

Political Accountability with Endogenous Party Formation*

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Abstract

In this paper we propose a game-theoretic model of overlapping generations of politicians in a democracy, where elections are always fair and competitive. We show that the outcome for voters can differ substantially in such democracies. In one equilibrium, we have endemic corruption with no provision of public goods, a large number of short-lived political parties, and high electoral volatility. In another equilibrium, competition in policy platforms reduces corruption to a minimum, political parties are long-lived and reduce to only a few over time, and electoral volatility and corruption also reduces over time. The model offers a novel way to study the last-period effect of political leaders and suggests an endogenous mechanism how political novices may rein in rent-seeking politicians in their last-term. Implications from this model suggest that institutional mechanisms to remove leaders from office are central in allowing for commitment to policies promised in the election campaign, and, by the same token, they reduce electoral volatility. Thus, our model suggests that there are important institutional differences among electoral democracies that need to be taken into account in order to assess the effect of democracies on both economic and political outcomes. We provide examples and cross-country correlations that support the predictions of our model.

Keywords: Political accountability; democracies; electoral volatility; corruption; political parties

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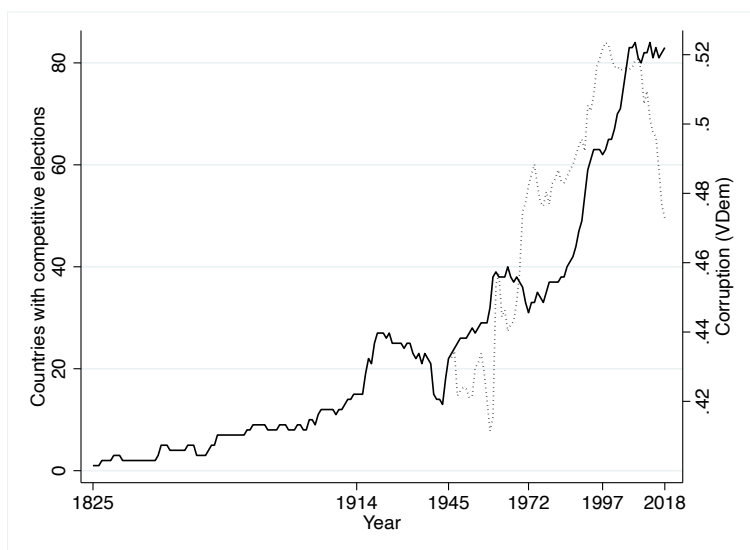
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1 Introduction

The substantial increase in the number of democracies since World War II has not led to a reduction in corruption globally. On the contrary, corruption at the executive level has risen quite considerably. For example, between 1945 and 2008, when the bulk of democratizations happened, corruption increased by about 20 percent globally according to the executive corruption index by VDem (see Figure 1).¹ At a first glance this fact is puzzling as one would expect that the increased competition for votes should drive corrupt governments out of office in more and more countries, which should increase accountability and reduce corruption globally. Note that in this paper we consider a country as being democratic if it selects its government “... through popular elections matching two or more viable parties or candidates ...” (MARSHALL/GURR, 2018). The question then is why voters continue to elect corrupt governments into office. This paper



Solid line shows number of democratic countries by year. We classify a country as a democracy if “the competitiveness of executive recruitment” (XRCOMP) measured by Polity 5 is equal to 3 (MARSHALL/GURR, 2018) Dotted line shows the average executive corruption index across countries by year (Vdem).

Figure 1: Democracy and corruption globally (1825–2018)

¹The “Executive Corruption Index” is based on the following question: “How routinely do members of the executive, or their agents grant favors in exchange for bribes, kickbacks, or other material inducements, and how often do they steal, embezzle, or misappropriate public funds or other state resources for personal or family use?” Note that using the corruption index by the International Country Risk Guide (ICRG) shows a similar upward trend in the corruption level. See Figure ?? in the Appendix.

offers an explanation. We also present cross-country correlations that are consistent with that explanation.

We propose an overlapping generations model of political candidates where elections are always fair and competitive; yet, the equilibrium outcome for voters can differ substantially. In one equilibrium, we have endemic corruption with no provision of public goods, a large number of short-lived political parties, and high electoral volatility. In another equilibrium, competition in policy platforms reduces corruption to a minimum, political parties are long-lived and reduce to only a few over time, and electoral volatility and corruption also reduces over time. The critical difference in the strategies supporting these two outcomes is whether or not party leaders admit junior members into their party who have the power to remove the leader from office when the junior members decide to do so. In the voter friendly equilibrium, only party leaders with such a junior member can credibly commit to a policy platform, and thus, only such leaders will get elected in equilibrium. Note that in that equilibrium voters also need to do their part: This equilibrium only is supported when parties with a history of corruption do not get re-elected unless the leader is removed from office.

To illustrate our mechanism consider the case of South Africa, where the ruling party ANC recalled its leader twice because they were confronted with serious corruption scandals. This then ultimately led to the resignation of Thabo Mbeki in 2008 and Jacob Zuma in 2018. Another case illustrating our mechanism is the Liberal Democratic Party in Japan that prevents “unpopular prime ministers from tainting the party’s image” by for example replacing them as BURDEN (2015) explains. But often enough, democratically elected government leaders plagued with scandals face no such internal opposition from their own party because there is no enforced party constitution or democratic process within parties that can constrain these leaders. This happens so in many democracies where political parties are better perceived as a one-person affair – often financed by wealthy elites – serving the main goal of catapulting that one person into power. For example, Jimmy Morales, the outgoing president in Guatemala, never faced internal opposition from his own party FCN (National Convergence Front) despite having been plagued

with corruption scandals, and the previous president Otto Pérez Molina only resigned and ended up in prison because he got charged by a UN backed international court – the International Commission against Impunity in Guatemala –, a fate that Jimmy Morales was able to avoid as he systematically undermined this court during his presidency. We believe that the model highlights an issue that is of great importance: Countries with fair and competitive elections and peaceful transition of power can end up with diametrical different outcomes for voters. In many (emerging) democracies we seem to be faced with an equilibrium where democratically elected governments plagued with corruption get replaced by other such democratically elected governments with little consequence for those government leaders, and the disappointing outcome for most voters that democratization has produced very few benefits for them. Guatemala fits that description very well.

The remainder of the paper is structured as follows: Section 2 reviews the related literature and highlights the contribution of this paper to the literature. Section 3 presents our model and discusses the relevance for policy. Section 5 summarizes the conclusions of our research.

2 Literature review

Our paper relates closely to a theoretical literature that analyses how political parties can constrain political leaders and solve the problem of making politicians accountable for their election promises. For example, ALESINA/SPEAR (1988) propose “an overlapping generations model of electoral competition.” The role of political parties is to discipline politicians and as such to solve a “last period problem in the political arena.” The mechanism proposed there is a transfer scheme between new and old leaders that is based on a credible threat that a transfer to a retired leader is refused when that retired leader failed to implement the policy that is best for the party when being government leader. HARRINGTON JR (1992) builds on ALESINA/SPEAR (1988) and shows that there can also be an equilibrium without the transfer scheme provided that party leaders care enough about policy once they retire. In both of these papers, parties exist and the

question is how parties solve the last period problem. In our setup, parties emerge endogenously and parties only survive over time if young candidates decide to join an existing party (see the related literature on citizen-candidates FEDDERSEN ET AL., 1990; FEDDERSEN, 1992; OSBORNE/SLIVINSKI, 1996). We obtain commitment to party policy from the inter-generational construction of a party and the fact that junior members care about the future which may give them the correct incentive to remove leaders only then when that leader jeopardizes their prospect for re-election. In our ANC example, according to the Economist, this is precisely why Jacob Zuma was removed from office:

