A Theory of Minimalist Democracy*

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Abstract

A majority of the world democracies are far from the benchmark of representative democracy. Large swaths of population are excluded from representation, constraints on the executive are low, yet virtually all of them run (often bitterly) contested elections. Why would elections be held and respected in an environment with otherwise weak political institutions and limited constraints on the national elite? This paper presents a model of a minimalist conception of the democratic state, i.e. a form of government solely characterized by competitive elections. Even absent any form of commitment, any role for redistribution, and any rebellion threat from the citizenry, elections emerge as a superior power-sharing mechanism among ruling elites. This is shown in environments where players are restricted to Markov Perfect strategies and in non-Markovian settings where the class of power-sharing alternatives is much more vast. Finally, the model delivers empirical implications about the democratization process that are borne out in the data.

Keywords: Democratic theory; Minimalist democracy; Political transitions; Autocracy
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1 Introduction

Consolidated democracies are characterized by a long list of complementary attributes that many scholars deem necessary for effective representation of the populace. Dahl (1971) spells out several necessary institutional guarantees: freedom to form and join organizations; freedom of expression; the right to vote; eligibility for public office; the right to compete for support and votes; alternative sources of information; free and fair elections; the dependence of public policies on citizens' preferences.

A large share of democracies worldwide appears less than consolidated, however. In the words of Diamond (2002), such systems operate in the "political gray zone...between full-fledged democracy and outright dictatorship". These 'hybrid' systems are empirically relevant. According to the 2012 Polity IV Project, a popular data series coding authority characteristics of states in the world since 1800, of the 115 countries that had a (Polity 2) score above 0 – entering the incremental democratic score range between 0 and 10 points – only 51 countries had a score above 8 (e.g. above Paraguay, Philippines, Ghana or Indonesia in 2012). The pervasiveness of political systems gravitating around democratic principles, but failing to fully meet the conditions of a representative democracy, is evident in Figure 1, which traces their historical evolution and persistence.

As a starting point, this paper establishes in Section 2 that most of these hybrid regimes share precise systematic features. First, they meet an electoral criterion for being defined democracies (i.e. they hold competitive elections for executive office), but not much else. Second, competitive elections appear to be the earliest emergent feature of political regimes exiting from autocratic form.[1] Constraints on executive power or widespread political inclusiveness appear to systematically lag electoral competition. In the words of Dahl (1971), contestation leads inclusiveness.[2]

Emphasis on elections as the primary feature of democracy and the role of elections in the transfer of power without bloodshed (Popper, 1963) has a long tradition in political philosophy, political science, and political economics. Indeed, a *minimalist* conception of democracy, discussed in Schumpeter (1942) and later in Przeworski (1999) and others, simply puts competitive elections as the sole fulcrum of the very definition of democracy as "a system in which rulers are selected by competitive elections."

Motivated by the empirical prevalence of minimal democracies, a relevant question to ask is therefore: Is an electoral criterion a purely procedural phenomenon without bite? Glaeser,

[1] There are multiple historical examples of this phenomenon. A pertinent instance is the wave of African democratizations in the 1990's. According to Bratton and van de Walle (1997), and discussed in Block (2002), in pre-1990 Sub-Saharan Africa (SSA), elections were "largely non-competitive affairs in which, by forgone conclusion, a dominant ruling party won all available seats." The authors report that over the 1985-89 period only 9 countries out of 47 had competitive elections. Only one SSA incumbent ruler (Seewoosagur Ramgoolam of Mauritius) was ever replaced through elections over the 1980-1989 period. In contrast, the authors report that in the early democratization phase between 1990 and 1994, 38 countries out of 47 experienced competitive elections and 11 SSA incumbents were replaced through elections. Yet, over the same sample period, 37 of the 47 SSA countries were not full democracies according to Polity IV scores.

[2] Dahl (1971, ch. 3) indicates as the most robust path towards stable polyarchy one of increased political competition followed by the expansion of participation, citing the historical sequences of the United States and the United Kingdom as examples. See also Coppedge, Alvarez, and Maldonado (2008) for a discussion.

La Porta, Lopez-de-Silanes and Shleifer (2004), for instance, criticize the use of Polity2 series as an institutional proxy because it "provides a rapidly moving assessment of electoral outcomes over time, not a measure of actual political constraints on government." This paper provides a negative answer to this question and addresses a set of pertinent and related ones: Why would elections be held and respected in an environment with otherwise weak political institutions? Why is power-sharing conducted via elections (rather some other arrangement, including rotating leadership)? Under what economic conditions are elections used? Is 'minimalist democracy' simply a necessary transitory phase on the way to a fuller version of democracy, or is it a stable form of governance in itself? Given so many developing economies often solely meet a minimalist democratic criterion, answering these questions offers important insights to their political development and process of institutional consolidation.

This paper characterizes the problem of leadership survival for an autocrat facing coup threats from regime insiders. It is the empirical frequency of coups and insider-induced leader terminations that suggests that the main threat to a dictator's survival comes from within an autocrat's regime, not just from the masses.[3] Coup threats (defining the "Problem of Authoritarian Power-Sharing" in Svolik, 2012) cannot always be assuaged by dividing up and sharing the benefits of leadership with insiders. *Some* of the benefits of being a leader are non-divisible (for instance, due to the natural contractual incompleteness in the administration of the State and the government) and hence non-transferrable.

Elections yield two benefits for leadership survival: First, they generate uncertainty as to the identity of the leader, hence offering a mechanism of stochastic power-sharing of leadership rents to the non-leader insiders (Przeworski, 1999); second, when credible, elections allow the transfer of power without bloodshed (Popper, 1963), hence avoiding welfare losses due to coups (which are typically violent and surplus destroying, as often either the leader or the coup plotter dies). However, for elections to be able to do this without any additional coercive power more is required than just a randomization device: Specifically, voters must believe that violating an election reveals something meaningful about a leader's type. Heterogeneity in leader types, and some arbitrarily small (at least) valuation of types, are thus essential ingredients of our framework. But how the beliefs of voters are affected by elections, and hence their efficacy, is an equilibrium outcome. When effective, a leader who chooses to stay in office after losing an election is able to do so in our framework – as holding elections never mechanically commits leaders to following them, and as voters have no power at all. But voters will not re-elect that leader, if they have the chance to vote, in future. Such a leader thus effectively loses access to the randomization device from then on.[4] And this can be enough for leaders to choose to respect electoral outcomes. We characterize the conditions under which this holds, and hence

[3] See Kendall-Taylor and Frantz (2014), Geddes (2003), Svolik (2009) and Ezrow and Frantz (2011) for further analysis of turnovers in autocracies and empirical evidence in support of this statement.

[4] We model the extreme position that voters will never re-elect such a leader again. But this can be relaxed to allowing for a "small" chance of voters forgiving the leader without effect. This very simple dependence of the randomization device on a single aspect of the leader's past behavior distinguishes elections from a pure coin-toss. In reality voters will condition on much more than this in deciding how to vote. But our aim is to show that a type of democratic turnover can become self-enforcing even if all that matters is this one element. As discussed further, we also contrast our equilibrium with what can be supported using only a mechanical randomization device, like a coin-toss a la Przeworski (1999), in Section 5 of the paper.

under which a minimalist democracy arises in equilibrium. Section 3 presents the setup of our model and the main results.

The conjecture that elections could be introduced by the elite to facilitate peaceful power sharing has been subject to debate. But our theory highlights several key dimensions of elections which necessarily elude Schumpeter's and Przeworski's less formal analyses. Section 4 elaborates further on why voters are not replaceable by a mechanical randomization device. We also explore the nature of other equilibria that arise when loosening the restriction to Markovian strategies in Section 3. Although the elite will be able to replicate equilibrium outcomes using an alternative non-electoral randomization device, we show how doing so requires a threat of reversion to Pareto-dominated equilibria–i.e. requires strategies that are not renegotiation-proof. We then show that any power-sharing equilibrium (without elections) is either not renegotiation-proof or relies on strong informational assumptions regarding motivations for coups. We conclude the section by elucidating the limits to which renegotiation-proof equilibria exist in general.

In Section 5 we show how the model naturally delivers a mechanism for how permanent negative economic shocks, and falls in transferable state resources in particular, may trigger transitions to minimalist democracies. This is not a trivial facet, as the theory is then able to successfully match a voluminous body of evidence in the political resource curse literature (Robinson, Torvik, Verdier, 2006), which systematically links resource shortfalls and institutional change. We revisit some of the empirical findings in this literature and present some new ones consistent with the model in this section. Indeed, we see the empirical consistency of our theory as a distinctive feature. To be precise, this paper contributes to the literature on political institutions by tying together three sets of empirical findings. Our model is not only designed to be consistent with the systematic lack of redistributive aspects to democratizations (Acemoglu, Naidu, Restrepo, and Robinson, 2013) and presents a rationale for hybrid regimes meeting the electoral criterion alone (which is shown in Section 2 to be pervasive in the data), but also the model is consistent with extant evidence on resource windfalls and institutional change.

This paper speaks to the literature on the causes of democratizations and democratic transitions. The contemporary literature, too vast to be properly discussed here, dates at least back to Lipset (1959) and his modernization hypothesis, and it includes, prominently and more relatedly to this work, the contributions by Huntington (1991) on the third wave of democratizations, Przeworski, Alvarez, Cheibub (1996), the selectorate theory of Bueno de Mesquita, Smith, Siverson, Morrow (2003), the work of Boix (2003), Acemoglu and Robinson (2001, 2006), Lizzeri and Persico (2006), Fearon (2011) and Svolik (2012).[5] Our theory departs from current economic models of political transitions along several dimensions.

First, our theory does not require elections having any 'bite' in terms of political account-

[5]In addition, we touch on the literature investigating the socioeconomic consequences of democratizations as in Acemoglu, Naidu, Restrepo, and Robinson (2013) and Przeworski, Alvarez, Cheibub, Limongi (2000), but also the work by Persson and Tabellini (2009) on democratic capital accumulation and growth, and Rodrik and Wacziarg (2005) on the economic effects of democracy, among others. More specifically, it is possible to directly connect our work to other recent contributions in the political economy of development and of autocratic survival in neopatrimonial systems. A set of recent contributions in this direction includes Geddes (2003), Posner (2005), Gandhi (2008), and Francois, Rainer and Trebbi (2014a,b).

ability, nor do elections or the democratic process per se impose on participants any technological or physical constraints that would otherwise limit the dictator's use of force to secure political objectives. Unlike standard political agency models (e.g. Barro (1973)), participants decide whether to abide by electoral rules. This is an important difference from Acemoglu and Robinson (2001, 2006) for instance, where the commitment power of institutions is assumed and in fact central to policy outcomes. Here leaders are free to void election results going against their interest and to remain in power if they choose so. Government insiders are free to stage coups against democratically elected leaders if they have the opportunity to do so. Moreover, these opportunities are assumed to be symmetric in democracies and autocracies. Thus, a minimalist democracy as we characterize it can only exist if democratic rules are self-enforcing in the sense of those with the capacity to use violence for political ends *choosing* not to do so, which we will show they can be.

Second, our framework does not rely on democracy being redistributive or representative in nature. This separates our work from models of political transitions based on redistributive motives à la Meltzer and Richard (1981), including prominently the contributions of Acemoglu and Robinson (2001, 2006) and Boix (2003).[6] A theory of democratization that does not hinge on redistributive motives is relevant from an empirical perspective: redistributive democratizations are in fact *not* observed in the data (Acemoglu, Naidu, Restrepo, Robinson, 2013; Mulligan, Gil, Sala-i-Martin, 2004). Most democratic transitions remain elite-versus-elite affairs, political representation is limited, and income inequality does not systematically decrease after democratic transitions. As in Lizzeri and Persico (2004) we confront the issue of when elites will expand the franchise when there is no direct threat to elite continuation. In their framework, policies which a majority of the elite would want are not deliverable in the elite-only equilibrium. If these policies are coincident with the interests of the non-elite, expanding the franchise can be a way to achieve them. As they report, this appears consistent with the composition of spending changes in early nineteenth century Britain. In contrast, we go even further in our emphasis on the passiveness of the non-elite in this process and public goods play no role in our theory. Similarly Lust (2009) emphasizes the role of elections in facilitating elite access to state resources. This access they can then use to help their rank-and-file supporters, as well as for personal gain. A major difference with the present paper is her focus on elections to legislative bodies with little formal authority and which impose little challenge to essentially autocratic regimes. Instead, we focus on elections where paramount leaders allow candidates to run against them, and where the leader vacates office based on electoral outcomes.

Third, we focus on 'internal' threats to autocratic survival in the form of coups. This is a principle point of contrast with Fearon (2011) who also prominently studies how democratic elections can become 'self-enforcing', but who instead emphasizes the threat of 'external' rebellion on the part of the citizenry in disciplining their leaders, what Svolik (2012) describes as the "Problem of Authoritarian Control". Svolik (2012) argues, with evidence, that the empirically greatest threats for leaders are those arising from within, but as recently evidenced by the Arab Spring, popular rebellion can also dispel leaders from power.

[6] Also related is the work of Benhabib and Przeworski (2006).

2 Motivating Facts

In the previous section we briefly motivated our analysis by emphasizing how prevalent less than consolidated democracies –i.e. regimes in the "gray zone"– are. As reported in Figure 1, they cover a sizeable share of polities world wide and over time.

This section has the goal of providing a set of stylized facts justifying our focus on electoral (minimalist) democracies. We show that: 1. Minimalist democracies exist almost exclusively in the gray zone; 2. Minimalist democracies are the overwhelming point of departure from non-democracy; 3. Minimalist democracies can be persistent over time. To the best of our knowledge these stylized facts are new to the literature on democratic theory.

Fact 1: Less than consolidated democracies are predominantly minimalist, in the sense of satisfying electoral competitiveness requirements but little more. This could be readily observed in the raw data, were detailed disaggregated measures of political features in fact available. Ideally one would require, at the very least, specific scores for both competitiveness and inclusiveness of the political process, the two main factors in Dahl's famous decomposition of the democratic state.

The Polity IV project (Marshall, 2013), a standard reference in the measurement of political regimes characteristics, offers such decomposition, producing scores for competitiveness of executive recruitment (XRCOMP), openness of executive recruitment (XROPEN), limitations on the executive authorities (XCONST) and inclusiveness of political participation (PARCOMP) among different groups in society. An unambiguous interpretation of the Polity IV subdimensions comes from Goldstone, Bates, Epstein, Gurr, Lustik, Marshall, Ulfelder, and Woodward (2010) – that paper's authors include two of the original Polity principal investigators – explicitly reporting that there are: "*two variables in the Polity data set that roughly correspond to the two dimensions Dahl (1971) uses to characterize modern forms of government. We use Polity's scale for the openness of executive recruitment (EXREC) as a measure of contestation and Polity's scale of the competitiveness of political participation (PARCOMP) to capture variation in the degree and forms of inclusiveness.*" EXREC is the executive recruitment concept variable whose main components are XRCOMP and XROPEN.[7] PARCOMP explicitly indicates exclusion from participation among its criteria, by marking as criteria the exclusion of "*substantial groups (20% or more of the adult population) from participation.*" and whether "*large classes of people, groups, or types of peaceful political competition are continuously excluded from the political process*"(Marshall, 2013, p.26). Polity IV also offers an aggregate measure of the overall degree of democracy in a country, specifically through its revised Polity 2 score, which cumulates the full set of sub-dimensions on a discrete scale of democracy increasing from -10 to 10.[8]

By looking at which levels of the Polity 2 score (from less democratic to more democratic) the different features of competitiveness and inclusiveness emerge, one can garner a first indication of along what dimensions the process of democratic development typically unfolds. It is

[7] We will focus on the component variables as opposed to the concept variables in what follows, in order to focus on the most disaggregated level possible.

[8] Although some subcomponents of Polity 2 load somewhat nonlinearly on Polity 2 (for example when it comes to XCONST), XROPEN, XRCOMP, PARCOMP load linearly on the overall score, so none of the results on contestation and inclusiveness reported below hinge on nonlinear loadings of these subcomponents. For details see http://www.systemicpeace.org/inscr/p4manualv2012.pdf

easy to show that electoral competitiveness emerges systematically earlier than political inclusiveness. Table 1 considers three different country-year subsamples of the Polity 2 data: consolidated democracies (with scores above 8); less than consolidated democracies with scores above 0 but less than 8; less than consolidated autocracies (with score between -5 and 0). It then evaluates how many of the countries within each of the three subgroups reach fully democratic scores for three different dimensions: Competitive elections, coded as 1 if XRCOMP $= 2$ (transitional arrangements between selection, ascription and/or designation, and competitive election) or 3 (election), and 0 otherwise. Inclusive political process, coded as 1 if PARCOMP $=$ 4 (transitional arrangements to fully politically competitive patterns of all voters) or 5 (competitive: alternative preferences for policy and leadership can be pursued in the political arena.), and 0 otherwise. Executive constraints, coded as 1 if XCONST $= 5$ (substantial limitations on executive authority) or higher, and 0 otherwise.

Table 1 tries to capture which dimensions of democracy 'mature' first. Quite intuitively, consolidated (mature) democracies fare as well in terms of competitive elections as in terms of limitations on the executive authorities and inclusiveness of political participation. Less-than-consolidated democracies – i.e. regimes in the gray zone – fare almost as well as consolidated democracies in terms of competitive elections (XRCOMP). However, regimes in the gray zone fare much worse in terms of limitations on the executive authority (XCONST) and on inclusiveness of political participation (PARCOMP). Weak autocracies finally lose the competitive elections. Using an alternative, but much coarser measure for electoral competitiveness, defined based on the openness of executive recruitment (XROPEN $= 4$, i.e. open executive recruitment), produces similar patterns. In synthesis, electoral competition is the predominant democratic feature in the gray zone.

In Figure 2 we report the nonparametric representation by local polynomial of the relationship between a dummy for competitiveness of executive recruitment and the overall Polity 2 score in the dashed line. It is evident that competitiveness arises much earlier in the process of democratic consolidation than the same line but for political inclusiveness (in solid). In Figure 3 we again report the nonparametric representation by local polynomial of the relationship between a dummy for competitiveness of executive recruitment and the overall Polity 2 score in the dashed line. And again competitiveness arises much earlier in the process of democratic consolidation than executive constraints (in solid). In Figures 4, 5, and 6 we repeat the analysis, but controlling for country and year fixed effects using semiparametric methods. The competitiveness of executive recruitment emerges at Polity 2 levels around 0 and significantly differently (based on 95% country-clustered confidence bands) than political inclusiveness or executive constraints, which both appear more frequently later on in the democratic consolidation process.

Fact 2: Minimalist democracies are the point of departure from non-democracy. This second feature of the data is illustrated by focusing on events of democratization and reporting which democratic features emerge at the onset. Acemoglu, Naidu, Restrepo, and Robinson (2013) produce a detailed list of 122 democratizations and of 71 democratic reversals for 175 countries over the 1960-2010 period, which we employ in an event study type of analysis. The authors provide a convincing discussion of the advantages their classification of events relative to other extant studies (for example the forward-looking classification of Papaioannou and Siourounis,

2008).

The empirical approach we follow is straightforward. For each variable considered in the event study, we partial out year and country fixed effects and normalize the residual mean level 5 years before a democratization (or reversal) to 0. In each figure, the democratization event takes place at $t = 0$ and the behavior of the variable is plotted in a window around it.[9] For example we can follow the behavior of contestation and inclusiveness around events of institutional change. The conditioning on year and country fixed effects ensures the dynamics we report are not biased by unobserved heterogeneity, composition effects, and global trends, all issues emphasized by Acemoglu et al. (2013) as particularly relevant in this empirical setting.

In Figure 7 we report the behavior around democratizations of electoral contestation and in Figure 8 of inclusiveness. Competitive elections, as defined above, clearly jump at democratization, with a sharp, almost discontinuous increase when the country moves out of nondemocracy. Inclusiveness is instead characterized by a much smoother behavior at $t = 0$. While the data also indicate an increased incidence of inclusive politics at $t = 0$, such increase is about 2/5 in magnitude of the increase in competitive elections, and only after 15 years of inclusive politics do the two variables reach comparable levels of incidence.[10] Hence, contestation systematically leads inclusiveness and countries do not immediately move to a Meltzer and Richard's type of fully representative democracy at onset, one where the political voice of the median voter may be heard. The lack of empirical support for the Meltzer and Richard's logic to democratization can be further illustrated by focusing on the behavior of after tax income inequality around democratization. A basic prediction for the theory is that the after tax Gini coefficient should be lower as a country transitions from nondemocracy to democracy. In Figure 9, where we employ after tax Gini from Solt (2014) Standardized World Income Inequality Database, there is no evidence of any break in Gini levels at $t = 0$, if anything the level of inequality increases smoothly over time.

Other institutional features which might be correlated with representation appear also to lag electoral competition. Figure 9 also reports the behavior of the Freedom House civil liberties index (rescaled to indicate maximum level of civil liberties with 1 and minimum with 0). At democratization this particular measure of civil rights attributed to the general population does appear to follow a pattern similar to inclusiveness, smoothly increasing over time after $t = 0$[11].

It would be unwarranted to rule out any role for social conflict and rebellion threats in a theory of democracy. The events of the Arab Spring of 2011 are an obvious counterexample of their importance. However, our theory relies on a different mechanism which just may happen to be more empirically salient. To justify our focus on minimalist democracies that leave little room to pressure from outside the elite, in Figure 9 we report the behavior around democratization of social unrest measured with a dummy variable for revolutions, demonstrations, revolts, or

[9] We thank an anonymous referee for suggesting this event study approach and for suggesting this exhaustive set of empirical checks.

[10] Incidentally, reproducing the event study analysis for executive constraints reports an effect closer to contestation than inclusiveness. This is in line with what reported above.

[11] Reproducing the event study analysis for Freedom House political rights index reports an effect qualitatively close to what shown for contestation at $t = 0$. The definition used for political freedom in the Freedom House conflates contestation and inclusiveness and is coarser than the one presented in Polity IV.

strikes from Banks (2015) Cross-National Time-Series Data Archive. The data do not seem to overwhelmingly indicate social conflict as main precursor of democratizations, or at least that no overwhelming empirical smoking gun is present to suggest our focus is unwarranted. Social unrest appears marginally higher before democratizations, but the amount of variation in social unrest appears quantitatively minimal comparing before and after democratizations, or even relative to reversals (as reported below). Alternative measures of unrest are not abundant, but when using information on coups from the University of Illinois' Cline Center for Democracy Coup D'état Project a similar lack of stark discontinuities at $t = 0$ is evident.

It is instructive to focus on reversals, i.e. movements into non-democracy. We report this analysis in Figure 10, 11 and 12, in fashion analog to Figures 7, 8 and 9. Inclusiveness appears on a downward trend well before reversals at $t = 0$, with electoral competition being the last feature to be removed. Income inequality appears again unaffected at reversal. Interestingly civil liberties also tend to present a sharper erosion around reversals.

Fact 3: Minimalist democracies are non-ephemeral. This third feature of the data is illustrated by focusing on regime transitions. Again, in order to maintain the analysis as transparent as possible, we focus on raw transition matrices across years. Given our definitions of competitive and inclusive politics indicators above, we define the following four states: Non-democracy if Competitive elections = 0 and Inclusiveness = 0. Minimalist democracy if Competitive elections = 1 and Inclusiveness = 0. Alternative democracy if Competitive elections = 0 and Inclusiveness = 1. Representative democracy if Competitive elections = 1 and Inclusiveness = 1. The empirical frequencies of the transitions from year $t-1$ to t in the post-1945 period are reported in Table 2. Focusing on the minimalist democracy state we observe a year-on-year likelihood of persistence in this state of 92%, which underscores a substantial level of persistence. In Table 3 report the same data expressed as conditional on a transition happening between $t-1$ and t. Here again the evidence points at minimalist democracy as being the most likely transition state out of non-democracy. We also reproduced the transition analysis using different measures for competitive elections (using only XRCOMP = 3) and inclusive politics (using only PARCOMP = 5) with very similar results.

In terms of length of the spells under the four states described above (and ignoring censoring), the average length of spells under minimalist democracy is 9 years, under representative democracy is 24 years, under non-democracy is 24 years, and under alternative democracy is 8 years.

