defense, he is given access to power and resources that allows him to consolidate his own base of support. Over time, these positions shift the distribution of power away from the president by identifying alternative leaders that elites can rally around if the president were to renege on distributive promises. Institutions that *empower and identify* specific challengers help to solve elite coordination problems, allowing them to better hold incumbents accountable. This article therefore presents a specific mechanism demonstrating how institutions become self-enforcing.

The theory underscores the point that it is that the existence of a democratic façade is not of primary importance. Rather, institutions constrain when they change the underlying distribution of power within the ruling coalition. When a leader institutionalizes the regime, she hands the (figurative) sword to someone else while pointing it at herself. This helps to explain why nominally-democratic institutions cannot necessarily explain why some regimes are institutionalized systems while others remain personalist dictatorships. This is especially true when parties or legislatures are empty vehicles that simply *amplify* the authority of an incumbent, rather than constraining them.[2] Institutions matter, not because they establish de jure rules, *but when they affect de facto political power.*

2 Institutions as Commitment Devices

This article builds on insights from prior scholarship theorizing that institutions allow autocratic leaders to create semi-autonomous structures that can enforce joint rule. Our argument shares similar features with the formal literature on endoge-

[2]We do not claim that *all* parties and legislatures are window dressing institutions that do not constrain leaders. Some autocracies, such as in China, the former Soviet Union, or Mexico under the PRI, have well organized parties and legislatures that do not merely rubber-stamp legislation.

nous democratization (Acemoglu and Robinson, 2001, 2006; Dower et al., 2017), yet departs from these studies in our emphasis on intra-elite conflict, rather than commitment problems between elites and the masses. This study is also related to Boix and Svolik (2013), which focuses on the implications of collective action problems that elites face when threatening to hold autocrats accountable to power-sharing deals. Here we focus on how autocrats choose to institutionalize, given their relative strength, when elites *can* credibly threaten to rebel.[3] This model also shares a similar mechanism with studies that examine when non-democratic governments will institutionalize the ruling party or create anti-corruption institutions in order to check elite predation (Gehlbach and Keefer, 2011; Hollyer and Wantchekon, 2015). Finally, our model also builds on the formal literature highlighting inter-temporal commitment problems that arise as a result of shifts in the distribution of power (Acemoglu and Robinson, 2001, 2006; Powell, 2006, 2012).

Importantly, however, the model presented in this article differs from much of the existing scholarship in that it provides an explicit mechanism for *how* institutions provide commitment power in dictatorships. The establishment of executive constraints empower elites by providing them with access to the state. When an elite is given a key cabinet position, such as vice president or the minister of defense, he is given access to power and resources that allows him to consolidate his own base of support. Elites who are appointed to positions of authority within the regime then become focal points for other elites – they become obvious potential challengers to the incumbent if she were to renege on promises to distribute rent. This is particularly true if a particular appointee, such as the vice president, is designated in the constitution as the legal successor to the incumbent. In such a case, a particular elite is publicly declared the number two authority within the regime,

[3] The model presented in this article also stresses a different mechanism - while Boix and Svolik examine inefficiencies that result from asymmetric information, this model focuses on commitment problems due to stochastic shifts in power.

allowing other elites to coordinate around him. Even when leaders have the ability to choose who they appoint to these key positions – as they often do – the simple act of delegating authority shifts the underlying distribution of power between the leader and her appointees. In the model, this mechanism is formalized as a shift in the future distribution of power against the leader. When a president institutionalizes the regime, she empowers particular elites who become more capable of unseating her in the future.

North and Weingast (1989) first established the idea that leaders can rely on rules that "do not permit leeway for violating commitments" to honor promises made to elites (804). Focusing on the evolution of political institutions in seventeenth-century England, they argue that explicit limits on the Crown's ability to make unilateral policy changes enabled the King to commit more credibly to promises made over fiscal agreements. Following the Glorious Revolution, the Crown now required approval by parliament to make policy changes. As a result, the creation of institutions that constrained the leader had enormous consequences for economic growth.

In a recent study, Cox (2016) returns to North and Weingast's seminal argument by asking the following question: "How can [leaders] make their promises credible enough to sell if they cannot be legally enforced?" (1). This sentiment echoes Svolik's (2012) key observation that "dictatorships inherently lack an independent authority with the power to enforce agreements among key political actors" (2). After all, if the Crown granted parliament the ability to approve or deny policy changes, what prevented the Crown from simply revoking this privilege? Cox argues that part of the "English solution" to this problem was to grant parliament greater control over the allocation of revenue collected through taxation. As a result, the parliament, rather than the Crown, began to control lower-levels of government and resources that were collected by the state (p. 26-33). Rather than simply creating empty rules on paper, changes in budgetary power facilitated power-sharing between the Crown and Members of Parliament. The model presented in the next section formalizes the argument that institutions bind only when they empower specific elites, therefore providing potential challengers with the *ability* to hold incumbents accountable.

3 A Theoretical Model

We model the decision for a leader to institutionalize her regime by implementing executive constraints as part of two-period bargaining game where an incumbent autocrat and a regime elite want to divide a set of benefits. After observing the initial distribution of power, the autocratic leader decides how much to institutionalize the regime. Institutionalization is modeled as a shift in the distribution of power *against* the autocrat in the future period. In other words, institutionalization increases the ability of elites to depose the autocrat, by receiving access to state resources. The key decision is whether the autocrat wants to institutionalize the regime, and if so, how much to institutionalize. If the autocrat chooses not to institutionalize, she will make targeted transfers to elites in each period, at the heightened risk of *not* being able to pay the full amount needed to induce cooperation. We are primarily interested in examining the relationship between regime institutionalization and the distribution of power between the autocrat and elite.

3.1 Model Set Up

Formally, imagine a two player, two-period bargaining game in which an Autocrat (A) and a regime Elite (E) divide a set of benefits or "pies" normalized to size 1.[4] We will refer to the Autocrat using a female pronoun and the Elite using a male

[4] We make the simplifying assumption that regime elites are identical and treat the coalition of elites as a single player (E) in this model.

pronoun. In the first period, A offers x_1 to E, who can accept the division or reject it. If E accepts A's offer in that period, then A and E receive payoffs of $1-x_1$ and x_1, respectively, and A remains in power. The game continues onto the second period, and A makes a new offer.

E can also choose to reject A's offer and remove his support of A. If E rejects A's offer and removes his support of A, then A will be deposed with probability p_t, which varies stochastically in each round. Elite defections are known to be one of the primary drivers of authoritarian breakdown, and the removal of support can be extremely dangerous for incumbents (Haggard and Kaufman, 1995; Reuter and Gandhi, 2011). Research on military coups has shown that they rarely succeed without substantial civilian support. Militaries often oust governments during periods of crisis when citizens express discontent with the civilian leader's incompetence or mismanagement of the economy (Geddes, 2009).

p_t is uniformly distributed on $[0, \bar{p}]$ such that $\bar{p} < 1$.[5] An implication of this functional form assumption is that as $\bar{p}$ rises, the variance in autocrat strength also increases. In other words, an autocrat who is generally weak will also have draws of p_t that vary more than an autocrat who is generally strong and therefore has a smaller range from which p_t is drawn. Existing studies suggest that this assumption can be substantively supported. Many studies consider an important aspect of regime durability to be the capacity to survive crises – such as economic failures, opposition challenges, or external pressures for liberalization (Bratton and van de Walle, 1997; Levitsky and Way, 2012; Pepinsky, 2009). Strong leaders are, by definition, less susceptible to external events or shocks in the distribution of power. In the model, this is represented by a decrease in the variance of p_t for strong autocrats.[6] Note

[5]Although we do not focus on the elite collective action problem, one can interpret p_t as a representation of elites' ability to credibly threaten to remove their support. In other words, low values of $\bar{p}$ can represent elites that face high levels of collective action problems therefore are less likely to be successful in deposing A.