“Mr Zuma’s reluctant early departure follows directly from Mr Ramaphosa’s victory in the ANC leadership race in December, when he defeated Nkosazana Dlamini-Zuma (Mr Zuma’s preferred candidate and his ex-wife), albeit by a very narrow margin. This, combined with a growing perception in the ANC that Mr Zuma’s ongoing legal woes – linked to corruption scandals – were damaging the party’s electoral prospects ahead of the 2019 election, meant that Mr Zuma’s position became untenable.” (EIU, 2018)

The model by GEHLBACH/KEEFER (2011) is similar to our model in that it proposes an endogenous party formation mechanism for ruling parties in autocratic regimes, where the dictator chooses a party size such that it prevents that ruler from expropriating excessive amounts of investments thereby preserving investment incentives in the economy. Similar than in our model, a credible threat of removal by a coup keeps the ruler in check. Related to autocratic governments, BESLEY/KUDAMATSU (2009) show within the framework of the “selectorate theory” that such governments can work well “when the power of the selectorate does not depend on the existing leader remaining on office.” They contrast this to democratic regimes where poorly-performing leaders get removed from office “through regularized contests for power in elections.” Here we show that persistent corruption and lack of accountability can also exist in democracies with competitive elections as rational voter indifference can lead to a situation where corruption and expropriation becomes the norm across elections: a poorly-performing leader gets simply replaced

by another poorly performing one. Our model also closely relates to BECHER (2016) in that it proposes an endogenous commitment device for political parties. The mechanism proposed there is based on candidate selection in the legislator where players have divergent preferences over policy. Selecting legislative candidates with more moderate policy preferences helps party leaders to commit to more moderate policies in equilibrium. In our setup, all politicians have identical preferences and commitment emerges because of the inter-generational structure of our model in that the young potentially care more about the tomorrow whereas the old only care about the today. HUG (2001) presents a game-theoretic model that models the interaction between an existing party and a potential new party where the existing party decides whether or not to accommodate by including a new political dimension – such as environmental issues for example – into its platform. Our model also relates to models that perceive political parties as a reputation entity or an “informative brand” (SNYDER JR/TING, 2002). In their model, heterogeneous candidates in terms of policy preferences only way of communicating that preference to the voter is through party membership, where parties are modeled as “brands to voters.” This model differs to ours in that commitment to policy is not the concern but the communication of policy preferences to voters. In our setup preferences are straightforward: Elected leaders engage in rent-seeking and corruption if there are no consequences of doing so.

Our paper also relates to work on defining and measuring democracy. In SCHUMPETER (1942)’s procedural definition competition and elections suffice to guarantee democratic governance. Subsequent work, however, has come to a broader understanding of democracy culminating in COPPEDGE/GERRING (2011)’s multi-faceted approach, conceiving deliberative, electoral, egalitarian, liberal, and participatory democracies. These definitions all rely on institutional characteristics and neglect, at least in representative democracies, the crucial role of political parties (e.g., ALDRICH, 1995). By our focus on additional elements than purely institutional ones, our paper relates to a large theoretical and empirical literature that focuses on democracy defined as “fair and competitive elections and peaceful transfer of power” (see relatedly PRZEWORSKI, 1995). This literature either tries to explain this form of democracy as for example, HARTLYN

ET AL. (2008) investigate the relationship between the independence of electoral management bodies and the quality of elections, or uses this form of democracy to explain other outcomes such as economic growth and income levels (BARRO, 1996; TAVARES/WACZIARG, 2001; ACE-MOGLU ET AL., 2019; RODRIK/WACZIARG, 2005; PAPAIOANNOU/SIOUROUNIS, 2008). This latter literature can be summarized as having inconclusive results on whether democracy enhances growth or not. We believe that this is expected as our model shows that countries that fit the empirical description of democracy studied in these papers can produce very different outcomes for voters.

Our contribution also relates to work on newly democratized countries. Many new democracies need to construct a new system of representation in which political parties and the emergence of the latter are of crucial importance (e.g. HUG, 2001; TAVITS, 2006). Several authors argue in this context that party institutionalization is a key element in making party systems more stable and thus reduce volatility (see TAVITS, 2013; GHERGHINA, 2014). TAVITS (2008) and POTTER/TAVITS (2012) also suggest that the accountability of rulers is enhanced with more institutionalized parties.² This focus on party organization jibes well with a renewed interest in the ways in which political parties are structured internally (e.g., SAMUELS/SHUGART, 2010; POGUNTKE ET AL., 2016; SCARROW ET AL., 2017; DÖRING/REGEL, 2019).³

3 A Model

Consider the following situation: There is a country in which voters care about the size of the public good x that a government leader can provide by using a public resource $R > 0$. We assume that one unit of this resource produces one unit of the public good. The government leader on the other hand cares for a private good, which can also be financed by the public resource. One part of that is unrelated to policy – we denote it by $k \geq 0$. One can think of it as a leader's

²See also the related work by PRZEWORSKI ET AL. (1999); MASKIN/TIROLE (2004); TAVITS (2007) and BREITENSTEIN (2019); CASELLI/MORELLI (2004).

³See the "Political Party Database" at <https://www.politicalpartydb.org/countries/>

salary and other (private) privileges that come with being the government leader. The other part, however, conflicts with the production of the public good: More private goods for the leader result in fewer public goods for the voters. Here we think of rent-seeking, embezzlement, corruption, and cronyism where helping the leader's family and friends comes at the cost of having fewer public goods for the majority of voters. Again, we assume that one unit of the public resource produces one unit of that private good.⁴

Unlike most of the literature, we model political competition as a two stage process where politicians decide on the policy campaign platform, x_i^c , on the one hand and on campaign effort levels, e_i , on the other. In order to start an election campaign, we assume that politicians need to incur a fixed cost $f_i > 0$ and campaign efforts at a constant cost of $c = 1$ per unit.⁵ The cost f_i can be seen as direct costs related to an election campaign but it can also be seen as opportunity costs in the sense that politicians may need to give up private sources of income when entering into politics. Consequently, we assume that costs related to election campaigns are incurred by the leader and not the political party.⁶

In terms of preferences we, thus, have

$$v = x, \tag{1}$$

with v being the utility for the voter, and

$$u_i = \varphi_i[\gamma_i(R - x + k) + (1 - \gamma_i)\beta k] - f_i - e_i, \tag{2}$$

with u_i being the utility for the leader of party i , $\varphi_i(\gamma_i)$ being an indicator variable that equals one

⁴The leader of course may also care about the public good but if we would assume that one unit of the public resource produces more of the private than the public good (for the leader), which is plausible, our strong assumption that the leader does not care about the public good produces identical results.

⁵The assumption of $c = 1$ is without loss of generality as equilibrium campaign expenditure e_i^*c for each party i does not depend on the marginal cost c .

⁶Note that this assumption does not necessarily imply that all costs have to be incurred by the party member. There may be costs that are covered by the party, but we shall ignore those here. The assumption can also be read as stating that there are *some* costs that are incurred by the member of a party, which is certainly true for our opportunity cost interpretation.

if the leader of the party i is elected (not removed from office) and zero otherwise, x is the amount of the public good provided when elected, k is this leader's salary, and $\beta = [0, 1]$ is the leader's share of k when removed from office. During an election, party leaders will campaign on the level of the public good x they intend to produce once elected. Throughout this paper we assume that if a party leader is indifferent between any two platforms x_i^c and $x_i^{c'}$, i.e. $E(u|x_i^c) = E(u|x_i^{c'})$, he or she will choose the platform that is better for the voters. Our final assumption related to preferences is that all players discount payoffs by a discount factor δ that is assumed to be the same for all players.

