Endogenous Presidentialism[*]

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Abstract

We develop a model to understand the incidence of presidential and parliamentary institutions. Our analysis is predicated on two ideas: first, that minorities are relatively powerful in a parliamentary system compared to a presidential system, and second, that presidents have more power with respect to their own coalition than prime ministers do. These assumptions imply that while presidentialism has separation of powers, it does not necessarily have more checks and balances than parliamentarism. We show that presidentialism implies greater rent extraction and lower provision of public goods than parliamentarism. Moreover, political leaders who prefer presidentialism may be supported by their own coalition if they fear losing agenda setting power to another group. We argue that the model is consistent with a great deal of qualitative information about presidentialism in Africa and Latin America.

Keywords: Constitutions, Legislative Bargaining, Political Economy.

JEL: D72, P5, O1

1   Introduction

Within studies of comparative political institutions, the form of the constitution and its consequences has attracted particular attention. This literature has emphasized the importance of the dichotomy between parliamentary and presidential constitutions. For example, Linz (1978) proposed that presidential democracies tended to be less stable and more prone to coups.[1] Presidential systems have also been argued to have consequences for many other outcomes, such as the strength of parties (Linz, 1994), and fiscal policy outcomes such as the level of taxes and the provision of public goods (Persson, Roland and Tabellini, 2000).

The majority of the research, however, has focused on the *consequences* of presidentialism, not its' *origins* (see the essays in Lijphart, 1992b, Linz and Valenzuela, 1994, or Haggard and McCubbins, 2001). For instance, the large literature on presidentialism in Latin America pays hardly any attention to the question of why Latin American polities are presidential, something which might be thought quite puzzling given that the preponderance of this literature concludes that presidentialism has perverse consequences.[2] Mainwaring and Shugart (1997) and Cheibub (2007) both propose that one should think of presidentialism as being endogenous to the circumstances of societies though they do not really advance an explanation of why polities are presidential. Persson and Tabellini (2003) also recognize that the cross-national incidence of presidentialism is endogenous and propose a number of sources of variation in presidentialism (whether or not a country was colonized by the British, latitude and the fraction of the population which speaks a European language as a mother tongue).

That there is a need for a more explicit theory of the origins of presidentialism can be illustrated by examining the constitutional experience of Sub-Saharan African countries since independence. Table 1 contains the Sub-Saharan African countries that had either a parliamentary or a presidential constitution at independence.[3] It shows remarkable patterns that call for an explanation. At the time of independence, parliamentary constitutions outnumbered presidential constitutions 4 to 1 in Africa. Yet in country after country there was a switch towards presidentialism.[4] At present 18 of the 21 countries that started out with a parliamentary con-

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[1] His work has stimulated much other research, some like Stepan and Skatch (1994) and Przeworski, Alvarez, Cheibub and Limongi (2000), which supports his thesis, and other, for instance by Horowitz (1990), Carey and Shugart (1992), and Mainwaring and Shugart (1997), which contradicts it.

[2] Implicitly, scholars seem to believe that presidentialism has deep roots going back to ideological choices made at the time of independence 200 years ago and an earlier generation of social scientists, such as Lambert (1969), suggested that presidentialism was more effective in creating national identities or promoting development (see Mainwaring, 1990).

[3] The table is contructed on the basis of the more detailed account of African constitutional changes in our working paper version Robinson and Torvik (2008). There we show the timing of constitutinal changes that have taken place in the different countries, as well as separate between different versions of presidential constitutions.

[4] Around the same time as African states wrote presidential constitutions, many also introduced one party states. Presidentialism was introduced before the one party state in Congo, Dahomey, Mauritania, the Central African Republic, Kenya, Sierra Leone, Senegal and Togo, but in the Côte d'Ivoire, Guinea, Burkina Faso, Niger and Chad the one-party state preceded the move to presidentialism. In Zambia both came together in 1973. In

stitution have switched to a presidential constitution. None of the countries that started out with a presidential constitution have adopted a parliamentary constitution. Even in the wave of democracy which has swept over Africa since the 1990s, no country has yet made such a transition, even though the switch to presidentialism is clearly associated with a transition to a less democratic style of politics in Africa. Also worthy of note is that two of the three countries which started with parliamentary institutions and have not changed them - Botswana and Mauritius - are the only two countries which have been economically successful in Sub-Saharan Africa since independence. The pattern is present both in Francophone and Anglophone countries. Any relationship in cross-national data between having been a British colony and parliamentarism turns out to be driven by Caribbean islands. Moreover, including the countries that started out with what researchers often refer to as Afro-communist constitutions at independence (such as Angola and Mozambique) all countries that have switched away from these have adopted presidential institutions - not a single one of them have adopted parliamentary constitutions.

These remarkable facts have been little studied. In the 1960s presidentialism seems to have been seen as a natural reflection of 'big man' African political culture. De Luisgnan (1969, p. 79) argues "the concentration of all government responsibility in the hands of one man was in the spirit of African tribal tradition." Others argued that presidentialism was a response to problems of underdevelopment and lack of national identities and it has "largely been in response to the ruling elite's determination to utilize institutions as resources for coping which such problems as national integration and economic development" (Rothchild and Curry, 1978, p. 87). More recently scholars of African politics, such as Horowitz (1990) have engaged in the debate on the 'perils of presidentialism' but have argued that in Africa the 'winner take all' nature of parliamentary institutions creates instability while presidentialism with its checks and balances is a better system in an ethnically divided society. Indeed, Lewis (1965) argued that parliamentary institutions in West Africa played a role in the creation of authoritarianism.

In this paper we develop a model to try to help us understand constitutional variation between presidentialism and parliamentarism. We use it to ask some basic questions about why some countries have presidential constitutions while others do not. We particularly focus on how the model can help us understand the attractions of presidentialism in Africa since independence. We also investigate whether the model is consistent with claims made in the comparative politics literature that presidential democracies are less stable.