The evidence so far shows that exit from autocracy entails a gradual process of institutional change, early on through competitive elections for authority recruitment and, only secondarily, through guaranteeing inclusion of other political agents (the poor, for instance). It remains to be shown what are typical triggers of democratizations and whether they primarily affect the presence of competitive elections as the evidence above suggests. We formalize this issue next.

3 Model

3.1 Basic Setup

Consider an infinite horizon discrete time economy populated by two types of agents: citizens and the elite. At each date t there are $N \geq 2$ elites, one of which is the *leader* and the remainder are *insiders*.

At the start of the period, the leader obtains a non-transferable payoff from holding office (ego rents, prestige, status, power, etc.) worth F and is endowed with U units of transferable patronage (graft, cash, resource revenues, public offices, bribes, etc.).[12] The leader then decides how to allocate the available patronage across the elite. Thus, if $\tau \in [0, U]$ units of patronage are allocated to the insiders in some period, then the leader obtains a payoff of $F+U-\tau$ in that period. The extent to which the benefits of office are transferable is captured by

$$\psi \equiv \frac{U}{F+U}. \tag{1}$$

It is key to all of the results that will follow that at least some part of the total value of holding the leader's position is in a non-transferable form–i.e. that $\psi < 1$. Patronage, graft and the state's wealth are all clearly of a transferrable form, but it is equally realistic that no small part of the motivation for leading a country comes in the form of status and the even more nebulous form of "power". A voluminous literature exploring the psyche of dictators attests to this.[13] Again, it is conceivable that some of this could be transferrable – leaders can appoint a "right hand man" with immense power. But the residual component of a leader's power in a weakly politicized state is inherently non-transferrable – the leader always has the right to "un-appoint" the right hand man too. These residual decision rights are similar in nature to those discussed in the theory of incomplete contracting a la Grossman and Hart (1986). A non-trivial component of power, and hence a leader's status, seems inextricably linked to actually being the leader, and we recognize this as distinct from regular patronage by fixing F to the leader.

Insiders observe their allocated patronage and decide whether they wish to mount a coup. We assume that exactly one of the insiders has the opportunity to mount a coup in any given period, and that this is determined randomly after the patronage has been allocated. A coup requires that the allocated patronage is forgone and succeeds with probability γ. If successful, the coup instigator becomes leader in the following period and the current leader dies. If unsuccessful, the coup instigator dies.

If there is no coup, then the leader can choose whether to hold an election. Following an election, the leader chooses whether he is going to respect the result. Since election results

[12] Patronage is a ubiquitous feature of weakly institutionalized polities. For instance: Bratton and Van de Walle (1994):

> "The distinctive institutional hallmark of African regimes is neopatrimonialism. In neopatrimonial regimes, the chief executive maintains authority through personal patronage, ...The essence of neopatrimonialism is the award by public officials of personal favors, both within the state (notably public sector jobs) and in society (for instance licenses, contracts and projects). ....it is the *core* feature of politics in Africa..."

[13] For example, much has been made of the self-aggrandizing aspects of power which satisfy deep personal needs within a particular type of leader, see Padilla, Hogan and Kaiser (2007).

can be ignored, there is no downside to holding an election in the model. Thus, to simplify the exposition we suppose that elections are always held and focus instead on whether the results are respected. We can then interpret a situation in which leaders never respect election losses as being equivalent to elections not being held.

Finally, each member of the elite dies with probability δ at the end of the period for exogenous reasons. An elite that dies is replaced by another in the next period and the replacement occupies the same position (leader or insider).

To summarize, the basic timing within a period is as follows:

1. Leader allocates patronage
2. Insider observes allocation and decides whether to mount a coup
3. If no coup, then election results revealed and Leader decides whether to respect them
4. Successors assume the role of any agents that die

We stress that a leader's maintenance of power here ultimately depends only on being able to survive coup attempts and deliberately set aside the possibility of revolutionary threats from citizens. The one and only role of citizens is to decide the election outcome. We further emphasize that citizens do not have redistributive motives for voting: consistent with repeated observation in weakly politicized settings, citizens correctly anticipate that leaders do not deliver pro-citizen policies. Nevertheless, the behaviour of voters will determine the consequences facing a leader that refuses to respect an election loss. We follow an approach in which, for the most part, voters are essentially indifferent between candidates. When this is the case the incumbent wins the election with probability $p \in [0,1]$. This state of indifference is broken however if a leader refuses to respect an election loss (equivalently, refuses to hold an election) when he was not expected to do so in equilibrium. In this event, voters become unwilling to vote for the recalcitrant leader ever again. Whilst there are many potential foundations for this voting behavior, for concreteness we pursue one possibility below.

3.1.1 Voting Outcomes

We assume that leaders are one of two types: *regular* or *tyrant*. Tyrants behaviourally undertake actions that can differ from the value maximizing actions of regular types. This type is obsessed with maintaining power. We assume that a leaders' type is not observed by citizens but allow the possibility that leader and insiders observe each others' types. All agents start off as regular types but become a tyrant type (permanently) with probability $\varepsilon \to 0$ when they assume the leadership position. Citizens would prefer not to be ruled by a tyrant because there is a small chance that a tyrannical leader could adversely affect them.[14] Formally, we shall assume that with probability $\eta \to 0$ the type of a leader effects citizens' payoffs; and it does so adversely if the leader is a tyrant. One could think of the leader as only very occasionally being presented with the opportunity to undertake an egregious or exploitative act. The act is costly to the leader, delivers some private benefit to him, but is immensely costly to (vast chunks of) the citizenry. Regular types follow equilibrium incentives and never find it worthwhile to undertake the exploitative act. Only tyrants value the private benefit sufficiently to warrant the

[14] All of the results we shall report fully persist if we assume tyrants are even more costly, in expectation, to citizens

cost. An example might be a murderous purging of perceived threats to the leader's position. Such purges are costly to the leader, can be very costly to citizens, both directly and indirectly, and though perhaps raising a leader's security, would be considered disproportionate by rational leaders but not by tyrants. Of course, if the possibility of such acts arises more than rarely, this only makes citizens prefer non-tyrannical types even more. We emphasize the assumption of a very low η to illustrate that an arbitrarily small preference on the part of citizens is sufficient here.

Additionally, we assume that tyrants do not respect election results. This, in itself, is of no direct consequence to citizens, as citizens do not value the outcome of elections per se. But it becomes so when they expect non-tyrannical types to respect election results. That is, when a leader's not respecting an election result indicates – with a high probability – that the leader must be a tyrant type. As shall be seen, a key distinction between democratic and autocratic outcomes will hinge on voters' perceptions regarding a leader's type following the violation of election results.

There are two important points that arise from this structure. First, if both the leader and non-leader have always taken the equilibrium response to election losses (and have not taken the exploitative act), then citizens consider them equally likely to rule as a tyrant type–i.e. the leader *is* a tyrant with probability ε and the non-leader would *become* a tyrant with probability ε. Second, if a leader refuses to step down when they are expected to do so in equilibrium, then citizens believe them to be a tyrant. This remains true even if such a leader were to subsequently step down.[15] As a result, such a leader becomes uncompetitive in future elections.

Finally, we reiterate, that though the citizens' perceptions of a leader may vary depending on whether or not he steps down, these perceptions have no direct impact on the leader's welfare. Citizens do not move against leaders, and the success of coup attempts in no way depends on citizens.

3.1.2 States and Markov Strategies

We analyze the above structure via the consideration of two states, $\omega \in \{\omega_p, \omega_0\}$, which are differentiated by the probability with which citizens elect the incumbent. State ω_p represents the situation described above in which citizens are indifferent between the leader and non-leader. In such cases we suppose that the incumbent is re-elected with probability $p \in [0,1]$. This captures both a preference for the incumbent and any capacity for the incumbent to tilt election outcomes in their favor. State ω_0 represents the situation described above in which the leader (but not the non-leader) has taken an action in the past which leads citizens to believe that they are a tyrant. In such cases the incumbent is elected with probability zero.

Transitions between these states work as follows. If regular leaders do not respect elections in state ω_p, then voter beliefs are unaffected when a leader refuses to step down in state ω_p and the economy thus remains in state ω_p. On the other hand, if regular leaders do respect election

[15] If regular leaders always respect election losses in equilibrium, then we would never observe a leader that respects an election loss after having previously not respected an election loss on the equilibrium path. As such, citizen beliefs are not pinned down in this event. They would be pinned down in the manner described if, for example, election losers were forced to step down with a positive but arbitrarily small probability. In any case, all that we require is that such a leader does not fully redeem themselves by respecting an election.

outcomes in state ω_p, then refusing to step down following an election loss leads citizens to believe that the leader is a tyrant and the state transitions to ω_0. By using the fact that it would never be optimal for the leader to step down in this state,[16] the leader will remain more likely than the challenger to be a tyrant. As such, we have that the economy remains in state ω_0 until the leader dies–either naturally or via a coup–at which point citizen indifference re-emerges and the state transitions back to ω_p.

For a start, we focus only on Markov Perfect Equilibria (MPE), whereby strategies depend only on the payoff relevant state variable, $\omega \in \{\omega_p, \omega_0\}$, and prior actions taken within the period.[17] Specifically, a Markov strategy for the leader maps the state ω into a patronage allocation and a probability of respecting an election loss. The strategy of an insider maps the state ω into to a function that indicates a coup probability for each potential amount of offered patronage transfer. We provide the full definition of Markov Perfect Equilibrium in the appendix, but opt to present more useful specialized definitions in the text that follows. Specifically, we consider the two natural classes of equilibria. The first is Autocratic equilibria, whereby leaders never respect election losses (equivalently, never hold elections), and the second is Democratic equilibria, whereby leaders always respect election results. These are considered in turn.

3.2 Autocratic Equilibrium

In order to highlight the elite's motivation for establishing and adhering to minimalist democracy, we begin by analysing equilibrium outcomes that arise when elections are ignored (equivalently, never held). Such equilibria, which we call *autocratic equilibria*, feature leaders that never share power with insiders. Despite an unwillingness to share power, autocratic leaders need not face coup attempts in equilibrium since they are able to share patronage with insiders. Since coups are costly, insiders can be dissuaded from holding them if they are offered enough of a transfer. Whilst one could imagine a leader preferring to face coups over making the transfers required to dissuade them, we shall demonstrate that this can never be the case – any political violence in equilibrium necessarily reflects insufficient patronage. We show how a generically unique autocratic equilibrium always exists, and depending on the availability of patronage can either never have coups (a *secure* autocracy), occasionally have coups (a *weakly insecure* autocracy), or always have coups (a *strongly insecure* autocracy). We also show that, unlike democracy, an unwillingness to share power is *always* self-enforcing: it is never optimal to hand over the leadership today if no-one is expected to hand over the leadership in the future.

[16] This is shown formally in the appendix, but the intuition is as follows. If the leader stepped down, then they are more likely than the new incumbent to be a tyrant (and since $\eta \to 0$ we can ignore the possibility that the new incumbent reveals themselves to be a tyrant by taking the exploitative act). Since the new leader continues to win elections, there is no opportunity for them to violate an election loss and therefore their popularity (and that of their replacements) relative to the non-leader persists. Thus, if a perceived tyrant steps down, they will become a non-leader that will never be elected. This means that such a non-leader will be held to their expected value of mounting a coup. But even if the coup succeeds they only get the discounted value of being a leader in the ω_0 state. In short, stepping down in state ω_0 represents a strictly costly way to achieve what one could get by not stepping down in state ω_0.

[17] We consider equilibria with non-Markov strategies in section 4 below.

3.2.1 Equilibrium Conditions

Markov strategies are particularly simple to describe when leaders ignore elections. If leaders never respect an election loss, then voters' beliefs about a leader's type is not affected by a refusal to step down. As such, the economy only exists in a single state, ω_p. Equilibrium strategies boil down to a patronage transfer level, τ_A, and a coup probability function, $c_A(\tau)$.

To establish the behavior as an equilibrium, we must ensure the optimality of behavior at each decision point. For simplicity, assume from now on that there is a single insider –and all results generalize to multiple insiders. Specifically, if we let V_A^L be the value of starting a period as the leader and V_A^N be the value of starting a period as the insider, then the leader is optimizing in their transfer choice if

$$\tau_A \in \arg\max_{\tau\in[0,U]} \left\{F + U - \tau + (1 - c_A(\tau)\cdot\gamma)\cdot(1-\delta)\cdot V_A^L\right\} \tag{2}$$

and the insider is optimizing at each possible transfer if

$$c_A(\tau) \in \arg\max_{c\in[0,1]} \left\{c\cdot[\gamma\cdot(1-\delta)\cdot V_A^L] + (1-c)\cdot[\tau + (1-\delta)\cdot V_A^N]\right\} \tag{3}$$

for all $\tau \geq 0$. Given equilibrium outcomes, τ_A and $c_A \equiv c_A(\tau_A)$, the value functions satisfy

$$V_A^L = F + U - \tau_A + (1 - c_A\cdot\gamma)\cdot(1-\delta)\cdot V_A^L \tag{4}$$

$$V_A^N = c_A\cdot[\gamma\cdot(1-\delta)\cdot V_A^L] + (1-c_A)\cdot[\tau_A + (1-\delta)\cdot V_A^N]. \tag{5}$$

In order for the leader to optimally ignore election results–i.e. in order for autrocracy to be self-enforcing–it must be that

$$V_A^L \geq V_A^N. \tag{6}$$

The strategies τ_A and $c_A(\tau)$ form an *autocratic equilibrium* if conditions (2)-(6) are satisfied. An autocratic equilibrium is said to be *secure* if $c_A = 0$, is said to be *strongly insecure* if $c_A = 1$, and said to be *weakly insecure* if $c_A \in (0,1)$.

3.2.2 Analysis

We begin with the insiders' problem of determining whether to mount a coup when presented with a transfer offer. From (3), it is clear that insiders must follow a cut-off strategy whereby the insider requires a critical transfer level, denoted $\hat{\tau}_A$, in order to be dissuaded from a coup. The value of $\hat{\tau}_A$ makes the insider indifferent to holding a coup and thus satisfies $\hat{\tau}_A + (1-\delta)\cdot V_A^N = \gamma\cdot(1-\delta)\cdot V_A^L$. That is:

$$\hat{\tau}_A \equiv (1-\delta)\cdot\left[\gamma\cdot V_A^L - V_A^N\right]. \tag{7}$$

By establishing a basic property of $\hat{\tau}_A$, the following result indicates that avoiding coups is costly in any autocratic equilibrium.

Lemma 1. *Avoiding a coup requires a positive transfer:* $\hat{\tau}_A > 0$

Turning to the leader's patronage transfer problem (2), we see that the leader's optimal transfer is either $\hat{\tau}_A$ or zero. Paying the former helps dissuade coups but the latter preserves patronage for the leader's consumption. The following shows that leaders will always prefer to make the positive transfer and avoid coups whenever strictly possible.

Lemma 2. *Coups are avoided whenever it is strictly feasible to do so: $\hat{\tau}_A < U$ implies $\tau_A = \hat{\tau}_A$.*

Thus, leaders will never keep patronage if giving it away could dissuade a coup (even if γ is small), so that political violence in equilibrium reflects insufficient patronage rather than the leader's optimal risk-taking. Intuitively, this is because coups are surplus destroying – either the leader or challenger dies with probability one – so avoiding them raises the surplus of the game played by insiders and leader. This efficiency gain, which is always claimed by the leader through his discretionary allocations of τ_A, ensures that, whenever possible, coups are avoided along the equilibrium path.

An implication of this is that $\hat{\tau}_A < U$ implies a secure autocracy. The argument is that if it were not true, then it could not be optimal for the leader to pay $\tau_A = \hat{\tau}_A$ since a marginally higher transfer would ensure a secure autocracy (achieving a discrete increase in benefit at a marginal increase in cost). The fact that this argument does not apply when $\hat{\tau}_A = U$ explains the importance of the 'strict' qualifier. That is, it is possible that insiders hold a coup with a positive probability when offered all available patronage: $\tau_A = \hat{\tau}_A = U$. If this coup probability is sufficiently low then leaders will opt to transfer everything and face a small coup probability. However, if this coup probability is sufficiently high then leaders will opt to transfer nothing and face coups with probability one. Of course, if $\hat{\tau}_A > U$ then it is impossible to dissuade insiders from mounting coups, and a strongly insecure autocracy is the only possibility.

We now turn to the self-enforceability condition, (6). This requires that a leader prefers to retain the leadership rather than handing it over and becoming an insider. This condition seems to be threatened by the observation that the leadership is unattractive when subject to frequent coup attempts and/or high patronage demands whilst being an insider is attractive to the extent that they are able to use the threat of coups to extract patronage transfers. The following result indicates such a threat never materializes.

Result 1. *Autocracy is always self-enforcing: conditions (2)-(5) imply condition (6).*

The intuition is that one becomes an insider by stepping down. Since they can mount a coup, insiders can ensure themselves at least the expected value of a coup. But in autocracy, this is also the most that they will achieve. This is clear in strongly insecure equilibria since insiders mount coups on the equilibrium path. If insiders were to achieve a higher value in a weakly insecure or secure equilibrium then by definition they must be receiving a transfer greater than the indifference threshold, $\hat{\tau}_A$. But this would imply that leaders could not be optimizing since they could lower the transfer marginally (which is always feasible by Lemma 1) while still avoiding coups. Thus, the most that an insider can get is the expected value of holding a coup, which is strictly less than the value of being the leader since coups are not always successful. Thus stepping down and becoming an insider will yield a value strictly less than the value of remaining the leader, and therefore autocracy is always self-enforcing.

Given the above discussion, we would expect that secure autocracy arises when there is sufficient patronage, a strongly insecure autocracy to arise when there is insufficient patronage, and a weakly insecure autocracy to arises when patronage falls between these. In order to help state the following proposition, recall that the availability of patronage is denoted $\psi \equiv U/(U+F)$, and define two critical values $\mu_1 \equiv \frac{\delta\cdot\gamma\cdot(1-\delta)}{\delta+\gamma\cdot(1-\delta)}$ and $\mu_2 \equiv \frac{\gamma\cdot(1-\delta)}{1+\gamma\cdot(1-\delta)}$, noting that $0 < \mu_1 < \mu_2 < 1$.

Proposition 1. *An Autocratic equilibrium always exists and is generically unique. Specifically:*

- *A secure Autocratic equilibrium exists if and only if* $\psi \geq \mu_2$,
- *A weakly insecure Autocratic equilibrium exists if and only if* $\psi \in [\mu_1, \mu_2)$, *and*
- *A strongly insecure Autocratic equilibrium exists if and only if* $\psi \leq \mu_1$.

When patronage is sufficiently abundant, $\psi \geq \mu_2$, leaders can afford to pay off insiders an amount that fully dissuades them from holding a coup when anticipating becoming a secure autocrat. When patronage falls in the middle region, $\psi \in (\mu_1, \mu_2)$, the leader does not have enough patronage to dissuade insiders from holding a coup when anticipating becoming a secure autocrat, yet does have enough patronage to dissuade insiders from holding a coup when anticipating becoming a strongly insecure autocrat. In this region, all available patronage is transferred and insiders hold coups with a probability that makes them indifferent between accepting this and mounting a coup anticipating becoming a weakly insecure autocrat. As patronage is lowered within this region, so too is the transfer to insiders. This makes coups more attractive and thus the probability of a coup must increase as patronage decreases. At some point though, when μ falls to μ_2, the probability of a coup becomes so great that leaders prefer to keep the transfer and face coups with probability one. These forces become more acute as patronage is reduced further, even coming to the point at which the leader does not have the resources to dissuade insiders from holding a coup and becoming a strongly insecure autocrat if successful. Leaders are therefore resigned to facing coups each period when patronage is sufficiently scarce.

This result thus links the stability of autocracies to the existence of a steady stream of patronage rents; a theme already well reflected in the study of autocracies. For example, Van de Walle (1994):

> " Cameroon's "patrimonial orientation" was due to its political leaders' management of oil wealth and that this wealth, along with foreign aid, allowed the authoritarian regime to endure."

Fjelde (2009):

> "The conversion of public funds into private payoffs has prolonged poverty and bred economic inequality in many oil-wealthy states, but it has also helped foster powerful alliances with a stake in the continuation of the prevailing rule (Smith, 2004). Countries such as Gabon, Libya and Saudi Arabia illustrate how oil-based rent- seeking can strengthen regimes, by exiting their clientelist networks and thus placating restive groups."

And:

> "Oil-rich Gabon provides another illustration of how oil wealth and institutionalized corruption have converged to produce relatively high political stability, ...the political stability of Gabon has relied crucially on the president's (Bango)patronage networks. These have derived their strength from a careful ethnic balancing in the ethnically diverse country and a deliberate integration of powerful political opponents into the regime's power base (Yates, 1996; Basedau & Lacher, 2006)." p.203

Another implication is that, for much of the relevant parameter space, the marginal dollar of patronage is best used by an autocrat as a transfer to insiders to increase (or maintain) regime security rather than fully retained as consumption. The logic stems from Lemma 2, where we showed that autocrats are willing to avoid coups whenever possible. Only strongly insecure autocrats, those for whom $\psi < \mu_1$, would retain marginal increases in patronage. For such autocrats, peace is unaffordable and thus consumption is the only feasible use of extra patronage. In all other cases, at least some of the marginal increase will be transferred to insiders, and *all* of it is transferred if the autocrat is weakly insecure–i.e. those for whom $\psi \in (\mu_1, \mu_2)$. In this range we have seen that equilibrium involves occasional coups – insiders are indifferent to undertaking coups and remaining loyal. A marginal increase in patronage that was not transferred to insiders would thus lead to coups with probability one – as it raises leadership value without affecting that of insiders and would thus never be chosen by a leader. A marginal increase that was only partially transferred to insiders so that they remained indifferent to undertaking coups would also not be chosen by the leader. Any such partial transfer that could maintain insider indifference to coups is dominated by a slightly higher one that would buy leader security for sure. The full transfer of any marginal increases to insiders, on the other hand, is an equilibrium response. Insiders remain indifferent to undertaking coups: the probability of a coup falls making leaders better off and the higher transfers increase the value of being an insider too. Marginal increases in patronage availability in the range $\psi \in (\mu_1, \mu_2)$ are thus fully transferred to insiders, with insider incentives remaining balanced between loyalty and coups and the equilibration achieved via the magnitude of the decline in coup frequency.

An autocratic equilibrium involves wasteful coups only if patronage is insufficient. This observation hints at the underlying value that the elites may find in minimalist democracy: the inability to avoid coups via patronage could possibly be overcome if insiders could instead be offered the possibility of future power via elections. We now turn to this issue.

3.3 Minimalist Democracy Equilibrium

We now investigate the possibility of situations in which leaders call elections and use the outcomes of these to determine whether they will stay in power. A minimalist democracy equilibrium has two key features. The first is this respect for election results and the second is that democratic leaders do not have their rule truncated by coups. We capture this by considering democratic equilibria of our model. Such equilibria involve peaceful power transfers among the elite: i.e., a lack of coups and leader replacement after electoral loss. Coups are dissuaded by the promise of legitimately obtaining power via elections (as well as patronage transfers in some cases). It will be seen that the principal reason leaders respect election losses is that because failing to do so will render them uncompetitive in future elections. This condemns them to rule as a tyrant (a type of ruler who will never be approved by the public) and, as we shall demonstrate, minimalist democracy depends on ruling as a tyrant being sufficiently unattractive. This will be the case when insiders are especially motivated to mount coups against tyrants.

3.3.1 Equilibrium Conditions

Since leaders respect election losses in this equilibrium, a failure to do so leads voters to update their beliefs about a leader's type. Specifically, the leader is perceived to be a tyrant and as a result is never elected again. Thus, both states ω_p and ω_0 need to be considered in the minimalist democracy equilibrium. In state ω_p voters perceive candidates to be equally attractive since both candidates have respected elections in the past. As such, we shall refer to ω_p as the "democratic" state in this equilibrium.[18] In state ω_0 the leader has refused to respect an election loss in the past and is therefore perceived to be a tyrant by voters. As such, we shall refer to ω_0 as the "tyranny" state in this equilibrium.