3.1 Political Parties

In every period $t = 1, 2, \dots$, there is a large pool of potential candidates.⁷ We assume that each candidate has a live in politics for at most 2 periods. A candidate decides whether to create his or her own "new" party or to join an "established" party. A party is "established" if it had been created by a candidate in a previous period and if it has been participating in every election since then. Assume that there are $n_0 > 1$ established parties at the beginning of the game. If a candidate creates a new party, this candidate is the only party member and becomes the party leader and, if elected, the government leader. Alternatively, if the candidate joins an established party and is accepted as a new member in that party, he or she will become the junior member of this party. The senior member is the party leader and if a party is elected that member becomes the government leader. We assume that all party leaders retire from politics at the end of a period. The junior member, if a party has such a member, then becomes the party leader in the following period. If a government party has no junior member, this party ceases to exist by the next election.

The party leader of party i decides on the platform x_i^c and, when elected, decides on the policy, x , that shall be implemented. The only role the junior member of a party can play is to

⁷Note that this assumption of having a large pool of candidates implies that not all politicians will end up in politics. The number of politicians will be determined endogenously.

remove the current party leader from office if that leader is elected. If the junior member decides to remove the leader from office, (early) elections are called before any policy is implemented and the leader's salary k is split between the government leader and the junior party member, where the leader receives βk and the junior member receives $(1 - \beta)k$, where $\beta \in (0, 1)$. If the leader is not removed from office, the policy x – decided by the leader – is implemented and payoffs are allocated as defined in (1) and (2). In other words, we assume in our model that the leader makes his or her policy choice in the “shadow of removal” – if that leader chooses to have a junior party member.

3.2 Elections and Party Competition

In order for the leader of party i to participate in an election, he or she needs to pay a fixed cost f_i . We think of it as a cost that parties need to incur in order to start an election campaign or an opportunity cost associated with running for office. That cost equals

$$f_i = \theta \phi^{\min(z, \tau)} f,$$

where z counts the consecutive times a party has been in power and f is a positive constant. At $t = 1$ that cost is identical for all parties (established and new parties), i.e. $f_i = f$ for all i . However, that cost will diminish by a factor $\theta \phi$, if a party has been in power for a *full* term, where $\theta, \phi < 1$. The parameter θ measures a temporary cost reduction, which is justified by an incumbency advantage the ruling party has. In contrast, the parameter ϕ refers to a permanent cost reduction provided that a party continues to run in elections. We find this assumption plausible as for a government party the use of government and party resources for election purposes is often fuzzy (temporary effect as an incumbency advantage) and this party may also have access to voter information that other parties do not have. Because some of that advantage may be related to information and because parties can plausibly use this information after leaving government, we assume that the cost reduction measured by ϕ is permanent as

long as this party continues to participate in upcoming elections. Permanent cost reductions can happen for at most τ times. This takes into account the notion of diminishing returns in terms of cost reduction. We assume that if a party decides to wait out an election, its campaign fixed cost rises again up to $f_i = f$. Upon starting a campaign, each party i simultaneously selects its campaign platform x_i^c and an campaigning effort level e_i at a constant marginal cost $c = 1$. For every party, voters form a policy expectation should that party be elected, x_i^e . Conditional on having paid the fixed cost f_i , party i wins the election with probability

$$P_{i,t} = \begin{cases} \frac{e_i}{\sum_{j \in m_t} e_j} & \text{if } i \in m_t \\ 0 & \text{otherwise,} \end{cases} \quad (3)$$

where $m_t = \{i | x_i^e \geq x_j^e, \forall i \neq j \text{ and } x_{i,t-1}^c = x_{i,t-1}^e\}$. The set m denotes the set of political parties with the highest expected policy level x^e and includes only parties who have not broken an election promise in the previous election. If in an election all parties are new parties, then that second condition is not binding for any of the parties. Note that if the set m_t is a singleton, then an infinite small campaigning effort level e_i will have this party win the election with probability one. In our setup, parties choose a platform on the one hand and then an campaign effort level to convince voters of the platform on the other. That effort becomes important only then when two parties decide to run on the same platform and when that platform is competitive. Thus, we assume that ties in terms of platforms are broken proportionally to election campaign effort levels e_i . We believe this is a reasonable assumption. If voters are indifferent between parties in terms of expected policies, they may give their vote to parties that are more entertaining, make “presents,” or simply pay a little bit for their vote. Since parties are identical in terms of policy expectation, such voter behavior is rational. It can for example explain the existence of vote buying that is observed in many young democracies (CARRERAS/İREPOĞLU, 2013; CENDALES, 2012; HANUSCH/KEEFER, 2013; KEEFER/VLAICU, 2017). This model can also explain the existence of election cycles where governments spend resources, for example, in for voters highly visible infrastructure projects and other projects just before an election (e.g. ANNEN/STRICKLAND,

2017; BRENDER, 2003; KNEEBONE/MCKENZIE, 2001; HANUSCH/KEEFER, 2014). If voters are indifferent in terms of policy expectations, they might give their vote as well to the party that has spent resources in the local community more recently.

3.3 Analysis

The timing of the game is as follows:

1. At the beginning of period $t = 1, 2, \dots$, there are n_{t-1} established parties, with $n_0 > 1$.⁸
2. There is a pool of “new” candidates who decide whether to join one of the existing parties, create a new party, or stay out of politics (join/create/stay out). Joining an established party, however, is only possible if leaders of these parties decide to admit a junior member into their party (admit/reject).
3. Party leaders simultaneously decide on an election policy platform x_i^e and an election campaign effort level e_i at the constant marginal cost of $c = 1$ by paying a fixed cost f_i .
4. Voters form policy expectations x_i^e for every party i participating in an election and vote according to the mechanism described in (3).
5. The party leader of the elected party decides on the policy x to implement.
6. The junior member of the elected political party (if there is one) decides on whether to remove the leader from office or not (remove/keep). If the leader is removed from office, the leader and the junior party member receive the payoff of βk and $(1 - \beta)k$ respectively, where $\beta \in (0, 1)$, and no policy is implemented. If a leader is not removed from office, the policy x is implemented and voters and the leader earn the payoff as indicated in (1) and (2). All party leaders retire at the end of the period.
7. The game moves to period $t + 1$.

⁸Except for the initial period, n_t is determined endogenously.

This is a game with overlapping generations where each player lives for at most two periods. To describe strategies in this game can become fairly involved as a strategy prescribes an action for every possible history of the game where it is a player's turn to make a decision. In the following we will focus on strategies that are player and history independent in the sense that players in a certain "role" choose certain actions – i.e. strategies are not player-specific – and that strategies are independent of the history of the game related to *previous* periods.⁹ Thus, events that happened in periods before the current period cannot affect the play of the game in this period. For example, a strategy could be described that players in the role of "junior party members always remove party leaders from office" or "junior party members only remove a party leaders from office if that leader breaks an election promise, i.e. remove if $x \neq x^c$." In this latter part of a strategy, only the history of the current period affects the play of the game. Similarly, "party leaders always accept junior party members and choose $x^c = x = R$ " could be another part of a strategy where actions are prescribed by "roles."¹⁰

Consider now the following strategy:

Definition 1 (Strategy 1). *Players as new politicians always **create** a new party. Players as junior party members always **remove** leaders from office. Players as leaders of established parties always **reject** a junior party member. Players as party leaders always choose $x^{c*} = R + k$ and $e_i^* = f \left(\frac{\sqrt{R+k}}{\sqrt{f}} - 1 \right)$. Players as government leader choose $x^* = 0$.*

Note that this strategy prescribes an action for every possible history of the game. Even though new politicians never join an established party, the strategy still prescribes an action after a history in which an established party has a junior member. Also, consider the following variation of Strategy 1:

⁹Note that the strategies described in ALESINA/SPEAR (1988) and HARRINGTON JR (1992) do not satisfy this last property. The equilibrium described has the logic of a "trigger strategy," in which a deviation from the equilibrium strategy is punished by playing a Pareto inferior outcome thereafter.

¹⁰Note that voters are not active players in this game as elections are decided mechanically as described in (3). In this mechanism voters do not re-elect a party that failed to follow an election promise in the previous period. Through this mechanism the play in a previous period can affect the play in the current period – i.e. voter do not vote for a party that failed in the previous period. We discuss this property in more detail below.

