Can Mortality Drive Monarchs Toward Democratic Reforms?*

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Abstract

Do monarchs expecting brief reigns have the incentives to establish democratic institutions? In contrast with prevailing theories in political economy, I argue that the prospect of a short reign may in itself incentivize self-interested monarchs to establish democratic institutions that constrain their powers. To support this argument, I analyze a model of elite-driven democratization, using the reign of Jigme Dorji Wangchuck in Bhutan to illustrate its mechanisms and implications. In this model, absolute monarchy may prove costly and inefficient due to the short time horizons of monarchs who fear death. Consequently, such monarchs may seek to implement democratic institutions which limit their powers, establishing a more efficient constitutional monarchy. In light of this, I highlight how salient signals of a monarch's mortality, such as observable health problems, may act as catalysts for democratic reforms.

Key words: Elite-Driven Democratization, Commitment, Credibility, Taxes, Mortality
JEL Classification: C73, D02, D72, H11, O12, O17, P48

1 Introduction

What motivates powerful leaders, such as monarchs, to establish institutions that limit their own authority? In his seminal theory of state emergence, Olson (1991, 1993) argues that the incentives faced by self-interested leaders with secure positions drive them to establish such institutions to maximize their long-term revenues. In this account, such leaders have an encompassing interest in the output of their subjects, prompting them to create institutional checks on their power to foster long-term investment and economic growth. At the same time, this account suggests that insecure leaders, unable to take a long-term perspective, behave more like roving bandits and have little incentive to implement such measures. Consequently, Olson's account suggests that only leaders

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who expect lengthy tenures can adopt the long-term view necessary to motivate them to implement institutions that constrain their own power.

Alternatively, I propose an account suggesting that the very possibility of a brief tenure, rather than turning a powerful leader into a roving bandit, could be precisely what prompts him to restrict his own authority. To visualize this, imagine a sickly leader confronting his impending death. Such a leader would naturally place less value on future payoffs since it is likely that he will not live to enjoy these payoffs. Accordingly, this leader may be inclined to seize as much as possible in the present, disregarding the property rights of their subjects. So far, this account aligns with existing theory and supports Olson's (1993) prediction that "when an autocrat has no reason to consider the future output of the society at all, his incentives are those of a roving bandit, and that is what he becomes." Yet, this perspective overlooks the extent to which the strategic responses of the leader's subjects affect him. If these subjects observe their leader's declining health and anticipate high levels of expropriation, they will rationally choose not to invest in producing the output that he intends to seize. As a result, a sickly leader might find himself unable to extract any revenues at all. Considering this, he may offer to relinquish some of his power by democratizing as a way of assuaging his citizens' concerns and avoiding this outcome.

In this paper, I develop a dynamic model of politics that fleshes out the strategic problem faced by leaders when they are faced with their own mortality. At the heart of my model is the idea that a sickly leader's imminent death creates a commitment problem which he must overcome to continue extracting revenues from his subjects. In light of this, I propose that such a leader would be driven to adopt democratic reforms to address the problem and secure continued access to revenues. Put simply, democratic reforms in my model function as institutional checks that prevent a leader from expropriating excessively, prompting citizens to maintain their costly production and ultimately guaranteeing the leader's income. Moreover, I show how these reforms are not reversed by a leader's successors, outlasting his tenure and leaving citizens in a strictly better position.

Formally, my model depicts the interactions between a representative citizen, who bears the costs of producing output, and a leader, who derives tax revenues from that output. Initially, these interactions unfold under an absolute monarchy, where the leader is free to set any tax rate after the citizen decides how much to produce. However, this leader may relinquish absolute authority and implement a constitutional monarchy, under which the tax rate is set by the citizen, and can only be challenged through costly repression. By presenting these two distinct institutional options, one authoritarian and one democratic, the model provides a framework for examining an elite-driven transition to democracy.

A central feature of my model is the explicit incorporation of a leader's health and its effect on his incentives. In the model, leaders can be either healthy or sickly: healthy leaders are assumed to live indefinitely but may become sickly at the end of each period, while sickly leaders face a probability of dying each period. Because of this mortality risk, sickly leaders discount future payoffs more heavily than their healthy counterparts. As such, this feature of the model allows me to essentially model variations on the discount factors faced by leaders, and examine how they affect their incentives to pursue

democratic reforms.

In describing a democratization process initiated by a monarch, this paper contributes to the family of formal models of elite-driven democratization. While existing models have emphasized mechanisms such as the threat of costly revolts (Acemoglu and Robinson 2000, 2001, 2006; Fearon and Francois 2023), the prevention of patronage (Lizzeri and Persico 2004), and the nature of economic production (Bates and Lien 1985; Fleck and Hansen 2004), I introduce a novel mechanism driving democratic reforms: the impact of salient health-related shocks on a leader's time horizon.

I am by no means the first to entertain the idea that a leader's incentives and actions depend on the time horizon he faces. As noted earlier, Olson's (1991, 1993) influential account emphasizes the role of a leader's time horizons in shaping their incentives to act as stationary bandits rather than roving ones. Similarly, Grossman and Noh (1990, 1994), Levi (1988), and Winthrobe (1998) argue that leaders who heavily discount future payoffs are more prone to short-term, opportunistic behavior. This paper complements these works by illustrating how a leader's short time horizon can surprisingly lead to more benevolent rather than exploitative behavior.

Furthermore, my model provides a counterpoint to models in the selectorate theory literature regarding the effects of mortality. As De Mesquita and Smith (2011) state, 'Dead leaders cannot deliver rewards to their coalition. Dying leaders face almost as grave a problem. If essential backers know their leader is dying, then they also know that they need someone new to assure the flow of revenue into their pockets.' In other words, they argue that a leader's mortality may prompt his supporters to turn against him and replace him with another authoritarian ruler. Thus, they conclude that a leader's mortality reinforces authoritarianism rather than fostering democratization—contrary to the main argument of this paper.

The remainder of this paper is organized as follows. In section 2, I provide additional motivation by examining the democratic reforms led by the Bhutanese Monarch, Jigme Dorji Wangchuck, during his reign in the mid-twentieth century. In Section 3, I introduce the model, and in Section 4, I discuss its main results. Finally, In section 5, I conclude and suggest possible avenues for further research. All proofs can be found in the Appendix.

2 Reform in the face of death: The Bhutanese experience

Many of the relevant issues addressed by my model are well illustrated by the experience of Bhutan during the reign of Jigme Dorji Wangchuck. In 1952, Jigme Dorji ascended the Bhutanese throne as the nation's third Druk Gyalpo (Dragon King). At the time of his accession, the third Druk Gyalpo inherited a highly centralized absolute monarchy from his predecessors, who, as Rose (1977) describes, had "succeeded in creating a highly centralized system in which royal powers came as close to absolutism as possible in a traditional society with a feudal heritage." Over the course of his reign, however, this centralized political system underwent significant transformation.