For simplicity we consider a polity formed of two groups, one of which is in a majority and which differ in their preferences with respect to government policy, specifically public goods provision. (We later extend the model to more than two groups). In each group there are

this paper however we shall only analyze the motivates for moving towards presidentialism and treat them as conceptually distinct from that of creating a de jure one-party state (see Zolberg, 1966, and Collier, 1982, on the one-party systems).

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three sorts of individuals, citizens, politicians and political leaders. In the model citizens elect politicians to the legislature using a system of proportional representation. The political system determines the allocation of a fixed budget between the provision of public goods and rents to politicians.

We contrast two types of political institutions. Under presidentialism, there are two separate elections, one where the leaders of the two groups vie for the presidency, and one for the legislature. Once elections have been held, the president then decides policy if he is supported by a majority in the legislature. If not a status quo policy is implemented. When the constitution is parliamentary there is only one election which is for the legislature. After the election a legislator is chosen at random to decide which group shall try to form a ruling coalition. The proposed members of the coalition then bargain about policy, which is then voted on in the legislature. If at any stage a proposal either to form a government or for a specific proposal is defeated then a status quo policy is implemented.

The structure of the model is designed to embody two key features which we believe are realistic aspects of presidential and parliamentary constitutions. First, the minority party is more powerful in a parliamentary system than in a presidential system. This is true in our model because the presidency, and thus agenda setting power, will always be captured by the majority, while with some positive probability the prime minister can be from the minority group. We believe that Carlson (1999, p. 12) grasps a fundamental truth when he argues that

> "The threat of no-confidence votes means that MPs possess bargaining power and that those in the opposition can have hopes that they may be in the government in the relatively near future. In a presidential system ... an opposition legislator is generally condemned to remain in the opposition for the (often lengthy) duration of the president's term(s) in office."

Second, a president has more power than a prime minister relative to members of his own coalition. Intuitively this is because once elected a president cannot be removed short of impeachment, while a prime minister must always maintain the support of his or her colleagues. If Mrs Thatcher had been president of Britain, she could not have been removed from the office of prime minister by the Conservative Party as she was in November 1990 and Cheibub, Przeworski and Saiegh (2004, p. 567) report that in OECD countries 163 out of 291 prime ministers left office without elections between 1946 and 1995. In the model, this feature is captured by the assumption that a president can present a take it or leave it offer to legislators, whereas a prime minister engages in bargaining with his coalition.

An important consequence of these assumptions is that politicians in general and particularly political leaders, capture more rents and provide fewer public goods under a presidential system compared to a parliamentary one. This is because when prime ministers are not the

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residual claimants on rents more of the government budget is allocated to public goods. Another consequence is that while political leaders may prefer to be presidents rather than prime ministers, conditional on being in the winning coalition, other politicians prefer to be members of parliament rather than members of the legislature of a presidential system.

Bringing these ideas and findings together we can understand the politics of institutional choice. Political leaders prefer to be presidents. The institutional preferences of other politicians are more complex. Conditional on being in the winning coalition, those in the majority group prefer a parliamentary constitution because it increases their power relative to their leader. However, the drawback of such a constitution is that it also empowers the minority relative to a presidential system. In particular with some probability the majority can lose agenda setting power. Therefore, politicians from the majority group can be induced to support presidentialism if the probability that they will lose power is sufficiently large and if losing power is sufficiently bad. We show that losing power will be worse, and presidentialism more attractive, when the preferences of the two groups with respect to public goods are more polarized, when ideological differences are more extreme, and when the society is poor in the sense that the government budget is low.

The comparative statics of the model may therefore help to explain why African countries so quickly switched to presidential constitutions after independence and why Latin American politicians seem so content to remain with presidentialism. As compared to countries in Western Europe or islands in the Caribbean, which have sustained parliamentary constitutions, the preferences of different political salient groups in Africa, for instance, are much more polarized. Political parties are often highly regional, for instance in Sierra Leone the Sierra Leone People's Party gets its' support from the South and East and the Mende ethnic group. Its' main opponents, the All People's Congress Party, gets its support from the North and West and the Temne ethnic group. This is a case where polarization is maximal (see Cartwright, 1970, on the emergence of these patterns). A similar case is the Sudan which has been ruled since independence by a small elite from the North of the country (Seekers of Truth and Justice, 2000, Johnson, 2003, Cobham, 2005) who share few common interests with those in Darfur of the south of the country. This pattern is very common in Africa. It is this which raises the stakes from agenda setting and makes the majority prefer to have a president to make sure that they cannot lose agenda setting power to the minority. African countries are also much poorer than others which have sustained parliamentary regimes.

Our model also supports the claims of Linz about presidentialism. A natural way to think about the stability of democracy is to ask whether those who lose out under democracy would be better off trying to overthrow the system (Przeworski, 1991, Chacon, Robinson and Torvik, 2011). Whether or not this is so depends on the relative payoffs. In our model the minority does better with a parliamentary constitution and therefore has less incentive to overthrow

democracy. This follows because even ex post, if the majority hold power, public good provision is greater with a parliamentary system and this is better for the minority than the presidential system with lower public good provision and greater rent extraction.

Our modelling approach builds on the seminal work of Persson, Roland and Tabellini (1997, 2000), whose formulation was heavily inspired by presidentialism in the United States. Nevertheless, the way presidentialism works in Africa or Latin America, is different in a number of ways. For one thing, presidents have far more formal powers. For instance in Argentina, Chile and Taiwan, only the president can introduce a budget and congress cannot increase expenditures (Haggard and Shugart, 2001, p. 79) and it is quite general for presidents to have the agenda setting powers with respect to budgets (Carey and Shugart, 1992, Table 8.2, p. 155). In Argentina, Brazil, Colombia and Russia presidents can decree new legislation without getting any authority from the legislature (see Carey, Neto and Shugart, 1997, for a comprehensive discussion of the powers of Latin American presidents).