[6]In the appendix we also relax this functional form assumption and show that the results do

that both players observe all draws of p_t and there is complete information in this model.

A period of conflict ends strategic decision-making in the game, and the winner receives all future benefits. If fighting occurs in period 1, then the winner consumes the pie for *both* periods. If fighting occurs in period 2, then the winner consumes the pie for the final period. However, fighting is costly and destroys a fraction of the pie. If a period of conflict occurs, then only a fraction $\sigma \in [0, 1]$ of the pie remains. Commitment problems arise when A cannot pay E enough to maintain his support in the first round because A is constrained by the fact that she cannot credibly commit to honor future promises to E.

A can decide after the initial draw of p_1 whether she wants to institutionalize the regime. Since institutionalization provides elites with access to the state, it functions to shift the future distribution of power away from the leader. Once an elite is appointed to an important cabinet position, such as the vice presidency, he is given access to state resources and becomes a focal point as a potential challenger other elites can rally around if they were to try to depose the leader. Institutionalization therefore shifts the future distribution of power away from the leader by reducing her control over the state. In the model, institutionalization is represented by the parameter $g \in [0, \bar{p}]$. If A chooses $g > 0$, then the period 2 probability that A will be deposed will be drawn from an amended uniform distribution of $[g, \bar{p}]$.[7]. Therefore her offer in period 2 is affected by the institutionalization decision she made at the start of the game. If A sets $g = 0$, then the future distribution of power does not change and both draws of p_t will come from the same uniform distribution $g \in [0, \bar{p}]$.[8]

not change substantively. See the proof of the equilibrium of the game in the appendix for this discussion.

[7]Note that the mean draw of p_2 is higher if A chooses $g > 0$, since g was drawn from a distribution of $[0, \bar{p}]$ prior to institutionalization.

[8]We assume that A does not value g inherently. She does not consume g, it only affects the extent to which the distribution of p_2 shifts. In other words, A only cares about the *results* of g, rather

The game proceeds as follows.

1. In period 1, Nature selects $p_1 \in [0, \bar{p}]$ and both players observe this draw.
2. A selects $g \in [0, \bar{p}]$ then offers $x_1 \in [0, 1]$.
3. E accepts or rejects the offer of x_1.
    (a) If E rejects the offer then a period of conflict ensues. A will be deposed with probability p_1 and remain in power with probability $1 - p_1$. There is a cost, σ, of fighting. The winner of the conflict consumes the remainder of the pie for both periods, and the loser gets nothing for both periods.
    (b) If E accepts the offer, then E receives x_1 and A receives $1 - x_1$. The game moves on to the second period.
4. In period 2, Nature selects $p_2 \in [g, \bar{p}]$ and both players observe this draw.
5. A offers $x_2 \in [0, 1]$.
6. E accepts or rejects the offer of x_2.
    (a) If E rejects the offer then a period of conflict ensues. A will be deposed with probability p_2 and remain in power with probability $1 - p_2$. There is a cost, σ, of fighting. The winner of the conflicts consumes the remainder of the pie for the second period, and the loser gets nothing for the second period.
    (b) If E accepts the offer, then E receives x_2 and A receives $1 - x_2$. The game ends.

than the inherent level of g. This assumption reflects the idea that leaders do not have a preference ordering about the strategies they use to rule. Instead, leaders care only about maximizing rents and time in office.

4 Baseline Model

Now we present the baseline model. First we establish the conditions under which institutionalization will not occur. Then, we will derive equilibrium levels of institutionalization and show that the autocrat will prefer to institutionalize when faced with a commitment problem in period 1. Our equilibrium solution concept is subgame perfect Nash equilibrium.

4.1 No institutionalization

When will the leader decide *not* to institutionalize her regime? In this section, we show that an autocrat who initially enters power strong will not face a commitment problem in period 1. She therefore does not need to institutionalize the regime in order to make an offer that is acceptable to the elite.

Assume that a commitment problem never exists. If that is the case, then A can always make an offer x_t that can always be accepted in both periods. In period 1, A needs to make E indifferent between accepting and rejecting an offer.[9] In other words, A needs to make an offer x_1 that satisfies the following condition:

$$\begin{gathered} EU_E(reject) \leq EU_E(accept) \\ 2\sigma p_1 \leq x_1 + V_E \end{gathered} \tag{1}$$

V_E denotes the continuation value of accepting the offer and moving onto period 2 for E. What is V_E in this case? Recall that we have already assumed that A can always makes an offer x_t that can satisfy equation (1). E's continuation value is therefore equal to the expected value of the offer he will received in the second period.[10] In period 2, the expected value of the offer will be exactly equal to the

[9]Recall that if conflict occurs in period 1, then the winner consumes the pie for *both* periods. Therefore, the expected utility of E rejecting the offer is $2\sigma p_1$.

[10]Note that if the game moves peacefully onto the second period, there will never be fighting.

expected utility of rejecting an offer (since there are no future offers to condition on). Since p_t is uniformly distributed, the expected value of fighting is equal to the *mean* draw of p_2 multiplied by the rewards of winning.

Formally, the continuation value is equal to the following:

$$V_E = \sigma\frac{\bar{p}}{2} \tag{2}$$

We plug the continuation value back into equation (1):

$$2\sigma p_1 \leq x_1 + \sigma\frac{\bar{p}}{2} \tag{3}$$

Since A gets to pocket the remainder of the pie that is not distributed to E, she would prefer to hold E down to his lowest possible reservation price. Formally, A will make the following offer in period 1:

$$x_1^* = max\{0, 2\sigma p_1 - \sigma\frac{\bar{p}}{2}\} \tag{4}$$

Whether A will always be able to make this offer depends on her relative strength in period 1. Recall that the largest possible per period offer A can make is equal to the entire size of the pie, which is normalized to 1.[11] Since A cannot commit to future offers, each per period offer cannot exceed 1.

Proposition 4.1 (No Institutionalization). *When $p_1 \leq \frac{1}{2\sigma} + \frac{\bar{p}}{4} \equiv p_L$, then A can always make an offer x_1 that can induce an acceptance by E. For all $p_1 \in [0, p_L]$, there exists an $x_t \leq 1$ such that $E[U_E(reject)] \leq E[U_E(accept)]$.*

Proposition 4.1 tells us that if A is strong when she first enters power, she will not

Even if Nature draws the worst $p_2 = \bar{p}$ for A, she can always offer $x_2 = p_2$ because this probability is bounded by 1 (the size of the pie).