Over the following two decades, Jigme Dorji introduced sweeping institutional reforms that transitioned Bhutan's political system from an absolute monarchy toward a more democratic constitutional framework. These reforms began in 1953, when the Druk Gyalpo issued a royal decree establishing the Tshogdu, or National Assembly, an early-stage legislative institution. Initially, its decisions were subject to an unchallengeable royal veto, limiting its legislative authority. But, that would change in 1968, when the Druk Gyalpo requested an amendment to the Tshogdu's constitution, abolishing the royal veto and granting final authority to the Assembly's decisions without requiring the monarch's approval.

In addition to establishing the Tshogdu, Jigme Dorji introduced the Lodoi Tsokde, or Royal Advisory Council, in 1965 to advise him and oversee policy implementation. Then, in 1968, he also instituted the first Council of Ministers, with members selected by the king but approved by the Tshogdu. Together, these two institutions formed part of the nation's cabinet and effectively shared executive authority with the Druk Gyalpo.

Overall, these reforms imposed constraints on both the legislative and executive powers of the Bhutanese monarch, leading the Druk Gyalpo to gradually assume what Dorji (2008) calls "the role of a democratic King." In light of this, it is evident that the third Druk Gyalpo pursued an ambitious reform agenda that decentralized his powers and initiated Bhutan's democratization. Yet, the motivations that pushed him to pursue this agenda remain quite elusive, particularly considering the idiosyncrasies of the Bhutanese experience, as described by Leo E. Rose in "The Politics of Bhutan:"

> Bhutan is not unique, of course, in having a "revolutionary" ruler decide to introduce basic reform programs directed at the modernization of a traditional system. Most monarchical polities, both surviving and extinct, went through the same experience at some point in their history. What makes Bhutan somewhat atypical, however, is the virtual nonexistence of competing elite groups ready to undertake this task, and thus heavy dependence upon a strong-willed and determined monarch for the introduction and implementation of such programs. In most monarchical societies there have been other modernizing agents available: dissident elements within the traditional elite; new elites that are the products of a nontraditional education and socialization system; modernized bureaucratic and military institutions; and the leaders of political organizations, whether extremist (at either end) or middle-of-the-road in their politics. These elite cliques assisted and encouraged the monarch's programs for change, but they were also ready to depose the monarch, or even abolish the monarchical system itself, when this seemed necessary to advance their personal, group, or national interests.
>
> This has not yet been the case in Bhutan, as there have been no institutional competitors to the monarchy and none are evident on the horizon even now.
>
> (Rose 1977)

Taking Rose's (1977) account into consideration, it appears that the typical mechanisms discussed in the literature on elite-driven democratization were absent in the Bhutanese case. Notably, this account emphasizes the fact that the third Druk Gyalpo did not

face threats to his power, suggesting that his reforms, unlike those taken by elites in Acemoglu and Robinson's (2000, 2001, 2006) seminal account, were not driven by a need to avert costly revolution.

Although revolutionary pressures did not threaten the third Druk Gyalpo's rule, the possibility of an untimely death from natural causes posed a different kind of pressure. Throughout his reign, Jigme Dorji Wangchuck had to contend with a severe heart ailment, having already suffered his first heart attack prior to his ascension to the Bhutanese throne.[1] It is likely that this condition, along with its associated risk of early death, influenced the Druk Gyalpo's views. For instance, Dorji (2008) described how His Majesty reflected on the inevitability of death, quoting him as telling his son, "Whoever is born into this world must follow the path to death. I cannot escape this path." This reflection on mortality proved prescient, as the third Druk Gyalpo's heart condition ultimately cut his reign short. In 1972, just over twenty years after his coronation, he died of a heart attack while seeking medical treatment for his condition in Nairobi.

His rule is fondly remembered by the people of Bhutan, who honor him as the "Father of Modern Bhutan," as noted by Dorji (2008). This lasting legacy can, in part, be attributed to the continuity of the democratization process he initiated. His successor, the Fourth Druk Gyalpo, Jigme Singye Wangchuck, not only upheld his father's democratic reforms but also significantly contributed to Bhutan's transformation into a fully democratic state, which was fully realized shortly after the end of his reign.

How could the pressure of a shortened time horizon have motivated the third Druk Gyalpo to implement his agenda of democratic reforms? In what follows, I develop a theory intended to provide a convincing answer to this question. I argue that his shortened time horizon created a commitment problem, one that reduced potential revenues at his disposal. To mitigate this problem, he established institutions aimed at resolving this commitment issue, namely, the democratic institutions implemented during his reign.

3 Model

3.1 Description

In this paper, I model the interactions of a leader K, and a representative citizen C, each with an underlying discount factor of $\delta \in (0,1)$ over an infinite number of discrete periods $t = 1, \ldots$. In each period, K may be healthy (H) or sickly (S) and the government may be an absolute monarchy or a constitutional monarchy with a parliament of strength $r_t \in [0,1)$, with both the type of leader and government being common knowledge. Initially, K is healthy, and the government is an absolute monarchy, but both may change during each period. Formally, the state of the economy each period can be represented by the state variable $\Gamma_t \equiv (\gamma_t, r_t) \in \{H; S\} \times [0,1)$, with $\Gamma_1 = (H, 0)$.

At the beginning of each period under absolute monarchy, C makes a production choice

[1] As described in Khyentse Foundation (2010), the third Druk Gyalpo "had his first heart attack at age 20", four years before his ascension to the Bhutanese throne.

$Y_t \in \{0; 1\}$, at a cost cY_t, with $c \in (0, 1)$. Following this choice, K chooses the level of taxation $T_t \in [0, Y_t]$. Alternatively, at the beginning of each period under constitutional monarchy, C chooses both the production level Y_t and an offer of tax transfers to K, T_t. Following these choices, K can either accept C's offer of T_t or repress the parliament at cost r_t and expropriate Y_t. This decision is captured by the binary variable $E_t \in \{0, 1\}$, where $E_t = 1$ indicates repression of the parliament. In case $E_t = 1$, absolute monarchy is restored and remains in place for all future periods. For simplicity, I will assume that whenever K is indifferent between expropriating and not expropriating, he will choose the latter.

In both institutional frameworks, at the end of every period, payoffs are realized. Then, if K is healthy, he remains healthy in the following period with probability $\phi \in (0, 1)$, and with probability $1 - \phi$, he becomes sickly. Alternatively, if K is sickly, he dies in office with probability $\rho \in (0, 1)$ and is replaced by an identical, healthy heir. Finally, if the government is an absolute monarchy, K may choose to transition to a constitutional monarchy in the following period, establishing a parliament with a given positive strength. That is, he may set r_{t+1} to either 0 or $r \in (0, 1)$.