State transitions can thus occur only when leaders are replaced or refuse to step down. The democratic state persists if the leader wins the election, loses the election and steps down, or dies. If the leader loses election and stays, the state transitions to the tyranny state. The tyranny state persists as long as the leader stays in power, and transitions back to the democratic state if he dies or is deposed.

Equilibrium strategies boil down to a patronage transfer level and a coup probability function for each of the two states: $\{\{\tau_D, c_D(\tau)\}, \{\tau_T, c_T(\tau)\}\}$. To establish behavior as an equilibrium, we must establish the optimality of behavior at each decision point. In order to describe this, let V_D^L and V_T^L be the values of starting a period as the leader in the democratic and tyranny states respectively, and similarly let V_L^N and V_T^N be the values of starting a period as an insider in each of the states.

In the democratic state, the leader is optimizing in their transfer choice if

$$\tau_D \in \arg\max_{\tau\in[0,U]} \{F + U - \tau + (1 - c_D(\tau)\cdot\gamma)\cdot(1-\delta)\cdot[p\cdot V_D^L + (1-p)\cdot V_D^N]\} \tag{8}$$

and the insider is optimizing at each possible transfer if

$$c_D(\tau) \in \arg\max_{c\in[0,1]} \Big\{c\cdot[\gamma\cdot(1-\delta)\cdot V_D^L] + (1-c)\cdot[\tau + (1-\delta)\cdot(p\cdot V_D^N + (1-p)\cdot V_D^L)].\Big\} \tag{9}$$

In the tyranny state, the leader is optimizing in their transfer choice if

$$\tau_T \in \arg\max_{\tau\in[0,U]} \{F + U - \tau + (1 - c_T(\tau)\cdot\gamma)\cdot(1-\delta)\cdot V_T^L\} \tag{10}$$

and the insider is optimizing at each possible transfer if

$$c_T(\tau) \in \arg\max_{c\in[0,1]} \Big\{c\cdot[\gamma\cdot(1-\delta)\cdot V_D^L] + (1-c)\cdot[\tau + (1-\delta)\cdot(\delta\cdot V_D^N + (1-\delta)\cdot V_T^N)].\Big\} \tag{11}$$

Given equilibrium outcomes, τ_D, τ_T and $c_T \equiv c(\tau_T)$, the value functions satisfy

$$V_D^L = F + U - \tau_D + (1-\delta)\cdot[p\cdot V_D^L + (1-p)\cdot V_D^N] \tag{12}$$

$$V_D^N = \tau_D + (1-\delta)\cdot[p\cdot V_D^N + (1-p)\cdot V_D^L] \tag{13}$$

and

$$V_T^L = F + U - \tau_T + (1 - c_T\cdot\gamma)\cdot(1-\delta)\cdot V_T^L \tag{14}$$

$$V_T^N = c_T\cdot[\gamma\cdot(1-\delta)\cdot V_D^L] + (1-c_T)\cdot[\tau_T + (1-\delta)\cdot\{\delta\cdot V_D^N + (1-\delta)\cdot V_T^N\}]. \tag{15}$$

[18] Note that ω_p has no such interpretation in the autocratic equilibrium.

In the democratic phase, equations (12) and (13), value functions reflect that leaders do not face coups, so only transition out of leadership via election losses, p. Insiders face the reciprocal probability of moving to power. Tyrannic value functions, equations (14) and (15), are similar to the autocracy case we studied previously. A difference is that, in case of leader death via either coup success or exogenous causes, since democracy is a preferred governance mode, the replacement leader will govern democratically and value functions reflect a transition back to the democratic phase.

We must verify that two key imposed 'democratic' actions – that leaders hold elections and respect the outcome – are indeed optimal. For leaders to optimally hold elections, they must prefer doing so to acting as a tyrant:

$$V_D^L \geq V_T^L. \tag{16}$$

For a leader to optimally step down following an election defeat–i.e. for democracy to be *self-enforcing*–they must prefer being an insider in democracy to being a tyrant:

$$V_D^N \geq V_T^L. \tag{17}$$

In addition to the above, our conception of minimalist democracy also requires that democracy is *peaceful*–there must be no coups in the democracy state:

$$\tau_D + (1-\delta)\cdot(p\cdot V_D^N + (1-p)\cdot V_D^L) \geq \gamma\cdot(1-\delta)\cdot V_D^L. \tag{18}$$

The strategies $\{\{\tau_D, c_D(\tau)\}, \{\tau_T, c_T(\tau)\}\}$ constitute a *minimalist democracy equilibrium* if (8)-(18) are satisfied.

3.3.2 Analysis

We begin by considering play in the democratic state, again starting with the insider's problem of deciding whether to attempt a coup for each possible transfer offer. From (9) it is clear that in order to dissuade a coup, the leader must make a sufficiently large transfer to the insider. Specifically, the transfer must be at least $\hat{\tau}_D$, where this ensures the insider is indifferent to holding a coup. Using (9), this is:

$$\hat{\tau}_D \equiv (1-\delta)\cdot[\gamma\cdot V_D^L - (p\cdot V_D^N + (1-p)\cdot V_D^L)]. \tag{19}$$

Unlike the autocracy case, it is possible that $\hat{\tau}_D \leq 0$: when the probability of an insider winning election, $1-p$, is sufficiently high they are willing to withhold coups without the need for transfers. The value of $\hat{\tau}_D$ is important for the existence of democratic equilibrium since leaders must pay it in equilibrium if coups are to be dissuaded. That is, (18) is equivalent to $\tau_D \geq \hat{\tau}_D$. We now turn to the leaders' transfer problem (8), and thus to a consideration of the 'no coup' condition.

3.3.3 No Coups in Democracy

In order to satisfy the 'no-coup condition' (18), it must be that the leader is willing and able to pay $\hat{\tau}_D$. This is clearly satisfied if $\hat{\tau}_D < 0$ since the leader can dissuade coups for free and therefore sets $\tau_D = 0$. The leader is clearly unable to dissuade coups if $\hat{\tau}_D > U$, implying that

(18) is necessarily violated in this case. If $\hat{\tau}_D \in (0, U]$ then peace is costly for the leader. The next result addresses the issue of when a democratic leader finds it optimal to pay the required price.

Result 2. *Democratic leaders always find it optimal to avoid coups, even when it is costly. That is, if $\hat{\tau}_D \in (0, U]$ then there is no profitable deviation from $\tau_D = \hat{\tau}_D$.*

As a consequence of result 2, we have that the 'no-coup' condition is satisfied if and only if parameters are such that $\hat{\tau}_D \leq U$. The conditions under which this holds are characterized in the following lemma, which indicates that *in order to ensure that insiders do not attempt to seize power with violence, democracy requires the availability of sufficient patronage or that elections are sufficiently competitive.* To aid in the expression of the result, define $p^* \equiv \frac{1-\gamma}{1-\gamma\cdot(1-\delta)}$ and $f(p) \equiv \frac{(1-\delta)\cdot\left(\gamma-(p\cdot\gamma\cdot(1-\delta)+(1-p))\right)}{\delta\cdot(1+\gamma\cdot(1-\delta))}$.

Lemma 3. *The 'no coups' condition, (18), is satisfied if p is sufficiently low or if ψ is sufficiently high. Specifically, it is satisfied with zero transfers if and only if $p \leq p^*$, and is satisfied with positive transfers if and only if $p > p^*$ and $\psi \geq f(p)$.*

Lemma 3 identifies conditions on parameters that are necessary to ensure that democracy is *peaceful.* These conditions are illustrated in figure 13, which identifies two (disjoint) sets of parameters, P_1 and P_2, such that peaceful transfers are achieved with zero transfers in P_1 and with positive transfers in P_2.[19] To explain the shape of P_1, suppose that democratic equilibrium involved zero transfers so that the leader gets all the benefits from office. In order to dissuade a coup, it must be that insiders anticipate becoming the leader with sufficiently high probability (i.e. $p \leq p^*$). The extent to which the benefits from office are transferable is immaterial since no transfers are made. In order to explain the shape of P_2, suppose instead that the insider does not have a high enough chance of winning an election (i.e. $p > p^*$) so that a positive transfer is required to dissuade a coup. In order for the required transfer to be feasible it must be that patronage is sufficiently abundant ($\psi \geq f(p)$). Furthermore, an insider requires a greater transfer to avoid a coup–and thus feasibility requires greater levels of patronage–as their electoral prospects worsen (i.e. f is increasing in p).

The result also helps establish the uniqueness of transfers in democratic equilibrium. The fact that P_1 and P_2 are disjoint rules out the possibility that a democratic equilibrium with zero transfers coexists alongside one with positive transfers. By ruling out the possibility of democratic equilibria with different positive transfers coexisting, Result 6 in the appendix establishes the uniqueness of transfers in democratic equilibrium.

3.3.4 Holding and Respecting Elections in Democracy

We now turn to the conditions under which leaders find it optimal to hold and respect elections. The first result in this regard indicates that we only need to worry about the conditions under which leaders respect elections.

Result 3. *If it is optimal for leaders to respect elections then it is optimal for leaders to hold elections. That is, condition (16) is redundant.*

[19] Formally, $P_1 \equiv \{p, \delta, \gamma, U, F \mid p \leq p^*\}$ and $P_2 \equiv \{p, \delta, \gamma, U, F \mid p > p^*, \psi \geq f(p)\}$.

The result follows from verifying that agents prefer being a democratic leader to being a democratic insider. This is because if it is optimal to respect an election, then being a democratic insider is preferred to being a tyrant. Thus, if being a democratic leader is preferred to being a democratic insider then it must also be preferred to being a tyrant and as such leaders find it optimal to hold elections.

Given this, we now turn to the condition that elections are respected–i.e. that election losers optimally step down. This condition compares the value of being a democratic insider, V_D^N, with that of being a tyrant, V_T^L. The value of V_D^N has been pinned down by the above analysis,[20] so we need now to turn to an analysis of play in the tyrant state.

Recall that the tyrant state is triggered when the leader refuses to step down following an election. Citizens perceive the leader to be a tyrant with a greater probability than a challenger and therefore the leader is sure to lose any future election. As such, the leader who is believed to be a tyrant with a relatively high probability will never benefit from stepping down in future elections and will therefore remain in office until deposed via coup or death.

The tyrant leader is similar to the autocrat except that they face insiders that anticipate becoming a democratic leader following a successful coup (as opposed to becoming an autocrat). As with an autocrat, a tyrant may be secure (face coups with zero probability) or insecure (face coups with a positive probability). In determining whether a tyrant is secure, we note from the insider's problem in the tyrant state (11) that the insider must be transferred a minimum amount, denoted $\hat{\tau}_T$, to be dissuaded from a coup. This value makes an insider in the tyrant state indifferent to mounting a coup. From (11), it is given by:

$$\hat{\tau}_T \equiv (1-\delta)\cdot[\gamma \cdot V_D^L - (\delta \cdot V_D^N + (1-\delta)\cdot V_T^N)]. \tag{20}$$

This value is important for determining whether democracy is self-enforcing since it governs how costly it is to lead as a tyrant. That is, democracy is self-enforcing only if being a tyrant is sufficiently costly. For instance, being a tyrant with insufficient patronage is costly because of the perpetual coup attempts. But even secure tyrants face high costs to the extent that high transfers are required to dissuade coups. Nevertheless, the following result indicates that secure tyranny is *never* costly enough a prospect to convince election losers to step down.

Lemma 4. *Leaders respect elections only if leaders in the tyranny state are insecure.*

Intuitively, if peace is available to a tyrant leader then the total surplus available to all players in the game is the same under both democracy and under tyranny. Coups are the only surplus destroying event and they will then not occur in either tyranny or democracy. Under tyranny, the leader transfers just enough of this surplus to insiders to buy peace, and thus makes them indifferent to undertaking coups. Necessarily then under democracy either the leader transfers $\tau_D > 0$ leaving insiders indifferent to coups, or $\tau_D = 0$. In the latter case, the possibility of winning power through elections is sufficient to motivate insider loyalty. But then insiders strictly prefer loyalty over taking a coup, implying that their share of the surplus exceeds that which they would obtain under tyranny – where leader transfers make them just indifferent to undertaking coups. Necessarily then, leaders share more of the (same total) surplus with insiders in democracy than they do with insiders under secure tyranny implying that

[20] Specifically, the value of $\{V_D^L, V_D^N\}$ are the solutions to (12) and (13) where $\tau_D = 0$ if parameters are in P_1 and $\tau_D = \hat{\tau}_D$ (as defined in (19)) if parameters are in P_2.

tyrannical rule must be preferred. Alternatively, the leader makes a positive transfer to insiders so that they are just indifferent to taking a coup under tyranny. But this implies that the leader's share of the total surplus is as high under democracy as it would be under tyranny. When that is the case a leader would never voluntarily step down from leadership, as staying on and ruling as a tyrant is just as good. In either case, democracy cannot be self-enforcing.

For democracy to be self-enforcing leaders must fear its alternative so much that they are willing to walk away from office when losing elections. But peaceful rule under tyranny is sufficiently attractive to losing leaders that they will never choose to do that. Democracies can be self-enforcing only when a leader violating democratic rules is forced to rule as a tyrant, and such rule features perpetual existential threats. If it fails to do so, then democracy fails.

Lemma 3 provides the set of necessary conditions implied by the requirement that democracy involves peaceful power transfers (i.e. a democratic equilibrium exists only if parameters are in P_1 or P_2). We now refine these conditions further by imposing the necessary conditions implied by the requirement that democracy be self-enforcing. Lemma 4 implies that we can do so by imposing the necessary conditions implied by insecure tyranny.

A tyrant is insecure if either it is infeasible to make the required transfer or if they optimally prefer to face coups than make the required transfer. As with autocrats and democrats, the latter never applies since tyrants are always willing to pay to avoid coups.

Result 4. *A tyrant avoids coups whenever strictly feasible. That is,* $\hat{\tau}_T < U \Rightarrow c_T = 0$.

An implication of this is that a tyrant is insecure, and thus democracy can be self-enforcing, only when they have insufficient patronage to dissuade coups. The following lemma characterizes the conditions under which this holds.

Lemma 5. *A tyrant is insecure only if* p *is sufficiently large or* ψ *is sufficiently small. Specifically, only if*

- $\psi \leq g(p) \equiv \frac{(1-\delta)\cdot[\gamma\cdot(2-\delta)\cdot(1-p\cdot(1-\delta))-(1-p)\cdot(1-\delta)]}{2-\delta-2\cdot(1-\delta)\cdot p}$ *if parameters are in* P_1*, or*
- $\psi \leq \mu_2$ *if parameters are in* P_2.

Since insecure tyrants are necessary for democracy to be self-enforcing, Lemma 5 identifies a tighter set of necessary conditions for the existence of democratic equilibrium. This is illustrated in figure 14 where democracy is self-enforcing only if parameters are in S_1 or S_2 (which are subsets of P_1 and P_2).[21] That is, a democratic equilibrium with zero transfers exists only if parameters are in S_1 and a democratic equilibrium with positive transfers exists only if parameters are in S_2. To get the intuition for the shapes, first consider S_1. In this region democratic equilibrium necessarily involves zero transfers. Thus a larger p makes elections more biased toward incumbents, and since transfers are zero, it must be that leaders in democracy are better off. But this gives insiders under tyranny a greater incentive to mount a coup. Thus tyranny becomes even more insecure in the sense that a greater transfer is required to dissuade a coup. Thus the upper boundary of S_1 is upward sloping. On the other hand, in S_2 democratic equilibrium necessarily involves positive transfers. A larger p makes elections more biased toward incumbents, which would induce insiders to strictly prefer a coup. To avoid this the equilibrium transfer required by the insider is raised. The net effect on payoffs is unaffected. Thus,

[21] Formally, $S_1 \equiv \{p, \delta, \gamma, U, F \mid \psi \leq g(p)\} \cap P_1$ and $S_2 \equiv \{p, \delta, \gamma, U, F \mid \psi \leq \mu_2\} \cap P_2$.

the payoff to being a democratic leader is unchanging in p in this region and therefore incentives for insiders to mount a coup against a tyrant is unchanged. The security of tyranny is unaffected, and therefore the upper boundary of S_2 is flat.

Importantly, *the conditions that democracy requires in order to be self-enforcing are of the opposite nature to those democracy requires to be peaceful: patronage must be sufficiently low or elections must be sufficiently favorable to the incumbent.* As is clear from the above, tyrannical rule is insecure with low levels of patronage. This makes it an unattractive choice for a leader, so he respects democratic rules. But this is also the reason why p cannot be too low. Insiders who depose tyrants via coups rule as democrats, so that when p is low, the attractiveness of coups is also low, making tyrannical rule more secure.

This result is opposite to that of Fearon (2011) who also studied a similar credibility of elections problem. Fearon considered the incentives for members of the public to undertake a rebellion to unseat a leader who had overstayed his electoral mandate. Elections helped in coordinating citizens in their act of rebellion and hence helped in sustaining equilibria where elections would become self-enforcing. In his framework they are more likely to be self-enforcing the lower is p (i.e., the analogue of p in his model). The reasoning is in line with the original (informal) argument along these lines by Przeworski (1991). Incumbents will step down in the event of losing elections only if p is sufficiently low because the probability of the incumbent coming back in to office is greater if p is low (in the limit, with p approaching 1, stepping down means remaining out of power indefinitely). The continuation value of leaving thus falls with p, and if p is high enough, makes the incumbent willing to stay after a loss even though it means facing a rebellion. The difference in results arises because it is the threat of rebellion that disciplines leaders to step aside. This threat, unlike the coups that we study, is exogenous to the political process, in the sense that the magnitude of the threat, i.e., the willingness of the public to rebel, is independent of the parameters of the political process. In our set-up, the leader is threatened by *endogenous* coups, the returns to which are themselves dependent on the parameters of the political system. Since, for the reasons discussed above, the value of becoming leader via a coup is increasing in p, p must then be sufficiently great to make elections self-enforcing.

3.3.5 Existence of Democratic Equilibrium

We now turn to the question of existence of democratic equilibrium. So far we have that a democratic equilibrium exists only if parameters are in S_1 or S_2. But being insecure is, in general, not sufficient to ensure that elections are respected. For sufficiency, leaders must also prefer to step down upon election loss rather than leading as an insecure tyrant. Intuitively, this requires that coups have a sufficiently high probability of succeeding–a higher threat lowers the value of being an insecure tyrant and also raises transfers to democratic insiders who are compensated for relinquishing coup opportunities. Indeed, the following result shows that insecure tyranny is sufficient if γ is high relative to δ.

Proposition 2. *If $\gamma \geq \delta^{1/2}/(1-\delta)$, then a democratic equilibrium exists if and only if tyrants are insecure (and there are no coups in the democratic state). That is, if and only if (i) $p \leq p^*$ and $\psi \leq g(p)$, or (ii) $p > p^*$ and $\psi \in [f(p), \mu_2]$. Furthermore, the equilibrium is generically unique. Specifically,*

- *if $p \leq p^*$ and $\psi < g(p)$, the equilibrium involves zero transfers in the democracy state, and zero transfers and coups with probability one in the tyranny state.*
- *if $p > p^*$ and $\psi \in [f(p), \mu_2)$, the equilibrium involves positive transfers in the democracy state, and zero transfers and coups with probability one in the tyranny state.*

This proposition establishes the conditions under which facing an insecure tyranny is sufficient to ensure a leader respects electoral outcomes and a democratic equilibrium exists. The restriction on γ simply ensures that being an insecure tyrant is worse than a transfer-receiving insider. Since insecure tyrants do not face elections their welfare is independent of p. However insider welfare is non-increasing with p. If the insider transfers are zero ($p < p^*$) a marginal increase in p extends the expected time to an election victory, strictly lowering welfare. For $p > p^*$ transfers are designed by the leader to *just* dissuade coups. Higher $p's$ are thus offset by lower transfers making insiders values flat in this region. Insider value is thus minimized (with respect to p) whenever insiders receive positive transfers. Provided the value of being an insecure tyrant is lower than this minimized value, leaders will choose to respect elections rather than stay on as tyrants.

With this condition met, the possibility of democracy depends *both* on the requirement that it is peaceful and that it is self-enforcing. Peace, or no-coups, places a lower bound on patronage/upper bound on p whereas the self-enforcing condition places an upper bound on patronage/lower bound on p. Hence the marked contrast with preconditions in Fearon (2011) for this case. Note finally that the condition is not restrictive–e.g. it holds for any γ as long as agents are sufficiently concerned about the future (i.e. as long as δ is low enough).

If γ is marginally lower than required for the above to hold, then insecure tyranny does not ensure that democracy is self-enforcing. Now being an insecure tyrant is preferred to being an insider when insider values are at their lowest possible value (i.e. when $p > p^*$). Nevertheless, democracy can still be self-enforcing when the value of being an insider is greater (that is, for values of $p < p^*$). This immediately implies that democracy *must* involve zero transfers in this case.

Proposition 3. *If $\gamma < \delta^{1/2}/(1-\delta)$, then a democratic equilibrium exists if and only if $\psi \leq g(p)$ and p is sufficiently small that*

$$\frac{p}{1-p} \leq \gamma \left(\frac{1-\delta}{\delta}\right)^2 - \frac{1}{\delta}. \tag{21}$$

Such an equilibrium is generically unique, and involves zero transfers in the democratic state.

When this condition is met, democratic equilibrium is constrained only by the self-enforcing condition. Specifically, p must be high enough that tyrants are insecure but low enough that insiders are sufficiently optimistic about returning to power in the future. The no coup condition has no bite–if V_D^N is high enough to convince a leader to step down it is necessarily high enough to dissuade an insider from mounting a coup.

Note that this condition does not ensure that a democratic equilibrium exists. If γ gets too low then the value of being an insecure tyrant becomes larger than the largest value obtained by an insider (i.e. that arising when $p = 0$). For instance, $\gamma < \delta/(1-\delta)^2$ is sufficient for non-existence since it requires $p < 0$.

The problem a leader faces in pursuing a democratic strategy rests with the credibility of the leader's claims to respect democracy, and the adequacy of promised electoral processes in appeasing the elite. These two propositions characterize the full parameter range in which these problems are solved. Credibility depends on the interaction between the patronage value of the state, and the nature of electoral processes in democracy. For low values of p a democratic equilibrium will exist provided the patronage value of the state is not too high. For higher values of p patronage helps keep peace in democracy. Since leaders enjoy large incumbency advantages and are removed by elections only rarely, insiders must receive sufficient transfers to eschew coup opportunities, but without sufficient patronage leaders will not be able to meet these transfers. It is still the case in this region though that patronage levels cannot become too large or autocracy will be secure, and hence chosen by leaders.

4 The Role of Elections and Non-Markov Equilibria

Our theory of minimalist democracy demonstrates how peaceful power-sharing among elites can be achieved via the use of elections. But can such arrangements be achieved without elections, especially if we expand our scope to consider non-Markov equilibria? If so, what advantages do elections have over the alternatives? We turn to these questions in this section.

In the equilibria analyzed above, the voters play the role of a randomization device that determines when power is to shift hands. However, their role is more than this owing to their aversion to voting for a leader that has ignored election results in the past. To see the importance of this role, suppose that we ignored voters altogether but instead endowed the elites with a randomization device that dictates when power is to be handed over. This device could be made as similar as we like to that of elections studied above, i.e., it can be set to generate a binary signal with the leader being able to "stay" with probability p or "leave" with $1-p$. Supporting peaceful power-sharing in this setting requires non-Markovian strategies,[22] yet the strategic environment of our democratic equilibrium can be replicated here. Simply have agents play the same strategies as described in the democratic equilibrium except that a leader's violation of the power sharing rule triggers a 'punishment phase' in which insiders hold coups until the leader is replaced. That is, a violating leader is forced to rule as a tyrant not because voters leave no other option but, rather, because their observed violation facilitates a coordinated shift toward punitive actions by the other insiders.