[11]If p_1 is very small relative to $\bar{p}$, $2\sigma p_1 - \sigma\frac{\bar{p}}{2}$ can actually be a negative number. Because offers are restricted to be within $[0, 1]$ we must restrict x_1 to non-negative numbers.

institutionalize the regime. Recall that p_t is the probability that A will be *deposed*. Therefore high draws of p_t denote a period in which A is weak, and low draws of p_t denote a period in which A is strong. When Nature draws a p_1 that is sufficiently low, A enters power in a position of strength. Because the probability that E can successfully depose A is very low, A will be able to make an offer that will match E's expected utility of rejecting, therefore commitment problems will not occur. In this scenario, A will not institutionalize the regime in equilibrium because she does not need to in order to sustain peaceful bargaining.

If the game does not end after period 1, then in period 2, a commitment problem will never occur. This is because p_t is bounded above by $\bar{p}$, which is assumed to be strictly less than 1. Therefore in period 2, A can always make an offer x_2 that is large enough to induce an acceptance by E.

How does the threshold of no institutionalization, denoted by p_L, change as the support of p_t changes? Keep in mind that p_1 is simply a random draw of p_t, not the average value of p_t. To determine how the threshold changes as the average value of p_t changes, we take the comparative static of p_L with respect to $\bar{p}$.

Proposition 4.2. *As A's average strength decreases, the range for peaceful bargaining without institutionalization increases. Formally,* $\frac{\partial p_L}{\partial \bar{p}} > 0$.

Since p_t is a random variable that is drawn from a uniform distribution on $[0, \bar{p}]$, when $\bar{p}$ is larger, A will be weaker on average.

Put together, Propositions 4.1 and 4.2 produce some interesting counterintuitive results. Recall, from equation (2), that E's continuation value is equal to the average value of fighting in period 2. As $\bar{p}$ increases, E's continuation value also increases. In other words, as A gets weaker, she needs to offer greater shares of the pie in order to satisfy E. In period 1, if E knows that the expected utility of fighting in period 2 is relatively high, then he can expect a large continuation value. This, in turn, puts less pressure on the period 1 offer, x_1.

When A *enters* power strong, she will not institutionalize the regime because she can make an offer that will satisfy E (in this case, the left hand side of equation (1) is small). However, keeping the initial strength of A constant (keeping p_1 constant), as the *average* strength of A decreases, institutionalization becomes less likely (in this case, the right hand side of equation (1) is growing because V_E is increasing). In other words, an initially strong A does not institutionalize. However, an A who is, on average, weak, also does not institutionalize.

4.2 Institutionalization

Now let's assume that an offer x_t large enough to induce an acceptance from E cannot always be made without some degree of institutionalization $g > 0$. In other words, let's assume that $p_1 > p_L$.

4.2.1 Finding the equilibrium level of institutionalization

In period 1, E will accept an offer only if the following condition is satisfied:

$$\begin{aligned} EU_E(reject) &\leq EU_E(accept) \\ 2\sigma p_1 &\leq x_1 + V_E \end{aligned} \tag{5}$$

Lemma 4.1. *If $p_1 > p_L$, A will always offer $x_1 = 1$.*

After observing the period 1 draw of p_t, A must decide what to set g and x_1. In this case, we have assumed that $p_1 > p_L$, therefore an offer larger than 1 is needed in order to induce an acceptance by E. Under these circumstances, A would prefer to set x_1 as large as possible in order to take pressure off of g. Not only is x_1 a per-period offer with no lasting consequences for the second period of the game, g is also a less efficient mechanism for increasing E's continuation value, compared with x_1. See the appendix for the full proof.

After plugging in $x_1 = 1$, we see that A must ensure that V_E is large enough in order to satisfy equation (5).

$$2\sigma p_1 \leq 1 + V_E \tag{6}$$

What is V_E? We know that one of two things must happen in period 2. It is possible A cannot make an offer that satisfies E, and E decides to reject the offer. If this happens, then E's continuation value is equal to his expected utility of fighting. The only other possible outcome is that A can make an offer that satisfies E in period 2. However, A will always try to make the cheapest possible offer to E, which is exactly his expected utility of fighting. Therefore we know that V_E is simply equal to E's expected utility of rejecting in period 2.

$$\begin{aligned} V_E &= EU_E(reject) \\ &= EV(p_2)\sigma \\ &= (\frac{g+\bar{p}}{2})\sigma \end{aligned} \tag{7}$$

We now plug E's continuation value back into equation (6) and solve for g.

$$\begin{aligned} 2\sigma p_1 - 1 &\leq V_E \\ 2\sigma p_1 - 1 &\leq (\frac{g+\bar{p}}{2})\sigma \\ 4p_1 - \frac{2}{\sigma} - \bar{p} &= g^* \end{aligned} \tag{8}$$

Proposition 4.3. *Autocratic leaders will never fully bind their hands, even when* *they choose the optimal level of institutionalization. Formally, it is always the case that $g^* < \bar{p}$.*

In equilibrium, the autocrat never needs to fully institutionalize the regime in order to maintain peaceful bargaining. This finding highlights the fact that autocrats tend to maintain at least some discretionary power, even when they find themselves in the institutionalization equilibrium.

4.2.2 Comparative Statics

We can also take comparative statics of g^* with respect to key parameters of interest.

Proposition 4.4. *As the autocrat's period 1 draw of strength increases, the equilibrium level of institutionalization increases. Formally, $\frac{\partial g^*}{\partial p_1} > 0$.*

Extremely high draws of p_1 implies that the leader is facing a more intense commitment problem in period 1, therefore increases the need for institutionalization. Interestingly, however, we find the *opposite* relationship between the equilibrium level of institutionalization and the *average* distribution of power, $\bar{p}$.

Proposition 4.5. *As the autocrat's average level of strength increases, the equilibrium level of institutionalization decreases. Formally, $\frac{\partial g^*}{\partial \bar{p}} < 0$.*

Why is it the case that as the leader's *average* strength decreases, the need for institutionalization actually decreases as well? If the leader is, on average, weaker, this means that elites have higher levels of de facto power in the future - their expected draw of p_2 will be smaller compared with an autocrat who is, on average, very strong. This expected high draw of p_2 therefore alleviates the need for institutions to provide a good bargain.

Proposition 4.4 provides an interesting contrast with Proposition 4.5. Where autocrat weakness in the first period results in higher levels of institutionalization in order to solve the commitment problem, average levels of autocrat weakness results in lower levels of institutionalization because elites have more defacto political power.

Finally, we can also consider how the the equilibrium level of institutionalization g^* changes with respect to the cost of fighting, σ.

Proposition 4.6. *As the cost of fighting decreases, the equilibrium level of institutionalization increases. Formally,* $\frac{\partial g^*}{\partial \sigma} > 0$.

Recall that σ is the portion of the pie that remains after a period of conflict. Increasing levels of σ suggests that conflict is getting *less* costly. As conflict gets less destructive, the period 1 payoff of rejecting an offer increases because a larger portion of the pie is preserved in the case of conflict. Under these circumstances, it becomes *harder* to buy E off, therefore requiring higher levels of institutionalization.

4.2.3 Determining A's equilibrium behavior

We now know the equilibrium level of institutionalization, g^* required for peaceful bargaining - but will A always prefer to set institutionalize? We consider the tradeoffs A faces when she institutionalizes the regime.[12]

Proposition 4.7 (Benefits of Institutionalization)**.** *If* $g = g^*$*, then conflict does not occur in equilibrium.*

Proposition 4.8 (Costs of Institutionalization)**.** *A's second period consumption is decreasing in* g*. Formally,* $\frac{\partial(1-x_2)}{\partial g} < 0$.