In Africa the situation is even more extreme with scholars referring to the "imperial presidency" (Carlson, 1999, p. 39, Nwabueze, 1975). Indeed, scholars who have examined the transitions to presidentialism have seen it in terms of a strengthening of the powers of the executive and *reducing* checks and balances. For instance, Widner's (1992) analysis of the 10th Amendment to the Kenyan constitution in 1968 which established a presidential system is that the amendment "eliminated Kenyatta's dependence on a parliamentary majority" (p. 67) and this served to "insulate the presidency from the battles within KANU [the Kenyan African National Union - Kenyatta's party] and to hamper efforts to challenge the allocation of resources favored by the Kenyatta government" (p. 68). Similarly, in Zimbabwe Laakso (1999, p. 134) argues that after the change to a presidential constitution "the executive presidency was a threat to the independence of the judiciary. Even Parliament, instead of reflecting the supremacy of the people, had become accountable to the president." Returning to Table 1, it is quite clear that the desire of Joseph Mobutu to make himself president in 1967, rather than remain prime minister of Zaire, represented a reduction in checks and balances. The same can be said for Robert Mugabe in Zimbabwe in 1987, Siaka Stevens in Sierra Leone in 1978, Hastings Banda in Malawi in 1966, or Kwame Nkrumah in Ghana in 1960.[5]

In our model, though there is separation of powers under a presidential constitution in the sense that the president and legislature are separately elected, this does not lead to the type of checks and balances that Persson, Roland and Tabellini emphasize because we assume that the president proposes the entire policy vector. The main conceptual difference, however, is that our focus is on presidential systems where presidents have far more powers than in the United States.

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[5]It is telling that most presidents face term limits while to our knowledge there is no instance of a term limit on a prime minister. This is because prime ministers are naturally checked by the nature of their interactions with their coalition and the legislature.

As such our paper should been seen as a complement rather than a substitute for the approach of Persson, Roland and Tabellini. Unlike their paper we also explicitly model the choice over institutions and have a separate election for the president. Furthermore, politicians care about public goods and ideological matters and not just rents, and voters are forward looking rather than retrospective.

We also extensively use insights from the models of parliamentary institutions by Huber (1996), Baron (1998) and Diermeier and Feddersen (1998). Our model of how a parliament works is very similar to the models of these papers, choosing the same status quo policy, though we also allow for the provision of public goods and endogenous elections, as in Austen-Smith and Banks (1988).

The paper is also related to a number of other lines of work. There are a few more works on the origins of presidentialism, particularly in Eastern Europe and the former Soviet Union as scholars have tried to understand why, for example, Hungary, Czechoslovakia or the Baltic states chose parliamentary constitutions while other republics of the former Soviet Union and Russia chose presidential institutions. Easter (1997) argued that this variation stemmed from how powerful communist era elites were. When they were powerful they were able to impose presidentialism to best further their interests. By contrast (p. 189)

> "parliamentarism was preferred in cases in which old regime elites had been dispersed ... Particular institutional features of parliamentarism - no confidence votes and legislative control of the executive - guarded against any one party or group making a proprietary claim on the state's power resources."

Lijphart (1992a) similarly argued that presidentialism arose in Poland and not Hungary and Czechoslovakia because in the former the Communist elites were much stronger and viewed this as the best way to perpetuate their power. Frye (1997) examined the varying strength of presidential powers and argued that stronger presidencies emerged when political elites were powerful during constitutional negotiations and there was little uncertainly about future election outcomes - hence they chose presidentialism to lock in their power. Though all of this work is informal, motivated by different cases and methodologically distinct from ours, it does share with our analysis the spirit that what favors presidentialism is a strong elite wishing to isolate itself from the controls of a legislature. Most closely related is the thesis of Carlson (1999) who studied the same facts as we do in Africa. He argued that the appeal of presidentialism was that in highly fragmented legislatures with weak party systems a president insured policy stability which risk averse legislators desired.

The paper proceeds as follows. In Section 2 we set out our model of presidentialism, discuss the timing of events, and our assumptions. In Section 3 we define the equilibrium of the model. We study two different versions of voting. We allow citizens to vote sincerely in the sense

that citizens vote for the group of politicians that have preferences most closely aligned with themselves. We also allow citizens to vote strategically. In our model sincere and strategic voting may coincide, but need not do so. We then in Section 4.1 investigate policy under presidentialism, and in Section 4.2 under parliamentarism, before we compare the two and discuss why some of our results differ from those previous in the literature. Section 4.3 then derives the equilibrium under the two different assumptions regarding voting, and discuss why different equilibrium constitutions may emerge. In Section 5.1 we extend the model to the case with more than two groups and show that our qualitative results remain valid also in such a case, and in Section 5.2 we discuss the extension of the model to consider the implications of the different constitutional arrangements for the stability of democracy. Section 6 concludes.

2 The Model

2.1 Citizens

We consider an infinite horizon society with a set of citizens denoted by K. The set of citizens are divided into two groups. One of the groups, which constitutes a fraction λ of the population and which we term group L, is in majority and thus $\lambda \geq \frac{1}{2}$. The set of citizens in group L is denoted $K^L \subset K$. The other group is termed group S. The preferences of a voter $k \in K^j$ in group $j \in \{L, S\}$ is given by

$$\sum_{t=0}^{\infty} \beta^t Z_t^{k,j} = \sum_{t=0}^{\infty} \beta^t \left(F(G_t^j) + (1-\gamma)F(G_t^{-j}) + \delta^j \right), \tag{1}$$

where t denotes time, $\beta \in (0,1)$ is the discount factor, $Z_t^{k,j}$ is the instantaneous utility at time t, G_t^j denotes the time t provision of the type of public goods a member of group j prefers the most, G_t^{-j} denotes the time t provision of the type of public goods the group other than j prefer the most, and we assume that $F(0) = 0$, $F_G > 0$, $F_{GG} < 0$. In (1) the parameter $\gamma \in [0,1]$ measures the dissimilarity in preferences for public goods for voters in the two groups. There is a conflict of interest between the two groups regarding which public goods should be provided, and this conflict of interest is stronger the higher is γ. For simplicity we assume that only one type of public goods can be provided in a given period. Finally, the parameter $\delta^j \geq 0$ is the ideological utility which accrues to individual k of group j if their group is in power. There may therefore be a conflict about ideology which we assume is symmetric, i.e. $\delta^L = \delta^S = \delta$. The higher is δ, the stronger is ideological polarization.