I assume that K values the payoffs of his descendants less than their own, discounting these by parameter $\beta \in [0, 1)$. Additionally, I assume that whenever $Y_t = 0$ the period a sickly leader dies, then an unrelated successor takes his place instead of one of his descendants. Finally, I impose two additional restrictions on the parameter values in my model.

Assumption 1. $\delta > \frac{c}{\phi}$.

Assumption 2. $\beta < \frac{(1-\delta\phi)c}{\delta[1-c+\delta(1-\phi)]}$.

In essence, Assumption 1 ensures that healthy leaders are sufficiently patient to avoid commitment problems, whereas Assumption 2 implies that a leader's regard for his descendants is insufficient to make mortality concerns irrelevant.

3.2 Equilibrium concept, payoffs, and timing of events

The sequence of events in each period, depending on the type of government, can be summarized as follows:

- Absolute monarchy:
  1. C makes his production choice Y_t,
  2. K makes his choice of taxation T_t,
  3. Payoffs are realized,
  4. If K is of type S, he may die and be replaced. If he is of type H, his type may change to S.
  5. K chooses whether to implement a constitutional monarchy or not.
- Constitutional monarchy:
  1. C makes his production choice Y_t and proposes T_t,

2. K chooses E_t,

3. Payoffs are realized,

4. If his type is S, K may die and be replaced, if his type is H, his type may change to S,

Each player's flow payoffs can be described as follows:

$$u_t^K = T_t[1 - \mathbb{1}(r_t > 0)] + \{(1 - E_t)T_t + E_t[Y_t - r]\}[\mathbb{1}(r_t > 0)], \tag{1}$$

$$u_t^c = (1 - E_t)[Y_t - T_t], \tag{2}$$

where $\mathbb{1}(\cdot)$ represents an indicator function.

Additionally, the leader's discounted expected payoff, conditional on his type, is given by:

$$V_t^H = u_t^K + \delta[\phi V_{t+1}^H + (1 - \phi)V_{t+1}^S] \tag{3}$$

$$V_t^S = u_t^K + \delta[\rho\beta V_{t+1}^H + (1 - \rho)V_{t+1}^S] \tag{4}$$

In this paper, I consider the concept of Stationary Equilibrium, defined as a strategy profile that constitutes a Nash Equilibrium in all subgames and yields outcomes in each period depending solely on state Γ_t. Notice that this definition ensures stationarity only along the equilibrium path and does not rule out punishments for deviations. To address this, I additionally require that punishments themselves be stationary. Throughout the paper, I refer to these simply as equilibria.

Under this equilibrium concept, both the representative citizen's and the leader's payoffs must depend solely on whether the leader is sickly or healthy, and on whether the government is an absolute monarchy or a constitutional one. Furthermore, the same must be true during any punishment stage that follows a deviation.

4 Analysis

4.1 Mortality and commitment

How does mortality affect the incentives of a leader? To address this question, I begin with a baseline model in which the leader is bound to an absolute monarchy and cannot implement a constitutional monarchy, i.e. where $r = 0$.

In the baseline model, there are no formal limits on the leader's ability to set tax rates. Instead, any incentive to limit taxation arises solely from informal enforcement by the representative citizen, who can punish the leader by withholding future production. Notice that this form of informal enforcement is feasible since withholding production can be sustained in equilibrium. Moreover, as established in the following lemma,

such an equilibrium yields the leader the lowest possible payoff, making it an optimal punishment for deviations.[2]

Lemma 1. *Under absolute monarchy, no equilibrium yields a payoff to the leader lower than* 0*.*

Crucially, this sort of informal enforcement would only be effective if the leader cares enough about future payoffs to be deterred by threat of a future punishment. As such, while this enforcement may work well when the leader is healthy, that may not be the case once he becomes sickly and discounts future payoffs more heavily. This leads to the following result.

Proposition 1. *If the mortality parameter is high enough, i.e.,*

$$\rho > \bar{\rho} \equiv \frac{(1-\delta\phi)(\delta-c)}{\delta\{1-\beta(1-c)-\delta[\phi+\beta(1-\phi)]\}},$$

a sickly leader will be unable to extract any tax revenues in equilibrium. Moreover $\bar{\rho} \in (0,1)$*, is increasing in* δ*,* ϕ *and* β*, and decreasing in* c*.*

The intuition behind this result is straightforward. When a leader becomes sickly, it effectively acts as a shock to how he discounts future payoffs. Consequently, if this shock is severe enough, he will prioritize immediate gains over long-term ones, making it impossible for him to commit to limiting taxes and instead prompting him to extract as much as possible in the present. Understanding this, the representative citizen will expect a sickly leader to seize as much output as possible when ρ is sufficiently high and, hence, will be unwilling to bear the costs of production. As a result, a sickly leader will be left with no output available to tax or expropriate.

Furthermore, it follows that the threshold $\bar{\rho}$ decreases under conditions that exacerbate this problem–namely, when the leader is more inherently impatient (δ is lower), when he places less value on his descendants (β is lower), when his descendants are more likely to become sickly (ϕ is lower), or when potential revenues are lower (c is higher).

The logic behind Proposition 1 aligns with existing theories on how short time horizons affect a leader's incentives and can create commitment problems. In particular, it shows how the specter of mortality can push a sickly leader to act rapaciously, mirroring the "roving bandits" described by Olson (1991, 1993). Nonetheless, this also suggests a sickly leader may prefer to resolve these commitment issues instead of facing a situation where he collects no tax revenues.

4.2 Mortality and democratization

The baseline model explored in the previous section illustrates how a leader's mortality gives rise to commitment issues and their consequences. Crucially, it shows that leaders confronting mortality may be deprived of tax revenues due to these commitment issues. As a result, a sickly leader has a vested interest in in addressing these commitment issues, potentially through institutional constraints such as democratic reforms. To

[2]For a formal discussion of optimal punishment schemes, consult Abreu (1988).

examine how such reforms can strengthen commitment, let me turn my attention to the general model in which a leader has the option to establish a constitutional monarchy, i.e. where $r > 0$.

In this general model, the leader can establish a constitutional monarchy at the end of any period by calling a parliament of positive strength for the following period. By doing so, the leader transfers decision-making power over tax levels to the representative citizen while retaining the ability to expropriate additional resources only through costly repression. Consequently, in a constitutional monarchy, the leader's revenues are determined by the representative citizen's choices, subject to the extent to which repression remains a credible threat.