Definition 2 (Strategy 1'). *Players as new politicians always **create** a new party. Players as junior party members **remove** a party leader from office if that leader fails to implement his or her election platform and they **keep** leaders in office otherwise. Players as leaders of established parties always **reject** a junior party member. Players as party leaders always choose $\mathbf{x}^{c*} = \mathbf{R} + \mathbf{k}$ and $\mathbf{e}_i^* = \mathbf{f} \left(\frac{\sqrt{\mathbf{R} + \mathbf{k}}}{\sqrt{\mathbf{f}}} - \mathbf{1} \right)$. Players as government leader choose $\mathbf{x}^* = \mathbf{0}$.*

Note that both strategies describe an outcome where there is no political accountability with no stable party structure in equilibrium. We can now state our first result:

Proposition 1. *Strategy 1 (1') is a Subgame Perfect Equilibrium if $(1 - \beta)k \geq (<) \delta(1 - \theta\phi^\tau)f$. In equilibrium, $n_t^* = \sqrt{\frac{R+k}{f_i}}$ parties are created and disappear in every period, where each party i is elected with probability $P_{i,t} = 1/n_t^*$.*

Proof. We need to show that given that all other players follow this strategy, no player has a beneficial deviation in any subgame of the game. We use the one-stage-deviation principle for finite horizon games as each player has a finite horizon in this repeated game (FUDENBERG/TIROLE, 1991, p. 109). Consider a given period $t = 1, 2, \dots$. Consider the deviation that a new politician asks to join an established party instead of creating his or her own. Strategies 1 and 1' ask leaders to reject, so this deviation is not profitable. Consider the deviation of a leader of an established party to admit the junior member. This can only make a difference in the game after a history in which the junior member asks to join an established party: following Strategies 1 and 1' thereafter implies that the leader will be removed, so this deviation is not profitable. Consider the deviation by the leader to campaign on $x^c \neq R + k$. Such a deviation will not affect voter expectations as Strategies 1 and 1' implement policy $x = 0$, which is expected by voters. Thus that deviation is not profitable. If elected, and after a history in which there is no junior member, the government leader's dominant strategy is to choose $x = 0$, which yields the gross payoff of $u = R + k$, this payoff is gross of election campaigning costs. After a history in which there is a junior member, this deviation is not profitable as well: If $(1 - \beta)k \geq \delta(1 - \theta\phi^\tau)f$, Strategy 1 removes the leader from office; if $(1 - \beta)k < \delta(1 - \theta\phi^\tau)f$, Strategy 1' asks the leader to be

removed from office unless $x = R + k$, which yields a gross payoff of zero which is smaller than βk , the payoff of removal after such a history. Thus, the leader chooses $x = 0$. This is the “last period problem” where government leaders have an incentive to embezzle as much public funds as they can (e.g. ALESINA/SPEAR, 1988; HARRINGTON JR, 1992). This leader does no longer face an election, and thus does not need voter support in the future. Finally, consider the deviation of a junior member in the last stage of the game in a given period. The assumption $\delta(1 - \theta\phi^\tau)f \leq (>)(1 - \beta)k$ for Strategy 1 and 1' respectively assures that this last move is a Nash equilibrium after any history in which the junior has to make that choice.

Voters anticipate that no public goods are created in equilibrium by any political party. Thus, $x_i^e = 0$ for all i . In terms of expected policy, all parties will be identical and campaigning efforts e_i will decide on the probability of winning. The equilibrium campaigning effort level given that $x_i^e = 0$ for all i equals

$$e^* = \frac{(n_t - 1)(R + k)}{n_t^2}, \quad (4)$$

when n_t parties are competing, and expected indirect utility net of campaigning costs from participating in the election equals

$$\frac{(R + k)}{n_t^2} - f_i. \quad (5)$$

That utility decreases in the number of participating candidates. In equilibrium, indirect utility is at least zero.¹¹ Setting (5) equal to zero and solving for n_t yields

$$n_t^* = \sqrt{\frac{R + k}{f_i}}.$$

n_t^* denotes the number of political parties participating in the election in period t . Quite intuitively, that number increases in R and k and decreases in the fixed cost f_i . Free entry into politics drives expected gains from running for office down to zero. Substituting n_t^* into (4) yields

¹¹Since n_t is plausibly an integer, indirect utility may not be exactly zero in equilibrium. If n_t can be a real number, then indirect utility will be exactly zero.

$$e_i^* = f \left(\frac{\sqrt{R+k}}{\sqrt{f}} - 1 \right).$$

□

Note that our model so far has strong similarities with the “neutral entry model” developed, for example, by FEDDERSEN ET AL. (1990) concerning the prediction of the number of candidates entering the race for public office. The political world in our model is cynical: Voters are rational by expecting “nothing” from politicians but lots of money is spent campaigning and at the end of the day nothing comes out of it. For example, if $\gamma \equiv \frac{f}{R+k}$ expresses the fixed cost f as a fraction of total resources, then in equilibrium the fraction $1 - \sqrt{\gamma}$ of total resources is spent on campaigning. Note that this fraction approaches one as γ approaches zero. Together political candidates spend a large amount of resources with the expectation of winning the election and then appropriating all the public resources for private gain once elected. Furthermore, no established parties come to live as there is no incentive for new candidates to join an existing party. This means that a party ceases to exist once it had been in power. In addition, each party i with $P_{i,t} = 1/n_t$ has an equal likelihood of winning an election, and this translates into a high level of electoral volatility. Candidates are all equally bad for the voter, so campaign promises do not mean anything to the voter as government leaders won’t be made accountable for their policy choice anyway.

We would also like to emphasize that the equilibrium outcome of our model described so far would pass the definition of “democracy” that is often used in the empirical literature as elections here are fair and competitive, there are fair election entry conditions – i.e. no party is prevented from entering once the fixed cost f_i is paid for, and finally there is a peaceful transition of power.¹²

We will now show that the threat of removal of a government leader by a junior party member can lead to another equilibrium that produces a better outcome for voters. Consider the following strategy:

Definition 3 (Strategy 2). *Players as new politicians always join an established party. Players*

¹²For example, our “cynical” democracy equilibrium would be classified as a “democracy” in the empirical literature estimating the impact of democracy vs. autocracy on economic growth as for example in BARRO (1996); CHEIBUB ET AL. (2010b); ACEMOGLU ET AL. (2019); RODRIK/WACZIARG (2005); PAPAIOANNOU/SIOUROUNIS (2008); MURTI/WACZIARG (2014); GIAVAZZI/TABELLINI (2005).

as junior party members **remove** a party leader from office if that leader fails to implement his or her election platform and they **keep** leaders in office otherwise. Players as leaders of established parties always **admit** a junior party member. Players as party leaders always choose election platforms \mathbf{x}^{c*} as described in Lemma 1 or Lemma 2, and $e_i^* = \epsilon$, where ϵ is infinitely small. Players as government leaders choose $\mathbf{x}^* = \mathbf{x}^{c*}$.

Can such a strategy be a Subgame Perfect equilibrium? There are several components to this potential equilibrium: First, only established parties will be running for office as these would be the only parties that can “commit” to a policy by including a junior member that has the power to remove a leader that breaks an election promise from office. Admitting a junior member serves as a commitment device, a device a party without such a member does not have. As a result, a party without a junior member will not be elected. Second, junior members need to have an incentive to remove the leader from office only when that leader breaks his or her election promise.