2.2 Politicians

A subset of citizens from each group of voters decide exogenously to run for office. Among politicians from each group of voters an individual is initially picked at random to be the group

leader, denoted p^j, $j \in \{L, S\}$. In a presidential regime this person runs for president, while in a parliamentary regime this person runs for the post of prime minister. Politicians are elected from the citizens and thus they have preferences for public goods and ideology that are aligned with those of a citizen in the group from which they originate. In addition, however, politicians value personal rents. Denote the set of elected politicians at time t by P_t, and the set of politicians elected from group $j \in \{L, S\}$ by $P_t^j \subseteq P_t$. The preferences of a politician $i \in P_t^j$ is given by

$$\sum_{t=0}^{\infty} \beta^t U_t^{i,j} = \sum_{t=0}^{\infty} \beta^t \left(R_t^i + F(G_t^j) + (1 - \gamma)F(G_t^{-j}) + \delta^j \right),$$

where $U_t^{i,j}$ is the instantaneous utility at time t and R_t^i denotes rents to politician i at time t. Thus the only difference between politicians and non-politicians from a particular group is that politicians also value the rents which can be extracted from office holding.

We assume that politicians can not commit to policy.[6] Thus when in office they maximize their expected utility, subject to the public sector budget constraint

$$G_t^j + G_t^{-j} + \sum_{i \in P_t} R_t^i = B, \tag{2}$$

where B denotes per period public income which we treat as exogenous (and none of the variables in the budget constraint can be strictly negative which is presumed in the rest of the analysis without stating this explicitly).

2.3   Constitution and timing of events

At the start of a period elections are held according to an existing political constitution denoted ξ_t. We consider two different such political constitutions - presidentialism, indexed by pr, and parliamentarism, indexed by pa. Thus $\xi_t \in \{pa, pr\}$. Under presidentialism the president and the legislature are both elected directly by citizens. Under parliamentarism the legislature is elected directly by the citizens. The post election government formation and policy process differs under the two constitutions. Under presidentialism the president may be granted the right to decide policy if a majority of politicians agree. If not we assume that some status quo policy is implemented. Under parliamentarism the creation of the ruling coalition and policy is determined by bargaining between politicians in the legislature. If a coalition fail to be established or fail to reach an agreement on policy then the government is brought down and the status quo policy is implemented.

Finally, at the end of the period the prime minister or the president decides whether or not to propose a change in the constitution. If no change is proposed then the constitution is unchanged, while if a change in the constitution is proposed, and approved by a majority of politicians, the change is implemented and the next period starts with a new constitution.

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[6] As in the citizen candidate model of Osborne and Slivinski (1996) and Besley and Coate (1997).

More specifically, the sequence of events at each date t is as follows.

1. Elections take place according to the rules in the existing constitution $\xi_t \in \{pa, pr\}$.

2. Government formation, legislative bargaining and policy is determined according to the rules in the existing constitution $\xi_t \in \{pa, pr\}$.

3. Agents receive their payoffs.

4. The constitution ξ_t is either unchanged ($\xi_{t+1} = \xi_t$) or changed ($\xi_{t+1} \neq \xi_t$) according to the rules in the existing constitution $\xi_t \in \{pa, pr\}$.

5. A new period starts.

Before we proceed with the analysis we need to explain the constitutional rules in steps 1, 2 and 4. Although we borrow heavily from existing literature in the modelling of elections and legislative bargaining it is useful to discuss in detail some of the effects of our assumptions and their motivation. The constitutional details in steps 1, 2 and 4 are as follows:

Step 1 (Elections): In the legislative election each citizen $k \in K$ votes for a politician of type $j \in \{L, S\}$. In a presidential election each citizen $k \in K$ votes for candidate p^j, $j \in \{L, S\}$. If the constitution is presidential, voters elect one president and a legislature of politicians of mass $M - 1 > 2$.[7] The president elected is the one with the most votes, and the seat share in the legislature for each group $j \in \{L, S\}$ is proportional to the vote share. If the constitution is parliamentary, voters elect a legislature of politicians of mass M, with a seat share in the legislature for each group $j \in \{L, S\}$ proportional to the vote share.

Step 2 (Legislative bargaining and policy): If the constitution is presidential, $\xi_t = pr$, the president can not be removed by the legislature. The president is granted the right to decide policy if at least $\frac{M}{2}$ of the politicians agree. In exchange for support the president may offer rents $\{R_t^i(pr)\}_{i \in P_t}$ to politicians. Each politician $i \in P_t$ decides if to support that the president decides policy. We term the set of politicians who supported the president his coalition; $C_t(pr)$. If the president does not get the right to decide policy a status quo policy where all politicians get the same personal rent $R_t^i = \frac{B}{M}$ is implemented.

If the constitution is parliamentary, $\xi_t = pa$, a politician is drawn at random from the legislature to decide which group shall shall try to establish a ruling coalition. The prime minister from the nominated group then invites a coalition of $\frac{M}{2}$ politicians to bargain about forming a government and decide on a policy platform. If the invited coalition $C_t(pa) \subseteq P_t$ does not agree on a policy proposal the government is not formed and the same status quo policy

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[7]Below we shall also simplify by letting a share of the votes for politicians from one group map into the same share of legislators from that group. Thus we assume that M is sufficiently large that such an approximation is valid despite M being discrete.

as under presidentialism $R_t^i = \frac{B}{M}$ is implemented. Since all members of the coalition including the prime minister face the same consequence if a coalition does not agree we simply assume symmetric Nash-bargaining. If the coalition agrees on a policy proposal, this proposal is voted over in the legislature. If less than $\frac{M}{2}$ of the politicians vote in favor of the policy proposal the government is brought down and the status quo policy $R_t^i = \frac{B}{M}$ is implemented. If a majority supports the proposal the government survives and the proposal is implemented.