Notice that a leader's decision to engage in repression depends on the strength of parliament, i.e., r, relative to the taxes T offered by the representative citizen, and any additional punishments enforced by the representative citizen. Taking this into account, the representative citizen will set a tax level that makes the leader indifferent between accepting it and resorting to repression and expropriation. Given this, a sickly leader will be willing to accept an offer of T from the representative citizen if the following condition holds

$$V^{S,r} \geq \tilde{V}^{S,r}, \tag{5}$$

where $\tilde{V}^{S,r}$ represents the expected payoff from deviating and expropriating. Notice that the value of $\tilde{V}^{S,r}$ will depend on the severity of punishments the leader expects to face when deviating from the path. I begin by considering the most permissive scenario in which the representative citizen refrains from punishing expropriations under a constitutional monarchy. In this case, if a leader expropriates, the regime reverts to an absolute monarchy, where the representative citizen produces a positive amount and the leader can tax the entire surplus $1 - c$, provided he remains healthy. Recall that a sickly leader's descendant can ascend the throne only if the leader dies during a period of positive production. Consequently, a sickly leader can expect his descendants to earn a positive payoff only if he dies before the regime reverts to absolute monarchy. Taking this into account, it is possible to see that $\tilde{V}^{S,r} = 1 - r + \delta\rho\beta(1 - c)/(1 - \delta\phi)$. Thus, (5) can be simplified as follows

$$V^{S,r} \geq 1 - r + \frac{\delta\rho\beta(1 - c)}{1 - \delta\phi}. \tag{6}$$

To contrast, I continue by considering the least permissive scenario in which the representative citizen implements an optimal punishment scheme by threatening to withhold production when the leader deviates. Now, in this case, (5) can be simplified as follows

$$V^{S,r} \geq 1 - r. \tag{7}$$

Note that the right-hand side of condition (7) is strictly lower than that of condition (6). Given that (7) and (6) correspond to (5) under the most and least severe punishment schemes, respectively, this suggests that punishment severity can be parameterized.

Specifically, a more general punishment scheme can be formulated in which the representative citizen mixes between these two extremes. In this framework, the probability of employing the most permissive punishment–denoted by σ–serves as a measure of punishment severity, yielding the following general expression for (5).

$$V^{S,r} \geq 1 - r + \frac{\delta\sigma\rho\beta(1-c)}{1-\delta\phi} \tag{8}$$

Note that, the right-hand side of condition (8) is decreasing in σ. This reflects the notion that, when a leader anticipates harsher punishments for deviating, he can be deterred with a lower expected value of compliance. Additionally, observe that when condition (8) is satisfied, $T > 0$, given that $1 - r > 0$. This indicates that under a constitutional monarchy, a sickly leader can extract positive taxes whenever some $T \leq 1 - c$ satisfies one of these conditions.

These observations reveal why a sickly leader may find establishing a constitutional monarchy appealing. As Proposition 1 demonstrated, when ρ is sufficiently high, a sickly leader under an absolute monarchy cannot secure any tax revenues at all. Consequently, the mere possibility of earning a positive payoff, no matter how small the amount, provides the leader with sufficient motivation to implement a constitutional monarchy. Moreover, these observations suggest that the smallest parliamentary strength r necessary for a sickly leader to implement such a reform can be determined by checking condition (8) when $\sigma = 0$ and $V^{S,r}$ is maximized. This brings me to my next result, summarized in the following proposition.

Proposition 2. *If the mortality parameter is sufficiently high, i.e. $\rho > \bar{\rho}$, then in an equilibrium a sickly leader can extract positive tax revenues by implementing a constitutional monarchy, provided that $r \geq \bar{r}$, where*

$$\bar{r} \equiv \frac{c - \delta[1 - \rho(1-\beta)]}{1 - \delta[1 - \rho(1-\beta)]}.$$

Moreover, $\bar{r} \in (0, c)$ is increasing in c and ρ, and decreasing in δ and β.

Once again, the intuition behind this result is straightforward. Under an absolute monarchy, the absence of effective constraints prevents a sickly leader from extracting positive tax revenues. To address this, such a leader can constrain himself by adopting a constitutional monarchy and relinquishing decision-making authority over taxes to the representative citizen. Under this regime, the leader can credibly commit to respecting the property rights of his subjects, provided that parliament is strong enough to impose effective constraints and enforce taxes–that is, if r is sufficiently high. This allows the representative citizen to engage in production without fearing expropriation, ensuring that taxable output exists. At the same time, because the leader can still resort to repression, the representative citizen has no choice but to share a fraction of this output with him, ensuring a strictly positive level of taxation.

Moreover, it follows that weaker parliaments are able to effectively incentivize a sickly leader when his commitment problem is less severe. Accordingly, the threshold $\bar{r}$ should be lower when potential revenues are higher (c is lower), when his probability of survival

is greater (ρ is lower), when he is inherently more patient (δ is higher), or when he places greater value on his descendants (β is higher).

The results of Propositions 1 and 2 highlight a key mechanism in my model—namely, how institutional constraints enable leaders to establish commitment when informal enforcement alone may be insufficient. This mechanism is the main driver behind a sickly leader's push for democratic reforms. In essence, a sickly leader faces a shortened time horizon, which makes commitment impossible under an informal enforcement scheme. Recognizing this limitation, he turns to democratic reforms as a means of building commitment and securing tax revenues.

Additionally, Proposition 2 alludes to a fundamental trade-off in parliamentary strength r: although higher levels of r strengthen commitment, they can simultaneously restrict a leader's tax revenues. As such, if a leader had the ability to select a specific level of r, he would neither opt for the maximum nor the minimum level.

To investigate this idea further, I introduce the concept of a leader-preferred equilibrium, defined as an equilibrium that maximizes the leader's expected payoff at $t = 0$.[3] This leads directly to the next proposition.

Proposition 3. *If $\rho > \bar{\rho}$ and $r \geq \bar{r}$, then in the unique Leader-Preferred Equilibrium, a healthy leader retains the regime with which he begins each period, while a sickly leader implements a constitutional monarchy. Furthermore, a leader's expected discounted payoff is maximized at r^*, where*

$$r^* \equiv \bar{r} + \frac{\delta\rho\beta(1-c)}{1-\delta\phi}\left[\frac{1-\delta[1-\rho+\phi]}{1-\delta[1-\rho(1-\beta)]}\right].$$

More precisely, a leader's expected discounted payoff increases between $\bar{r}$ and r^*, and decreases thereafter.

Intuitively, under a constitutional monarchy, the representative citizen will always offer the leader a level of tax revenue sufficient to deter expropriation. Notice that this will be possible whenever $r \geq \bar{r}$. Thus, the leader's payoff under such a regime declines as parliamentary strength r increases and as he anticipates more severe punishments in equilibrium. Although on the surface this could suggest that the leader would benefit from a weaker parliament and lighter punishments, that is not necessarily the case due to the issue of commitment.

Observe that when parliament is of strength $\bar{r}$, the leader is just able to commit to not expropriating—but only under the most severe punishment scheme, in which the representative citizen withholds production indefinitely after expropriation. It is only when a parliament's strength is greater than $\bar{r}$ that milder punishment schemes are able to properly motivate the leader. Thus, a stronger parliament can, surprisingly, reduce the severity of punishments the leader faces in equilibrium.