Before we establish that such a Nash equilibrium exists, we want to establish two results that assume that party leaders can commit to election platforms. In that case, equilibrium strategies become qualitatively quite different from what we have seen so far. Now the game has similarities with a Bertrand game with unobserved costly entry.¹³

Lemma 1. *Assume party leaders of all parties can commit to any election platform x^c and $q > 1$ parties have identical election campaign fixed costs f_q , where $f_q \leq f_i$ for all i . Then, there exists a symmetric Nash Equilibrium in which each party i with cost $f_i = f_q$ starts an election campaign with probability*

$$\alpha = 1 - \left(\frac{f_q}{R + k} \right)^{\frac{1}{q-1}} < 1.$$

Parties with cost $f_i > f_q$ stay out. Conditional on starting an election campaign, platforms are

¹³These games are fairly well understood in the literature (see for example LANG/ROSENTHAL, 1991; THOMAS, 2002).

chosen according to the mixed strategy

$$F(x^c) = \frac{\left(\frac{f_q}{R+k-x^c}\right)^{\frac{1}{q-1}} - \left(\frac{f_q}{R+k}\right)^{\frac{1}{q-1}}}{1 - \left(\frac{f_q}{R+k}\right)^{\frac{1}{q-1}}}, \quad (6)$$

with support $[0, R + k - f_q]$. Each party earns an expected payoff of zero net of campaign fixed costs.

Proof of Lemma 1. Assume each of the q parties starts an election campaign with probability α . Then, choosing $x_i^c = 0$ yields the expected gross payoff of $(1 - \alpha)^{q-1}(R + k)$. But that expected payoff gross of entry costs needs to cover the entry cost otherwise a party would not start an election campaign. Setting the last expression equal to f_q and solving for α yields $\alpha = 1 - \left(\frac{f_q}{R+k}\right)^{\frac{1}{q-1}} < 1$. Conditional on entering, denote by $F(x^c)$ the cumulative distribution function of a party leader's mixed strategy. The highest support of $F(x^c)$ assures to win the election with probability one which must yield an expected payoff of f_q . We must have that

$$R - \bar{x}^c + k = f_q, \quad \text{thus, } \bar{x}^c = R + k - f_q.$$

Furthermore, each x^c needs to yield the same expected payoff given the mixed strategy of other party leaders. We must have

$$[\alpha F(x^c) + 1 - \alpha]^{q-1}(R - x^c + k) = f_q.$$

Substituting for α and solving for $F(x^c)$ yields (6). □

Two things are noteworthy about this result: First, with symmetric and identical costs as assumed at $t = 1$ in our model, all n_0 established parties participate in an election with a positive probability. Second, the election is now decided on platform choices. With the assumption that leaders can commit to their platform choice, competition drives the public good up to the point

that political leaders are even willing to give up some of their salary k to invest in the public good as long as their campaign fixed cost f is covered. This happens when $k > f$. We have party leaders that are committed to serve the public and are also willing to give up part of their salary for the benefit of the voters if that salary exceeds the fixed cost.

Lemma 2. *Assume party leaders of all parties can commit to any election platform x^c and party 1 has a cost of f_1 and $q - 1 \geq 1$ parties have a cost f_q , where $f_1 < f_q$ and $f_q \leq f_i$ for all $i \neq 1$. Then, there exists a Nash Equilibrium in which the leader of party 1 starts an election campaign with probability one and the leaders of parties with cost $f_i = f_q$ start an election campaign with probability α where α is defined as in Lemma 1. Leaders of parties with a cost $f_i > f_q$ stay out. Conditional on starting an election campaign, platforms are chosen according to the mixed strategy described in (6) for leaders of parties other than 1. For the leader of party 1, the mixed strategy is*

$$F_1(x^c) = \begin{cases} 0 & \text{for } x^c = 0 \\ \frac{f_q \left(\left(\frac{f_q}{R+k} \right)^{\frac{1}{q-1}} + F_{-1} \left(1 - \left(\frac{f_q}{R+k} \right)^{\frac{1}{q-1}} \right) \right)^{2-q}}{R-x^c+k} & \text{for } x^c \in (0, R+k-f_q], \end{cases} \quad (7)$$

where F_{-1} denotes the mixed strategy of leaders of parties other than party 1. The support for both, F_1 and F_{-1} is $[0, R+k-f_q]$. The leader of party 1 earns an expected payoff of $f_q - f_1 > 0$ and the leaders of all other parties earn an expected payoff of zero net of campaign fixed costs.

Proof. If a leader of a party other than party 1 is indifferent between starting and not starting a campaign, the leader of party 1 will be strictly better off starting a campaign because his/her entry cost is lower. Thus, the leader of party 1 must be starting a campaign with probability one. By setting $x = 0$, the leader of party 1 can then earn an expected payoff of $(1 - \alpha)^{q-1}(R+k)$. If choosing the upper bound of $F(x^c)$, \bar{x}^c , a party wins with probability one and its leader earns the payoff $R - \bar{x}^c + k$. Because any platform choice needs to yield the same expected payoff given the mixed strategy of the leaders of all other parties, and since a leader of a party other than party 1 is indifferent between starting and not starting a campaign, we obtain as before that choosing

\bar{x}^c yields a payoff of f_q . Thus, we get $\bar{x}^c = R + k - f_q$. Conditional on starting a campaign, each party leader must earn a (gross) payoff of f_q . Thus, we get that $(1 - \alpha)^{q-1}(R + k) = f_q$. Solving for α yields a value of α as described in Lemma 1. For the leader of party 1, the choice of any platform x_1^c needs to yield the same expected gross payoff given the mixed strategy of all the other party leaders F_{-1} . We get $[\alpha F_{-1}(x_1^c) + (1 - \alpha)]^{q-1}(R - x_1^c + k) = f_q$. Solving for $F_{-1}(x_1^c)$ yields the same mixed strategy as described in Lemma 1. For a leader of a party other than party 1, the choice of any platform x_i^c needs to yield the same expected gross payoff given the mixed strategy of the leader of party 1, F_1 , and the mixed strategy of all the other leaders of parties other than 1. We get $F_1(x_i^c)[\alpha F_{-1}(x_i^c) + (1 - \alpha)]^{q-2}(R - x_i^c + k) = f_q$. Substituting for α and solving for $F_1(x_i^c)$ yields (7.)

□

The question now is whether having a junior member in the party who removes a leader from office only when that leader fails to implement the election platform x_i^c can serve as a tool for the leader to commit to his or her campaign platform choice.

We are now able to state our main result.

Proposition 2. *If $(1 - \beta)k \leq \delta(1 - \theta)\phi^\tau f$ and $\beta k \leq \phi^\tau f$ Strategy 2 is a Subgame Perfect Equilibrium. The number of political parties competing over time decreases and approaches two and electoral volatility decreases over time.*

Proof. Consider a history of the game in which the elected party leader implements the election platform x^c . To remove the leader yields an expected payoff of $(1 - \beta)k$ whereas to not remove the leader yields a payoff of at least $\delta(1 - \theta)\phi^\tau f \geq (1 - \beta)k$ by assumption. Thus, the junior member will not remove the leader from office. Assume a history in which the leader did not implement the campaign platform. Then, removing the leader from office yields a payoff of $(1 - \beta)k \geq 0$ whereas not removing the leader from office yields a payoff of zero as an elected party that fails to implement an campaign platform is not elected in the subsequent election. Thus, the junior member will remove the leader from office. Assume now a history of the game where the elected

leader campaigned on the platform $\bar{x}^c = R + k - f_q$. The lowest the fixed cost f_i of the party with the second lowest cost can be is $f_q = \phi^\tau f$. Implementing the campaign platform yields a gross payoff of at least ϕf_q . Not implementing the platform yields a gross payoff of βk given that the leader will be removed from office. We have that $\beta k \leq \phi^\tau f$ by assumption. Thus, the leader is better off implementing the platform.

In the first two elections, all n_0 established parties will participate in the election. The electoral subgame is played according to Lemma 1. However, in the second election, one party already comes with the incumbency advantage, which reduces electoral volatility. From then on, the electoral subgame is played according to Lemma 2. If the incumbent does not win that second election, then there will be only two parties participating in the subsequent elections as all the other parties have a strictly higher cost than the two parties that have been previously in government. Electoral volatility decreases as the number of parties participating in elections decreases over time and the incumbent government has a higher probability of winning the election as this party starts an election campaign with probability one and other parties start a campaign with probability less than one.