Institutionalizing the regime comes with costs and benefits for A. On one hand, by setting $g = g^*$, conflict will not occur in either period of the game. A is therefore

[12] Changing the functional form of g does not alter the results substantively. For instance, if g was inefficient, say some input $\hat{g}$ would only shift the distribution by $f(\hat{g})$, such that $f(\hat{g}) < \hat{g}$, A will not be more or less likely to institutionalize. See the proof of the equilibrium of the game in the appendix for discussion.

able to pocket the surplus saved from not fighting in her period 2 consumption.[13] On the other hand, as g increases, A's second period consumption decreases. This is because g increases the average draw of p_2. The higher g is, the larger x_2 must be in order to induce an acceptance from E.

Will A want to institutionalize by setting $g = g^*$ in equilibrium? She will institutionalize only if the following condition holds:

$$EU_A(institutionalize) \geq EU_A(not\_institutionalize) \tag{9}$$

Let's start with the right hand side of equation (9). The expected utility of A not institutionalizing is equal to the expected utility of E rejecting the offer x_1. This can be expressed as follows:

$$\begin{aligned} EU_A(E\_rejects) &= EU_A(not\_institutionalize) \\ &= 2\sigma(1 - p_1) \end{aligned} \tag{10}$$

Now we consider A's expected utility from institutionalizing. If A chooses to institutionalize, she will set $g = g^*$ and $x_1 = 1$. As long as A sets $g = g^*$, E will accept the period 1 offer.

$$\begin{aligned} EU_A(E\_accepts) &= EU_A(institutionalize) \\ &= (1 - x_1) + V_A \\ &= 0 + V_A \end{aligned} \tag{11}$$

What is A's continuation value? A gets to pocket the portion of the pie that she

[13]Recall that if a commitment problem occurs in period 1, then A will set $x_1 = 1$ and consume nothing in the first period.

doesn't offer to E, therefore her continuation value is the size of the pie minus the *expected value* of the period 2 offer, x_2.

$$V_A = 1 - EV(x_2) \tag{12}$$

Before we calculate the expected value of x_2, we first keep in mind that *if* the game advances to period 2, then conflict will never occur in equilibrium. Even if Nature happens to draw the worst possible $p_2 = \bar{p}$ for A, she will always be able to make an offer that E can accept, because $\bar{p} < 1$ by assumption. In period 2, A will make the cheapest possible offer to E, so in expectation, x_2 will be equal to the expected value of fighting for E.

$$EV(x_2) = (\frac{\bar{p} + g^*}{2})\sigma \tag{13}$$

Plugging g^* into equation (13) produces the following:

$$EV(x_2) = 2\sigma p_1 - 1 \tag{14}$$

We plug this back into A's continuation value:

$$\begin{aligned} V_A &= 1 - EV(x_2) \\ &= 2 - 2\sigma p_1 \end{aligned} \tag{15}$$

To verify that A will always prefer to institutionalize, we check whether A's expected utility of institutionalizing is larger than A's expected utility of not institutionalizing:

$$\begin{aligned} EU_A(institutionalize) &\geq EU_A(not\_institutionalize) \\ 2 - 2\sigma p_1 &\geq 2\sigma(1 - p_1) \\ 2 &\geq 2\sigma \end{aligned} \tag{16}$$

Since $\sigma \leq 1$ by assumption, equation (16) is always true. A will therefore always prefer to institutionalize if $p_1 > p_L$.

Proposition 4.9. *The equilibrium of the game can be characterized as following:*

1. *(No institutionalization) If $p_1 \leq p_L$, A will set $g = 0$. In period 1, A will offer $x_1 = x_1^*$, and in period 2, A will offer $x_2 = \sigma p_2$. In each round, E will accept each offer if $EU_E(accept) \geq EU_E(reject)$ and reject otherwise.*

2. *(Regime institutionalization) If $p_1 > p_L$, A will set $g = g^*$. In period 1, A will offer $x_1^* = max\{0, x_1^*\}$, and in period 2, A will offer $x_2^* = \sigma p_2$. In each round, E will accept each offer if $EU_E(accept) \geq EU_E(reject)$ and reject otherwise.*

Figure 1 graphs the equilibrium results using different parameter values for σ and $\bar{p}$. The graphs show that institutionalization occurs only when the leader enters power with a particular bad draw of p_1. Leaders do not institutionalize ($g^* = 0$) when p_1, the probability of being deposed in the first period, is lower than p_L. The figure also illustrates that when $p_1 > p_L$, levels of institutionalization increase as the probability of deposing the leader in period 1 increases.

4.2.4 Discussion

The model illustrates *two different types of autocratic rule*, which differ based on the leader's relative strength when she first comes into office. In the "No institutionalization" equilibrium, the autocrat is never incentivized to institutionalize the regime

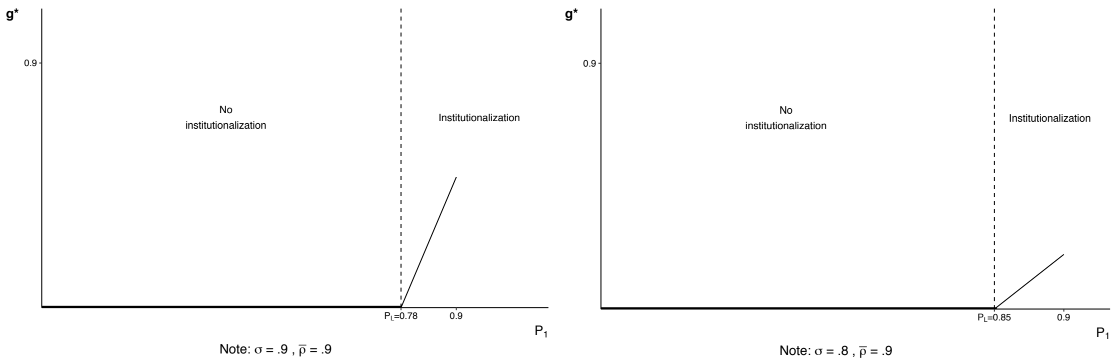

Figure 1: Graphing equilibrium results

because her initial likelihood of being deposed is very low. Leaders who enter power in a relatively strong position will prefer not to empower elites by providing access to the state because they are always able to make a per-period transfer that can be accepted. In the "Regime institutionalization" equilibrium, autocrats who face an initial higher probability of being deposed will implement institutionalization in order to maintain peaceful bargaining in the first period. Although doing so shifts the distribution of power against the leader, institutionalization relaxes demands on the first period transfer by raising the elite continuation value, which allows weaker autocrats to made credible future promises when elites are stronger.

These two different types of autocratic rule have one very important feature in common: conflict never occurs in equilibrium. In other words, initially strong leaders will not institutionalize the regime upon taking office but can remain in power for long periods of time. Initially weak leaders will institutionalize the regime when they first enter power, and these institutional arrangements will also allow them to remain in power for long periods of time. This model highlights the fact that leader tenure should *not* be used as a proxy for strength. This result is consistent with empirical studies that have found no significant relationship between the presence of institutions and leader tenure (Gandhi, 2008; Meng, 2017; Lucardi, 2017).