A problem with power-sharing constructed this way, however, is that it is supported by threats to pursue a punishment path that is Pareto dominated; i.e. such an equilibrium without elections is not *renegotiation proof* (Farrell and Maskin (1989), Bernheim and Ray (1989)). Specifically, both the leader and insider prefer, at least one strictly, to return to the equilibrium path following a leader's refusal to step down. Naturally the leader prefers to return to the equilibrium path: the fact that the leader respects the power-sharing rule in equilibrium implies that they would in fact even weakly prefer to return to the equilibrium path as an in-

[22] Since the outcome of the randomization device is not payoff relevant, Markov strategies are not rich enough to allow punishments following a leader's refusal to step down when required by the randomization device. As such, power sharing would not be possible in Markov strategies. This is not true in the main model above, where there are voters who are unwilling to re-elect election violators. Such an unwillingness *is* both rational and payoff relevant.

sider, and therefore *strictly* prefer to return as the leader. Perhaps less obviously, the insider also prefers to return to the equilibrium path. This follows by observing that all coups, whether aimed at disciplining the leader or at an opportunistic seizure of power, are treated the same in equilibrium–a successful coup allows the new leader to rule 'with a clean slate'. The value of mounting a coup on the punishment path is therefore the same as the value of mounting a coup off the equilibrium path. But since there are no coups against non-tyrants in equilibrium, the latter value is no greater than the value of being an insider on the equilibrium path. Thus, it must be that an insider would always prefer to return to the equilibrium path over continuing with the punishment. Thus, both players would willingly renegotiate back to equilibrium play rather than pursue punishment strategies.

In contrast, issues of renegotiation during the punishment phase are circumvented by introducing elections. Voters effectively strip a violating leader of future access to the power-sharing technology. That is, renegotiating back to the equilibrium path *is not an option* for a leader that has violated an election outcome. In this light, elections are more than a simple randomization device – rather, they are a randomization device that has the important property of becoming biased against those that have violated its directive in the past.

This rationale for use of elections – that they bolster the credibility of punishments supporting power-sharing agreements – complements existing rationales that stress other features. Fearon (2011) emphasizes how the regularity of elections helps citizens impose their will on leaders by providing them with a means to coordinate a rebellion. Coordination is not an issue for us – citizens have no power over the elite and coups are mounted unilaterally by insiders. Przeworski (1999) instead emphasizes the role of "ballots vs. bullets": the idea that elections help gauge the relative strength of competing factions and thus help avoid bloodshed by providing a reasonable prediction of the result of violent conflict. This avenue does not operate in our model either since there is no uncertainty over the consequences of conflict (i.e. coups).[23]

4.1 Alternative Strategies to Support Power-Sharing

The previous section has shown how elections allow for power-sharing via the use of particular strategies that would otherwise fail to be renegotiation-proof. In this section we explore the extent to which power-sharing can be supported without elections using other strategies that *are* renegotition-proof. Specifically, we are interested in "power-sharing equilibria"–i.e. equilibria of the repeated game played by the elite in which leadership changes hands periodically in a peaceful manner. These equilibria are distinguished from our Minimalist Democracy Equilibrium since the latter necessarily involves voters.

We begin by identifying an attractive property of our minimalist democracy equilibrium, related to the treatment of coups, and then go on to show it is necessarily absent in any power-sharing equilibrium that is renegotiation-proof.

In considering the minimalist democracy equilibrium, coups can be classified into two cat-

[23] Przeworski (1999) also raises, but dismisses, the possibility that elections compel citizens to accept the decisions of leaders because voting imposes an obligation to respect the outcome. Similarly the elite in our model have no need to seek such an obligation – their hold on power is not directly tied to their perceived legitimacy. However, it is indirectly, since an equilibrium outcome is the continued ability to use elections depends upon respecting them in the past. Without this ability, leaders would face constant threats from excluded insiders.

egories. First, an *opportunistic* coup is one mounted against a player that has never deviated from their equilibrium strategies (and is not a behavioural tyrant type). This sort of coup is motivated by the prospect of seizing the leadership and does not arise on the equilibrium path. Second, a *disciplining* coup is one mounted against a player that has either deviated in the past (e.g. by not holding an election, by holding a rigged election, by not respecting the election outcome, by not making the required transfer, or by undertaking an opportunistic coup) or has become a behavioural tyrant type. Such coups do arise on the equilbrium path in the event that a leader becomes a behavioural tyrant type, and must also arise in the (off-equilibrium) sub-games following players' deviations.

In a minimalist democracy equilibrium both coups are treated identically, but we will argue here that power-sharing equilibria necessitate differential treatment – i.e. disciplining coups are encouraged and opportunistic coups discouraged. Before demonstrating this formally, first note the heavy informational assumptions required for coups to be differently treated. Since opportunistic coups are not supposed to arise in equilibrium, future players – unless they know the nature of the coup with certainty – will rationally interpret any coup as a disciplining coup mounted against a behavioural tyrant. To disguise the true reason, the instigator of an opportunistic coup could always maintain that they did not receive the required transfer, or that the election was rigged, or perhaps even that the current leader seized power via an opportunistic coup. In short, opportunistic coups are readily disguised as disciplining coups without intimate knowledge of current and past events and circumstances. If we take the possibility seriously that instigators may disguise their reasons for a coup and that hence the motivation for coups is unlikely to be public knowledge, then the fact that the minimalist democracy equilibrium strategies treat opportunistic coups and disciplining coups the same (i.e. they have the same continuation value) is a highly desirable feature.

Is it possible to construct power sharing equilibria that share this feature? Define equilibrium strategies as having *coup symmetry* if there exists at least one opportunistic coup on the equilibrium path and one disciplining coup (not necessarily on the equilibrium path) such that the continuation value of the opportunistic coup is at least as large as that of the disciplining coup. This property is weaker than requiring all coups be treated equally (as they are in a minimalist democracy equilibrium) as it allows opportunistic coups to have strictly lower continuation values than disciplining coups. It requires only that the highest continuation value following an opportunistic coup on the equilibrium path is at least as great as the lowest continuation value following any disciplining coup. The following result shows that even this weak requirement is too stringent a demand on power-sharing equilibria.

Proposition 4. *There does not exist a power-sharing equilibrium that is renegotiation-proof and has coup symmetry.*

Rewarding disciplining coups so that renegotiation back to the equilibrium path is not chosen by an insider must necessarily clash with dissuading insiders from opportunistic coups, unless these differing types of coups lead to different continuation values.

Proposition 4 ensures that any renegotiation-proof power-sharing equilibrium must have the feature that all opportunistic coups have continuation values strictly lower than all disciplining coups. Thus, necessarily, power-sharing equilibria require current and future insiders to know the nature of any coup. An implication then is that under the reasonable assump-

tion that insiders do not know the true reason for a coup, it is not possible to construct a power-sharing equilibrium (i.e., by using a non-electoral randomization device) that is also renegotiation-proof. We reiterate that this same assumption, applied to the minimalist democracy framework we have studied above, has no effect, since coups are treated identically by players irrespective of the reason for the coup.

4.1.1 Power-sharing equilibria when insiders can know the reasons for coups

It remains to be seen whether it is possible to construct renegotiation proof strategies under the stronger informational assumption that the reasons for coups are public knowledge. We consider that here. A promising possibility would seem to be the use of strategies that are similar to the minimal democracy equilibrium ones except that those instigating opportunistic coups are *also* subject to perpetual coups (insiders can still mount disciplining coups with impunity). To see how this could be renegotiation-proof, classify a leader as "illegitimate" if they have ever violated the power-sharing rule, or came to power via a coup against a leader that had never violated the power-sharing rule, otherwise classify them as "legitimate". There will tend to be a high value of being the leader and a low value of being an insider since the threat of launching an opportunistic coup is weakened by the fact that doing so would, at best, render the instigator an illegitimate leader. Being an illegitimate leader is unattractive since insiders can mount coups without fear of losing their legitimacy. Punishments then have the possibility of being renegotiation-proof since insiders relish the opportunity to become a legitimate leader rather than an insider and thus cannot be dissuaded from mounting a coup against an illegitimate leader by the offer of renegotiation.

This logic applies more generally, but it should be noted that there are parametric limits within which such a renegotiation-proof construction can exist. For example, the one outlined in the paragraph above fails to do so at any $p < p^*$.[24] More generally, the structure of the game imposes limits on how great the differences between continuation values of disciplining and opportunistic coups can be. And as the following proposition shows, there are always regions of the parameter space where such limits bind.

Proposition 5. *There does not exist a renegotiation-proof power-sharing equilibrium if incumbents enjoy insufficient bias: specifically, for $p < p^{**}$ where p^{**} is a constant that depends only on (γ, δ). Furthermore, p^{**} is decreasing in γ and $p^{**} > 0$ if $\gamma < 1/2$.*

The proposition establishes a region of the parameter space where renegotiation-proof power sharing is not possible. Intuitively, renegotiation proofness necessitates that punishments imposed on leaders who violate the dictates of a randomization device must be preferred by the insider to letting by-gones be by-gones and reverting back to the equilbrium path. This, in general, requires that following a leader's violation of power-sharing, the value to undertaking a coup and becoming leader is sufficiently high relative to that of remaining an insider. But the value of being a leader is limited by the fact that insiders can never receive strictly

[24] Since transfers are zero in the democracy phase of the minimal democracy equilibrium if $p < p^*$, insiders strictly prefers their equilibrium payoff (without coups) to that arising from mounting a coup. But, in the example, this is precisely the choice confronting an insider in a power-sharing equilibrium in the event that the leader refuses to step down. A coup would allow them to rule as a legitimate leader, but the offer of returning back to the equilibrium path peacefully would be preferred to carrying out the coup. Therefore the equilibrium can not be renegotiation-proof.

less than what they could obtain by undertaking constant coups. This yields a natural upper bound on how much the value of being a leader can exceed the value of being an insider along *any* continuation path of the game. When p is low, i.e., when the randomization device calls for leaders and insiders to turnover relatively regularly, the value of being a leader is relatively close to that of an insider. In that case, remaining a peaceful insider rather than undertaking a coup against a recalcitrant leader is always so attractive that coups would not be taken when the leader offers reversion back to the equilibrium path.

We explore in the appendix the parameter values under which this restriction has the most bite. As the proposition establishes, this tends to be when values of both p and γ are low. Having a low p makes reversion back to the equilibrium path relatively attractive and renegotiation proofness harder to achieve. A low γ makes the threat of a coup weaker, hence also favouring renegotiation back to the path.[25] The fact that this occurs for low values of p is particularly vexing, since it is the low values of p that correspond most closely to turn taking. For instance the limiting case of $p = 0$ where the elite would alternate in the leadership position each period would seem a natural focal point of power-sharing. The proposition establishes that these cases are indeed the most difficult to sustain as power-sharing equilibria – more specifically that the minimalist democracy equilibrium at low values of p is more likely to fall in the parameter range where power-sharing equilibria cannot be renegotiation proof than are equilibria at higher values of p.

To summarize, the role of elections is more than that of a simple randomization device. Voters who are unwilling to vote for violators of previous elections play an important role. Their arm's length relationship to the elite skirts issues of renegotiation that would undermine power-sharing amongst elites in the absence of voters. When considering non-Markov equilibria, alternative power-sharing strategies based on some other randomization device can also be constructed without such third parties. But these will either lean heavily on strong informational assumptions: that opportunistic coups can be distinguished from disciplining coups by future players, or will fail to be renegotiation-proof. Furthermore, renegotiation-proof power-sharing equilibria will sometimes fail to exist even under these strong assumptions. This is particularly likely for low values of p – for instance if elite are supposed to take turns and turn over each period. In contrast, elections – in a minimalist democracy Markov equilibrium – use voters as a type of randomization device (one that cannot be used again if violated), support power sharing in a renegotiation-proof manner and, most importantly, do so without requiring agents to know anything about the reasons for coups.

5 Democratization and Empirical Implications

The preceding analysis reveals how autocratic and democratic equilibria coexist. This is due to a dynamic complementarity whereby the optimal action for today's leader depends on the

[25] Incidentally, for lower γs where coups are less attractive, transfers to insiders on the equilibrium path are also low, suggesting that the value of reversion back to the equilibrium path should also fall with a decline in γ. But lowering γ further in this region has minimal effect on the continuation value for a peaceful insider since their transfers are zero already.

anticipated actions of future leaders.[26] If the current leader believes that future leaders will not respect election results, then this belief is self-reinforcing; it is a best response for the current leader to also not do so (Result 1). This is why there always exists an autocratic equilibrium whereby turnover only occurs through leader death (violent or peaceful) and the democratic machinery lies dormant (Proposition 1). At the same time, a democratic alternative may also exist (under the conditions stated in Propositions 2 and 3). Here, where the patronage value of the state is not too high, and provided the electoral system delivers appropriate chances for electoral turnover, a confidence that future leaders will respect elections becomes self-enforcing as well. As such the current leader voluntarily steps aside too when losing elections, and violent challenges to power disappear.

One approach to understanding the process through which democracy emerges or disappears involves examining the elites' equilibrium payoff under each regime. The potential benefit of democratization to leaders who are free to rule as they please is that, when credible, it helps solve the non-divisibility of the spoils of leadership problem. It is the non-divisibility of (at least a partial aspect of) power or prestige – which we have modelled through the utility term F – that generates leadership insecurity here. The converse implication is that if leading a state generates neither power, prestige nor any other non-transferable benefit, an autocratic leader will always be able to devise a means of transferring the state's divisible benefits to those who threaten him so that peace will ensue and autocratic power will persist. But with a non-divisible component of leadership this is no longer the case, and as we have shown, offering insiders a peaceful, stochastic avenue to power through elections may stop them using the (costly) coup technology. The following result establishes that doing so in fact makes both the leader and insiders strictly better off.

Proposition 6. *The democratic equilibrium generically strictly Pareto dominates the autocratic equilibrium. In the special case where $\psi = \mu_2$ we have $V_D^L = V_A^L$ and $V_D^N = V_A^N$, otherwise $V_D^L > V_A^L$ and $V_D^N > V_A^N$.*

The proposition suggests that if the elite have some capacity to coordinate on their desired equilibrium, they will choose democracy whenever it is feasible. This has two interesting implications.

First, it highlights how our minimalist approach to democracy contrasts with existing perspectives. Here the elite enthusiastically establish and respect elections without being compelled by outsiders (citizens, the poor, the masses, etc.). In contrast, Acemoglu and Robinson (2006) describe how elites establish and respect elections as the only feasible means to appease citizens and avoid revolution. Fearon (2011) describes how citizens' rebellion threats lead the elite to respect elections, but it is not clear that elites are interested in establishing an electoral system, because of the existence of preferred equilibria without elections.[27]

[26] A similar dynamic complementarity also arises with the voting decisions of citizens within the context of an established democracy. This has been analyzed by Myerson (2006) who shows how modifications of the game can help select the democratic equilibrium and Bidner and Francois (2013) who analyze the role of leaders in shifting norms towards equilibrium where leaders are responsive to voters.

[27] For instance, there is always a dictatorial equilibrium in which leaders provide nothing and rebellions never occur, regardless of whether there are elections. This is the best possible equilibrium for the leader, implying that democracy hinges on the elite being unable to select equilibria.

Second, it provides a rationale for why the elite may have self-interested motives for engaging in reforms of the state that lower patronage. For values of patronage that are close to, but not sufficiently low that democracy can be sustained, leaders would benefit by a decline in patronage putting them into the region where a democratic equilibrium exists. In short, destroying patronage renders tyrants insecure, thereby making democracy possible and thus helping engineer democratic transitions.

5.1 Empirical Implications

Due to the configuration of equilibria, a direct empirical implication of the present paper is that a permanent increase in graft to a sufficiently high level threatens democracy; it will *always* force democracy into autocracy. The fact that the democratic equilibrium strictly Pareto dominates the autocratic one suggests a reason for why elites would choose to coordinate on democracy whenever it is feasible. Thus, if we expect that political elite are able to coordinate on the preferred equilibrium, we predict democratization – in the minimalist sense – following a decline in graft. This is consistent with the pattern described by Jensen and Wantchekon (2004):

> "... most African resource-dependent countries were authoritarian governments and struggled with democratic consolidation after the "third wave" of democratization. These resource-dependent countries include Algeria, Nigeria, Libya, Gabon, Cameroon, and the former Zaire. Besides South Africa, the transition to democracy has been successful only in resource-poor countries such as Benin, Mali, Senegal, and Madagascar."

These perspectives are also reflected in the data. A large literature on the resource curse, which resonates with our theoretical model, focuses on resource abundance as an obstacle to inclusive institutions and democratization.[28] This literature has investigated both permanent and temporary resource shocks.

Our model speaks to such systematic empirical regularities. Although we do not regard what we offer in this section as a formal test of the model, we underscore how our theoretical setup can jointly reconcile these additional moments in the data with the set of empirical regularities we have reported in Section 2.

Specifically, defining y_t the level of state resources available in year t, a shock ε_t has the feature of permanence when affecting future expected resources available in the indefinite future, i.e. ε_t affects $E_t\left[y_{t+1}\right], E_t\left[y_{t+2}\right]$, and so on. These are the shocks which are close to changes in resources U in our model; patronage available to fend off coup threats needs to be permanently changed in order to compare different equilibrium characterizations.[29] As an instance of such shocks, consider the case of an oil-rich country. Given that international oil prices

[28] By focusing on the process of democratic transition our model complements other theoretical contributions more focused on drawing a characterization of the political processes that sustain the resource curse, as in Robinson, Torvik and Verdier (2006).

[29] This remark follows from the fact that our current model does not focus on shocks to U that are expected to be temporary in nature although it can be extended in this direction.

follow a random walk,[30] $y_t = y_{t-1} + \varepsilon_t$, a negative shock ε_t permanently reduces expected oil revenues at any future $t+j$, for $j = 1, 2, 3...$, since $E_t\left[y_{t+j}\right] = y_t$. Along these lines, Caselli and Tesei (2011) focus on permanent resource windfalls due to improvements in the international price of the main commodity exported by a country. Such commodity prices typically follow nonstationary processes and therefore ε shocks have persistent effects. The authors show that increases in commodity prices (and hence revenues from exports) tend to consolidate autocracies. Given the inherently divisible and transferable nature of natural resources, commodity shocks are particularly close to our setup in terms of shocks to ψ, the availability of patronage, an issue amply discussed in the literature (Torvik, 2002; Collier and Hoeffler, 2005). Tsui (2011) focuses on historical discoveries of large oil reservoirs as an important determinant of long-run autocratic drift in a large panel of countries. Wantchekon (1999) discusses the political dynamics around peak discovery in the case of Nigeria along these same lines. Brückner, Ciccone, and Tesei (2012) focus on oil revenue windfalls as well, but with opposite results relative to Caselli and Tesei (2011) and Tsui (2011). In fact, studies of resource shocks and their effects on political institutions have received criticism.[31]

On the other hand, a shock ε_t is temporary if it has the feature of leaving expected resources available in the indefinite future unchanged, i.e. ε_t does not affect $E_t\left[y_{t+1}\right], E_t\left[y_{t+2}\right]$, and so on. This is consistent with Acemoglu and Robinson's (2001, 2006) 'window of opportunity' view of transitions that allows for a boom period of $y_t = h > 0$ with probability $1-s$ and recession $ah < h$ with probability s, which ultimately has the effect of changing the opportunity cost of transitions. In this setting economic shocks occur independently and the resource process is stationary. Brückner and Ciccone (2011) focus on these temporary resource shocks, specifically droughts in Africa, and show that low rainfall shocks (i.e. negative transitory shocks) tend to predict democratizations consistently with Acemoglu and Robinson (2001, 2006).

We scrutinize similar empirical evidence to the literature in the context of our model in Table 4, which looks at triggers of political transitions. The analysis here is kept brief and essentially focused on confirming whether negative resource shocks act to move autocratic systems towards democracy, and more specifically towards competitive elections and minimalist democracy, in contrast with other democratic features less related to our theory, such as political inclusiveness.

We employ specifications close to the reduced-form regressions of Brückner and Ciccone (2011, Eq. 2), including jointly permanent (resource prices) and temporary (weather) shocks. While our theory relies on the former, omitting the role of the latter, which have been shown to be relevant in past research, could bias the analysis. Table 4 employs a country and year fixed effects specification (plus country specific linear time trends) of the change between year t and $t+1$ of four institutional dependent variables: the Polity 2 score, electoral competitiveness, political inclusiveness, and executive constraints. The set of independent variables of interest includes the price growth of the main commodity exported by a country based on United Nation's Comtrade data (following the protocol spelled out by Caselli and Tesei, 2011) and the log Global Precipitation Climatology Project rainfall estimates at time t and at time $t-1$. The sample coincides with the set of Sub-Saharan African countries identified by Brückner and Ciccone

[30] Brückner, Ciccone, and Tesei (2012).

[31] See for instance Wacziarg (2012).

for which we have commodity quantities and prices.

Column 1 of Table 4 can be seen as a replication and robustness check of Brückner and Ciccone (2011) or of Caselli and Tesei (2011). It shows that resource shortfalls, in terms of lower rainfalls or lower commodity prices, strengthen the level of democracy by significantly increasing the Polity 2 overall score. Both temporary and permanent shocks appear to matter in this reduced-form environment. Quantitatively, the effect of one standard deviation drop in log rainfall at $t-1$ (-0.57) implies an increase of 1.4 Polity 2 points. A one standard deviation decrease in commodity price growth between t and $t-1$ (-0.23) produces an increase of 0.2 Polity 2 points and a one standard deviation fall in commodity price growth between $t-1$ and $t-2$ (-0.22) produces an increase of 0.23 Polity 2 points. Consistently with our discussion in Section 3, electoral competitiveness appears to respond statistically to resource shortfalls. Both commodity price declines and droughts increase electoral competitiveness in column 2, pushing autocracies towards minimalist democracies. Importantly for our theory, this does not happen for political inclusiveness measures (statistically insignificant and very noisy in column 3), which more properly pertain to fully representative (as opposed to minimalist) democracies.[32] In column 4 executive constraints appear to respond weakly to rainfall shocks and do not systematically respond to resource shocks. This ambiguity is not surprising, as in Figure 6 executive constraints show an uptake in between electoral competitiveness and inclusiveness. Columns (5) to (8) show the robustness of our findings to the exclusion of Polity IV interregnum periods, as those periods require interpolation of Polity 2 scores and could be overly influential around periods of political transition.

In synthesis, Table 4 reiterates evidence for the view that resource value declines seem to push autocratic regimes toward democratization. But importantly, this appears true along the electoral competitiveness dimension and for declines that affect the permanent value of state resources, both features that are central to our analysis.

6 Conclusions and Future Directions

After positing a relevant set of stylized facts, some of which are novel, this paper studies political transitions in to and out of democracy based on the minimalist concept of Schumpeter (1942) and Przeworski (1999). The focus is the mere presence of competitive elections. The fact that elections allow a stochastic rent sharing from executive power to elites currently not in power can lead them to eschew coup opportunities. When the respect of such electoral outcomes is credible for leaders, elections can reduce losses to the elite as a whole that arise from coups d'état. These are distinctive advantages of hybrid systems which feature minimalist democracy and are a valuable avenue for autocratic leaders who cannot fend off coup threats with side payments.

The main contribution of the paper is to shed light on the relevance of a set of hybrid regimes – electoral democracies with drastically low inclusiveness and limited constraints on the executive – as a first step in the process of democratic transition. This exercise should therefore be interpreted as moving away from a coarse definition of a polity as purely democratic or

[32] Although suggestive, the combination of coefficient magnitude and considerable noise in the estimates for Inclusive politics does not allow however to pinpoint 'precise zeros'.

purely autocratic, but rather as transiting through different hybrid phases, of which "electoral competition" represents a first basic stepping stone decoupled from any requirement of representation. We believe this is an important departure from the literature and highly relevant for a large number of the world's weak polities that lie between these two extreme poles. The Minimalist Democracies that we have studied embody elements from both ends of the political schema. Their underlying context is one in which power would seem to be determined by force, as the institutions in such countries are weak. Yet leaders hold elections, and even leave power when they lose. In these democracies, leaders who control violence, and hence sufficient force to stay in power, choose to step aside and respect electoral outcomes. We have first established why a dictator, in control of power through force, would choose to implement a minimalist democracy. Relatedly we have demonstrated how the process of holding elections can serve a substantive function when the leader – controlling force – can always choose to annul results and remain in office.