□

Note that election campaigns are chosen using mixed strategies. This means that there is a positive probability that voters end up with a public good that equals zero. This happens if only one party is running for office. However, in expectation voters earn a payoff of $R + k - f$ initially. Since costs reduce over time, on average the public good rises or corruption decreases over time as the public good on average rises to $R + k - \phi^\tau f$. Also note that the cynical equilibrium exists for any range of parameter values, whereas the equilibrium preferred by voters only exists when being in office is not too attractive for government leaders and the junior member of this leader's party. For example, if $k = 0$, then the voter friendly equilibrium always exists – and so does the cynical one. Also, the share parameter β may play an important role for an intermediate value of k . Clearly, if k is large relative to f , the voter friendly equilibrium does not exist for any value of β . However for some intermediate range of k , a small β increases the incentive for the junior

party member to remove the government leader from office independent of whether the leader follows the campaign platform or not. This aspect of the model highlights an important dilemma: With the power to remove a leader comes the incentive to do so no matter what, namely then when the removal leads to large immediate benefits for the junior party member.

Furthermore note that the voter friendly equilibrium hinges not only on the fact that the junior party member “punishes” leaders that do not honor campaign promises but also that voters do not re-elect political parties that have broken campaign promises. If voters do not punish failing government parties, junior members may have an incentive to keep a leader in office because in that case the cost advantage obtained by sitting out the government benefits them also in the cynical equilibrium.

4 Empirical implications and their plausibility

Our model has several empirical implications. The first one relates to the possible existence of two equilibria. In the first, cynical, one politicians eschew accountability while voters, knowing this, will fail to take elections seriously. Vice versa, in the second equilibrium, politicians are held to account by their juniors and thus the incentive to create new parties is reduced, while voters enforce this implicit bargain. The empirical implication of this is that high electoral volatility goes hand in hand with unaccountable leaders. Thus, we should find a correlation between electoral volatility and, on the one hand corruption, and on the other mistrust in government.

The second empirical implication relates to what allows maintaining, or at least making more likely, the second non-cynical equilibrium. As our model shows, if junior politicians can more easily hold to account their senior/leader colleagues then cynical behavior by both leaders and voters is less likely.¹⁴

¹⁴We note already here that while in the theoretical part we consider generally the mechanisms of party juniors removing their leaders, the precise institutional means through which this can be achieved can vary. In presidential systems oftentimes only impeachment procedures allow the members of a party to remove their leader. In parliamentary systems, as for instance Theresa May had to experience, oftentimes parties have their own leadership deselection procedures which exist in addition to the parliamentary confidence votes. As information on party procedures are often limited (for instance to mostly parliamentary democracies, see CROSS/PILET, 2014)

Assessing empirically these two implications is, however, not without difficulty, because electoral volatility is obviously influenced by a myriad of factors (see notably TAVITS, 2008, 2013; GHERGHINA, 2014; POWELL/TUCKER, 2014; EMANUELE ET AL., 2020), many of which are likely to be endogenous according to our model. In addition, specific relationships among the variables discussed above are often also derived from other theoretical perspectives. Thus, party institutionalization, which is often considered as an important factor in reducing electoral volatility (see for instance TAVITS, 2008; GHERGHINA, 2014), is quite clearly related to institutional mechanisms that allow parties to remove their leaders.¹⁵ Similarly, when it comes to the relationship between electoral volatility and corruption MELO ET AL. (2009), in an interesting study, show that higher electoral volatility leads to less activity of the Brazilian court of auditors (see relatedly TAVITS, 2007). Similarly, several studies suggest that political trust leads to a reduction in electoral volatility (see for such a study, though at the individual level, DASSONNEVILLE, 2012). Thus, what follows will offer more a plausibility check for our model than empirical tests in a narrow sense.

With these caveats in mind we present empirical analyses that aim at assessing the plausibility of the implications of our model, and thus also the latter. For this we rely on data stemming from different sources to cover measures of trust in government (World Values Surveys, LatinoBarometer, Asia- and South-East Asia Barometer, Afrobarometer and the European Social Surveys), information on corruption (Varieties of Democracy Project), the political system (CHEIBUB ET AL., 2010a), institutions for removals of leaders (BERGMAN ET AL., 2003; KADA, 2003), and GDP per capita from the Penn World Tables (HESTON ET AL., 2011). For simplicity's sake and because of varying granularity of the data we average over the period 1970-2018 (or the longest period since democratization) except for the GDP per capita variable which corresponds to the value in 1970 to limit endogeneity concerns. Table 1 reports simple analyses

we will focus here on the institutional mechanisms that exist in the political system (see relatedly CROSS/PILET, 2015; GRUBER ET AL., 2015).

¹⁵It bears noting that operationalizations of party institutionalization are often quite approximate (e.g., age of a party) that are likely to pick many other elements unrelated to party institutionalization and thus leading to endogeneity problems.

Table 1: Electoral Volatility, Corruption, and Voter Confidence (1970-2018)

	Corruption				Volatility	
	(1)	(2)	(3)	(4)	(5)	(6)
Volatility	1.1872*** (0.1778)	0.7687*** (0.1778)				
No Confidence			0.9424*** (0.2484)	0.7131*** (0.1634)	0.3582*** (0.0942)	0.2841*** (0.0698)
Initial GDP pc		-0.5844*** (0.1105)		-0.8489*** (0.1112)		-0.2783*** (0.0727)
Constant	-5.3496*** (0.6493)	1.1505 (1.3642)	-4.2509*** (0.7835)	4.0190*** (1.1452)	2.2309*** (0.2901)	4.9405*** (0.7133)
N	96	91	76	76	77	77
R-squared	0.35	0.49	0.23	0.52	0.16	0.31
F statistic	44.56	46.63	14.40	45.37	14.46	19.75

Sample consists of country averages between 1970 or the most recent year of democratization – if democratization happened after 1970 – and 2018, where a country is classified as democratic if XRCOMP from Polity5 equals 3 (Source: Polity5). “Corruption” refers to “Executive Corruption” as measured by the VDem project. “Volatility” is measured by the Pedersen Index for the seat distribution in national lower chambers (Source: Authors’ calculation). “No confidence” is measured as the fraction of the population who has no trust in the government (Source: World Value Surveys, Latino Barometers, Asia and South-east Asia Barometer, Afrobarometer and European Social Surveys) “Initial GDP pc” is the PPP adjusted GDP per capita in 1970 (Source: PWT 9.1). Dependent variable for Columns (1) to (4) is “Corruption” and for Columns (5) and (6) is “Volatility.” Robust standard errors are reported in parenthesis. Significance levels : * : 10 percent ** : 5 percent *** : 1 percent

assessing whether electoral volatility is related to corruption, respectively absence of trust in government. All six models provide evidence for the expected relationship. Higher electoral volatility as well the absence of trust in government goes hand in hand with more corruption, independent of whether we control for the initial economic conditions (models 1-4). Similarly, the absence of trust in government is linked with higher electoral volatility (model 5) even when controlling for initial economic conditions (model 6). All regressions show a fairly large R-squared all with no more than two independent variables.