Step 4 (Constitutional changes): Under a presidential regime the president decides whether or not to propose a switch to a parliamentary regime, i.e. $\xi_{t+1} = pa$. Under a parliamentary regime the prime minister decides whether or not to propose a switch to a presidential regime, namely $\xi_{t+1} = pr$. Each politician $i \in P_t$ decides to support an eventual proposal of changing the constitution, or not to support such a proposal. If a change in the constitution in proposed it is implemented if at least $\frac{M}{2}$ of the politicians $i \in P_t$ approve. Otherwise the constitution is unchanged $\xi_{t+1} = \xi_t$.

2.4   Discussion

A number of assumptions in this simple election and government formation game should be noted. First, when a proposal does not achieve a majority the status quo policy implemented in both regimes is to share all public funds between elected politicians. Although alternative status quo policies could have been modelled, the crucial feature we want to ensure with this simple formulation is that the status quo 'rule' is the same in both regimes. We do not want some exogenously imposed differences in status quo policy between the regimes to define their characteristics. Thus we have settled for a very simple status quo policy, which is the same as in Baron (1998) and Diermeier and Feddersen (1998), and which is the same under both types of constitutions.

Second, as government formation is determined by post election bargaining in a parliamentary regime, while a president himself decides on his government, we assume that the political minority has more power in the former than in the latter regime. We have settled for the simplest possible version of such an assumption, where in a presidential regime the president himself proposes the ruling coalition while in a parliamentary regime a politician is drawn at random from the legislature to decide who shall try to form a ruling coalition. In this way the political agenda setting power of the minority is less than that of the majority, but it is not zero.[8] If the minority has no political power in a parliamentary regime, then as will be easily

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[8]This assumption is consistent with the literature which assumes that the probability that a party leader will be recognized to form a coalition depends on the party's vote share (for relevant empirical evidence see Diermeier and Merlo, 2004). One difference here is that for simplicity in the basic model we have only two parties. Although this is consistent with many African countries, where despite the "stylized fact" that countries are very heterogeneous there are often only two dominants groups (for instance in Rwanda and Burundi Tutis and Hutu, in Zimbabwe Shona and Nbebele, in Sierra Leone Mende and Temne, and in Kenya Kikuyu and Luo), the mechanism we model holds also in a model with many groups as we show in Section 5.1.

understood from the analysis below, a switch to presidentialism is never possible in our model. We extend the model to more than two groups, so that no single group can have a majority in the legislature, in Section 5.1. Thus in such a case who constitutes the 'minority' and 'majority' becomes endogenous, but despite of this we show that our comparative static results from the basic model with two groups remain.

Third, with a parliamentary constitution the prime minister has less political power within the ruling coalition than a president has. This is captured in our model by the assumption that the prime minister is brought down with his coalition if the coalition falls, while a president in our model can not be removed by the legislature. We therefore assume that the president presents a take it or leave it proposal to his coalition members, while a prime minister engages in Nash bargaining.

Fourth, while there is no vote of confidence in the legislature under a president elected directly by the citizens, under a parliamentary regime the ruling coalition is dependent on the continuous support in the legislature. As a consequence, an agreement within the ruling coalition is not only an agreement on a particular issue viewed in isolation, but also an agreement on the survival of the ruling coalition. Thus a vote of confidence, as is well known from the work of Huber (1996), Baron (1998) and Diermeier and Feddersen (1998), increases the total utility of politicians in the ruling coalition. In our model this holds as under a parliamentary constitution the outcome is jointly Pareto efficient between coalition members (since it is determined by Nash bargaining), while it need not be under a presidential regime where the president is granted the right to decide policy in return for rents (or bribes) to the politicians in legislature. Below we will have our main emphasis on the case where despite of higher total coalition utility under parliamentarism a group leader will prefer to be a president rather than a prime minister. A president is more powerful and therefore presidentialism may increase his utility even if total utility of the coalition falls. As will easily be understood below, if a group leader prefers to be a prime minister instead of a president, a parliamentary constitution is the unique equilibrium in our model.

Fifth, note that the agenda setting power over constitutional changes can alternatively be interpreted as veto power: seen in this light our assumptions imply that under presidentialism the president has veto power over changes to the constitution, while under parliamentarism the prime minister has such veto power.

3   Definition of Equilibrium

We focus below on pure strategy Markov Perfect Equilibria (MPE), in which strategies depend only on the payoff-relevant state of the world and not on the entire history of play (other than the effect of this history on the current state). The payoff-relevant state here only includes

$\xi \in \{pa, pr\}$, and since we formulate the model recursively we drop time subscripts for the remainder of the paper.

3.1 Strategies

Denote the strategy of a group leader p^j given that he is the national leader by ψ^j. This strategy is a vector (conditional on the existing constitution) describing the set of proposed members of a coalition, rents to politicians, the type and quantity of public goods, and the decision to propose a switch in the constitution or not. If the leader is not in power his set of strategies is the same as that of other politicians. Denote also by ψ^{-j} the strategies of *all* other players (citizens and other politicians) than the leader p^j.

Denote the strategy of a politician i elected for the legislature (other than the national leader) by ϕ^i. This strategy is again a vector (conditional on the existing constitution), describing all the voting decisions of politicians on all policy proposals. Similarly denote the strategies of *all* other players by ϕ^{-i}.

Finally, denote the strategy of a citizen k by χ^k, and let χ^{-k} be the strategies of *all* other citizens and politicians. The strategy of citizens is a vector (conditional on the existing constitution) with all the voting decisions in all elections for the legislature and the president.