[3]While the requirement that a leader-preferred equilibrium maximizes the leader's payoff at $t = 0$ may initially seem overly restrictive, it can be shown that this also ensures his expected payoff is maximized at any t where he is sickly. The details are omitted here, but this result can be found within the proof of Proposition 3.

This reduction in the severity of punishments raises the leader's payoffs at a faster rate than the strengthening of parliament diminishes it. As a result, the leader's overall payoff increases with stronger parliaments, but only up to a certain point. This increase reaches its limit when the severity of punishments can no longer be reduced—specifically, when the leader expects no punishment at all. This happens when the parliament's strength reaches r^* , after which the leader's payoff steadily decreases as r increases.

In essence, Proposition 3's findings revolve around the interplay between parliamentary strength r and the severity of equilibrium punishments. Specifically, it reveals a non-monotonic relationship between the leader's payoff and parliamentary strength r, which Figure 1 illustrates.

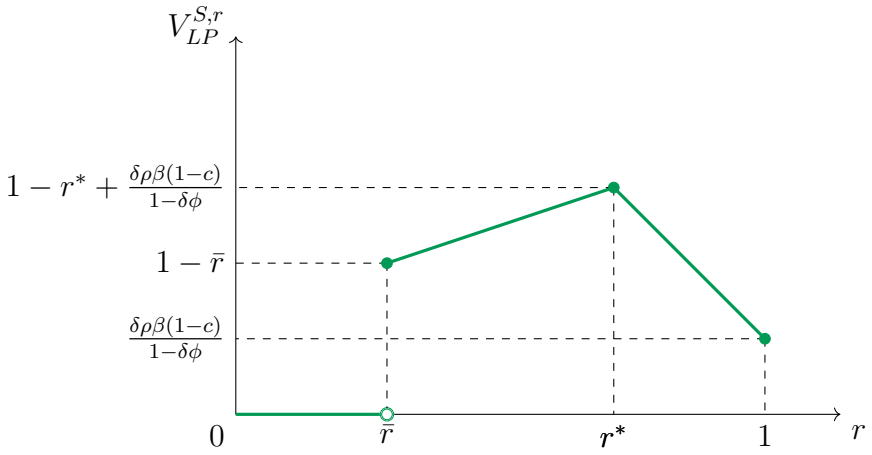

Figure 1: Expected payoff of a sickly leader under a leader-preferred equilibrium.

4.3 The persistence of democratization

So far, I have explored the forces driving a sickly leader toward democratization. Nonetheless, it remains to be determined whether democracy would always persist beyond his lifetime or if his successors would possibly restore absolute rule. Even though Proposition 3 revealed that democracy would survive under the leader-preferred equilibrium, the question remains whether this is merely a feature of that particular equilibrium or whether it generalizes to all equilibria. The following proposition shows that the latter is indeed the case.

Proposition 4. *In equilibrium, if $r \geq \bar{r}$, after the death of a sickly leader, constitutional monarchy is maintained and the representative citizen is able to earn a positive payoff whenever a leader is healthy.*

Proposition 4 reveals that when sickly leaders implement such reforms, healthy leaders will continue to uphold them. This outcome follows naturally from the nature of taxation in a constitutional monarchy, where the representative citizen offers taxes in order to deter expropriation by the leader, which is always possible when parliament is strong enough, i.e., $r \geq \bar{r}$. Thus, the leader will never refuse the representative citizen's offer of taxes, and absolute monarchy will never be restored.

Furthermore, Proposition 4 goes beyond examining the persistence of democratic re-

forms, demonstrating their clear benefits for citizens. Essentially, the intuition behind this result is that a healthy leader realizes that, no matter how lenient the representative citizen may be following expropriation, he will be left without any revenue once he becomes sickly under an absolute monarchy. Given this, such a leader understands that his potential payoff from expropriation will never match the value he would receive if he could extract the entire surplus every period. Consequently, the representative citizen can offer a healthy leader a smaller portion of the produced surplus while still preventing expropriation. In other words, Proposition 4 reveals that the representative citizen can appease a healthy leader with lower taxes than a sickly one.

5 Discussion

In their book "Economic Origins of Dictatorship and Democracy", Daron Acemoglu and James A. Robinson pose the question "Why does a nondemocratic elite ever choose to democratize?" (Acemoglu and Robinson 2006). Throughout the years, numerous authors in the political economy literature have offered various answers. In this paper, I have presented a novel answer to this question that aims to complement these existing accounts of elite-driven democratization.

In the model developed in this paper, a powerful nondemocratic leader initiates democratization when an exogenous mortality shock shortens his time horizon. Under this framework, democratization serves as the leader's means of resolving the commitment problem introduced by the shock, allowing him to preserve his revenues. In doing so, this model provides a fresh answer to Acemoglu and Robinson's (2006) question—one that does not rely on typical explanations such as revolutionary pressures or the nature of production. Beyond that, this model offers evidence that challenges the conventional belief, articulated by Olson (1991, 1993), that dying leaders impede development by resisting reforms like democratization.

Furthermore, given the divergence between selectorate theory's predictions on a leader's mortality and those in this paper, there is clear room to extend both frameworks. In particular, incorporating the leader-elite dynamics from selectorate theory into the model presented here could help clarify when a leader's mortality fosters democratization versus when it merely entrenches authoritarian rule.

Finally, this model's framework naturally lends itself to questions about how term limits affect leaders' behavior. In particular, the concept of a leader's death in the model can easily be adapted to represent term limits. Consequently, future research could extend this model to investigate how term limits may help promote checks and balances–either by compelling term-limited leaders to implement them or by protecting them encroachments by those leaders.

A Appendix

A.1 Proofs

Proof of Lemma 1. First, let me consider the following strategies by C and K.

- C produces $Y_t = 0\ \forall t$,
- K chooses $T_t = Y_t$.

Facing such strategies, neither K nor C are able to unilaterally increase their payoffs by employing a different strategy. Moreover, their flow payoffs trivially depend only on the state Γ_t, as they can be represented by the function $f(\Gamma_t) = 0$. Consequently this strategy profile must constitute an equilibrium.

Now, let me show that no equilibrium payoff can yield K a payoff lower than 0. This can be trivially shown, as K's flow payoff under absolute monarchy depend solely on his choice of T_t, which by definition must belong to set $[0, Y_t]$.