As several studies associate corruption, respectively electoral volatility with characteristics of the political system, we replicated the analyses presented in table 1 while controlling for the type of regime and the electoral system. As the results reported in table 2 the main relationships remain unaffected (models 1, 3, and 5) even if we control for world regions (models 2, 4 and 6). Amongst the additional controls it is noteworthy that in parliamentary democracies political

Table 2: Electoral Volatility, Corruption, and Voter Confidence (1970-2018)

	Corruption				Volatility	
	(1)	(2)	(3)	(4)	(5)	(6)
Volatility	0.8163*** (0.1663)	0.7946*** (0.1759)				
No Confidence			0.7577*** (0.1658)	0.9695*** (0.1419)	0.3149*** (0.0726)	0.3577*** (0.0877)
Initial GDP pc	-0.5586*** (0.1083)	-0.5940*** (0.1353)	-0.9003*** (0.1223)	-0.7502*** (0.1367)	-0.3723*** (0.0911)	-0.3046*** (0.0966)
Parliamentarian	-0.5230*** (0.1903)	-0.4495** (0.2174)	-0.1258 (0.2080)	-0.1590 (0.2812)	0.3093** (0.1523)	0.4124* (0.2309)
Majoritarian	-0.0275 (0.1857)	-0.0734 (0.2326)	-0.0100 (0.2334)	-0.5152 (0.3444)	-0.0904 (0.1823)	-0.2526 (0.2230)
SSA		-0.0665 (0.4247)		0.9727** (0.4468)		0.3676 (0.4809)
LAC		0.1543 (0.3070)		-0.0767 (0.4433)		0.1955 (0.2494)
EAP		0.3239 (0.3984)		0.9608** (0.4526)		0.3649 (0.2290)
SA		0.2704 (0.4303)		1.2020** (0.5661)		0.5252 (0.3263)
Constant	1.0386 (1.3042)	1.3146 (1.4955)	4.3603*** (1.3762)	2.3440 (1.5607)	5.5252*** (0.8612)	4.6302*** (0.9837)
N	82	82	70	70	70	70
R-squared	0.58	0.59	0.60	0.66	0.38	0.41
F statistic	31.75	18.31	37.45	55.03	12.37	7.65

See Table notes in Table 1. "Parliamentarian" equals one for a country with a parliamentary as opposed to a presidential system (Source: CHEIBUB ET AL., 2010a). "Majoritarian" equals one for countries with a majoritarian voting system as opposed to a proportional or a mixed system (Source: BORMANN/GOLDER, 2013)). Robust standard errors are reported in parenthesis. Significance levels : * : 10 percent ** : 5 percent *** : 1 percent

corruption seems smaller (models 1-4), while electoral volatility seems higher (models 5 and 6). As the estimated coefficients for majoritarian electoral systems (as opposed to PR or mixed systems) seems to suggest, this is not due to the way in which elections are run. Thus, both tables 1 and 2 support the implication of our theoretical model that electoral volatility goes hand in hand with political corruption and lacking confidence in government.

Our second implication suggests that one way to break the associations implied by our first implication are procedures that allow for the removal of the leaders. If there are considerable constraints for such removals the relationship between electoral volatility and corruption, respectively

Table 3: Electoral Volatility, Corruption, and Voter Confidence (1970-2018)

	Corruption				Volatility	
	(1)	(2)	(3)	(4)	(5)	(6)
Volatility	0.5684** (0.2444)	0.5423** (0.2579)				
No Confidence			0.8428*** (0.1709)	0.7202** (0.3224)	0.2242*** (0.0775)	0.2319 (0.1606)
Initial GDP pc	-0.8705*** (0.1873)	-0.6589*** (0.2211)	-1.0901*** (0.1995)	-1.0886** (0.4153)	-0.5057*** (0.1168)	-0.6353*** (0.1336)
Constraints of Removal	-3.0867*** (0.9986)	-2.4844** (1.1725)	-1.5558* (0.8466)	-1.5999 (1.1056)	-0.7391 (0.5053)	-0.6770 (0.5010)
Volat.*Constraints	0.9579*** (0.3027)	0.8631** (0.3630)				
No Conf.*Constraints			0.4955 (0.3217)	0.4818 (0.4614)	0.3017* (0.1603)	0.2069 (0.2057)
Constant	4.2265* (2.2186)	2.5444 (2.3051)	5.6504** (2.1346)	5.3232 (4.2836)	7.1119*** (1.0921)	7.2836*** (1.4888)
Additional Controls	no	yes	no	yes	no	yes
N	43	43	39	39	40	39
R-squared	0.65	0.72	0.73	0.76	0.51	0.66
F statistic	34.22	.	50.26	.	19.18	.

See Table notes in Table 1. "Constraints of Removal" combines information on confidence votes and impeachment procedures (Source: BERGMAN ET AL., 2003; KADA, 2003). Robust standard errors are reported in parenthesis. Significance levels : * : 10 percent ** : 5 percent *** : 1 percent

the absence of confidence in government should be strengthened. Assessing such moderating effects is not easy as in our sample of countries we have both parliamentary and presidential democracies in which the main removal mechanisms differ. In the former confidence votes are the main mechanisms, while in the latter impeachments allow for the removal of the leader. To measure the constraints on these two mechanisms we focus for the former on the majority requirement in confidence procedures as reported in BERGMAN ET AL. (2003). For the latter we draw on the data collected by KADA (2003) and more specifically whether impeachment processes involve also the judiciary. Based on these sources we consider that there are constraints in the removal process if either a absolute (instead of a simple) majority is required in a confidence vote, or the judiciary is involved in impeachment processes. As our sources cover only a subset of our cases the results reported in table 3 are slightly weaker but still in support of our second

implication. More specifically, the positive association between electoral volatility and corruption is strongest if there are constraints in the removal of party leaders (models 1 and 2). Similarly the relationship between the absence of confidence in government and political corruption is strengthened if the removal of leaders is subject to constraints (models 3 and 4). Finally, this strengthening effect also appears if we consider the relationship between the absence of confidence and electoral volatility (models 5 and 6). In the appendix, we provide several robustness checks. First, in table 5) we replicate these analyses while only considering for each country the most recent period without changes in the removal procedures. The substantive results remain the same, while becoming even slightly stronger. In tables 6 and 7 we repeat our analysis by changing the time frame from 1970–2018 to 2009–2018 thereby focusing on the last 10 years. Again, the substantive results stay the same.

5 Conclusions

We motivated this paper with the fact that competitive and fair elections combined with peaceful transition of power produces very different results in terms of accountability across countries that satisfy the commonly used definition of democracy. We showed that levels of corruption vary considerably across democracies. Furthermore, we pointed out that a large body of empirical studies that estimates the relationship between democracy and economic outcomes such as growth yields inconclusive results. In this paper we offer a game theoretic model based on overlapping generations of politicians that can explain these findings: In our model, elections are always fair and competitive, but equilibrium outcomes differ substantially. In one equilibrium, we have endemic corruption with no provision of public goods, a large number of short-lived political parties, and high electoral volatility. In another equilibrium, competition in policy platforms reduces corruption to a minimum, political parties are long-lived and reduce to only a few over time, and electoral volatility and corruption also reduces over time. The critical difference in the strategies supporting these two outcomes is whether or not party leaders admit junior members

into their party who have the power to remove the leader from office when the junior members decide to do so. In the voter friendly equilibrium, only party leaders with such a junior member can credibly commit to a policy platform, and thus, only such leaders will get elected in equilibrium. The mechanism for producing accountability is straightforward: Forward looking young party members need to have some decision power over policies chosen by the current leader, who is more interested in the here and now. If re-election benefits are strong enough, then junior members will have the incentive to remove leaders from power only then when that leader fails to be accountable for his or her election promises. However, accountability is only reached if candidates “coordinate” on the voter-friendly equilibrium in which case a candidate without a junior party member will never get elected as this candidate will not be able to commit to his or her election promises. Thus, the insight generated in our paper is that party internal processes of leader selection and potential removal can be critical to obtain accountability in a democracy.

The empirical assessments of the plausibility of our claims are largely in line with our theoretical model. High electoral volatility goes hand in hand with political corruption and the absence of confidence in government. All these three things we would expect in the cynical equilibrium. On the contrary, low electoral volatility is associated with less corruption and more trust in government, which all characterize our non-cynical equilibrium. These strong associations are mitigated, however, if the removal of leaders is made easier, i.e., if additional requirements have to be met.