An important finding from the model is that the optimal level of institutionalization is *partial* institutionalization. Autocratic leaders do not need to fully bind their hands in order to remedy commitment problems that arise from stochastic shifts in the distribution of power. This contrasts with existing studies that tend to model autocratic leaders' choice variables as dichotomous: either no institutionalization or full institutionalization.[14]

In an extension of the model that is presented in Appendix B, we parametrize the size of the pie, in order to account for possible variation in wealth across countries. Rather than normalizing the size of the pie to 1, we introduce the parameter π (which can be larger than 1)to denote the size of the pie. Interestingly, the equilibrium results are unaffected by changes in wealth. This is largely driven by the fact that the bargaining shares in each round are a *proportion* of the total amount of rents available, rather than an absolute amount. When a country is wealthier, elites simply demand the same portion of a larger pie. This finding suggests that leaders who enter power weak - even those with easy access to oil or mineral wealth - are still much more likely to institutionalize, compared with leader who enter power strong.

These results provide some interesting contrasts with findings from existing models. In the Acemoglu and Robinson (2006) model, a main finding is that democratization is most likely to occur if the poor poses a credible threat of rebellion *infrequently* (loosely speaking, when the leader is frequently strong). By contrast, in our model, institutionalization is most likely to occur when the leader enters power weak.[15] What accounts for this difference? In the Acemoglu and Robinson model, the poor can stage a revolution only when nature draws a low cost of rebellion (in the language of the A & R model, when $\mu = \mu_H$). Furthermore, if the poor stages

[14]For example, in the Acemoglu and Robinson model, elites have a choice of either full democratization or no democratization.

[15]Note that in the Acemoglu and Robinson model, elites are the analogous player as the autocrat (A) in our model, and the poor are the analogous player as the elite (E) in our model.

a revolution, it is guaranteed to succeed. In other words, when the poor choose to rebel, they are *guaranteed* a post-revolutionary income of $1-\mu$ in every future period. Because of this, in a world where the poor are very unlikely to hold a credible threat of rebellion (in the language of the A & R model, when q is low), that makes periods where they *can* stage a rebellion extremely valuable. Therefore, when the poor pose a credible threat of rebellion infrequently, they would prefer to revolt whenever they can because the probability of being able to do so is very low in the future.

By contrast, in our model, elites can *always* remove support of the autocrat - they are not, by assumption, constrained to rebel only in periods where the autocrat is weak. Furthermore, when elites initiate conflict, they are not guaranteed to win. Therefore an elite who has a temporarily good draw of p_t does not feel compelled to rebel against the autocrat *as long as* the autocrat can make an offer x_t that can satisfy the elite.[16]

5 Illustrative Case Studies: Cameroon and Côte d'Ivoire

The final section of this article provides two illustrative case studies of Cameroon and Côte d'Ivoire. We will use the case studies to highlight two key insights from the model. First, that institutions constrain when they empower elites by providing them with access to the state. Second, that leaders who initially enter power weak are incentivized to institutionalize the regime in order to remain secure in their rule. The ways in which leaders enter power often have path dependent consequences on the strategies of rule they must pursue in order to remain in power.

[16]Unlike in the Acemoglu and Robinson model, where the probability that elites will be unseated jumps discontinuously from 0 to 1 if the poor initiate a revolution, p_t is a continuous parameter in our model.

We first present the case of Cameroon, which is an example of a regime with high levels of institutionalization under the founding president, Ahmadu Ahidjo. We show how Ahidjo, who was an initially weak leader, used institutional bargains in order to maintain support from other elites – therefore establishing a rule-based system. Unlike Houphouët-Boigny, Ahidjo was not a renowned, charismatic, popular independence leader. He was initially encouraged to run for office by the French colonial authorities, and therefore was often perceived by the public as a cog in the colonial machine. When independence was granted, Ahidjo ascended to the presidency as a highly unpopular leader. To compensate for this initial lack of support, Ahidjo distributed important cabinet positions to other elites.

We juxtapose the case of Cameroon against Côte d'Ivoire under the rule of the founding president, Félix Houphouët-Boigny, which is an example of a regime with low levels of institutionalization. Houphouët-Boigny was a renowned independence leader, who lobbied for the right to self-governance throughout French West Africa. Upon taking power, Houphouët-Boigny was extremely powerful and influential and faced very few credible challenges to his authority. Throughout his tenure, Houphouët-Boigny centralized power within his cabinet, leaving key ministerial positions, such as the vice presidency, vacant.

5.1 Cameroon: Institutionalized Rule

The case of Cameroon under the presidency of Amadou Ahidjo from 1960 to 1982 is an example of a regime with high levels of institutionalization. Cameroon has had formal succession policies written into the constitution since the country gained independence, and term limits were added to the constitution in 1996. Key cabinet ministerial positions have almost always been filled and are quite stable – rotation rates in the Cameroon cabinet are low. The fact that Cameroon, especially in the first decades after independence was granted, had high levels of regime institutionalization may come as a surprise. The existing scholarship on colonial legacies generally claims that former British colonies had stronger institutions that kept rulers in check as well as more robust legal traditions (Hayek, 1960; La Porta et al., 1998; Landes, 1998). Cameroon was mostly French colony prior to independence,[17] yet institutional checks on executive power have always been quite robust, and these constraints were established early on during Ahidjo's rule.

Amadou Ahidjo entered office incredibly unpopular. Unlike other founding presidents in newly independent African countries, Ahidjo was not a national independence hero. On the contrary, he was a long standing civil servant within the colonial administration and largely inherited his position of power from the colonial government. In fact, it was the French authorities who encouraged Ahidjo to run for office in the first place. They referred to him as the "Ahidjo option": given that independence seemed to be increasingly inevitable, the colonial authorities preferred to have Ahidjo as head of state since they believed he would remain a close ally of France throughout his tenure. When Ahidjo first took office as the founding president of a newly independent Cameroon, he was deeply unpopular and (accurately) perceived to be a collaborator of the French colonial authorities (Joseph, 1978).

Upon entering office, Ahidjo needed to create official structures that would allow him to buy the support of key elites. He systematically used cabinet positions in order to secure support from other elites. Ministerial appointments provided "a majority opportunity for Ahidjo to reward influential people in society – or even to build influence for individuals – and to tie them to him" (DeLancey, 1989, p. 59). From 1960 to 1965, for instance, Charles Assale, who was the leader of a regional party in East Cameroon (the *Mouvement d'Action Nationale*) was offered the position of Prime Minister of East Cameroon in exchange for his support of the regime. Elites

[17] A small portion of Cameroon was under British rule.

who opposed Ahidjo's policies or central authority "found themselves without office" in the state bureaucracy (DeLancey, 1989, p. 54). Buying support, however, came at a cost: Ahidjo's own ethnic and regional elites did not control the majority of cabinet ministries - in fact, they were often *under-represented* in the cabinet. Power-sharing under the Ahidjo regime required that the leader relinquish control of the state. In 1975, Ahidjo appointed Paul Biya to be his prime minister – the constitutionally designated successor to the president. Ahidjo kept Biya in this position for seven years and voluntarily retired in 1982. Upon Ahidjo's retirement, Biya became the president of Cameroon and remains in office today.