□

Proof of Proposition 1. First, notice that, under absolute monarchy, C will never choose $Y_t = 1$ if he expects $T_t > 1 - c$. Thus, K can only extract $T_t \leq 1 - c$ at any given period in equilibrium. Now consider when K would prefer to choose $T_t \leq 1 - c$ following C's choice of $Y_t = 1$ when he is sickly and when he is healthy, i.e. K's Incentive Compatibility constraint based on his type:

$$V_t^H \geq 1 + \psi \tag{9}$$
$$V_t^S \geq 1 + \psi, \tag{10}$$

where V_H^t and V_S^t are the equilibrium expected discounted payoffs of a healthy and a sickly K at time t respectively, and ψ represents the continuation payoff following some punishment for deviating. Notice that, as revealed by Lemma 1, in a stationary equilibrium both V_t^H and V_t^S will be constant in t. Moreover, notice that K's lowest equilibrium payoff is achieved under an equilibrium where C chooses $Y = 0$ and does not produce any taxable output. Thus, $\psi \geq 0$, and $\psi = 0$ minimizes the RHS of both inequalities. Considering this these constraints can be simplified as follows

$$V^H \geq 1 \tag{11}$$
$$V^S \geq 1. \tag{12}$$

Recall that

$$V^H \equiv T + \delta[\phi V^H + (1 - \phi)V^S] \tag{13}$$
$$V^S \equiv T + \delta[(1 - \rho)V^S + \rho\beta V^H], \tag{14}$$

and, note that Assumption 1 guarantees that (11) will be satisfied for some $T \leq 1 - c$. This occurs because $V^S \geq 0$ and Assumption 1 guarantees that $(1 - c)/(1 - \delta\phi) > 1$, which is just V^H when $V^S = 0$. So let me turn my attention to when (12) will also be satisfied. It is possible to show that V^S is given by the following expression

$$V^S = \frac{[1-\delta(\phi-\rho\beta)]T}{1-\delta\{1-\rho+\phi-\delta[\phi(1-\rho)-\rho\beta(1-\phi)]\}}. \tag{15}$$

Notice that this expression is increasing in T. Thus, if condition (12) is not satisfied for the maximal equilibrium value of T, it will not be satisfied for any value of T. Substituting $T = 1 - c$ in (15) I arrive at the following expression

$$V^S = \frac{[1-\delta(\phi-\rho\beta)](1-c)}{1-\delta\{1-\rho+\phi-\delta[\phi(1-\rho)-\rho\beta(1-\phi)]\}}. \tag{16}$$

Plugging in expression (16) into (12) I can find the following expression for ρ that will make it binding

$$\bar{\rho} \equiv \frac{(1-\delta\phi)(\delta-c)}{\delta\{1-\beta(1-c)-\delta[\phi+\beta(1-\phi)]\}}. \tag{17}$$

Then, taking the partial derivative of (16) in terms of ρ and looking at the sign of its numerator it is possible to show that V^S is decreasing in terms of ρ, since $\delta\phi < 1$. Additionally, it is possible to show that Assumptions 1 and 2 guarantee that $\bar{\rho} \in (0, 1)$. To see that $\bar{\rho} < 1$, note that this will be directly implied by Assumption 2. At the same time, to see that $\bar{\rho} > 0$ note that Assumption 1 implies that $\delta > c$, which means the numerator of (17) must be positive. Then, notice that the denominator of (17) will also be positive as long as $(1-\beta)/\beta > (\delta - c)/(1-\delta\phi)$, which is implied by Assumption 2.

Considering these observations, it is possible to see that if

$$\rho > \bar{\rho}, \tag{18}$$

condition (12) will be violated by default. Consequently, anytime ρ violates this condition, K will be unable to extract any revenues under AM when he is sickly.

To show the second part of this proof, it suffices to find the sign of the derivative of (17) with regards to each of those parameters. Moreover, applying the quotient rule to find the partial derivatives of $\bar{\rho} \equiv \frac{f(x)}{g(x)}$ with regards to a particular parameter x, it becomes clear that it suffices to show what the sign of $f'(x)g(x) - f(x)g'(x)$ is.

Starting with δ, we find that $\bar{\rho}$ is increasing in it if the following condition holds

$$\begin{aligned}&\{1-\delta\phi-\phi(\delta-c)\}\delta\{1-\beta(1-c)-\delta[\phi+\beta(1-\phi)]\}\\&-(1-\delta\phi)(\delta-c)\{1-\beta(1-c)-\delta[\phi+\beta(1-\phi)]-\delta[\phi+\beta(1-\phi)]\}>0.\end{aligned} \tag{19}$$

Simplifying this, we can find

$$\begin{aligned}&-\phi(\delta-c)\delta\{1-\beta(1-c)-\delta[\phi+\beta(1-\phi)]\}\\&+(1-\delta\phi)c\{1-\beta(1-c)-\delta[\phi+\beta(1-\phi)]\}+(1-\delta\phi)(\delta-c)\delta[\phi+\beta(1-\phi)]>0.\end{aligned} \tag{20}$$

Notice that Assumption 2 implies that $\{1-\beta(1-c)-\delta[\phi+\beta(1-\phi)]\}>0$, so it is possible to see that (20) will hold as long as the following is true

$$-\phi(\delta-c)\delta\{1-\beta(1-c)-\delta[\phi+\beta(1-\phi)]\}+(1-\delta\phi)(\delta-c)\delta[\phi+\beta(1-\phi)]>0, \quad (21)$$

which can be simplified to $1-c\phi>0$, which is true.

Analogously, $\bar{\rho}$ is increasing in ϕ if the following condition holds

$$-(\delta^2-\delta c)\delta\{1-\beta(1-c)-\delta[\phi+\beta(1-\phi)]\}+(\delta^2-\delta^2\beta)\{(\delta-c)(1-\delta\phi)\}>0, \quad (22)$$

which can be simplified to $\delta>c$, which is implied by Assumption 1.

Then, $\bar{\rho}$ will be increasing in β if the following condition holds

$$-(1-\delta\phi)(\delta-c)[-\delta(1-c)-\delta^2(1-\phi)]>0, \quad (23)$$

which can be simplified to $(1-c)+\delta(1-\phi)>0$, which is also true.

Finally, $\bar{\rho}$ will be decreasing in c if the following condition holds

$$-(1-\delta\phi)\delta\{1-\beta(1-c)-\delta[\phi+\beta(1-\phi)]\}-\delta\beta(1-\delta\phi)(\delta-c)<0, \quad (24)$$

which can be simplified to $-1+\delta\phi<0$, which is also true.

□

Proof of Proposition 2. Recall from Proposition 1 that a sickly K always earns a payoff of 0 under an absolute monarchy when $\rho>\bar{\rho}$. Thus, to prove that a sickly K will choose to establish a constitutional monarchy, it suffices to show that K's payoff is strictly positive under this regime.