3.2 Equilibrium concepts

Since we model expected discounted utility the one stage deviation principle can be used even if we have an infinite horizon game.[9] Thus let $V^{p^j}(\xi|\psi^{-j})$ denote the expected utility of group leader p^j, $j \in \{L, S\}$, of starting out with a constitution $\xi \in \{pa, pr\}$ given the strategies of all other players ψ^{-j}. Also let $\Pi^j(\xi, \psi^j|\psi^{-j})$ denote the probability that the group leader from group j becomes the national leader under constitution ξ, when his strategy is ψ^j, and given the strategies of all other players ψ^{-j}. Let similarly $\Omega(\xi, \psi^j|\psi^{-j})$ be the probability the constitution will not be changed at the end of the period under initial constitution $\xi \in \{pa, pr\}$, when his strategy is ψ^j, and given the strategies of all other players ψ^{-j}.

We can now write payoffs recursively, and we begin with those of a political leader p^j, $j \in \{L, S\}$.

$$
\begin{aligned}
V^{p^j}(\xi|\psi^{-j}) &= \max_{\{\psi^j\}} \{\Pi^j(\xi, \psi^j|\psi^{-j})U^{p^j}(\xi, \psi^j|\psi^{-j}, p^j) \\
&\quad + (1 - \Pi^j(\xi, \psi^j|\psi^{-j}))U^{p^j}(\xi, \psi^j|\psi^{-j}, p^{-j}) \\
&\quad + \beta[\Omega(\xi, \psi^j|\psi^{-j})V^{p^j}(\xi|\psi^{-j}) \\
&\quad + (1 - \Omega(\xi, \psi^j|\psi^{-j}))V^{p^j}(-\xi|\psi^{-j})]\}.
\end{aligned}
\tag{3}
$$

[9]See e.g. Theorem 4.2 in Fudenberg and Tirole (1991), which applies here as in our game the overall payoffs are a discounted sum of per period payoffs that are bounded.

The two first lines in (3) consist of his current period expected utility. To clarify the intuition we explain the equation in some detail: with probability $\Pi^j(\xi, \psi^j | \psi^{-j})$ the political leader becomes the national leader (president or prime minister), in which case his instantaneous utility is $U^{p^j}(\xi, \psi^j | \psi^{-j}, p^j)$, i.e. the utility for group leader p^j when the constitution is ξ, his strategy is ψ^j, the strategies of the other players are given by ψ^{-j}, and it is given that p^j becomes the national leader. With the corresponding probability he does not become national leader, in which case his instantaneous utility is $U^{p^j}(\xi, \psi^j | \psi^{-j}, p^{-j})$. The last two lines in (3) state his discounted expected continuation value, where with the probability $\Omega(\xi, \psi^j | \psi^{-j})$ the constitution is unchanged when it starts out as ξ, his strategy is ψ^j, and the strategies of the others are given by ψ^{-j}. The corresponding probability the constitution is changed is given by $1 - \Omega(\xi, \psi^j | \psi^{-j})$, in which case his continuation utility is $V^{p^j}(-\xi | \psi^{-j})$ (i.e. the payoff if the constitution is changed).

Next we find the value functions for politicians in the legislature. Let $W^{i,j}(\xi | \phi^{-i})$ denote the expected utility of a politician i from group j in the legislature starting out with a constitution $\xi \in \{pa, pr\}$ given the strategies of all other players ϕ^{-i}. Furthermore let the probability that politician i from group j is included in the coalition when his own group leader wins power be $\Phi^{i,j}(\xi, \phi^i | \phi^{-i}, p^j)$, while the probability he is included in the coalition if the group leader from the other group $-j$ wins is similarly given by $\Phi^{i,j}(\xi, \phi^i | \phi^{-i}, p^{-j})$.

The value function can now be written recursively in the following equation (4):

$$
\begin{aligned}
W^{i,j}(\xi | \phi^{-i}) = \max_{\{\phi^i\}} \{ &\Pi^j(\xi, \phi^i | \phi^{-i}) [\Phi^{i,j}(\xi, \phi^i | \phi^{-i}, p^j) U^{i,j}(\xi, \phi^i | \phi^{-i}, p^j, i \in C) \\
&+ (1 - \Phi^{i,j}(\xi, \phi^i | \phi^{-i}, p^j)) U^{i,j}(\xi, \phi^i | \phi^{-i}, p^j, i \notin C)] \\
&+ (1 - \Pi^j(\xi, \phi^i | \phi^{-i})) [\Phi^{i,j}(\xi, \phi^i | \phi^{-i}, p^{-j}) U^{i,j}(\xi, \phi^i | \phi^{-i}, p^{-j}, i \in C) \\
&+ (1 - \Phi^{i,j}(\xi, \phi^i | \phi^{-i}, p^{-j})) U^{i,j}(\xi, \phi^i | \phi^{-i}, p^{-j}, i \notin C)] \\
&+ \beta [\Omega(\xi, \phi^i | \phi^{-i}) W^{i,j}(\xi | \phi^{-i}) \\
&+ (1 - \Omega(\xi, \phi^i | \phi^{-i})) W^{i,j}(-\xi | \phi^{-i})] \}.
\end{aligned}
\tag{4}
$$

With a probability $\Pi^j(\xi, \phi^i | \phi^{-i})$ the group j leader becomes the national leader. In that case there is a probability $\Phi^{i,j}(\xi, \phi^i | \phi^{-i}, p^j)$ politician i is included in the coalition, in which case he gets the instantaneous utility $U^{i,j}(\xi, \phi^i | \phi^{-i}, p^j, i \in C)$, while under the corresponding probability his instantaneous utility is $U^{i,j}(\xi, \phi^i | \phi^{-i}, p^j, i \notin C)$. With probability $1 - \Pi^j(\xi, \phi^i | \phi^{-i})$ his group leader does not win power, in which case he gets the expected current payoff under a national leader from the other group, which is a symmetric expression to what he gets under a national leader from own group. Finally, the last two lines in (4) shows the discounted expected continuation value.[10]

---

[10] Strictly speaking we have made a shortcut here, as these payoffs also depend on the probability the politician that is elected in the present period is not elected in the future. However, this probability will turn out to be zero, and we simplify the expressions at this stage by incorporating that.