Secondly, we have developed the conditions under which minimalist democracy may emerge. By offering a probabilistic share of future leadership spoils to insiders, leaders in minimalist democracies can obtain peace and security from attempts against their regime. Additionally, they can pay (from the patronage available to them) insiders who would threaten them less in democracies than they would have to in autocracies in order to secure peace. Importantly, however, we have demonstrated that reducing patronage transfers is never a sufficient motivation for minimalist democracy to be implemented by a leader. Democracy can only be sustained if leaders fear that by flouting democratic rules they will face immediate threats to the stability of their regime. An important lesson here then is that: *Peaceful democracy rests on violent threats – necessarily.* If these threats against recalcitrant leaders can be mitigated – as they are when sufficient graft is available – then democracy can *never* be sustainable.

Thirdly, the paper has extensively explored the conditions under which voters are, and are not, replaceable by a randomization device that would allow the elite an alternative way to peacefully share power. In general a minimalist democracy with elections and voters cannot be replicated by such a device when either there is less than full information about the factors that would precipitate violent attempts to take over power, or where the elite wish to share so much of the value of being a leader amongst themselves that the value of being a leader is close to the value of being an elite insider.

There is a final question that naturally follows from this analysis. Here we provide some conjectures about it but leave to future research a fuller analysis. Does this framing of the emergence of minimalist democracy tell us anything about the process by which minimalist democracy turns in to a fully-fledged or consolidated democracy? The process we have analyzed points to some intriguing possibilities. The threat of force sustains a commitment to patronage transfers in autocracies. To ensure that their current share of spoils extends in to the future, elites thus only need to sustain that threat through maintaining their power-base – i.e., through their links to the rank-and-file. However, as we have seen, this threat of force does not guarantee graft transfers in minimalist democracies since a probabilistic share of leadership benefits replaces it. This contrasts with autocracies where the very lack of institutional commitments to sharing power ensure a credible commitment on the autocrat's part to share graft. Democratic contests between political elites thus supplant the role that graft transfers from the

leader to political elites perform in autocracy.

A plausible conjecture would thus be that the transition to minimalist democracy gives rise to the possibility of a new form of political actor to occupy elite roles. In autocracies, the political elites are those able to mobilize (potentially violent) support. The threat they pose must be placated by autocrats seeking security through transfers of graft. After minimalist democratic transitions, violent threats are ameliorated by democratic participation – elites eschew coup opportunities and instead participate in electoral politics. Since graft transfers fall (and often disappear) in minimalist democracies, the resourceses that would enable elites to maintain the support of the rank-and-file through the allocation of patronage dry up. The political elite who control violence shift from being key players with a claim to resources into marginal players through whom resources need not ever flow. We believe that this transition may play an important role in allowing the emergence of an alternative, non-violent and rival form of elite who are able to offer policy benefits (in lieu of graft) to the rank-and-file in return for their support. We explore this conjecture in future work.

A Further Details

A.1 Markov Perfect Equilibrium

A Markov strategy for the leader involves a state-contingent transfer offer $\tau_\omega \in [0,U]$, and a state-contingent probability of respecting an election loss, $z_\omega \in \{0,1\}$,[33] for $\omega \in \{\omega_p, \omega_0\}$. For ease of presentation we impose the fact that a leader would never want to step down in state ω_0–i.e. $z_{\omega_0} = 0$ (the proof is provided in section A.2 below). Furthermore, our focus on pure strategies for the leader reflects our primary interest in autocratic and democratic equilibria. Thus, a Markov strategy for the leader is given by three numbers $\sigma_L \equiv \{\tau_{\omega_p}, \tau_{\omega_0}, z_{\omega_p}\}$. The strategy for an insider involves a state-contingent probability of mounting a coup following each possible transfer, $c_\omega(\tau) \in [0,1]$, for $\omega \in \{\omega_p, \omega_0\}$ and $\tau \in [0,U]$. Thus, a Markov strategy for the leader is given by a pair of functions $\sigma_N \equiv \{c_{\omega_p}(\tau), c_{\omega_0}(\tau)\}$.

Consider a particular set of Markov strategies $\sigma_L^* \equiv \{\tau^*_{\omega_p}, \tau^*_{\omega_0}, z^*_{\omega_p}\}$ and $\sigma_N^* \equiv \{c^*_{\omega_p}(\tau), c^*_{\omega_0}(\tau)\}$. Given these, we can derive value functions as follows. In state ω_p, the value of being a leader at the start of the period, $V^L_{\omega_p}$, the value of being a leader following an election loss, $\tilde{V}^L_{\omega_p}$, and the value of being a non-leader faced with a transfer offer of τ, $V^N_{\omega_p}(\tau)$, satisfy:

$$V^L_{\omega_p} = \max_{\tau\in[0,U]} \{\hat{a}F + U - \tau + (1-\delta)\cdot[c^*_{\omega_p}(\tau)\cdot(1-\gamma)\cdot V^L_{\omega_p} + (1-c^*_{\omega_p}(\tau))\cdot[p\cdot V^L_{\omega_p} + (1-p)\cdot \tilde{V}^L_{\omega_p}]]\} \quad (22)$$

$$\tilde{V}^L_{\omega_p} = \max_{z\in[0,1]} \{z\cdot V^N_{\omega_p}(\tau^*_{\omega_p}) + (1-z)\cdot V^L_{\tilde{\omega}}\} \quad (23)$$

$$V^N_{\omega_p}(\tau) = \max_{c\in[0,1]} \{c\cdot[(1-\delta)\cdot\gamma\cdot V^L_{\omega_p}] + (1-c)\cdot[\tau + (1-\delta)\cdot[p\cdot V^N_{\omega_p}(\tau^*_{\omega_p}) + (1-p)\cdot \tilde{V}^N_{\omega_p}]]\} \quad (24)$$

where $\tilde{V}^N_{\omega_p}$ is the value of being a non-leader following an election victory:

$$\tilde{V}^N_{\omega_p} \equiv z^*_{\omega_p}\cdot V^L_{\omega_p} + (1-z^*_{\omega_p})\cdot[(1-\delta)\cdot V^N_{\tilde{\omega}}(\tau^*_{\tilde{\omega}}) + \delta\cdot V^N_{\omega_p}(\tau^*_{\omega_p})] \quad (25)$$

and $\tilde{\omega}$ is the state next period following a refusal to respect an election loss:

$$\tilde{\omega} \equiv \begin{cases} \omega_p & \text{if } z^*_{\omega_p} = 0 \\ \omega_0 & \text{if } z^*_{\omega_p} = 1 \end{cases} \quad (26)$$

In state ω_0, we use the fact that $z^*_{\omega_0} = 0$, to get the analogous value functions:

$$V^L_{\omega_0} = \max_{\tau\in[0,U]} \{F + U - \tau + (1-\delta)\cdot[c^*_{\omega_0}(\tau)\cdot(1-\gamma)\cdot V^L_{\omega_0} + (1-c^*_{\omega_0}(\tau))\cdot V^L_{\omega_0}]\} \quad (27)$$

$$V^N_{\omega_0}(\tau) = \max_{c\in[0,1]} \{c\cdot[(1-\delta)\cdot\gamma\cdot V^L_{\omega_p}] + (1-c)\cdot[\tau + (1-\delta)\cdot[(1-\delta)\cdot V^N_{\omega_0}(\tau^*_{\omega_0}) + \delta\cdot V^N_{\omega_p}(\tau^*_{\omega_p})]]\} \quad (28)$$

[33] Since elections only occur if there is no coup, the only prior action within the period is the transfer amount. We economize on extraneous notation by imposing that the leader respects an election with a probability that is independent of the specific transfer that dissuaded a coup.

The proposed strategy profile is an equilibrium profile if the components solve the problems posed on the right side of the above equations. That is:

$$\tau^*_{\omega_p} \in \arg\max_{\tau\in[0,U]} \{\hat{a}F + U - \tau + (1-\delta)\cdot[c^*_{\omega_p}(\tau)\cdot(1-\gamma)\cdot V^L_{\omega_p} + (1-c^*_{\omega_p}(\tau))\cdot[p\cdot V^L_{\omega_p} + (1-p)\cdot \tilde{V}^L_{\omega_p}]]\} \quad (29)$$

$$z^*_{\omega_p} \in \arg\max_{z\in[0,1]} \{z\cdot V^N_{\omega_p}(\tau^*_{\omega_p}) + (1-z)\cdot V^L_{\tilde{\omega}}\} \quad (30)$$

$$c^*_{\omega_p}(\tau) \in \arg\max_{c\in[0,1]} \{c\cdot[(1-\delta)\cdot\gamma\cdot V^L_{\omega_p}] + (1-c)\cdot[\tau + (1-\delta)\cdot[p\cdot V^N_{\omega_p}(\tau^*_{\omega_p}) + (1-p)\cdot \tilde{V}^N_{\omega_p}]]\} \quad (31)$$

$$\tau^*_{\omega_0} \in \arg\max_{\tau\in[0,U]} \{F + U - \tau + (1-\delta)\cdot[c^*_{\omega_0}(\tau)\cdot(1-\gamma)\cdot V^L_{\omega_0} + (1-c^*_{\omega_0}(\tau))\cdot V^L_{\omega_0}]\} \quad (32)$$

$$c^*_{\omega_0}(\tau) \in \arg\max_{c\in[0,1]} \{c\cdot[(1-\delta)\cdot\gamma\cdot V^L_{\omega_p}] + (1-c)\cdot[\tau + (1-\delta)\cdot[(1-\delta)\cdot V^N_{\omega_0}(\tau^*_{\omega_0}) + \delta\cdot V^N_{\omega_p}(\tau^*_{\omega_p})]]\} \quad (33)$$

Definition 1. *A Markov Perfect Equilibrium is a profile of Markov strategies, σ^*_L and σ^*_N, such that (22) to (33) simultaneously hold.*

A.2 It is never optimal to step down in state ω_0: $z^*(\omega_0) = 0$

Suppose that the leader in state ω_0 stepped down. Then since voters still perceive them to be a tyrant, and since $\eta \to 0$, they will (almost surely) lose an election against the new leader. Since the incumbent wins with probability 1, label such a state ω_1. Since the leader in this state always wins elections, and since $\eta \to 0$, the leader (almost surely) can not take actions that change citizen beliefs. As such, the state remains at ω_1 until the original leader (i.e. the perceived tyrant) dies. Upon this death, the replacement would become a tyrant with probability ε upon taking the leadership and thus citizens once again become indifferent between the candidates. That is, there is a return to state ω_p.

A successful coup in state ω_1 delivers a continuation value of $V^L_{\omega_0}$ (since the coup instigator is still perceived to be a tyrant). Thus, the value of being the insider in state ω_1 satisfies the following:

$$V^N_{\omega_1} = c^*_{\omega_1}\cdot[(1-\delta)\cdot\gamma\cdot V^L_{\omega_0}] + (1-c^*_{\omega_1})\cdot[\tau^*_{\omega_1} + (1-\delta)\cdot V^N_{\omega_1}] \quad (34)$$

where $\tau^*_{\omega_1}$ is the equilibrium transfer, and $c^*_{\omega_1} \equiv c^*_{\omega_1}(\tau^*_{\omega_1})$ is the equilibrium probability of mounting a coup, in state ω_1.

Result 5. *The leader in state ω_0 will never want to step down: i.e. $V^N_{\omega_1} < V^L_{\omega_0}$.*

Proof. The result will follow by establishing that $V^N_{\omega_1} = (1-\delta)\cdot\gamma\cdot V^L_{\omega_0}$. If $c^*_{\omega_1} = 1$ then this is obvious from (34). If $c^*_{\omega_1} < 1$, then $\tau^*_{\omega_1} > 0$ (if instead $\tau^*_{\omega_1} = 0$, then the implied value of $V^N_{\omega_1}$ would be zero, making a coup strictly preferable). But then $\tau^*_{\omega_1}$ must be set at that critical transfer value that makes the non-leader indifferent to a coup. Thus, for any possible value of $c^*_{\omega_1}$ we have $V^N_{\omega_1} = (1-\delta)\cdot\gamma\cdot V^L_{\omega_0}$, so that $V^N_{\omega_1} < V^L_{\omega_0}$ as required. □

B Supporting Results

Result 6. *Democratic equilibria with differing transfer levels never coexist.*

Proof. Lemma 3 establishes that if parameters are in P_1, then a democratic equilibrium must have $\tau_D = 0$. Thus, the only possible way for there to be multiplicity is if equilibria with different positive transfer levels co-exist (and thus parameters are in P_2). But if there is an equilibrium with transfers $\tau_D = \tau'$, then parameters must be such that $\tau' = \hat{\tau}_D$, where $\hat{\tau}_D$ is given by (19) where $\{V_D^L, V_D^N\}$ are computed from (12) and (13) using $\tau_D = \tau'$. The resulting condition has a unique solution for τ', so that an equilibrium with a transfers of $\tau' > 0$ precludes there being an equilibrium with any other transfer. □

C Proofs

Proof of Lemma 1:

Proof. Suppose instead that we had $\hat{\tau}_A \leq 0$. Since $\tau \geq 0 \geq \hat{\tau}_A$ we must have $c = 0$. From the optimality conditions we have $\tau_A = 0$ since $\sigma_A(\tau) = 0$ for all τ. Using this is the expressions for the value functions gives $V_A^N = 0$ and $V_A^L = (F+U)/\delta$. Thus, $\gamma \cdot V_A^L - V_A^N > 0$ which implies $\hat{\tau}_A > 0$ which is a contradiction. □

Proof of Lemma 2:

Proof. We proceed by showing that $\hat{\tau}_A < U$ implies that (i) there are no profitable deviations from choosing $\tau = \hat{\tau}_A$, and (ii) there is always a profitable deviation from choosing any $\tau \neq \hat{\tau}_A$.

Suppose $\hat{\tau}_A < U$ and that $\tau_A = \hat{\tau}_A$. Since $\hat{\tau}_A < U$, it must be that there are no coups in equilibrium (otherwise raising τ by a marginal amount will cause coups to occur with probability zero). If there is a profitable deviation, it will be to setting $\tau = 0$. This will definitely induce a coup (since $\tau = 0 < \hat{\tau}_A$). Thus, there is not a profitable deviation if

$$F + U + (1-\delta)\cdot(1-\gamma)\cdot V_A^L \leq V_A^L.$$

That is, if

$$V_A^L \geq \frac{F+U}{1-(1-\delta)\cdot(1-\gamma)} = \frac{\delta}{\delta+\gamma\cdot(1-\delta)}\cdot\frac{F+U}{\delta}.$$

Using $c_A = 0$ along with (7) in (5) gives $V_A^N = \gamma\cdot(1-\delta)\cdot V_A^L$. Adding (4) and (5) and re-arranging gives

$$V_A \equiv V_A^L + V_A^N = \frac{F+U}{\delta}.$$

Therefore $V_A^L = V_A - V_A^N = V_A - \gamma\cdot(1-\delta)\cdot V_A^L$, so that

$$V_A^L = \frac{1}{1+\gamma\cdot(1-\delta)}\cdot V_A = \frac{1}{1+\gamma\cdot(1-\delta)}\cdot\frac{F+U}{\delta} \geq \frac{\delta}{\delta+\gamma\cdot(1-\delta)}\cdot\frac{F+U}{\delta},$$

as required. Thus, there are no profitable deviations from $\tau = \hat{\tau}_A$.

Now suppose that $\tau_A \neq \hat{\tau}_A$. If $\tau_A > \hat{\tau}_A$ then $\tau = \hat{\tau}_A$ is clearly a profitable deviation (it achieves coups with the same probability, zero, at a lower cost). Similarly, if $\tau_A \in (0, \hat{\tau}_A)$ then

$\tau = 0$ is clearly a profitable deviation (it achieves coups with the same probability, one, at a lower cost). The only remaining possibility is $\tau = 0$. To show that there is a profitable deviation consider a deviation to $\tau = \hat{\tau}_A$. If this is a profitable deviation, then it must be that

$$F + U - \hat{\tau}_A + (1-\delta) \cdot V_A^L > V_A^L.$$

That is, if

$$F + U > \hat{\tau}_A + \delta \cdot V_A^L$$

Use the fact that $V_A^N = \gamma \cdot (1-\delta) \cdot V_A^L$ to get $\gamma \cdot V_A^L = V_A^N/(1-\delta)$ which can then be used in (7) to get $\hat{\tau}_A = V_A^N - (1-\delta) \cdot V_A^N = \delta \cdot V_A^N$. Using this in the above equation implies that we need to show

$$F + U > \delta \cdot [V_A^L + V_A^N].$$

Adding (4) and (5) and using $c_A = 1$ and $\tau_A = 0$, we get $V_A^L + V_A^N = F + U + (1-\delta) \cdot V_A^L$. That is,

$$F + U = \delta \cdot V_A^L + V_A^N > \delta \cdot [V_A^L + V_A^N],$$

as required. Thus, there can not be an equilibrium with $\tau_A = 0$ if $\hat{\tau}_A < U$. □

Proof of Result 1:

Proof. Follows from $V_A^L \geq \gamma \cdot V_A^L > V_A^N$ where the first inequality follows from $\gamma \leq 1$ and the second inequality is implied by lemma 1. □

Proof of Proposition 1:

Proof. The strategy is to first characterize the set of parameters for which an autocratic equilibrium with $\hat{\tau}_A > U$, $\hat{\tau}_A < U$, and $\hat{\tau}_A = U$ exist. This will allow us to then characterize the set of parameters for which a secure, insecure, and partially secure autocratic equilibrium exists. Since these cases cover all possible autocratic equilibria and since the characterized parameter sets will be generically disjoint (two of the sets will share a boundary), it follows that autocratic equilibria are generically unique.

To this end, we begin by characterizing the set of parameters that support an autocratic equilibria in which $\hat{\tau}_A > U$. Such equilibria must have insecure autocrats since the required transfer is infeasible. The parameter set is those for which $\hat{\tau}_A > U$, where $\hat{\tau}_A$ is given by (7) where $\{V_A^L, V_A^N\}$ are computed using $\tau_A = 0$ and $c_A = 1$. This gives $\psi < \mu_1$

Next, we characterize the set of parameters that support an autocratic equilibrium in which $\hat{\tau}_A < U$. Such equilibria must have secure autocrats by the above lemma. The parameter set is those for which $\hat{\tau}_A < U$, where $\hat{\tau}_A$ is given by (7) where $\{V_A^L, V_A^N\}$ are computed using $\tau_A = \hat{\tau}_A$ and $c_A = 0$. This gives $\psi > \mu_2$.

Next, we characterize the set of parameters that support an autocratic equilibrium in which $\hat{\tau}_A = U$. We divide this case into three sub-cases.

1. The equilibrium will have a strongly insecure autocrat if and only if parameters satisfy $\hat{\tau}_A = U$, where $\hat{\tau}_A$ is given by (7) where $\{V_A^L, V_A^N\}$ are computed using $\tau_A = 0$ and $c_A = 1$ (offering $\tau = U$ is not a profitable deviation because we can have insiders holding a coup with probability one in this event, removing any incentive to offer more than zero). This gives $\psi = \mu_1$.

2. The equilibrium will have a secure autocrat if and only if parameters satisfy $\hat{\tau}_A = U$, where $\hat{\tau}_A$ is given by (7) where $\{V_A^L, V_A^N\}$ are computed using $\tau_A = U$ and $c_A = 0$ (offering $\tau = 0$ is not a profitable deviation for reasons identical to those given in lemma 2). This gives $\psi = \mu_2$.

3. The equilibrium will have a weakly insecure autocrat if and only if parameters satisfy $\hat{\tau}_A = U$, where $\hat{\tau}_A$ is given by (7) where $\{V_A^L, V_A^N\}$ are computed using $\tau_A = U$, the implied value of c_A satisfies $c_A \in (0,1)$, and we verify that there are no incentives to deviate to offering $\tau = 0$. This gives $\psi \in [\mu_1, \mu_2)$

In summary then, a secure autocratic equilibrium exists if and only if $\psi \geq \mu_2$. A strongly insecure autocratic equilibrium exists if and only if $\psi \leq \mu_1$, and a weakly insecure autocratic equilibrium exists if and only if $\psi \in [\mu_1, \mu_2)$. Thus, autocratic equilbrium is unique unless $\psi = \mu_1$, in which case two equilibria exist (one weakly insecure and one strongly insecure). □

Proof of Result 2:

Proof. Consider a proposed democratic equilbrium in which $\hat{\tau}_D \in (0, U]$. Since coups are avoided in any democratic equilibrium, we have $\tau_D = \hat{\tau}_D$. From (19) and (13) we get $V_D^N = \gamma \cdot (1-\delta) \cdot V_D^L$, and by adding (12) and (13) we get $V_D^L + V_D^N = (F+U)/\delta$.

If there is a profitable deviation, it is to $\tau = 0$ (which must incite a coup by virtue of $\hat{\tau}_D > 0$). Thus, there is not a profitable deviation if

$$F + U + (1-\gamma) \cdot (1-\delta) \cdot V_D^L \leq V_D^L,$$

but since $V_D^N = \gamma \cdot (1-\delta) \cdot V_D^L$, this is $F + U \leq \delta \cdot V_D^L + V_D^N$. But this is ensured because

$$F + U = \delta \cdot V_D^L + \delta \cdot V_D^N < \delta \cdot V_D^L + V_D^N,$$

where the equality follows from $V_D^L + V_D^N = (F+U)/\delta$. □

Proof of Result 3:

Proof. The strategy is to show that $V_D^L > V_D^N$, since this along with (17) implies (16) as claimed.

If there were coups in equilibrium, then we would have $V_D^N = \gamma \cdot (1-\delta) \cdot V_D^L < V_D^L$. If there were no coups, then it is either the case that $\tau_D > 0$ or $\tau_D = 0$. If $\tau_D > 0$, then $\tau_D = \hat{\tau}_D$ which ensures $V_D^N = \gamma \cdot (1-\delta) \cdot V_D^L < V_D^L$. If instead $\tau_D = 0$, then the value functions (12) and (13) imply $V_D^L > V_D^N$. To see this, note that $V_D \equiv V_D^L + V_D^N = (F+U)/\delta$. This implies $V_D^N = V_D - V_D^L$, which can be substituted into (12) and solved to get $V_D^L = \frac{\delta + (1-\delta)\cdot(1-p)}{1-p} \cdot \frac{V_D}{2}$. Since $\delta > 0$ implies the first fraction is greater than unity, it follows that $V_D^L > V_D/2$ and thus that $V_D^L > V_D^N$ as required.

Thus, in all cases we have $V_D^L > V_D^N$. But then this and (17) implies $V_D^L > V_D^N \geq V_T^L$, which implies $V_D^L \geq V_T^L$ as required. □

Proof of Lemma 3:

Proof. The strategy is to first prove the 'only if' statements. The second step is to note that the fact that $P_1 \equiv \{p, \delta, \gamma, U, F \mid p \leq p^*\}$ and $P_2 \equiv \{p, \delta, \gamma, U, F \mid p > p^*, \psi \geq f(p)\}$ are disjoint implies the 'if' conditions.

If a democratic equilibrium involves $\tau_D = 0$, then it must be the case that $\hat{\tau}_D \leq 0$, where $\hat{\tau}_D$ is given by (19) where $\{V_D^L, V_D^N\}$ are computed from (12) and (13) using $\tau_D = 0$. This gives $p \leq p^*$.

If a democratic equilibrium involves $\tau_D \in (0, U]$ then $\hat{\tau}_D \in (0, U]$, where $\hat{\tau}_D$ is given by (19) where $\{V_D^L, V_D^N\}$ are computed from (12) and (13) using $\tau_D = \hat{\tau}_D$. This gives $p > p^*$ and $\psi \geq f(p)$.

So far we have established that if there is a democratic equilibrium with zero transfers then parameters are in $P_1 \equiv \{p, \delta, \gamma, U, F \mid p \leq p^*\}$, and that if there is a democratic equilibrium with positive transfers then parameters are in $P_2 \equiv \{p, \delta, \gamma, U, F \mid p > p^*, \psi \geq f(p)\}$. But the fact that P_1 and P_2 are disjoint implies the 'if' conditions. That is, if there is a democratic equilibrium with parameters in P_1 then it must involve zero transfers since a democratic equilibrium either has zero or positive transfers, yet it can not have positive transfers because parameters being in P_1 preclude them from being in P_2 (and similarly for the consequences of parameters in P_2). □

Proof of Lemma 4:

Proof. The strategy is to show that if tyrants are secure then the value to being a tyrant leader is at least as great as being a leader in democracy and therefore strictly better than being an insider in democracy since $V_D^L > V_D^N$ (this is formally proven as part of the proof of Result 3).