5.2 Côte d'Ivoire: Personalist Rule

Côte d'Ivoire under the founding presidency of Félix Houphouët-Boigny from 1960 to 1993 is an example of a regime with low levels of institutionalization. Under this regime, the constitution did not include term limits. While the constitution did specify succession procedures, this provision was frequently changed so that the designated successor wavered between the vice president and the president of the National Assembly. Moreover, Houphouët-Boigny kept key positions in the presidential cabinet vacant – including the vice presidency and the minister of defense - so that in practice, there was no appointed successor. Houphouët-Boigny remained in power for three decades, and died while in office in 1993. His designated successor, Henri Konan Bédié, remained in power for only six years before being deposed in a coup. Upon the death of the founding leader, the regime in the Ivory Coast fell apart, reflecting the absence of institutionalization power-sharing within the ruling coalition.

Félix Houphouët-Boigny was already the single most powerful political actor in Côte d'Ivoireeven before he even became president upon independence in 1960. He was born a member of a chiefly lineage and his first wife was of royal lineage as well. In 1944, Houphouët organized one of the earliest independence organizations in the country, the *Syndicat Agricole Africain* (SAA), a political organization aimed to protect the rights of Ivorian farmers. By the time Houphouët emerged as the leader of the SAA, he was also one of the richest African farmers in the entire country, allowing him to self-finance his political campaigns. As Houphouët continued his involvement in politics in the years leading up to independence, he cemented his popularity and influence. In 1946, Houphouët, who was then a member of the French National Assembly, proposed a bill that would abolish forced labor in Overseas Africa. Overnight, Houphouët "became a mythical hero who had imposed his will upon the French...The gratitude he earned from his countrymen has remained a foremost element in his political power and it has prevailed over the hesitations of many followers who questioned his later policies[18]" (Zolberg, 1969, p. 74-74). When Houphouët finally took office as the founding president of Côte d'Ivoire in 1960, he was the single most influential politician in the country and there were "few other national important politicians" of his stature (Jackson and Rosberg, 1982, p. 149).

Houphouët relied on his charisma, influence, and personal power to dominate politics as president of Côte d'Ivoire.[19] Rather than sharing power with other political elites through cabinet appointments, Houphouët relied extensively on French bureaucrats to run the state. The appointment of French technocrats within the state enabled Houphouët to monopolize political power. In fact, he took great pains to shut members of his own ruling coalition out of important government positions. According to Jackson and Rosberg (1982), "The cabinet is *less* a collegial body of *powerful and independent incumbents* and more a technical advisory body to the

[18]In fact, people throughout the country believed that forced labor would be reinstated if Houphouët left office.

[19]In fact, Jackson and Rosberg (1982) referred to the government of the Ivory Coast as the "government of virtually one man" (p. 145).

ruler" (p. 147-148, emphasis added). Houphouët ensured that all major ethnic groups were represented on the cabinet, but *not* by their most prominent politicians.[20] For the majority of the time he was in office, Houphouët did not have a vice president and avoided designating a successor. Through this personalist strategy of rule, Houphouët stayed in power for three decades, though the regime did not persist for long after his death. His successor, Henri Konan Bédié[21], was deposed in a military coup six years after taking office.

6 Conclusion

This article sought to understand why we see differences in the organizational capacity of authoritarian regimes by examining the institutionalization of executive power. Institutionalized regimes serve as effective commitment devices by providing elites with access to important government positions, therefore empowering them to hold the incumbent accountable to promises about rent distribution. Through a formal model we demonstrated that strong autocrats who enter power with a low probability of being deposed are less likely to institutionalize their regimes. Weaker autocrats without such guarantees of stability are more likely to pursue a strategy of institutionalization in order to maintain support from elites. Importantly, rather than assuming that institutions constrain leaders, we show *how* institutions can constrain incumbents by shifting the future distribution of power in favor of other elites. Through case studies of Cameroon and Côte d'Ivoire, we demonstrated how the ways in which leaders enter power have lasting impacts on the strategies they must pursue to stay in power.

This article makes an important contribution to theories of authoritarian stability

[20]In addition, Houphouët's own ethnic group was often overrepresented in the cabinet.

[21]In addition, Bédié was designated as the presidential successor only at the very end of Houphouët's tenure, prior to his death.

by advancing our knowledge of the origins of strong rule-based regimes. In contrast with the general finding that dominant-party regimes tend to be the strongest regime type, we show that the most durable institutional arrangements actually emerge out of autocrat weakness. Our theory suggests a cruel twist of fate. Initially strong leaders are never incentivized to build credible ruling organizations because they are able to remain in power without making institutional commitments to other elites. Yet personalist strategies of rule are ultimately destabilizing in the long run, especially upon the death of the ruler. Conversely, initially weak autocrats who lack a strong basis of support must pursue the counter-intuitive strategy of committing to give power away when they are most vulnerable. Doing so allows such leaders to buy support from elites who would otherwise jump at the opportunity to depose them. Yet at the same time, these self-interested actions generate stable power-sharing institutions, setting the stage for durable authoritarian rule.

The model presented in this article suggests that the initial period of an incumbent's tenure constitutes a critical juncture: whether the incumbent has already consolidated power when they enter office shapes the extent to which they invest in building strong institutions. Future work can examine the timing of regime institutionalization to verify whether most leaders create executive constraints soon after taking power. In addition, scholars can also consider how the process of de-institutionalization occurs. While most research has focused on the emergence of rules that constrain, little attention has so far been devoted to explaining how leaders can remove rules that bind their hands.

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Appendix A Proofs

Proof of Proposition 4.1. A must make an offer $x_1^* = max\{0, 2\sigma p_1 - \sigma\frac{\bar{p}}{2}\}$ in order to induce an acceptance from E. However, A faces a budget constraint of 1 - the size of the entire pie. Under what conditions does the optimal offer required not exceed the size of the entire pie?

$$\begin{aligned} x_1^* &\leq 1 \\ 2\sigma p_1 - \sigma\frac{\bar{p}}{2} &\leq 1 \\ p_1 &\leq \frac{1}{2\sigma} + \frac{\bar{p}}{4} \equiv p_L \end{aligned} \tag{17}$$

As long as the first draw of p_1 is sufficiently small, A will always be able to make an offer x_1^* that can induce an acceptance from E.