Thus, our theoretical model suggests (and our empirics support) that open recruitment of leaders through elections is not sufficient to ensure that elections allow voters to hold leaders to account. Only if, after an election, mechanisms exist that allow party members easily to get rid of their leader, can voters of politicians break free from a cynical equilibrium in which both voters and politicians play the election game without taking it seriously. The implication being that electoral democracy on paper is not enough to make democracy work, as political parties and their members, through removal processes must also keep their leaders to account even between elections to achieve this goal.

Appendix

In this appendix we provide more information on the empirical data we use and present some additional analyses as robustness checks.

Data

Table 4 list the sources used for the data.

Variable	Source
cocodecow, year, ti_cpi, vdem_corr	V-Dem dataset https://www.v-dem.net/en/data/data/v-dem-dataset/
A_great_dea, Quite_a_lot, Not_very_much, None_at_all.x, Dont_know, No_answer, (N).x	WVS https://www.worldvaluessurvey.org/WVSOnline.jsp
Mucha.confianza, Algo.de.confianza, Poca.confianza, Ninguna.confianza, No.sabe, No.responde, X.N.	LatinoBarometer https://www.latinobarometro.org/latOnline.jsp
Not at all, Just a little, Somewhat, A lot, Don't know/Haven't heard enough	AfroBarometer https://www.afrobarometer.org/node/118
const, incl, chambers, judicial, sel, judicial_m, chambers_m None_at_all.y	PÉREZ-LIÑÁN (2007) https://www.pitt.edu/~asp27/Presidential/Impeachment.html AsianBarometer and South Asia Barometer http://asianbarometer.org/data/data-release
parl_pres resig_ldwp, resig_ldwp_wm, re- sig_ldwp_m	CHEIBUB ET AL. (2010b) DE WINTER (1995)
bicameral_kada, judicial_kada conf_am_bergman	KADA (2003) confidence vote with absolute majority or not, BERGMAN ET AL. (2003)
No.trust.at.all, X1, X2, X3, X4, X5, X6, X7, X8, X9, Complete.trust, Total, N., no_gov_conf_es no_gov_conf	Trust in politicians, European Social Survey http://nesstar.ess.nsd.uib.no/webview/ combination of all sources for trust above

Table 4: Sources for country dataset

Additional analyses

As aggregating dichotomous institutional indicators for longer periods of time in which they changed may lead to problems in estimating their effects we report in table 5 results that cover for each country the most recent period with no institutional change. As the table shows the relationships reported in the main text in table 3 hold up even if we limit our analysis to such shorter periods. Systematically, if these removal processes get harder then the link between corruption and no confidence on the one hand and electoral volatility on the other becomes more pronounced. Finally, in tables 6 and 7 we report analyses focusing only on the most recent decade for which we have data. Again the results prove largely robust.

Table 5: Electoral Volatility, Corruption, and Voter Confidence (1970-2018)

	Corruption				Volatility	
	(1)	(2)	(3)	(4)	(5)	(6)
Volatility	0.6331** (0.2588)	0.5258* (0.2748)				
No Confidence			0.9064*** (0.1764)	0.8372** (0.3095)	0.2633*** (0.0752)	0.2645* (0.1497)
Initial GDP pc	-0.8118*** (0.1772)	-0.6204*** (0.1919)	-1.0604*** (0.2029)	-0.8606** (0.4043)	-0.5208*** (0.1154)	-0.5987*** (0.1600)
Constraints Removal	-3.0493*** (1.0489)	-2.6474** (1.1699)	-1.0458 (1.0317)	-1.4314 (1.2203)	-0.0475 (0.7049)	0.0135 (0.7409)
Volat.*Constraints	0.9294*** (0.3138)	0.9037** (0.3501)				
No Conf.*Constraints			0.3094 (0.3678)	0.4380 (0.4735)	0.0725 (0.2162)	-0.0135 (0.2533)
Constant	3.5082 (2.1689)	2.1994 (2.0887)	5.2434** (2.1713)	2.9738 (4.1779)	7.1705*** (1.0781)	6.9266*** (1.7113)
Additional Controls	no	yes	no	yes	no	yes
N	43	43	39	39	40	39
R-squared	0.63	0.71	0.72	0.74	0.52	0.67
F statistic	33.80	.	44.09	.	15.02	.

See Table notes in Table 1. "Constraints of Removal" combines information on confidence votes and impeachment procedures (Source: BERGMAN ET AL., 2003; KADA, 2003). Robust standard errors are reported in parenthesis. Significance levels : * : 10 percent ** : 5 percent *** : 1 percent

Table 6: Electoral Volatility, Corruption, and Voter Confidence (2009-2018)

	Corruption				Volatility	
	(1)	(2)	(3)	(4)	(5)	(6)
Volatility	0.3555** (0.1585)	0.5045*** (0.1531)				
No Confidence			0.5696*** (0.1419)	0.7701*** (0.1288)	0.2254*** (0.0736)	0.2907*** (0.0919)
Initial GDP pc	-0.7275*** (0.0894)	-0.8890*** (0.1548)	-0.9033*** (0.0923)	-1.0349*** (0.1547)	-0.2335*** (0.0733)	-0.2430** (0.1094)
Constant	4.1809*** (1.1542)	5.5928*** (1.8548)	5.4455*** (1.1058)	6.4687*** (1.8169)	4.7717*** (0.8056)	4.3460*** (1.2107)
Additional Controls	no	yes	no	yes	no	yes
N	89	78	72	66	72	66
R-squared	0.54	0.64	0.62	0.74	0.23	0.35
F statistic	50.67	22.16	76.43	50.49	16.24	15.47

See Table notes in Table 1. "Parliamentarian" equals one for a country with a parliamentary as opposed to a presidential system (Source: CHEIBUB ET AL., 2010a). "Majoritarian" equals one for countries with a majoritarian voting system as opposed to a proportional or a mixed system (Source: BORMANN/GOLDER, 2013)). Robust standard errors are reported in parenthesis. Significance levels : * : 10 percent ** : 5 percent *** : 1 percent

Table 7: Electoral Volatility, Corruption, and Voter Confidence (2009-2018)

	Corruption				Volatility	
	(1)	(2)	(3)	(4)	(5)	(6)
Volatility	0.3879* (0.2246)	0.4260 (0.2737)				
No Confidence			0.7189*** (0.1388)	0.7260*** (0.1944)	0.2353** (0.1136)	0.4311** (0.1748)
Initial GDP pc	-0.8851*** (0.1164)	-0.7429*** (0.1711)	-1.0739*** (0.0930)	-1.0602*** (0.1288)	-0.3582*** (0.0983)	-0.4676*** (0.1149)
Constraints Removal	-2.9649*** (1.0117)	-2.6182* (1.2983)	-0.6337 (0.6351)	-0.6297 (0.6976)	-0.2740 (0.4486)	0.1968 (0.6069)
Volat.*Constraints	0.8987*** (0.3114)	0.8520** (0.3945)				
No Conf.*Constraints			0.1534 (0.2266)	0.1494 (0.2678)	0.1206 (0.1678)	-0.0945 (0.2364)
Constant	5.5045*** (1.6471)	4.3005* (2.3931)	6.5704*** (1.0463)	6.4099*** (1.1557)	6.0150*** (1.0554)	6.2939*** (1.1831)
Additional Controls	no	yes	no	yes	no	yes
N	43	43	38	38	38	38
R-squared	0.71	0.74	0.79	0.79	0.37	0.44
F statistic	39.68	31.55	78.96	54.54	13.56	8.42

See Table notes in Table 1. "Constraints of Removal" combines information on confidence votes and impeachment procedures (Source: BERGMAN ET AL., 2003; KADA, 2003). Robust standard errors are reported in parenthesis. Significance levels : * : 10 percent ** : 5 percent *** : 1 percent

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