Finally let $X^{k,j}(\xi|\chi^{-k})$ denote the expected utility of a voter k from group j when the constitution is $\xi \in \{pa, pr\}$. Then

$$
\begin{aligned}
X^{k,j}(\xi|\chi^{-k}) \;=\; \max_{\{\chi^k\}} \{ &\Pi^j(\xi, \chi^k|\chi^{-k})Z^{k,j}(\xi, \chi^k|\chi^{-k}, p^j) \\
&+ (1 - \Pi^j(\xi, \chi^k|\chi^{-k})Z^{k,j}(\xi, \chi^k|\chi^{-k}, p^{-j}) \\
&+ \beta[\Omega(\xi, \chi^k|\chi^{-k})X^{k,j}(\xi|\chi^{-k}) \\
&+ (1 - \Omega(\xi, \chi^k|\chi^{-k}))X^{k,j}(-\xi|\chi^{-k})]\}.
\end{aligned}
\tag{5}
$$

where the interpretation follows immediately from those we gave for the two previous Bellman equations.

We study the pure strategy MPE of this model under two alternative assumptions about the voting strategies of citizens. We term these two different cases sincere voting and strategic voting. We define them as follows:

Definition 1: A *sincere* pure strategy MPE consists of voting decisions where all citizens vote for politicians from their own group in all elections, and a vector of strategies $\{\{\psi^j\}_{j\in\{L,S\}}, \{\phi^i\}_{i\in P}\}$ for group leaders and politicians that simultaneously solve (3) and (4).

Definition 2: A *strategic* pure strategy MPE consists of a vector of strategies $\{\{\psi^j\}_{j\in\{L,S\}}, \{\phi^i\}_{i\in P}, \{\chi^k\}_{k\in K}\}$ that simultaneously solve (3), (4), and (5).

Thus under sincere voting citizens vote for politicians that have preferences most closely aligned with themselves, while all group leaders and politicians play best response to the strategies of all other players for all states. Under strategic voting all strategies by all players are best responses to the other strategies for all states. (Obviously sincere voting and strategic voting may produce the same equilibrium, but as we will see they need not do so).

Another way to think about the difference between these two types of equilibria is that the sincere voting case can be seen as an equilibrium where voters are 'passive' and the real policy choices are made in the legislature with little voter control. Thus this case most closely resembles the cases of Baron (1998) and Diermeier and Feddersen (1998) where voting by citizens is not incorporated. In the strategic voting case, by contrast, voters can have more power over policy decisions in the legislature because in their strategies they incorporate the full set of strategies by all the other players, with the possibility that they can elect representatives that have preferences less aligned with themselves if this produces a higher expected discounted payoff. Thus this case most closely resembles the case of Austen-Smith and Banks (1988).

4 Analysis

To find the MPE we first find the current period equilibrium for a given constitution and any composition of the legislature. We then find the MPE under the two alternative voting assumptions from the Bellman equations (3), (4), and (5).

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4.1 Presidentialism

Consider a president elected from group $j \in \{L, S\}$. The president must find the policy vector $\{G^j(pr), G^{-j}(pr), \{R^i(pr)\}_{i \in P}\}$ that maximizes utility subject to the budget constraint and the presidential constitutional rules.

As usual we employ backwards induction. Given that the president has selected his coalition of supporters $C(pr)$ and they have agreed to let him decide policy, the president provides public goods of type G^j and rents to himself $R^{p^j}(pr)$ in a quantity determined by the solution to following programming problem:

$$\max_{\{G^j(pr), R^{p^j}(pr)\}} [R^{p^j}(pr) + F(G^j(pr))], \tag{6}$$

subject to the budget constraint

$$G^j(pr) + R^{p^j}(pr) + \sum_{i \in C(pr)} R^i(pr) = B, \tag{7}$$

The unique solution to this problem is that public goods are determined according to

$$F_G(G^j(pr)) = 1. \tag{8}$$

Realizing the policy of the president, a member of the selected coalition will support that the president decides policy provided the participation constraint is fulfilled. In turn, this determines the necessary amount the president has to give in rents or bribes to each member in his coalition to gain support as

$$R^i(pr) = \frac{B}{M} - F(G^j(pr)) \tag{9}$$

when coalition member $i \in P^j$ and

$$R^i(pr) = \frac{B}{M} - (1 - \gamma)F(G^j(pr)) \tag{10}$$

when coalition member $i \in P^{-j}$.

Moreover since more rents to coalition members means less rents to the president, the president proposes a *minimum winning coalition* of mass $\frac{M}{2}$. If the coalition consists of $\frac{M}{2} - N$ members from the presidents own group j and N members from group $-j$, it follows from (7), (9) and (10) that the rents to the president is given by

$$R^{p^j}(pr) = \frac{M+2}{2M}B - G^j(pr) + \left(\frac{M-2}{2} - \gamma N\right) F(G^j(pr)). \tag{11}$$

Thus, as the rents for the president is decreasing in N, in establishing the coalition it is always strictly better to include politicians from own group than politicians from the other group (which consequently will be included in the coalition only when the president can not form a majority with coalition members from his own group).

We may summarize the political equilibrium under presidentialism as:

Proposition 1 *With a presidential constitution the president forms a minimum winning coalition of mass $\frac{M}{2}$. Those outside the minimum winning coalition receive zero personal rents. A president from group $j \in \{L, S\}$ includes as few as possible of group $-j$ members in his coalition.*

The provision of public goods is given by (8), the rents to the president by (11), the rents to each coalition member $i \in P^j$ by (9), and the rents to each coalition member $i \in P^{-j}$ by (10).