If a tyrant is secure, then $c_T = 0$ and either $\hat{\tau}_T \leq 0$ or $\hat{\tau}_T \in (0, U]$. If $\hat{\tau}_T \leq 0$ then $\tau_T = 0$ and (14) implies

$$V_T^L = \frac{F+U}{\delta} = V_D^L + V_D^N > V_D^L > V_D^N \tag{35}$$

where the second equality comes from adding (12) and (13) and re-arranging. If on the other hand $\hat{\tau}_T \in (0, U]$, then $\tau_T = \hat{\tau}_T$ and thus $V_T^N = \gamma \cdot (1-\delta) \cdot V_D^L$. Since the right side is the value of holding a coup in democracy, we have $V_T^N \leq V_D^N$. But then using this in the right side of (15) we have $V_T^N \geq \tau_T + (1-\delta) \cdot V_T^N$ so that

$$\tau_T \leq \delta \cdot V_T^N \tag{36}$$

Using this in (14) gives $V_T^L \geq F + U - \delta \cdot V_T^N + (1-\delta) \cdot V_T^L$, and using $V_T^N \leq V_D^N$ gives $V_T^L \geq F + U - \delta \cdot V_D^N + (1-\delta) \cdot V_T^L$. Therefore we have

$$V_T^L + V_D^N \geq \frac{F+U}{\delta} = V_D^L + V_D^N. \tag{37}$$

Thus $V_T^L \geq V_D^L > V_D^N$, implying again that election results are not respected. □

Proof of Result 4

Proof. The result is obvious if $\hat{\tau}_T \leq 0$ since coups can be avoided for free. Suppose then that $\hat{\tau}_T \in (0, U)$. The strategy is to show that (i) there is no profitable deviation from $\tau_T = \hat{\tau}_T$ and (ii) there is always a profitable deviation from any $\tau_T \neq \hat{\tau}_T$. This will establish that $c_T = 0$ since strict feasibility implies that leaders can offer infinitesimally more than $\hat{\tau}_T$ and ensure that insiders coup with probability zero.

Suppose that $\tau_T = \hat{\tau}_T \in (0, U)$. There is a profitable deviation only if it is profitable to deviate to $\tau = 0$: it is never profitable to deviate to any $\tau \in (\hat{\tau}_T, U]$ since coups are still avoided but at a higher cost, and any deviation to some $\tau \in (0, \hat{\tau}_T)$ is dominated by $\tau = 0$ since coups are still

not avoided but at a lower cost. Since it will induce a coup for sure, it is not profitable to deviate to $\tau = 0$ if $V_T^L \geq F + U + (1-\gamma)\cdot(1-\delta)\cdot V_T^L$. That is, we need to show that

$$V_T^L \geq \frac{\delta}{\delta + \gamma\cdot(1-\delta)} \cdot \frac{F+U}{\delta} \tag{38}$$

whenever $\tau_T = \hat{\tau}_T \in (0, U)$. To this end, note that $\tau_T = \hat{\tau}_T$ implies that insiders are indifferent to holding a coup. Since the expected payoff to a coup is the same as in the democracy state (i.e. becoming a democratic leader), the fact that there are no coups in democracy implies $V_D^N \geq \gamma\cdot(1-\delta)\cdot V_D^L = V_T^N$. Note too that $\tau_T = \hat{\tau}_T < U$ implies insiders coup with probability zero. Using $c_T = 0$ along with $V_D^N \geq V_T^N$ in (15) gives $V_T^N \geq \hat{\tau}_T + (1-\delta)\cdot V_T^N$. Use this along with (14) to get $V_T \equiv V_T^L + V_T^N \geq \frac{F+U}{\delta}$. Since $V_D^L + V_D^N = \frac{F+U}{\delta}$, we have $V_T^L + V_T^N \geq V_D^L + V_D^N$. This, along with $V_D^N \geq V_T^N$ implies $V_T^L \geq V_D^L$. We therefore have $V_T^L = V_T - V_T^N = V_T - \gamma\cdot(1-\delta)\cdot V_D^L \geq \frac{F+U}{\delta} - \gamma\cdot(1-\delta)\cdot V_T^L$. Rearranging gives $V_T^L \geq \frac{1}{1+\gamma\cdot(1-\delta)} \cdot \frac{F+U}{\delta}$. Condition (38) follows from noting that $\frac{1}{1+\gamma\cdot(1-\delta)} > \frac{\delta}{\delta+\gamma\cdot(1-\delta)}$.

Suppose that $\tau_T \neq \hat{\tau}_T \in (0, U)$. There is clearly a profitable deviation to $\tau = \hat{\tau}_T$ if $\tau_T \in (\hat{\tau}_T, U]$ and to $\tau = 0$ if $\tau_T \in (0, \hat{\tau}_T)$. Thus, if there is an equilibrium with $\tau_T \neq \hat{\tau}_T \in (0, U)$ then it must be $\tau_T = 0$. In this case insiders coup with probability one since $\tau_T = 0 < \hat{\tau}_T$. Using $c_T = 1$ and $\tau_T = 0$ in (10) tells us that the equilibrium value of being a tyrant is given by the right side of (38). But this can not be an equilibrium since there is a profitable deviation to choosing $\tau_T = \hat{\tau}_T$ for all future periods. This will ensure that there are no coups and therefore the payoff to this strategy coincides with the value of V_T^L derived above in the case where $\tau_T = \hat{\tau}_T \in (0, U)$. That is, the left side of (38). The fact that this represents a profitable deviation follows from noting that we proved above that (38) holds with a strict inequality.

Therefore if $\hat{\tau}_T \leq 0$ then it is clearly optimal to set $\tau_T = 0$ and $c_T = 0$ as a result. If $\hat{\tau}_T \in (0, U)$, we have shown that the only equilibrium has $\tau_T = \hat{\tau}_T$ and since $\hat{\tau}_T < U$ it must be that $c_T = 0$ in this case also. Thus $\hat{\tau}_T < U \Rightarrow c_T = 0$. □

Proof of Lemma 5:

Proof. The strategy is to note that a tyrant is insecure only if $\hat{\tau}_T \geq U$ where $\hat{\tau}_T$ is given by (20) where the values of $\{V_D^L, V_D^N\}$ are given by the solutions to (12) and (13) using $\tau_D = 0$ if parameters are in P_1 and $\tau_D = \hat{\tau}_D$ if parameters are in P_2 where $\hat{\tau}_D$ is given by (19), and where $V_T^N = \gamma\cdot(1-\delta)\cdot V_D^L$ (since the insider is either indifferent to mounting a coup or strictly prefers it).

Using $V_T^N = \gamma\cdot(1-\delta)\cdot V_D^L$ in (20) gives:

$$\hat{\tau}_T = (1-\delta)\cdot\delta\cdot\left(\gamma\cdot(2-\delta)\cdot V_D^L - V_D^N\right). \tag{39}$$

If parameters are in P_1, then we have

$$V_D^L = \frac{1 - p\cdot(1-\delta)}{(2-\delta)\cdot(1-p) + p\cdot\delta} \cdot \frac{F+U}{\delta} \tag{40}$$

$$V_D^N = \frac{(1-p)\cdot(1-\delta)}{(2-\delta)\cdot(1-p) + p\cdot\delta} \cdot \frac{F+U}{\delta}, \tag{41}$$

which, when used in (39), makes the requirement that $\hat{\tau}_T \geq U$ equivalent to $\psi \leq g(p)$.

If instead parameters are in P_2, then we have

$$V_D^L = \frac{1}{1+\gamma\cdot(1-\delta)}\cdot\frac{F+U}{\delta} \tag{42}$$

$$V_D^N = \frac{\gamma\cdot(1-\delta)}{1+\gamma\cdot(1-\delta)}\cdot\frac{F+U}{\delta}, \tag{43}$$

which, when used in (39), makes the requirement that $\hat{\tau}_T \geq U$ equivalent to $\psi \leq \mu_2$. □

Proof of Proposition 2:

Proof. The 'only if' part follows from Lemmas 3 and 5. The strategy for showing the 'if' part is to show that elections are respected if tyrants are insecure (and $\gamma^2 \geq \delta/(1-\delta)^2$).

If $p \leq p^*$ and $\psi < g(p)$ or $p > p^*$ and $\psi \in [f(p), \mu_2)$, then equilibrium must have $\hat{\tau}_T > U$ (by virtue of $\psi < g(p)$ and $\psi < \mu_2$). This implies that it is impossible for a tyrant to dissuade a coup, and thus any equilibrium must have $c_T = 1$ and $\tau_T = 0$. As such, (14) implies that

$$V_T^L = \frac{F+U}{\delta+\gamma\cdot(1-\delta)}. \tag{44}$$

If $p > p^*$ and $\psi \in [f(p), \mu_2)$ (parameters are in S_2), then we have $\tau_D = \hat{\tau}_D$ where $\hat{\tau}_D$ is given by (19). This, along with (12) and (13), gives:

$$V_D^N = \frac{\gamma\cdot(1-\delta)}{1+\gamma\cdot(1-\delta)}\cdot\frac{F+U}{\delta}. \tag{45}$$

It then follows that elections are respected (i.e. $V_D^N \geq V_T^L$) if and only if

$$\frac{\gamma\cdot(1-\delta)}{1+\gamma\cdot(1-\delta)} \geq \frac{\delta}{\delta+\gamma\cdot(1-\delta)}, \tag{46}$$

which holds if and only if $\gamma^2 \geq \delta/(1-\delta)^2$.

If instead $p \leq p^*$ and $\psi < g(p)$ (parameters are in S_1), then we have $\tau_D = 0$ and from (12) and (13) we get:

$$V_D^N = \frac{(1-p)\cdot(1-\delta)}{(2-\delta)\cdot(1-p)+p\cdot\delta}\cdot\frac{F+U}{\delta}. \tag{47}$$

It then follows that elections are respected (i.e. $V_D^N \geq V_T^L$) if and only if

$$\frac{(1-p)\cdot(1-\delta)}{(2-\delta)\cdot(1-p)+p\cdot\delta} \geq \frac{\delta}{\delta+\gamma\cdot(1-\delta)}, \tag{48}$$

which is equivalent to

$$\frac{p}{1-p} \leq \gamma\left(\frac{1-\delta}{\delta}\right)^2 - \frac{1}{\delta}. \tag{49}$$

But note that the left side is increasing in p. But since $p \leq p^*$, this condition is satisfied for all $p \leq p^*$ if it is satisfied at p^*. Since

$$\frac{p^*}{1-p^*} = \frac{1-\gamma}{\gamma\cdot\delta}, \tag{50}$$

equation (49) is indeed satisfied at $p = p^*$ if $\gamma^2 \geq \delta/(1-\delta)^2$.

Thus, as long as $\gamma^2 \geq \delta/(1-\delta)^2$ holds, if $p \leq p^*$ and $\psi < g(p)$ or $p > p^*$ and $\psi \in [f(p), \mu_2)$ then a unique equlibrium with the stated properties exists.

The exact same existence arguments apply in the knife-edge cases of $p \leq p^*$ and $\psi = g(p)$ or $p > p^*$ and $\psi = \mu_2$, except that another democratic equilibrium will exist. If $p \leq p^*$ and $\psi = g(p)$ the added equilibrium will have still have zero transfers in the democratic state, but will have $\tau_T = U$ and some $c_T > 0$ in the tyranny state. Similarly, if $p > p^*$ and $\psi = \mu_2$ the added equilibrium will have still have positive transfers in the democratic state, but will have $\tau_T = U$ and some $c_T > 0$ in the tyranny state. This establishes the 'if' statement and the generic uniqueness. □

Proof of Proposition 3:

Proof. This proof follows closely from the proof of proposition 2. Specifically, if $\gamma^2 < \delta/(1-\delta)^2$, then (46) can not hold and as a result a democratic equilibrium can not exist if parameters are in S_2. If an equilibrium with parameters in S_1 is to exist, then (49) must hold.

Note that the condition is not satisfied for any $p \in [0,1]$ (implying a democratic equilibrium does not exist) if $\gamma < \delta/(1-\delta)^2$. Intuitively, there is a maximum possible payoff that an insider in democracy can receive and it must be the case that this is larger than the amount an insecure tyrant can obtain. Specifically, the maximum share of total available surplus (i.e. $(F+U)/\delta$) that can accrue to the insider in equilibrium is $(1-\delta)/(2-\delta)$ (corresponding to $p = 0$). This maximum share is decreasing in δ. The amount that an insecure tyrant is able to secure is decreasing in γ as coups become less of a threat. Thus, the existence of a democratic equilibrium is jeopardized when γ is relatively low (and/or when δ is relatively high). □

Proof of Proposition 4:

Proof. Suppose to the contrary that such an equilibrium did exist. Let H^{eqm} be the set of histories on the equilibrium path, H^{coup} be the set of histories at which equilibrium strategies call for a coup (such histories need not be on the equilibrium path), and $H^{*\text{eqm}} \equiv H^{\text{eqm}} \backslash H^{\text{coup}}$ be the set of histories that are on the equilibrium path but do not call for a coup. Let $V^{\text{coup}}(h)$ denote the continuation value associated with holding a coup at history h, and let $V_P^N(h)$ be the value of being the insider at history h under the proposed equilibrium strategies.

The *coup symmetry* property states that there exists histories $h' \in H^{*\text{eqm}}$ and $h'' \in H^{\text{coup}}$ such that

$$V^{\text{coup}}(h') \geq V_P^N(h''). \tag{51}$$

Since equilibrium strategies call for a coup at history h'', the insider would strictly prefer to commence play as if they were at any history in $H^{*\text{eqm}}$. Thus, in order to be renegotiation-proof, it must be that the insider at history h'' strictly prefers to undertake the (disciplining) coup over commencing play as if they were at any history in $H^{*\text{eqm}}$. That is,

$$V_P^N(h'') > \max_{h \in H^{*\text{eqm}}} V_P^N(h). \tag{52}$$

But equations (51) and (52), together with the fact that $\max_{h \in H^{*\text{eqm}}} V_P^N(h) \geq V_P^N(h')$ by virtue of $h' \in H^{*\text{eqm}}$, gives us

$$V^{\text{coup}}(h') > V_P^N(h'), \tag{53}$$

which is a contradiction since it implies that the insider at history h' is not best-responding by following the equilibrium strategy of not mounting a coup. □

Proof of Proposition 5:

Proof. Let $V_P^N(h)$ represent the value of being an insider in a power-sharing equilibrium at history h, and recall that H^{coup} is the set of histories at which equilibrium strategies call for a coup. The equilibrium will fail to be renegotiation-proof if there exists histories h and $h' \in H^{\text{coup}}$ such that $V_P^N(h) \geq V_P^N(h')$. Intuitively, at h' the insider is required to mount a coup and they must be unwilling to commence with play according to equilibrium strategies from any history h (since such play constitutes an equilibrium by sub-game perfection). Note that h need not be on the equilibrium path.

We first derive a bound, $\underline{V}^N$, such that there always exists a history h for which $V_P^N(h) \geq \underline{V}^N$. This bound turns out to be the value of being an insider in the minimalist democracy when zero transfers are made (i.e. in region S_1). That is,

$$\underline{V}_P^N \equiv \frac{(1-p)\cdot(1-\delta)}{1-(1-\delta)(2p-1)} \cdot \frac{F+U}{\delta}. \tag{54}$$

To see why this is so, suppose to the contrary that $V_P^N(h) < \underline{V}_P^N$ for all h. Then for all h on the equilibrium path we have

$$V_P^N(h) = \tau(h) + (1-\delta)\cdot(p \cdot V_P^N(h^-) + (1-p)\cdot V_P^L(h^+)), \tag{55}$$

where h^- (h^+) is the history following h in which the insider does not die and the leader (insider) wins the election. Since $V_P^N(h) + V_P^L(h) = V_D \equiv (F+U)/\delta$ for all h on the equilbrium path, we have

$$V_P^N(h) = \tau(h) + (1-\delta)\cdot(p \cdot V_P^N(h^-) + (1-p)\cdot[V_D - V_P^N(h^+)]). \tag{56}$$

Since $\tau(h) \geq 0$, and $V_P^N(h^+) < \underline{V}_P^N$ by supposition, we have

$$V_P^N(h) > (1-\delta)\cdot(1-p)\cdot[V_D - \underline{V}_P^N] + (1-\delta)\cdot p \cdot V_P^N(h^-) \tag{57}$$

But this implies an upper bound, $\tilde{V}_P^N$, whereby $V_P^N(h) > \tilde{V}_P^N$ for all h on the equilibrium path. This bound is the value of $\tilde{V}_P^N$ which satisfies

$$\tilde{V}_P^N = (1-\delta)\cdot(1-p)\cdot[V_D - \underline{V}^N] + (1-\delta)\cdot p \cdot \tilde{V}_P^N. \tag{58}$$

But it is straightforward to verify that $\tilde{V}_P^N = \underline{V}_P^N$ where $\underline{V}_P^N$ is defined in (54). This implies $\underline{V}_P^N = \tilde{V}_P^N < V_P^N(h) < \underline{V}_P^N$ which is a contradiction.

We now derive an upper bound, $\overline{V}_P^N$, whereby $V_P^N(h') \leq \overline{V}_P^N$ for all $h' \in H^{\text{coup}}$. That is, an upper bound on the value of mounting a coup when the equilibrium strategy calls for it. Start by noting that the value of being a leader is bounded below by the value of keeping all patronage and facing coups with probability one each period. Denote this value $\underline{V}^L$ and note that it corresponds to the value of being a strongly insecure autocrat or tyrant: $\underline{V}^L \equiv (F+U)/(1-(1-\gamma)(1-\delta))$. Thus the value of being an insider (on or off the path) is bounded below by $\underline{V}^N \equiv \gamma\cdot(1-\delta)\cdot\underline{V}^L$. Since the total value of office is bounded above by $(F+U)/\delta$, it follows that the value of being a leader is bounded above by $\overline{V}^L \equiv (F+U)/\delta - \underline{V}^N$. Since this is the very best that one can obtain from a successful coup, for all $h' \in H^{\text{coup}}$ we have $V_P^N(h') \leq \overline{V}_P^N \equiv \gamma\cdot(1-\delta)\cdot\overline{V}^L = \frac{\gamma\cdot(1-\delta)}{\delta+\gamma\cdot(1-\delta)}\cdot[\delta+\gamma\cdot(1-\delta)^2]\cdot\frac{F+U}{\delta}$.

Given these bounds, it follows that the equilibrium must fail to be renegotiation-proof if $\overline{V}_P^N \leq \underline{V}_P^N$. That is, there must exist histories h and $h' \in H^{\text{coup}}$ such that $V_P^N(h') \leq V_P^N(h)$. Thus the equilibrium must fail to be renegotiation-proof if

$$\frac{(1-\delta)\cdot(1-p)}{(2-\delta)\cdot(1-p)+p\cdot\delta} \geq \frac{\gamma\cdot(1-\delta)}{\delta+\gamma\cdot(1-\delta)}\cdot[\delta+\gamma\cdot(1-\delta)^2] \tag{59}$$

Since the left side is strictly decreasing in p, this holds for $p \leq p^{**}$ where p^{**} is the value of p that makes the above hold with equality. Such a value will clearly only depend on (δ,γ). Since the left side is independent of γ and strictly decreasing in p whereas the right side is strictly increasing in γ, it follows (implicit function theorem) that p is strictly decreasing in γ.

Note that we always have $p^{**} < 1$, since the left side is zero at $p = 1$ whereas the right side is positive.

Note also that $p^{**} > 0$ if $\gamma < 1/2$. Since the right side is increasing in γ, the fact that $\gamma < 1/2$ implies that the right side is less than the right side evaluated at $\gamma = 1/2$: i.e. $(1/2)\cdot(1-\delta)\cdot(1+\delta^2)/(1+\delta)$. But the value of the left side at $p = 0$ is $(1-\delta)/(2-\delta)$, which is greater than $(1/2)\cdot(1-\delta)\cdot(1+\delta^2)/(1+\delta)$. Thus $p^{**} > 0$ if $\gamma < 1/2$. Thus, $p^{**} \in (0,1)$ if $\gamma < 1/2$. □

Corollary 1. *If $\gamma \in \left(\frac{1-\delta}{2-\delta}, \frac{1}{2}\right)$, then there exists parameters for which a minimalist democracy exists yet a renegotiation-proof power-sharing equilibrium does not exist.*

Proof. If $g(0) \geq 0$, then there exists parameters (specifically $\psi = 0$) such that a minimalist democracy equilibrium exists for all p. It is straightforward to verify that $g(0) \geq 0$ if and only if $\gamma \geq \frac{1-\delta}{2-\delta}$. From proposition 5, we know that $p^{**} > 0$ if $\gamma < 1/2$. Thus, for values of $p \in [0, p^{**})$ take $\psi = 0$ so that a minimalist democracy equilibrium exists yet a renegotiation-proof power-sharing equilibrium does not. □

Proof of Proposition 6:

Proof. From lemma 5, the existence of democratic equilibrium implies $\psi \leq \mu_2$ (since g is increasing in p with $g(p^*) = \mu_2$). Thus, whenever a democratic equilibrium exists, we have $V_A^N = \gamma\cdot(1-\delta)\cdot V_A^L$. Since $\gamma\cdot(1-\delta)\cdot V_D^L \leq V_D^N$ (no coups) we have that $V_A^L < V_D^L \Rightarrow V_A^N < V_D^N$: i.e. insiders strictly prefer democracy to autocracy whenever leaders do. Thus, for the strict inequality claims, it is sufficient to show that $V_A^L < V_D^L$ when $\psi < \mu_2$.

If $\psi \in [0,\mu_1]$, then the result follows since $V_A^L = V_T^L \leq V_D^N < V_D^L$. The equality follows since the autocrat is strongly insecure, the weak inequality follows from the self-enforcing condition, and the strict inequality is readily computed from the value functions.

If $\psi \in (\mu_1,\mu_2)$, then

$$\hat{\tau}_A = U \leq \hat{\tau}_T, \tag{60}$$

with strict inequality if parameters are in P_2. The equality follows from the autocrat being weakly insecure and the inequality follows from a tyrant necessarily being insecure (strictly so if in P_2). Furthermore,

$$\hat{\tau}_T \leq (1-\delta)\cdot\delta\cdot\gamma\cdot V_D^L, \tag{61}$$

with strict inequality if parameters are in P_1. This follows because the fact that $V_T^N = \gamma \cdot (1-\delta) \cdot V_D^L \leq V_D^N$ implies $\hat{\tau}_T \equiv (1-\delta) \cdot [\gamma \cdot V_D^L - \delta \cdot V_D^N + (1-\delta) \cdot V_T^N] \leq (1-\delta) \cdot [\gamma \cdot V_D^L - V_T^N] = (1-\delta) \cdot [\gamma \cdot V_D^L - \gamma \cdot (1-\delta) \cdot V_D^L] = (1-\delta) \cdot \delta \cdot \gamma \cdot V_D^L$, where the inequalities are strict if in P_1. Finally,

$$\hat{\tau}_A = (1-\delta) \cdot \delta \cdot \gamma \cdot V_A^L. \tag{62}$$

This follows because $V_A^N = \gamma \cdot (1-\delta) \cdot V_A^L$ implies $\hat{\tau}_A \equiv (1-\delta) \cdot [\gamma \cdot V_A^L - V_A^N] = (1-\delta) \cdot [\gamma \cdot V_A^L - \gamma \cdot (1-\delta) \cdot V_A^L] = (1-\delta) \cdot \delta \cdot \gamma \cdot V_A^L$. But then using (60)-(62) gives

$$(1-\delta) \cdot \delta \cdot \gamma \cdot V_A^L = \hat{\tau}_A = U \leq \hat{\tau}_T \leq (1-\delta) \cdot \delta \cdot \gamma \cdot V_D^L, \tag{63}$$

implying that $V_A^L < V_D^L$ as required. This is because the first inequality is strict if parameters are in P_2 and the second inequality is strict if parameters are in P_1.