□

Proof of Proposition 4.2. It is easy to see that as p_L increases, $\bar{p}$ also increases:

$$\frac{\partial p_L}{\partial \bar{p}} = \frac{1}{4} > 0 \tag{18}$$

□

Proof of Lemma 4.1. A must choose values of x_1 and g such that the following equation is satisfied:

$$2\sigma p_1 \leq x_1 + V_E \tag{19}$$

What is V_E? We know that one of two things must happen in period 2. It is possible A cannot make an offer that satisfies E, and E decides to reject the offer. If this happens, then E's continuation value is equal to his expected utility of fighting. The only other possible outcome is that A can make an offer that satisfies E in period 2. However, A will always try to make the cheapest possible offer to E, which is exactly his expected utility of fighting. Therefore we know that V_E is simply equal to E's expected utility of fighting in period 2. Plugging in E's expected utility of fighting into the equation produces the following inequality:

$$\begin{aligned} 2\sigma p_1 &\leq x_1(\frac{\bar{p}+g}{2})\sigma \\ 2\sigma p_1 - \frac{\bar{p}\sigma}{2} &\leq x_1 + \frac{\sigma}{2}(g) \end{aligned} \tag{20}$$

Since each unit of g is weighted by a fraction $\frac{\sigma}{2}$, it is more efficient to increase x_1 in order to satisfy the inequality, rather than g. □

Proof of Proposition 4.3. We use a proof by contradiction to show that $g^* < \bar{p}$ is always true. First, assume that $g^* \geq \bar{p}$.

$$\begin{aligned} g^* &\geq \bar{p} \\ 4p_1 - \frac{2}{\sigma} - \bar{p} &\geq \bar{p} \\ 0 &\geq 2\bar{p} + \frac{2}{\sigma} - 4p_1 \end{aligned} \tag{21}$$

We know that the first two terms of the last equation are positive. The negative term ($4p_1$) is most negative when p_1 is large. The largest possible value of p_1 is $\bar{p}$. We plug $\bar{p}$ into p_1 and simplify the equation.

$$\begin{aligned} 0 &\geq \frac{2}{\sigma} - 2\bar{p} \\ \bar{p}\sigma &\geq 1 \end{aligned} \tag{22}$$

$\bar{p}$ is strictly less than 1 by assumption and σ is bounded above by 1, therefore the product of $\bar{p}$ and σ must always be strictly less than 1. This is the case for all parameter values of p_1, since we choose the most negative possible value of p_1. We have reached a contradiction. Therefore it must be true that g^* is strictly less than $\bar{p}$ for all parameter values of the model. □

Proof of Proposition 4.4. It is easy to see that as p_1 increases, g also increases:

$$\frac{\partial g^*}{\partial p_1} = 4 > 0 \tag{23}$$

□

Proof of Proposition 4.5. It is easy to see that as $\bar{p}$ increases, g decreases:

$$\frac{\partial g^*}{\partial \bar{p}} = -1 < 0 \tag{24}$$

□

Proof of Proposition 4.6. It is easy to see that g^* increases as σ increases.

$$\frac{\partial g^*}{\partial \sigma} = \frac{2}{\sigma^2} > 0 \tag{25}$$

□

Proof of Proposition 4.7. This proof follows directly from the construction of g^*, which is the minimal level of g that guarantees that the following condition is true: $EU_E(reject) \leq EU_E(accept)$. If $g \geq g^*$, then E will always accept in period 1. If the game makes it to period 2, then conflict will never occur because $\bar{p} < 1$ by assumption, therefore A will always be able to make an offer x_2 that can induce an acceptance by E. □

Proof of Proposition 4.8. A's second period consumption is simply $1 - x_2$, since she can always make an offer x_2 that can induce an acceptance by E. It is easy to see that $1 - x_2$ is decreasing in g:

$$\frac{\partial(1 - x_2)}{\partial g} = \frac{-\sigma}{2} < 0 \tag{26}$$

□

Proof of Proposition 4.9. We break the proof of Proposition 4.9 into two parts. First we establish the No Institutionalization equilibrium.

Proposition 4.1 has already established that if $p_1 \leq p_L$ then A can always make an offer x_1 that can induce an acceptance from E in period 1. Therefore in the No Institutionalization equilibrium, A's best response is to set $g = 0$.

In the second period of the game, A's strict best response is to offer $x_2 = \sigma p_2$ because doing so allows her to pocket the surplus saved from not fighting while offering the smallest possible amount that will induce an acceptance from E. E's best response is to accept an offer that is at least as good as his expected utility of fighting in the second period.

Moving to the first period of the game, A will always choose to set $x_1 = x_1^*$ to ensure peaceful bargaining, rather than choosing to fight because her expected utility from fighting is strictly less.

A's expected utility from peaceful bargaining is equal to $2 - (x_1^* + x_2^*) = 2 - 2\sigma p_1$. A's expected utility from fighting in period 1 is equal to $(1 - p_1)\sigma$. We can show that A's expected utility from peaceful bargaining is higher than her expected utility from fighting in period 1:

$$\begin{aligned} (1 - p_1)\sigma &< 2 - 2\sigma p_1 \\ 0 &< 2 - \sigma(1 + p_1) \end{aligned} \tag{27}$$

We need the difference between the two terms to be greater than zero. Since the largest possible value of σ will make the difference as small as possible, we set $\sigma = 1$.

$$0 < 2 - (1 + p_1) \tag{28}$$

The largest possible value of p_1 is $\bar{p}$ and since $\bar{p}$ is strictly less than 1 by assumption, equation (28) must always be true. Therefore A's strict best response is to offer $x_1 = x_1^*$ in period 1. Once again, E's best response is to accept x_1^* because it is, by construction, the smallest possible offer that can induce an acceptance by E in period 1. We have therefore established a unique equilibrium when $p_1 \leq p_L$.

Now we establish the Regime Institutionalization equilibrium. Here, we assume that $p_1 > p_L$ (otherwise we would be in No Institutionalization equilibrium) and that a peaceful offer cannot be made in period 1 without setting $g = g^*$.

If the game reaches a second period of bargaining, then A can always make an offer that will satisfy E, since $p_2 \leq \bar{p}$, which is strictly less than the total size of the pie. A's strict best response in period 2 is to offer $x_2 = \sigma p_2$ because doing so allows her to pocket the surplus saved from not fighting while offering the smallest possible amount that will induce an acceptance from E. E's best response is to accept an offer that is at least as good as his expected utility of fighting in the second period.

Moving to period 1, depending on her institutionalization decision at the start of the game, A can either make an offer $x_1 = 1$ that will ensure peaceful bargaining if $g = g^*$, or she cannot if $g < g^*$. We show that if A can make an offer $x_1 = 1$, given then $g = g^*$, she will choose to do so, rather than choosing to fight.

We have already established from Lemma 4.1 that if $p_1 > p_L$, then A will always offer $x_1 = 1$. If she chooses to do this, then her total expected utility over the two periods is simply the expected utility of $1 - x_2$, since she receives nothing in period 1. We show that $EU_A(x_1 < 1) < EU_A(x_1 = 1)$.

A's expected utility from fighting in period 1 is equal to $(1 - p_1)\sigma$. To calculate $EU_A(1 - x_2)$, we first establish x_2 given that $g = g^*$. We know that $x_2 = EV(p_2)\sigma$. The expected value of p_2 is the following:

$$\begin{aligned} EV(p_2) &= \frac{\bar{p} + g^*}{2} \\ &= \frac{\bar{p} + 4p_1 - \frac{2}{\sigma} - \bar{p}}{2} \\ &= 2p_1 - \frac{1}{\sigma} \end{aligned} \tag{29}$$

Plugging $EV(p_2)$ into the equation for x_2 gives us the following: $x_2^* = 2p_1\sigma - 1$. A's two period expected utility from peaceful bargaining is therefore $1 - x_2^* = 2 - 2p_1\sigma$. We show that this is strictly larger than A's expected utility from fighting in period 2.

$$\begin{aligned} EU_A(x_1 < 1) &< EU_A(x_1 = 1) \\ (1 - p_1)\sigma &< 2 - 2p_1\sigma \end{aligned} \tag{30}$$

Equation (30) is identical to equation (27), which we have shown to always be true. Therefore, it is always the case that setting $x_1 = 1$ produces a larger expected utility for A than fighting in period 1. A's strict best response, given that $g = g^*$ is to offer $x_1 = 1$ in period 1. E's best response is to accept $x_1 = 1$ because by construction, g^* ensures that E's expected utility of accepting $x_1 = 1$ is greater than or equal to his expected utility of fighting in period 1.