To show this, let me consider the lowest payoff K is able to earn in equilibrium under a constitutional monarchy. Recall that, under such a regime, a leader's expected payoff must satisfy

$$V^{\gamma,r}\geq\tilde{V}^{\gamma,r} \quad (25)$$

Moreover, note that the lowest value $\tilde{V}^{\gamma,r}$ can take is $1-r$, which arises under the optimal punishment scheme, where C can threaten to withhold production whenever the government reverts to an absolute monarchy due to a deviation by K. Thus, C is only able to limit the expected payoff of K to $1-r$ at most, since attempting to limit K's expected payoff any further would make him strictly prefer to deviate.

Considering this observation, it is possible to see that $V^{\gamma,r}=\tilde{V}^{\gamma,r}$ for γ equal to both H and S. Plugging this into the expression for $V^{S,r}$. This allows me to find that

$$[1-\delta(1-\rho)]\tilde{V}^{S,r}-\delta\rho\beta\tilde{V}^{H,r}=T^S, \tag{26}$$

where T^γ represents the amount of taxes a leader of type S is offered by C in equilibrium. Starting from the lowest possible values of $\tilde{V}^{S,r}$ and $\tilde{V}^{H,r}$, $1-r$, the following expression can be derived to describe the relationship between r and T^S

$$r=\frac{1-\delta[1-\rho(1-\beta)]-T^S}{1-\delta[1-\rho(1-\beta)]}. \tag{27}$$

Note that r is decreasing in terms of T^S. Thus, to find the lowest value of r that can be supported in equilibrium, let me plug in the highest level of taxes that can be supported in equilibrium $1-c$

$$\bar{r}=\frac{c-\delta[1-\rho(1-\beta)]}{1-\delta[1-\rho(1-\beta)]}. \tag{28}$$

It is possible to see that, for a given level of T^S and any equal or higher value of $\tilde{V}^{S,r}$, the level r implied by (26) must be higher than $\bar{r}$. Moreover, notice that $\tilde{V}^{S,r}>0$ for any value of $r\in[0,1)$. These observations suggest that, whenever $r\geq\bar{r}$, a sickly leader is able to earn positive taxes in equilibrium. Additionally, when $r<\bar{r}$, satisfying (26) requires T^S to be greater than $1-c$. This indicates that a sickly leader would be unable to earn positive taxes under these conditions in equilibrium.

Finally, to prove the final part of this proposition, first notice that $\bar{r}$ is positive and that

$$\bar{r}=\frac{c-\delta[1-\rho(1-\beta)]}{1-\delta[1-\rho(1-\beta)]}<\frac{c\{1-\delta[1-\rho(1-\beta)]\}}{1-\delta[1-\rho(1-\beta)]}=c. \tag{29}$$

Next, I determine the signs of the derivatives of (**??**) for each parameter, applying the same method as in Proposition 1's proof. Starting with δ

$$-(1-\rho+\rho\beta)(1-\kappa)\{1-\delta[1-\rho(1-\beta)]\}+\{c-\delta[1-\rho(1-\beta)]\}(1-\kappa)(1-\rho+\rho\beta)<0, \tag{30}$$

which can be simplified to

$$-1+c<0, \tag{31}$$

which holds true.

Then for ρ

$$(1-\beta)(1-\kappa)\delta\{1-\delta[1-\rho(1-\beta)]\}-\{c-\delta[1-\rho(1-\beta)]\}(1-\kappa)(1-\beta)\delta>0, \tag{32}$$

which can be simplified to

$$1 - c > 0, \tag{33}$$

which also holds true.

Then for β

$$-\delta\rho(1-\kappa)\{1-\delta[1-\rho(1-\beta)]\} + \{c-\delta[1-\rho(1-\beta)]\}(1-\kappa)\delta\rho < 0, \tag{34}$$

which can be simplified to

$$-1 + c < 0, \tag{35}$$

which also holds true.

Now for c, it is straightforward to simply take the partial derivative and find

$$\frac{\partial \bar{r}}{\partial c} = \frac{1}{1-\delta[1-\rho(1-\beta)]} > 0. \tag{36}$$

Analogously for κ

$$\frac{\partial \bar{r}}{\partial \kappa} = \frac{\delta[1-\rho(1-\beta)]}{1-\delta[1-\rho(1-\beta)]} > 0. \tag{37}$$

□

Proof of Proposition 3. First, let me define a Leader-Preferred equilibrium as an equilibrium which maximizes the expected payoff of K at $t = 1$ among all possible equilibria. Then, consider the following sketch of an equilibrium:

1. C:
   - Under absolute monarchy, C produces $Y_t = 1$ whenever K is healthy,
   - Under constitutional monarchy, C always produces $Y_t = 1$, and offering a tax level T^{γ} based on K's type,
   - If K ever taxes more than $1-c$ under absolute monarchy, C produces $Y_t = 0$ for all subsequent t,
   - If K ever expropriates under constitutional monarchy, C implements some punishment phase where K's payoff is driven down to $\tilde{V}^{\gamma,r}$.
2. K:
   - Under absolute monarchy, K taxes $1-c$ whenever C produces $Y_t = 1$,
   - Under absolute monarchy, if K becomes sickly at the end of a period, he implements a constitutional monarchy,

- Under constitutional monarchy, K accepts C's offers of taxation as long as $V^{\gamma,r} \geq \tilde{V}^{\gamma,r}$, otherwise expropriates.

Note that under this sketch, a healthy leader always retains the regime with which he begins each period, while a sickly leader implements a constitutional monarchy. Furthermore, this sketch describes an equilibrium, as there are no profitable deviations, and the outcome in each period depends only on Γ. Considering this, let me flesh out this sketch by determining T^{γ} and $\tilde{V}^{\gamma,r}$.

Let me start by exploring $\tilde{V}^{\gamma,r}$. Recall that $\tilde{V}^{\gamma,r}$ represents the payoff of a type γ K following expropriation. In light of this, consider the two potential strategies C can implement in a punishment stage following expropriation by K

1. - If $\gamma_t = H$ and K never chose $T_t > 1-c$ in the punishment stage, C produces $Y_t = 1$,
   - Otherwise, C produces $Y_t = 0$
2. - C produces $Y_t = 0$ regardless.

Now consider a punishment scheme that mixes both strategies, where C implements strategy 1 with probability σ, and strategy 2 with probability $1-\sigma$. Notice that this punishment scheme is stationary and yields the following expressions for $\tilde{V}^{S,r}$ and $\tilde{V}^{H,r}$ respectively

$$\tilde{V}^{S,r} = 1 - r + \frac{\delta\rho\beta\sigma(1-c)}{1-\delta\phi} \tag{38}$$

$$\tilde{V}^{H,r} = 1 - r + \frac{\delta\phi\sigma(1-c)}{1-\delta\phi}. \tag{39}$$

It is possible to see that the parameter σ can be interpreted as measuring the severity of the punishment scheme. Specifically, when $\sigma = 0$, K faces a grim trigger style punishment, whereas when $\sigma = 1$, K faces no punishment.