If $\psi = \mu_2$, then the existence of a democratic equilibrium implies that we are in region P_2. Thus the no-coup constraint holds with equality: $\gamma \cdot (1-\delta) \cdot V_D^L = V_D^N$. But then the fact that $V_A^N = \gamma \cdot (1-\delta) \cdot V_A^L$ implies that $V_A^L = V_D^L \Rightarrow V_A^N = V_D^N$. To show that $V_A^L = V_D^L$ when parameters are in P_2 and $\psi = \mu_2$, an argument similar that presented above can be used, noting that (60) holds with equality when $\psi = \mu_2$ and (61) holds with equality when parameters are in P_2. □

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Table 1: Democracies in Diamond (2002) "Gray Zone" are also minimal

	Share of country-Year Observations with Most Democratic Score as Defined in Column (1)	**Share of country-Year Observations with Most Democratic Score as Defined in Column (1)**	**Share of country-Year Observations with Most Democratic Score as Defined in Column (1)**
	Sample: Polity2 ∈ (8,10] **(2712 Total Obs.)**	**Sample: Polity2 ∈ [0,8]** **(1711 Total Obs.)**	**Sample: Polity2 ∈ [-5,0)** **(992 Total Obs.)**
(1)	(2)	(3)	(4)
Electoral Competitiveness Polity dimension XRCOMP =2 (transitional arrangements between selection, ascription and/or designation, and competitive election) or XRCOMP =3 (election)	100%	**85.7%**	12.4%
Electoral Competitiveness Polity dimension XROPEN =4 (Open executive recruitment)	100%	**87.3%**	55.5%
Inclusiveness Polity dimension PARCOMP =4 (transitional arrangements to fully politically competitive patterns of all voters) or PARCOMP =5 (competitive: alternative preferences for policy and leadership can be pursued in the political arena.)	92.4%	29.5%	6.2%
Executive Constraints Polity dimension XCONST =5 (substantial limitations on executive authority) or higher.	100%	69.5%	3.2%

Table 2: Yearly transition matrix

	To non-democracy at t	To minimalist democracy at t	To alternative democracy at t	To representative democracy at t
From non-democracy at t-1 (4143 Total obs.)	97.7%	1.4%	0.3%	0.5%
From minimalist democracy at t-1 (1289 Total obs.)	4.9%	92.0%	0.1%	2.9%
From alternative democracy at t-1 (112 Total obs.)	0.9%	0.0%	91.1%	8.0%
From representative democracy at t-1 (2865 Total obs.)	0.4%	0.8%	0.0%	98.8%

Notes:

Electoral Competitiveness: Polity dimension XRCOMP =2 (transitional arrangements between selection, ascription and/or designation, and competitive election) or XRCOMP =3 (election)**.** Inclusiveness: Polity dimension PARCOMP =4 (transitional arrangements to fully politically competitive patterns of all voters) or PARCOMP =5 (competitive: alternative preferences for policy and leadership can be pursued in the political arena.)

Non- democracy if Electoral competitiveness = 0 and Inclusiveness = 0.

Minimalist democracy if Electoral competitiveness = 1 and Inclusiveness = 0.

Alternative democracy if Electoral competitiveness = 0 and Inclusiveness = 1.

Representative democracy if Electoral competitiveness = 1 and Inclusiveness = 1.

Table 3: Transition matrix, conditional on experiencing a transition

	To non-democracy at t	To minimalist democracy at t	To alternative democracy at t	To representative democracy at t
From non-democracy at t-1		63.6%	13.6%	22.7%
From minimalist democracy at t-1	62.0%		1.2%	36.7%
From alternative democracy at t-1	10.1%	0.0%		89.9%
From representative democracy at t-1	33.3%	66.6%	0.0%	

Notes:

Electoral Competitiveness: Polity dimension XRCOMP =2 (transitional arrangements between selection, ascription and/or designation, and competitive election) or XRCOMP =3 (election)**.** Inclusiveness: Polity dimension PARCOMP =4 (transitional arrangements to fully politically competitive patterns of all voters) or PARCOMP =5 (competitive: alternative preferences for policy and leadership can be pursued in the political arena.)

Non- democracy if Electoral competitiveness = 0 and Inclusiveness = 0.

Minimalist democracy if Electoral competitiveness = 1 and Inclusiveness = 0.

Alternative democracy if Electoral competitiveness = 0 and Inclusiveness = 1.

Representative democracy if Electoral competitiveness = 1 and Inclusiveness = 1.

Table 4: Resource abundance and autocratizations

	ΔPolity 2	**ΔElectoral Competiveness**	**ΔInclusiveness**	**ΔExecutive Constraints**	**ΔPolity 2**	**ΔElectoral Competiveness**	**ΔInclusiveness**	**ΔExecutive Constraints**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log rainfall, t	**-0.07**	**0.04**	-0.21	0.10	**-0.21**	**0.02**	-0.21	0.10
	[0.52]	**[0.06]**	[0.20]	[0.16]	**[0.53]**	**[0.06]**	[0.20]	[0.16]
Log rainfall, t-1	**-2.44**	**-0.25**	-0.82	-0.68	**-2.52**	**-0.23**	-0.82	-0.68
	[1.00]**	**[0.09]*****	[0.39]**	[0.34]**	**[1.01]****	**[0.09]****	[0.39]**	[0.34]**
Price Growth of Main Commodity between t-1 and t	**-0.86**	**-0.09**	-0.13	-0.17	**-0.67**	**-0.07**	-0.13	-0.17
	[0.38]**	**[0.03]*****	[0.22]	[0.12]	**[0.40]***	**[0.03]****	[0.22]	[0.12]
Price Growth of Main Commodity between t-2 and t-1	**-1.03**	**-0.05**	-0.19	-0.30	**-0.91**	**-0.06**	-0.19	-0.30
	[0.50]**	**[0.04]**	[0.20]	[0.15]**	**[0.50]***	**[0.04]**	[0.20]	[0.15]**
R-Squared	0.03	0.03	0.01	0.02	0.03	0.03	0.01	0.02
Observations	668	672	651	651	651	655	651	651
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-Specific Linear Trend	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes:

All changes for the dependent variables (indicated with Δ) are computed between time t and t+1. Electoral Competitiveness is defined as a dummy taking value 1 if Polity dimension XRCOMP =2 (transitional arrangements between selection, ascription and/or designation, and competitive election) or XRCOMP =3 (election) and 0 otherwise. Inclusiveness is defined as a dummy taking value 1 if Polity dimension PARCOMP =4 (transitional arrangements to fully politically competitive patterns of all voters) or PARCOMP =5 (competitive: alternative preferences for policy and leadership can be pursued in the political arena.) and 0 otherwise. Executive Constraints is defined as a dummy taking value 1 if Polity dimension XCONST =5 (substantial limitations on executive authority) or higher, and 0 otherwise. Columns (5) to (8) report the same specifications as Columns (1) to (4) excluding periods of interregnum (Polity = -77). Standard errors clustered at the country level in brackets below coefficients. *Significant at 90% confidence; **95% confidence; ***99% confidence level.

Figure 1: Consolidated Democracies and the "Gray Zone" (Weak/Hybrid Democracies –Polity2∈(0,8])

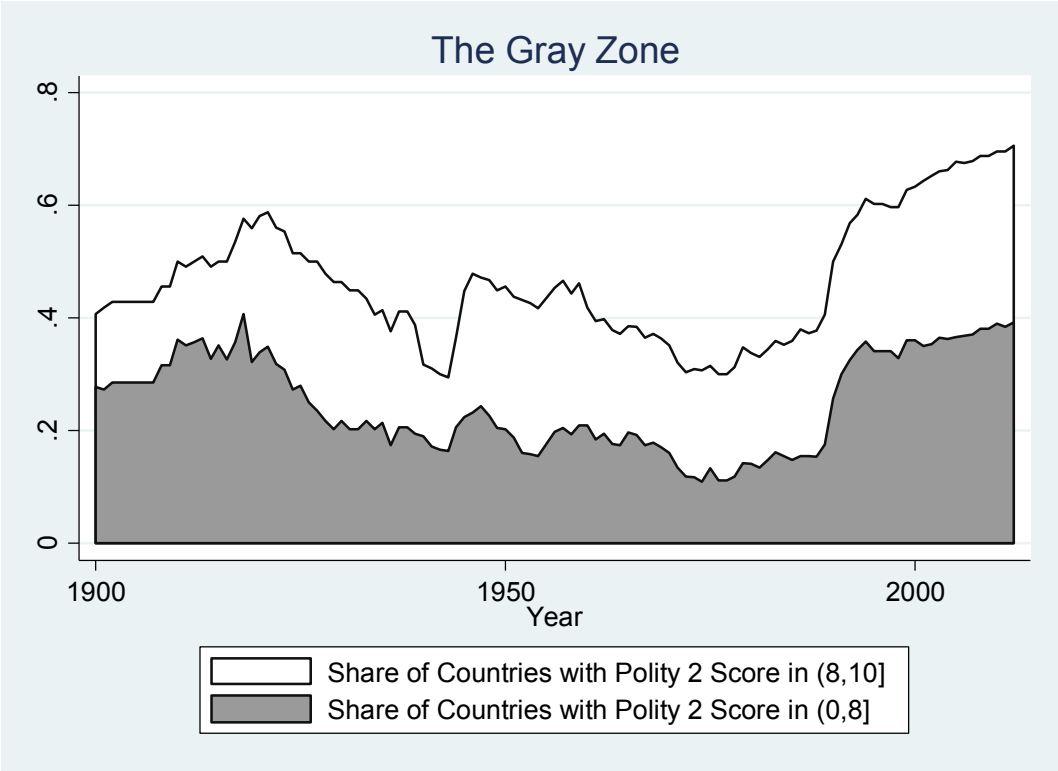
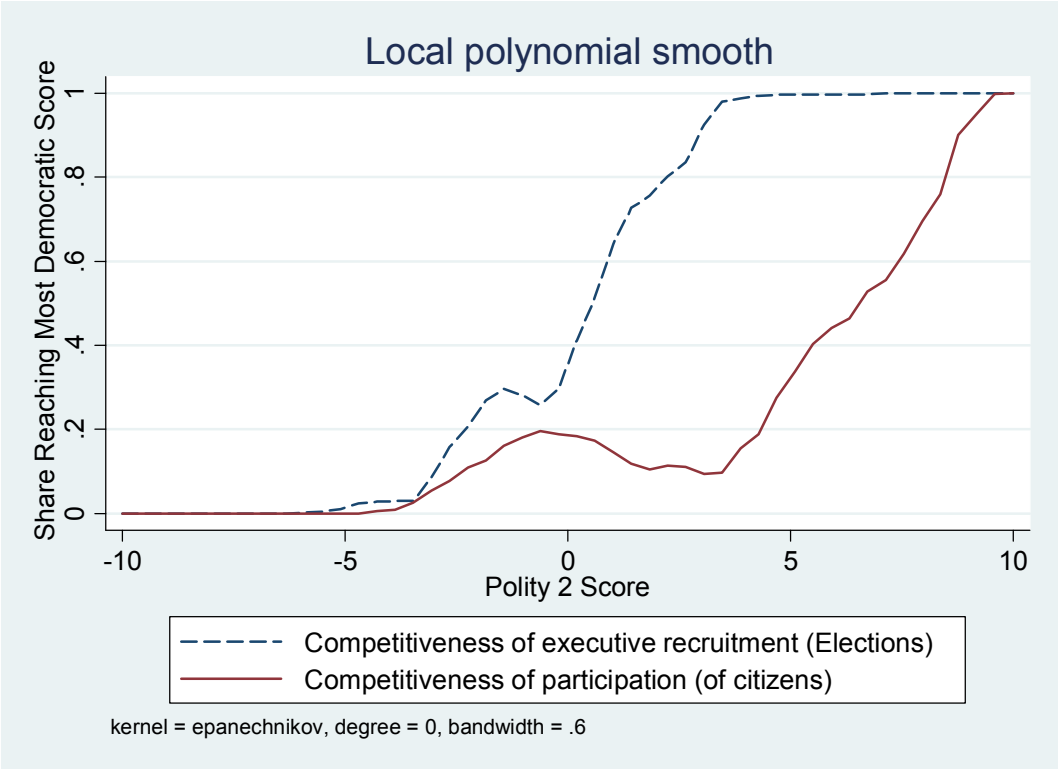


Figure 2: Weak Democracies fare as well as consolidated democracies in terms of Competitiveness of Executive Recruitment (Polity dimension XRCOMP –dashed line). Much less in terms of Competitiveness of Participation (PARCOMP – solid line).



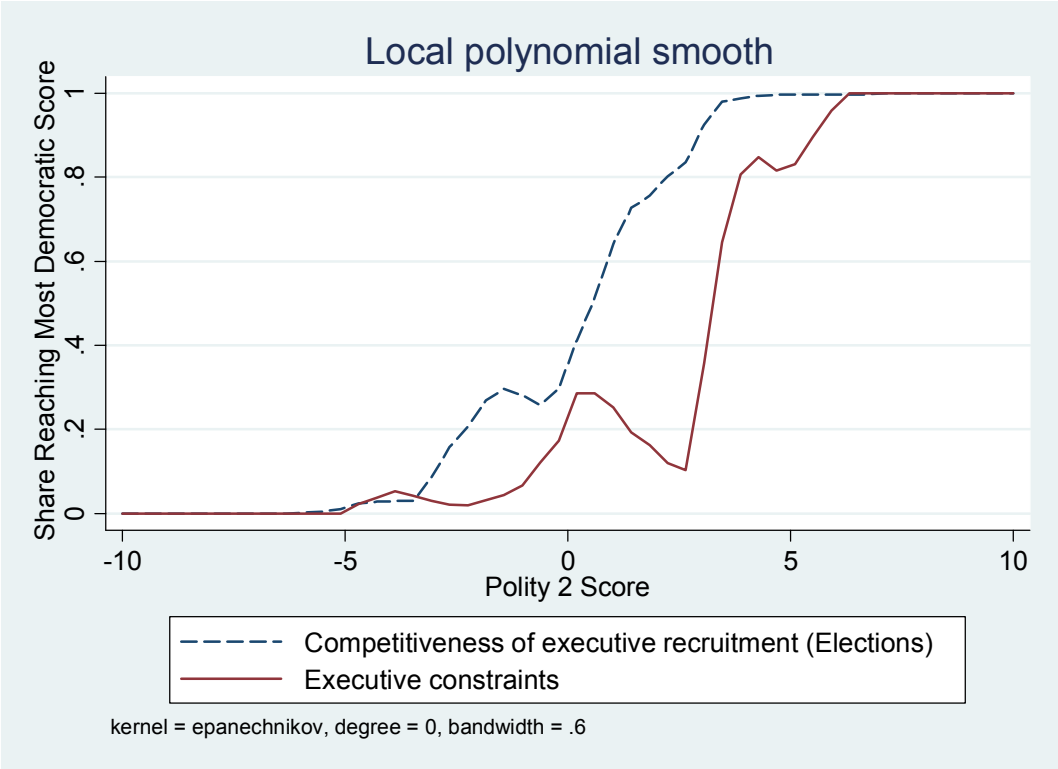
Notes:

Sample starts in 1945 and excludes periods of interruption (Polity = -66), interregnum (Polity = -77), transition (Polity = -88).

Dashed line = Nonparametric representation by local polynomial of the relationship between a dummy taking value 1 if Polity dimension XRCOMP =2 (transitional arrangements between selection, ascription and/or designation, and competitive election) or XRCOMP =3 (election), and zero otherwise, and Polity 2 score.

Solid line = Nonparametric representation by local polynomial of the relationship between a dummy taking value 1 if Polity dimension PARCOMP =4 (transitional arrangements to fully politically competitive patterns of all voters) or PARCOMP =5 (competitive: alternative preferences for policy and leadership can be pursued in the political arena.), and zero otherwise, and Polity 2 score.

Figure 3: Weak Democracies fare as well as consolidated democracies in terms of Competitiveness of Executive Recruitment (Polity dimension XRCOMP –dashed line). Much less in terms of limitations on the Constraints on Chief Executive (XCONST – solid line).



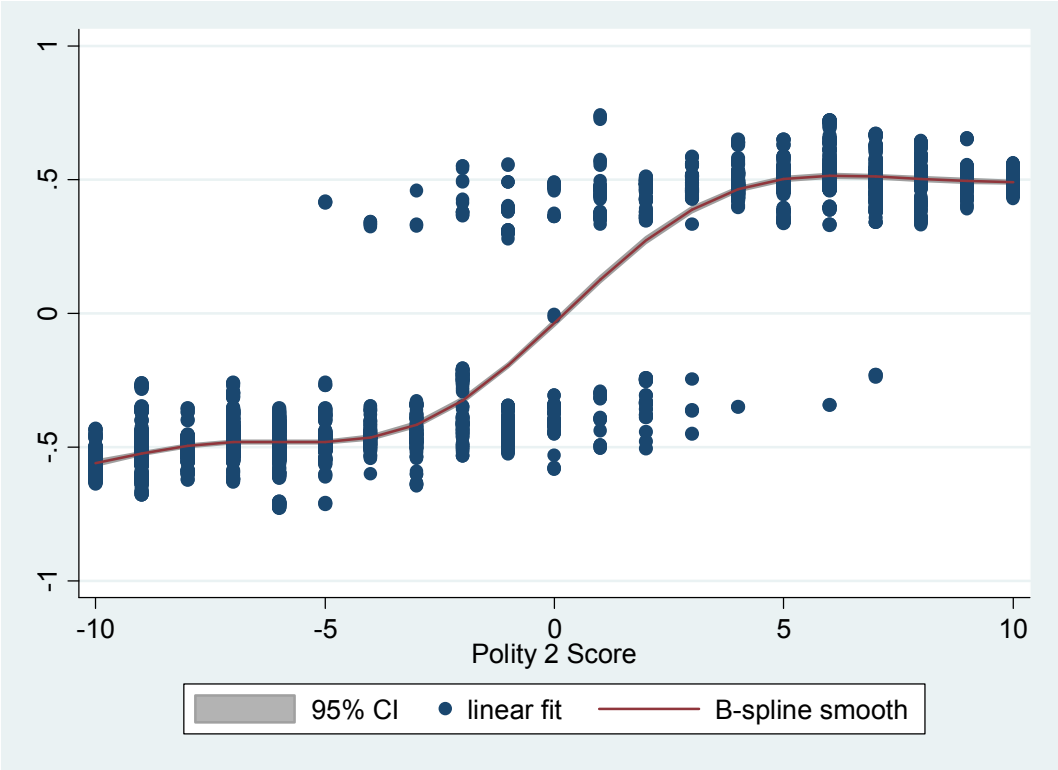
Notes:

Sample starts in 1945 and excludes periods of interruption (Polity = -66), interregnum (Polity = -77), transition (Polity = -88).

Dashed line = Nonparametric representation by local polynomial of the relationship between a dummy taking value 1 if Polity dimension XRCOMP =2 (transitional arrangements between selection, ascription and/or designation, and competitive election) or XRCOMP =3 (election), and zero otherwise, and Polity 2 score.

Solid line = Nonparametric representation by local polynomial of the relationship between a dummy taking value 1 if Polity dimension XCONST =5 (substantial limitations on executive authority) or higher, and zero otherwise, and Polity 2 score.

Figure 4: Competitiveness of executive recruitment emerges at Polity 2 levels around 0.

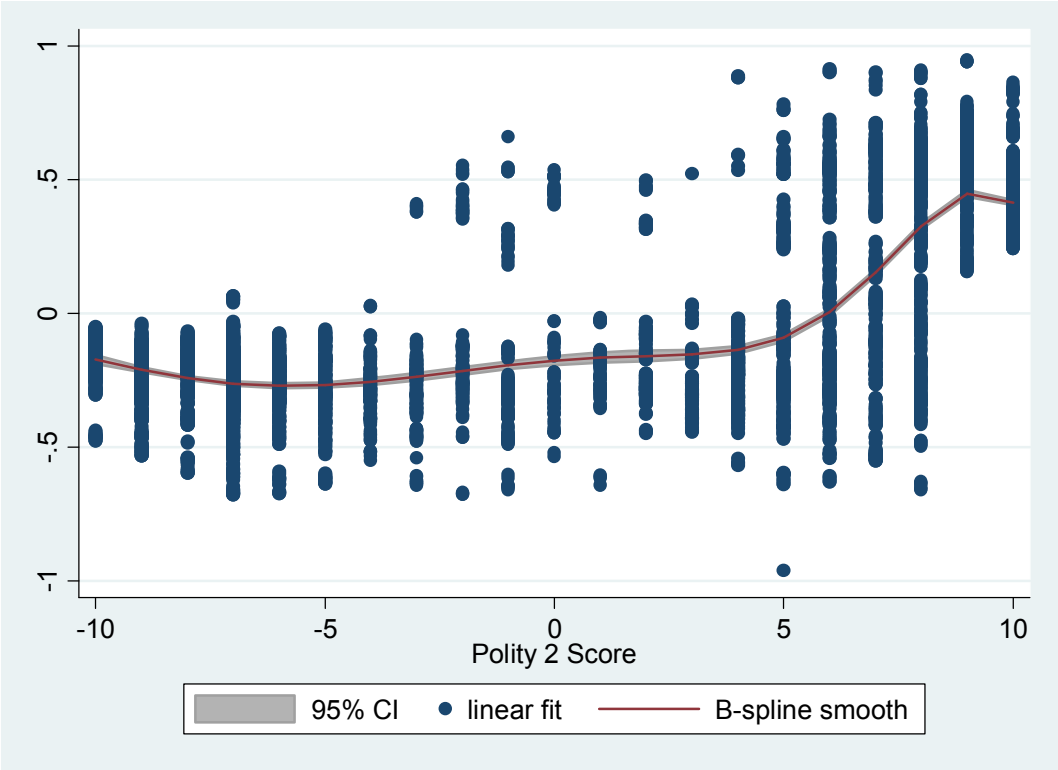


Notes:

Sample starts in 1945 and excludes periods of interruption (Polity = -66), interregnum (Polity = -77), transition (Polity = -88).

Solid line = Semiparametric representation by spline smoothing of the relationship between a dummy taking value 1 if Polity dimension XRCOMP =2 (transitional arrangements between selection, ascription and/or designation, and competitive election) or XRCOMP =3 (election), and zero otherwise, and Polity 2 score. Controls for country and year fixed effects. 95 % confidence interval shaded around the spline smooth based on a clustered variance covariance matrix at the country level. Spline knots at Polity 2 values [-5, 0, 5].

Figure 5: Political inclusiveness emerges at Polity 2 levels around 8.

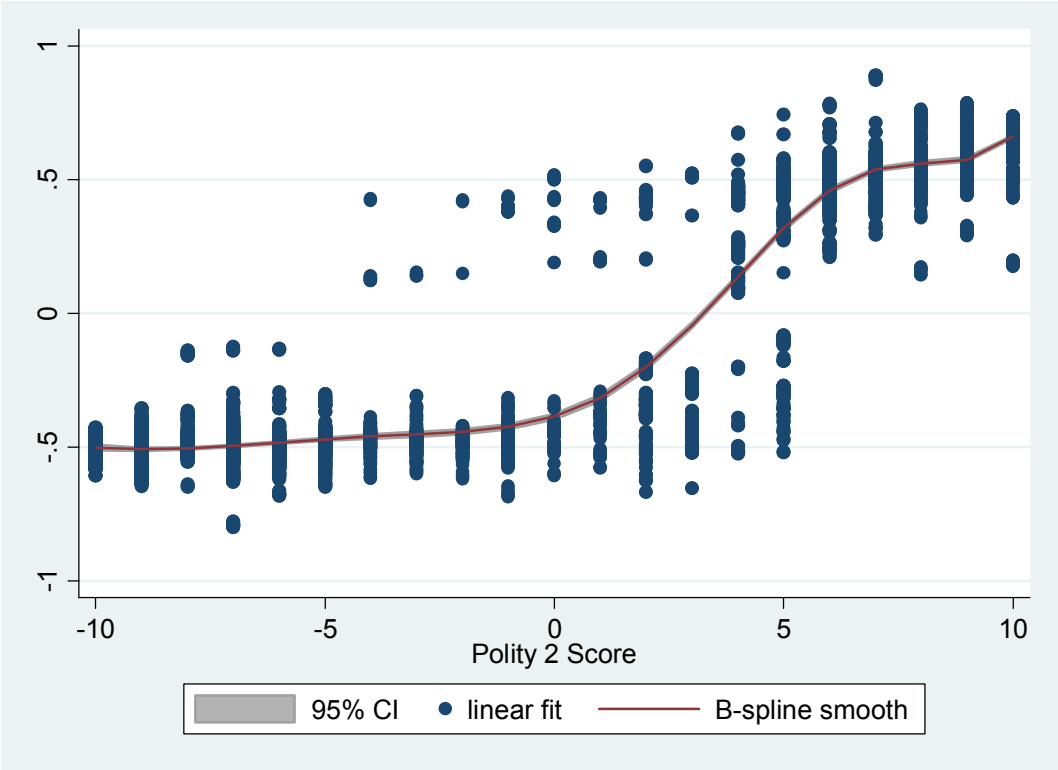


Notes:

Sample starts in 1945 and excludes periods of interruption (Polity = -66), interregnum (Polity = -77), transition (Polity = -88).