We now move to the very start of the game, where A decides what to set g. We have already established in the body of the paper that it is always true that $EU_A(institutionalize) \geq EU_A(not\_institutionalize)$. Therefore if $p_1 > p_L$, then A's best response is to set $g = g^*$ at the onset of the game. We have therefore established a unique equilibrium when $p_1 > p_L$, concluding our proof for the equilibrium of the game.

$\square$

We can establish that changing the functional form of g does not alter the results substantively. Instead of assuming that $w(g) = g$, let's assume that institutionalization is extremely efficient, such that $h(\tilde{g}) > \tilde{g}$ (in other words, $h(\cdot)$ is concave). How would $\tilde{g}^*$ compare with g^*? We know that $g^* = 4p_1 - \frac{2}{\sigma} - \bar{p} = h(\tilde{g^*}) > \tilde{g^*}$. Therefore, $g^* > \tilde{g^*}$. Unsurprisingly, when institutionalization is efficient, lower levels of institutionalization is required to sustain peaceful bargaining.

Interestingly, however, this does not change the threshold, p_L of institutionalization, not does it make A more or less willing to institutionalize, compared with when $w(g) = g$. First, note that g does not affect the calculation of the threshold, p_L. Second, recall that A does not value g inherently. She does not consume g, it *only* affects the extent to which the distribution of p_2 shifts. In other words, A only cares about the *results* of g, rather than the inherent level of g. Therefore, even if g was inefficient, say if $f(\hat{g}) < \hat{g}$, A will still always be willing to institutionalize.

It is also easy to establish that the results do not change substantively when using an alternative functional form for p_t, in which the variance of p_t does not depend on $\bar{p}$. To see this, we maintain the exact same setup as the original game, except for one difference: assume that p_t is drawn from a uniform distribution of $[p_m - \mu, p_m + \mu]$. In other words, p_t is still centered around some $p_m < \frac{1}{2}$. However, rather than changing the variance of p_t as $\bar{p}$ changes, the interval from which p_t is drawn simply shifts up or down at a constant rate. (We assume that μ remains constant and is sufficiently small, such that p_t remains bounded by 0 and 1.)

Using the same logic as in the body of the paper, it can be shown that when p_m is sufficiently low, peaceful bargaining can always occur without institutionalization.

More precisely, when $p_1 \leq \frac{1}{2\sigma} + \frac{p_m}{2}$, A will never institutionalize.

We can also show that when $p_1 > \frac{1}{2\sigma} + \frac{p_m}{2}$, A will always institutionalize. In this case, A must set $g = g^* = 2p_1 - \frac{1}{\sigma} - p_m$ in order for E to accept $x_1 = 1$ in the first period. To establish that A will always prefer to set $g = g^*$, we show that A's expected utility of institutionalizing is greater than or equal to her expected utility of not institutionalizing. A's expected utility of not institutionalizing remains the same as in the original case, $EU_A(g = 0) = 2\sigma(1 - p_1)$. A's expected utility of institutionalizing, taking into account the equilibrium level of g^* is equal to $EU_A(g = g^*) = 1 + \frac{1}{\sigma} - 2p_1$.

$$\begin{aligned} EU_A(g = 0) &\leq EU_A(g = g^*) \\ 2\sigma(1 - p_1) &\leq 1 + \frac{1}{\sigma} - 2p_1 \\ 0 &\leq 1 + 2\sigma p_1 + \frac{1}{\sigma} - 2(p_1 + \sigma) \end{aligned} \tag{31}$$

To see that this equation is always true, consider the following. If we set $\sigma = 1$, then the equation simplifies to: $0 \leq 2 + 2p_1 - 2(1 + p_1)$, which is always true. If we let σ get as close as possible to zero, then the positive term, $\frac{1}{\sigma}$ blows up. In fact, smaller values of σ ensure that the positive terms of the equation become much larger than the negative terms of the equation. It is therefore always true that A will prefer to institutionalize when faced when a commitment problem, under this modified distribution of p_t.

Appendix B Model extension: Size of the pie

In the baseline model, we normalized the size of the pie to 1. What if we parameterize the size of the pie such that it can change, which would allow us to account for variation in wealth across countries? Rather than setting the size of the pie to 1, we introduce the parameter π to denote the size of the pie (π can be larger than 1).

Does the threshold for the "No Institutionalization" equilibrium change? In period 1, A must make an offer x_1 that will induce an acceptance by E.

$$\begin{aligned} 2\sigma\pi p_1 &\leq x_1 + V_E \\ 2\sigma\pi p_1 &\leq x_1 + \sigma\pi\frac{\bar{p}}{2} \end{aligned} \tag{32}$$

A must offer $x_1^* = max\{0, \sigma\pi(2p_1 - \frac{\bar{p}}{2})\}$. This offer cannot be larger than the size of the pie, π.

$$\begin{aligned} \sigma\pi(2p_1 - \frac{\bar{p}}{2})\} &\leq \pi \\ p_1 &\leq \frac{1}{2\sigma} + \frac{\bar{p}}{4} \equiv p_L \end{aligned} \tag{33}$$

The "No Institutionalization" threshold when the size of the pie is π is the same as the "No Institutionalization" threshold when the size of the pie is normalized to 1. Therefore thresholds of institutionalization *are not affected* by wealth.[22]

Does wealth affect levels of institutionalization? In period 1, E will accept an offer only if the following condition is satisfied:

$$\begin{aligned} EU_E(reject) &\leq EU_E(accept) \\ 2\sigma\pi p_1 &\leq x_1 + V_E \end{aligned} \tag{34}$$

Using similar logic as was established by Lemma 4.1, A will set $x_1 = \pi$. Plugging

[22] When we assume that wealth does not affect the distribution of power between the leader and elites.

this into equation (34) produces:

$$2\sigma\pi p_1 \leq \pi + V_E \tag{35}$$

We know that V_E is simply equal to E's expected utility of fighting in period 2.

$$\begin{aligned} V_E &= EU_E(reject) \\ &= EV(p_2)\sigma\pi \\ &= (\frac{g+\bar{p}}{2})\sigma\pi \end{aligned} \tag{36}$$

We now plug E's continuation value back into equation (35) and solve for g.

$$\begin{aligned} 2\sigma\pi p_1 - \pi &\leq V_E \\ 2\sigma\pi p_1 - \pi &\leq (\frac{g+\bar{p}}{2})\sigma\pi \\ 4p_1 - \frac{2}{\sigma} - \bar{p} &= g^* \end{aligned} \tag{37}$$

The threshold for no institutionalization is unaffected by variation in levels of wealth, and the equilibrium level of institutionalization is also unaffected by wealth. This model extension has implications for the relationship between institutionalization and natural resource availability. It suggests that leaders who enter power weak - even those with easy access to oil or mineral wealth - are still much more likely to institutionalize, compared with leaders who enter power already strong. Moreover, initially weak leaders with easy access to natural resources will institutionalize at a similar rate to initially weak leaders without mineral or oil wealth.