Considering $\tilde{V}^{\gamma,r}$, C will offer taxes T^{γ} such that

$$V^{\gamma,r} = \tilde{V}^{\gamma,r}, \tag{40}$$

as long as $T^{\gamma} \leq 1-c$.

Proposition 2, established that $\tilde{V}^{\gamma,r} = 1-r$ when $\sigma = 0$, for both $\gamma = S$ and $\gamma = H$. In doing so, it also determined $\bar{r}$, the lowest level of parliamentary strength that supported production under a sickly leader. Notice that when $r > \bar{r}$, both $\tilde{V}^{S,r}$ and $\tilde{V}^{H,r}$ decrease, suggesting that when parliamentary strength is higher, it may be possible to support production under less severe punishments. Taking this into account, let me derive r_{σ}, the lowest level of parliamentary strength that allows for production under a sickly leader with punishments of severity σ, by using (40) together with the definition of $V^{S,r}$

$$r_\sigma \equiv \frac{c-\delta[1-\rho(1-\beta)]}{1-\delta[1-\rho(1-\beta)]} + \frac{\delta\rho\beta\sigma(1-c)}{1-\delta\phi}\left\{\frac{1-\delta[1-\rho+\phi]}{1-\delta[1-\rho(1-\beta)]}\right\}. \tag{41}$$

Notice that when parliamentary strength is of level r_σ, punishments of any smaller severity than σ will yield K a lower payoff, and punishments of any greater severity than σ will violate (5). Considering this, it is possible to find the maximum possible payoff available to a sickly leader by plugging in r_σ in (38)

$$V_{LP}^{S,r_\sigma} = \frac{1-c}{1-\delta[1-\rho(1-\beta)]} + \frac{\delta\rho\beta\sigma(1-c)}{1-\delta\phi}\left\{\frac{\delta(\phi-\rho\beta)}{1-\delta[1-\rho(1-\beta)]}\right\}. \tag{42}$$

Observe that this expression is increasing in r_σ until r_1. After r reaches r_1,it is no longer possible to implement any less severe punishment schemes, which allows C to start offering lower taxes while still satisfying (5). This leads to the following expression for a sickly leader's payoff when $r > r_1$

$$V_{LP}^{S,r} = \frac{1-c}{1-\delta[1-\rho(1-\beta)]} + \frac{\delta\rho\beta(1-c)}{1-\delta\phi}\left\{\frac{\delta(\phi-\rho\beta)}{1-\delta[1-\rho(1-\beta)]}\right\} - (r-r_1). \tag{43}$$

Now, let me consider the payoff of a healthy leader under constitutional monarchy. Analogously to the case with a sickly leader, when $r \in [r_0, r_1]$

$$V_{LP}^{H,r_\sigma} = \frac{1-c}{1-\delta[1-\rho(1-\beta)]} + \frac{\delta\sigma(1-c)}{1-\delta\phi}\left\{\frac{(\phi-\rho\beta)[1-\delta(1-\rho)]}{1-\delta[1-\rho(1-\beta)]}\right\}, \tag{44}$$

and when $r > r_1$

$$V_{LP}^{H,r} = \frac{1-c}{1-\delta[1-\rho(1-\beta)]} + \frac{\delta(1-c)}{1-\delta\phi}\left\{\frac{(\phi-\rho\beta)[1-\delta(1-\rho)]}{1-\delta[1-\rho(1-\beta)]}\right\} - (r-r_1). \tag{45}$$

Now, let me consider the initial payoff of a healthy leader under an absolute monarchy at $t = 1$. Note that his payoff can be written as

$$V_{LP}^{H,0} = \frac{1-c}{1-\delta\phi} + \frac{\delta(1-\phi)V^{S,r}}{1-\delta\phi}. \tag{46}$$

Note that the first term of this expression represents the payoff K expects to earn in absolute monarchy before becoming sickly, while the second term corresponds to the payoff he anticipates to earn after. Considering this, it is possible to see that K also earns the maximum possible payoff during his time under absolute monarchy, since flow payoff cannot ever be higher than $1-c$. Additionally, since it was shown that this

equilibrium also yields him the maximum payoff after becoming sickly, it is possible to see that the payoff of a leader at $t = 0$ while increasing between r_0 and r_1, is decreasing for $r > r_1$, regardless of his type γ. Finally, to conclude this proof, let me define $r^* \equiv r_1$, the parliamentary strength that maximizes a leader's payoff.

□

Proof of Proposition 4. First, to demonstrate that a K of type H will not restore the regime to an absolute monarchy when $r \geq \bar{r}$, it is sufficient to show that, in equilibrium, K has no strict incentive to expropriate under a constitutional monarchy. To see this, recall that under a constitutional monarchy, C will try to offer taxes to K at a level that dissuades expropriation. Notice that this is always feasible when the leader is healthy, and it is also feasible when the leader is sickly, provided $r \geq \bar{r}$. Thus, C will always offer taxes that deter expropriation, ensuring K will never restore absolute monarchy.

Second, to show that C is able to earn a a positive payoff whenever K is healthy, it suffices to show that $T^H < 1 - c$. To do so, let me show that K's payoff when healthy is lower than what he would earn if he were to receive taxes equal to $1 - c$ every period, i.e., $V^H_{\max} > V^{H,r}$. Since $V^{H,r}$ is maximized at r^* and $V^{H,r^*} = \tilde{V}^{H,r^*}$, it is possible to find

$$V^H_{\max} > 1 - r^* + \frac{\delta\phi(1-c)}{1-\delta\phi}. \tag{47}$$

Notice that $V^H_{\max} = 1 - c + \frac{\delta\phi(1-c)}{1-\delta\phi} + \frac{\delta(1-\phi)V^S}{1-\delta\phi}$, where V^S is given by (16). Thus, it is possible to simplify equation (47) as follows

$$1 - r^* < 1 - c + \frac{\delta(1-\phi)V^S}{1-\delta\phi}. \tag{48}$$

Plugging in the values of r^* and V^S, and simplifying it is possible to find

$$\begin{gathered}\frac{(1-\delta\phi)[1-\rho(1-\beta)] + \rho\beta[1-\delta(1-\rho+\phi)]}{1-\delta[1-\rho(1-\beta)]} < \\ \frac{(1-\phi)[1-\delta(\phi-\rho\beta)]}{1-\delta\{1-\rho+\phi-\delta[\phi(1-\rho)-\rho\beta(1-\phi)]\}}.\end{gathered} \tag{49}$$

First, comparing the numerators of the fractions on both sides of the inequality, we see that the numerator on the LHS is smaller than that on the RHS. Next, comparing the denominators, we see that the denominator on the LHS is greater than that on the RHS. This confirms that the LHS is indeed smaller than the RHS, thereby proving the inequality. Consequently, T^H must be smaller than $1 - c$, proving the second part of the proposition and concluding this proof.

□

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