Solid line = Semiparametric representation by spline smoothing of the relationship between a dummy taking value 1 if Polity dimension PARCOMP =4 (transitional arrangements to fully politically competitive patterns of all voters) or PARCOMP =5 (competitive: alternative preferences for policy and leadership can be pursued in the political arena.), and zero otherwise, and Polity 2 score. Controls for country and year fixed effects. 95 % confidence interval shaded around the spline smooth based on a clustered variance covariance matrix at the country level. Spline knots at Polity 2 values [-5, 0, 5].

Figure 6: Constraints on chief executive emerge at Polity 2 levels around 4.

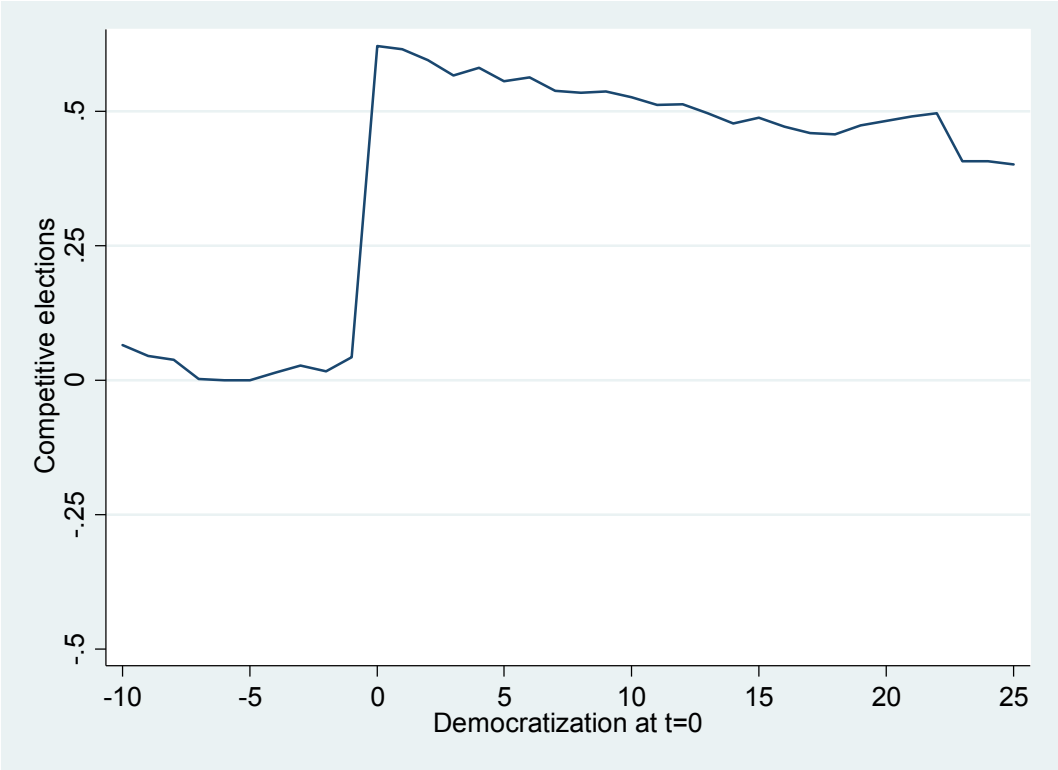


Notes:

Sample starts in 1945 and excludes periods of interruption (Polity = -66), interregnum (Polity = -77), transition (Polity = -88).

Solid line = Semiparametric representation by spline smoothing of the relationship between a dummy taking value 1 if Polity dimension XCONST =5 (substantial limitations on executive authority) or higher, and zero otherwise, and Polity 2 score. Controls for country and year fixed effects. 95 % confidence interval shaded around the spline smooth based on a clustered variance covariance matrix at the country level. Spline knots at Polity 2 values [-5, 0, 5].

Figure 7: Competitive elections at democratization.

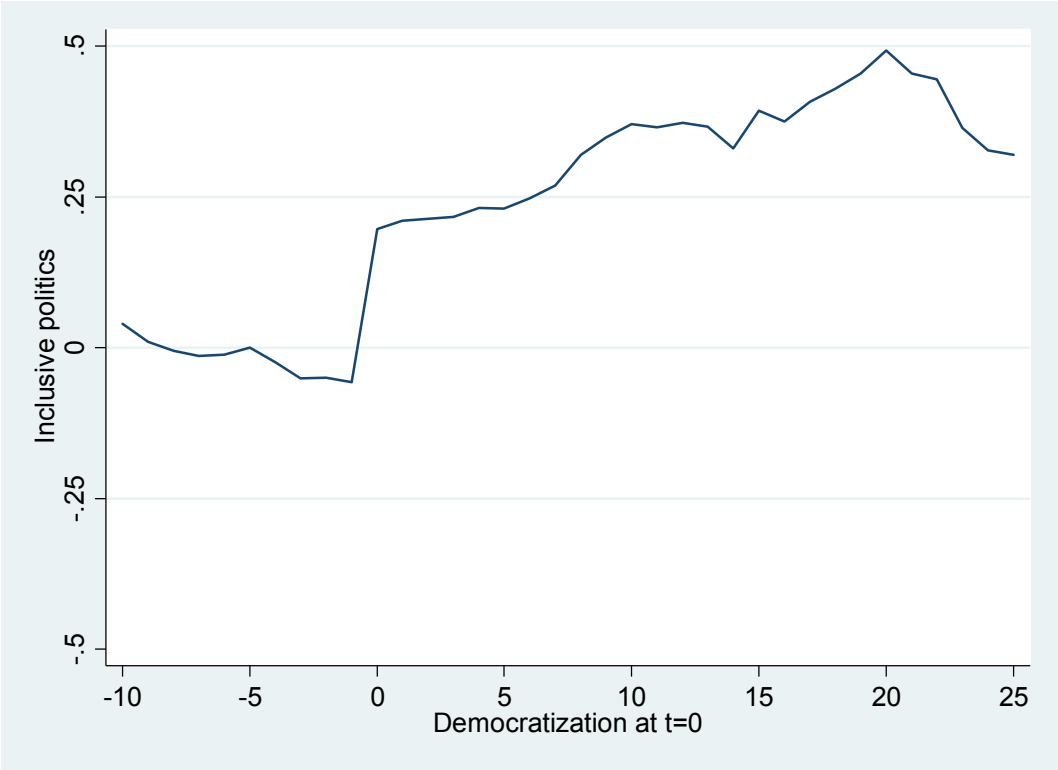


Notes:

Events considered are the Acemoglu, Naidu, Restrepo, and Robinson (2013) 122 democratizations.

For each variable considered in the event study, we partial out year and country fixed effects and normalize the residual mean level 5 years before a democratization to 0. In each figure, the democratization event takes place at t=0 and the behavior of the variable is plotted in a window around it

Figure 8: Inclusive politics at democratization.

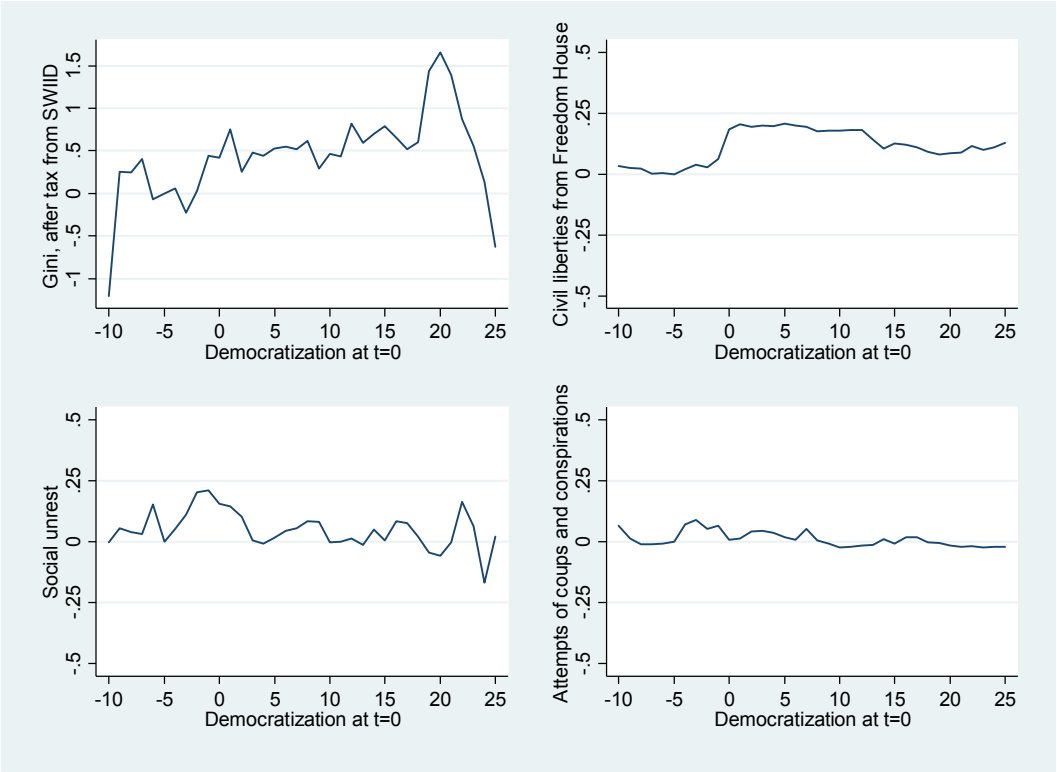


Notes:

Events considered are the Acemoglu, Naidu, Restrepo, and Robinson (2013) 122 democratizations.

For each variable considered in the event study, we partial out year and country fixed effects and normalize the residual mean level 5 years before a democratization to 0. In each figure, the democratization event takes place at t=0 and the behavior of the variable is plotted in a window around it

Figure 9: Redistribution and social conflict at democratization.

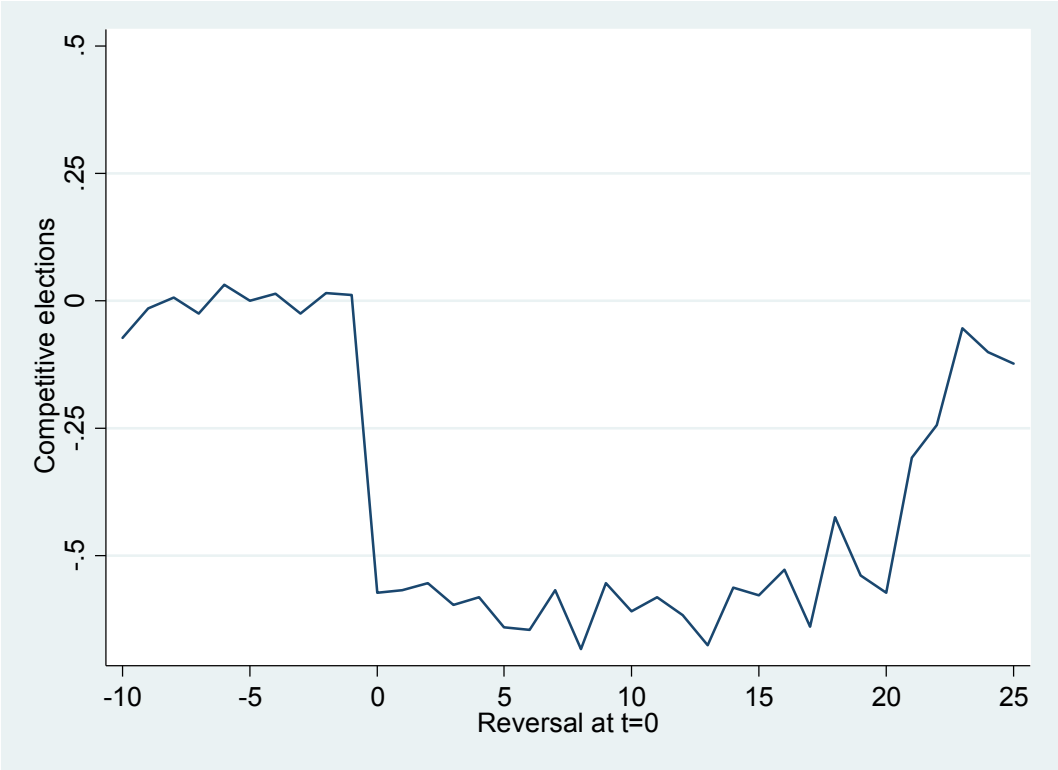


Notes:

Events considered are the Acemoglu, Naidu, Restrepo, and Robinson (2013) 122 democratizations.

For each variable considered in the event study, we partial out year and country fixed effects and normalize the residual mean level 5 years before a democratization to 0. In each figure, the democratization event takes place at t=0 and the behavior of the variable is plotted in a window around it

Figure 10: Competitive elections at reversal.

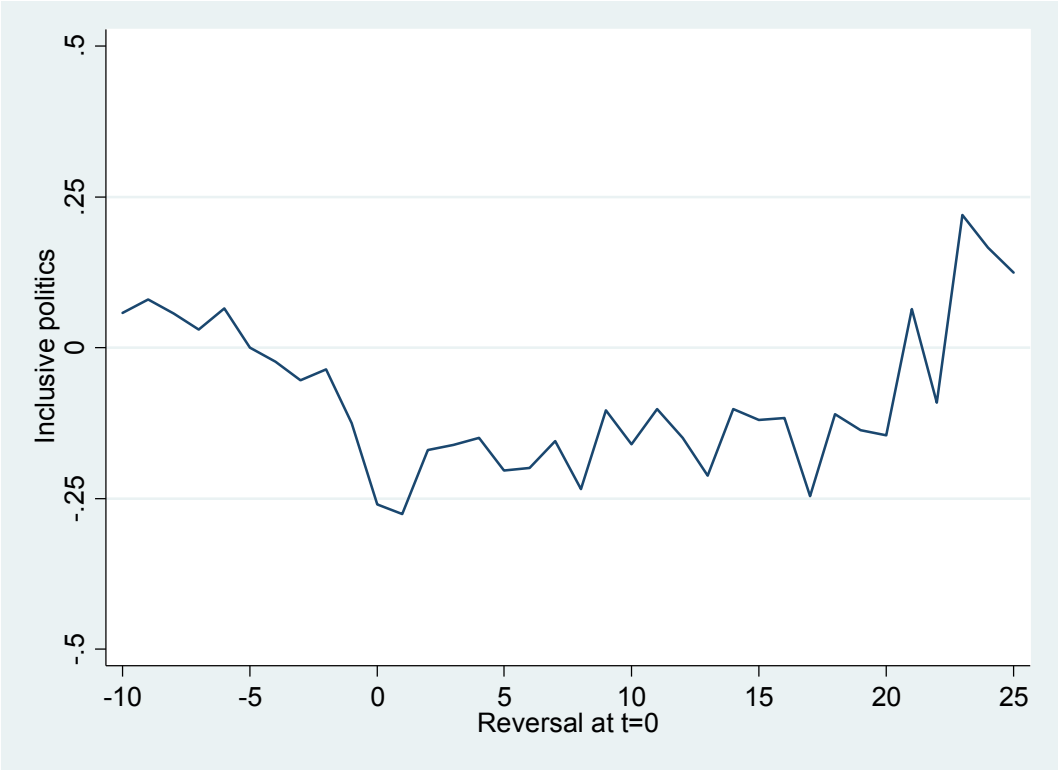


Notes:

Events considered are the Acemoglu, Naidu, Restrepo, and Robinson (2013) 71 reversals.

For each variable considered in the event study, we partial out year and country fixed effects and normalize the residual mean level 5 years before a reversal to 0. In each figure, the reversal event takes place at t=0 and the behavior of the variable is plotted in a window around it

Figure 11: Inclusive politics at reversal.

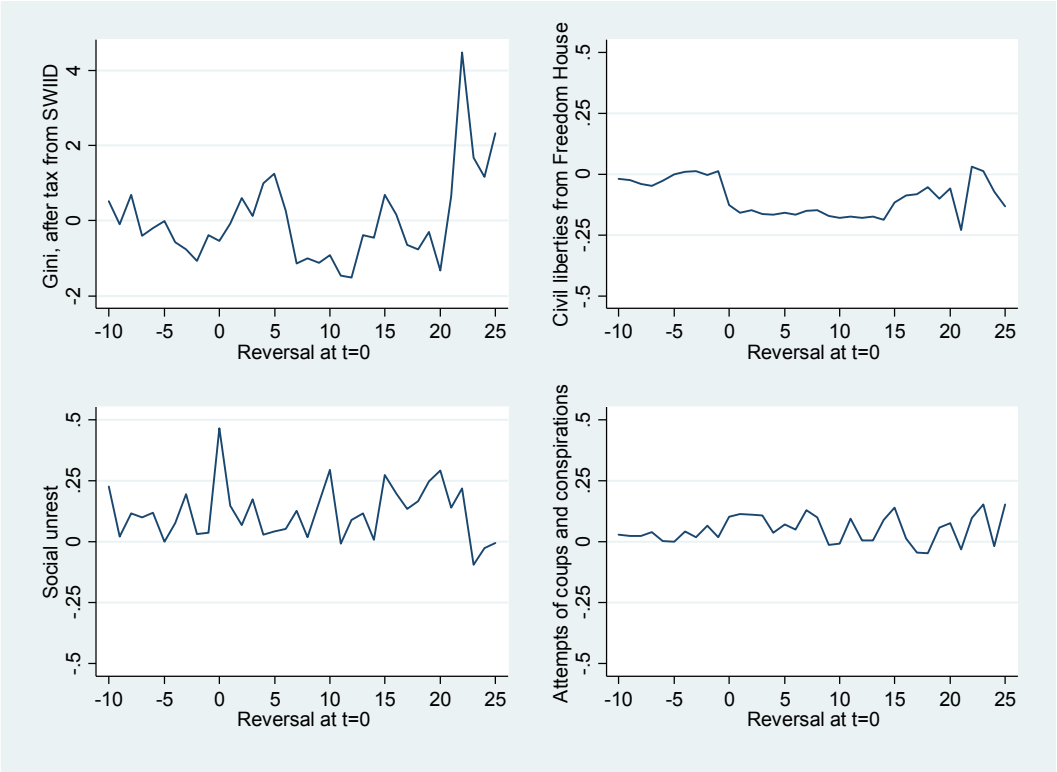


Notes:

Events considered are the Acemoglu, Naidu, Restrepo, and Robinson (2013) 71 reversals.

For each variable considered in the event study, we partial out year and country fixed effects and normalize the residual mean level 5 years before a reversal to 0. In each figure, the reversal event takes place at t=0 and the behavior of the variable is plotted in a window around it

Figure 12: Redistribution and social conflict at reversal.



Notes:

Events considered are the Acemoglu, Naidu, Restrepo, and Robinson (2013) 71 reversals.

For each variable considered in the event study, we partial out year and country fixed effects and normalize the residual mean level 5 years before a reversal to 0. In each figure, the reversal event takes place at t=0 and the behavior of the variable is plotted in a window around it

Figure 13: Peaceful Power Transfers.

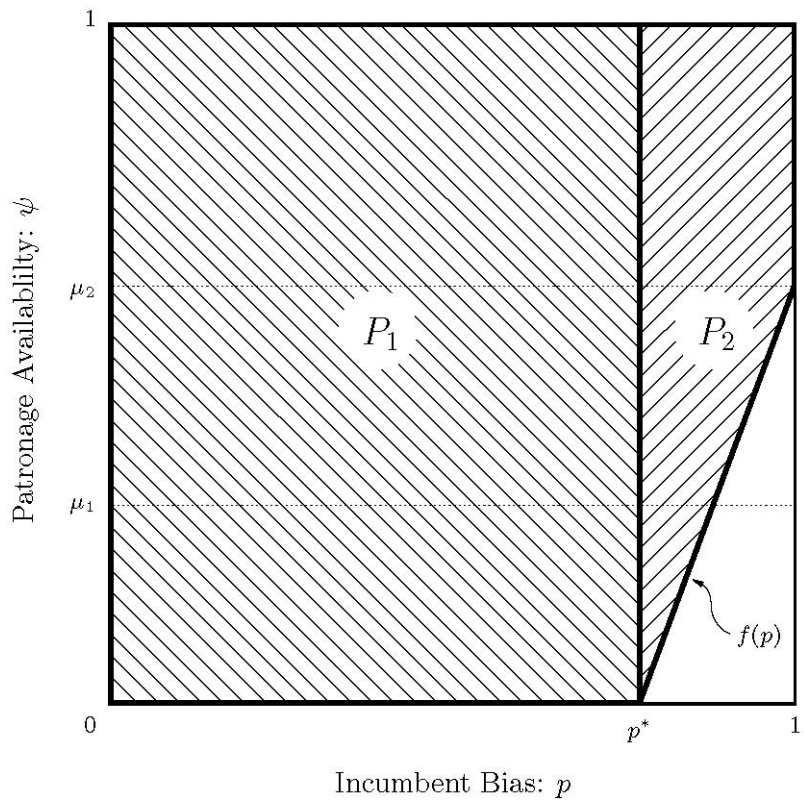
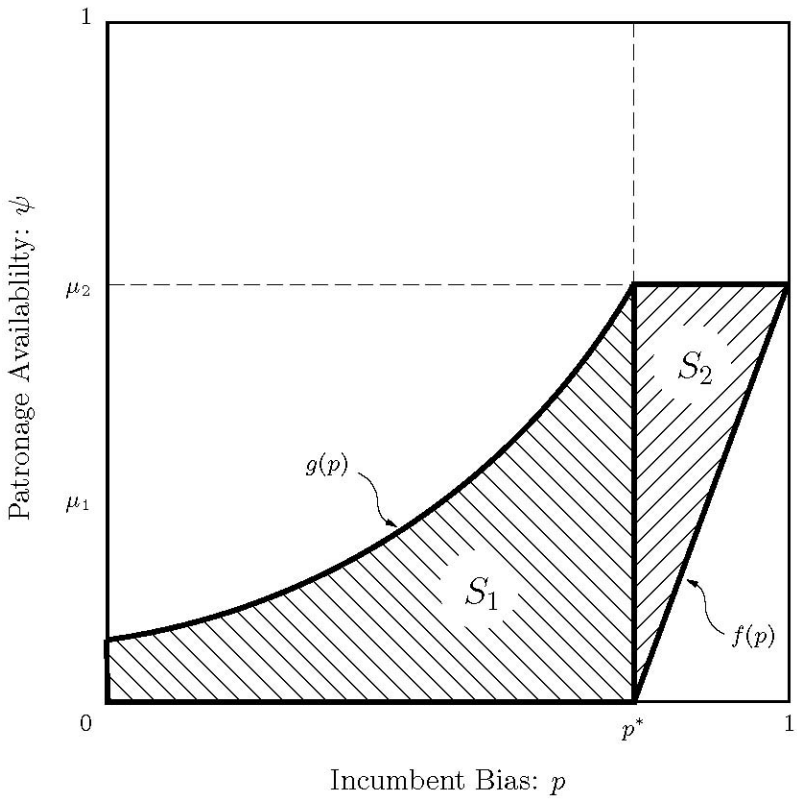



Figure 14: Self-Enforcing Democracy.