4.2 Parliamentarism

Again we apply backwards induction. Consider a prime minister from group $j \in \{L, S\}$ that has successfully established a coalition $C(pa)$ consisting of himself as well as $\frac{M}{2} - N$ members from group j and N members from group $-j$. Should the policy negotiations not succeed all members of the coalition including the (potential) prime minister would receive the same utility $\frac{B}{M}$. We focus in the main text on the case where a coalition headed by a prime minister from group j provides goods of type G^j. We delegate the case where such a coalition provides public goods of type G^{-j} to the Appendix. All our qualitative results to follow in the rest of the paper are valid also in this case.

The outcome of the negotiations follows from the maximization of the symmetric Nash product:

$$\max_{\{G^j(pa), R^j(pa), R^{-j}(pa)\}} \left[R^j(pa) + F(G^j(pa)) - \frac{B}{M} \right]^{\frac{M}{2} - N} \left[R^{-j}(pa) + (1 - \gamma)F(G^j(pa)) - \frac{B}{M} \right]^{N},$$

subject to the budget constraint

$$G^j(pa) + \left(\frac{M}{2} - N \right) R^j(pa) + N R^{-j}(pa) = B.$$

The unique solution to this problem is that public goods are determined according to

$$F_G(G^j(pa)) = \frac{1}{\frac{M}{2} - \gamma N}, \tag{12}$$

and that the rents to a coalition member is given by

$$R^i(pa) = \frac{2}{M} \left(B - G^j(pa) - N\gamma F(G^j(pa)) \right) \tag{13}$$

when coalition member $i \in P^j$ and

$$R^i(pa) = \frac{2}{M} \left(B - G^j(pa) \right) + \frac{M - 2N}{M} \gamma F(G^j(pa)) \tag{14}$$

when coalition member $i \in P^{-j}$. Rents to coalition members from the other group exceeds rents to members from own group by $\gamma F(G^j(pa))$. The intuition for this is that rents to coalition members from the other group have to compensate for their lower valuation of public goods.

Turning now to the establishment of the coalition, it is straight forward to verify that the prime minister prefers to have members of his own group in the coalition, and also that all those

included in the coalition will strictly prefer to be a member of the coalition. To see this note that the coalition is preferable to the status quo for the prime minister (as well as those from his own group included in the coalition) if

$$R^j(pa) + F(G^j(pa)) \geq \frac{B}{M},$$

which by inserting from (13) is equivalent to

$$\frac{B}{2} + \left(\frac{M}{2} - \gamma N\right) F(G^j(pa)) - G^j(pa) \geq 0$$

Inserting from the first order condition (12) this yields

$$\frac{B}{2} + \frac{F(G^j(pa))}{F_G(G^j(pa))} - G^j(pa) \geq 0, \tag{15}$$

which is always fulfilled with strict inequality as $F_{GG}(G^j(pa)) < 0$ implies that $\frac{F(G^j(pa))}{F_G(G^j(pa))} - G^j(pa) > 0$. Moreover note that the left hand side of (15) is increasing in G^j, and in turn that from (12) $G^j(pa)$ is decreasing in N, implying that the utility of the prime minister is decreasing in the number of coalition members from group $-j$. Finally note that as the utility of all coalition members will be the same, also members from group $-j$ will be happy to be included in the coalition. Thus all coalition politicians will vote in favor of the policy proposal by the coalition.

We may summarize the political equilibrium under a parliamentary regime as:

Proposition 2 *With a parliamentary constitution a minimum winning coalition containing a mass $\frac{M}{2}$ of politicians will always form, and the coalition will have the support of the legislature. Those outside the minimum winning coalition receive zero personal rents. A prime minister from group $j \in \{L, S\}$ includes as few as possible of group $-j$ members in his coalition.*

The provision of public goods is given by (12), the rents to the prime minister and each coalition member $i \in P^j$ by (13), and the rents to each coalition member $i \in P^{-j}$ by (14).

Under parliamentarism politicians from both groups provide more public goods than under presidentialism. The reason for this is that parliamentarism involves bargaining within the ruling coalition over policy. As a result the prime minister is not the residual claimant on rents. The bargaining within the ruling coalition implies that compared to presidentialism, politicians offer more in directions where their preferences are (more or less) aligned such as for public goods, and less in directions where there is a direct conflict in preferences such as for the distribution of rents.

For the same reason total personal rents to politicians in the coalition are higher under presidentialism than under parliamentarism. This is the opposite result from Persson, Roland and

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Tabellini (2000), which predict that rents are the highest under parliamentarism. The difference from the Person, Roland and Tabellini (2000) result is due to their association of presidentialism with checks and balances as in the US presidential system, while under parliamentarism in their model there are no such checks and balances. Then under parliamentarism the politicians can appropriate all public resources for personal rent, which in their model is the only thing politicians care about. To prevent this voters implement a coordinated strategy of providing politicians sufficiently much rents today that they prefer not to steal the whole public sector budget, but instead be reelected so that they can get a new round of rents tomorrow. In this way a parliamentary constitution generates more rents to politicians than a presidential one.

It is also interesting to compare our results to those of Diermeier and Feddersen (1998), since we have modelled similar effects which lead to high rents to coalition members in their case - but still get the opposite result. The reason is that we have extended the dimensions of policy. In their setting a given amount of rents is divided between politicians, and the parliamentary regime allows politicians within the coalition to capture a higher fraction of these rents than otherwise. In our setting we include public goods and an endogenous amount of total rents. Then, as in their model, the utility of politicians within the coalition is higher with parliamentarism - although this involves lower not higher rents because we have extended the policy space.

Leaving aside presidents or prime ministers, it is more favorable to be in the winning coalition under a parliamentary than under a presidential constitution. Under a parliamentary constitution coalition members have more power than under a presidential regime, because policy is decided by bargaining and all coalition members have the same to lose should they not agree. In turn, this makes the prime minister weaker, but the other members of the coalition stronger compared to a presidential regime where the president can not be removed by his coalition members.

This raises the question why members of a parliamentary coalition would vote for presidentialism? Such a regime involves lower utility of being a part of the coalition than under parliamentarism. The point, however, is that although this intuition is correct it is not the complete intuition. The reason is that the probability of being included in future coalitions may depend on if there is a presidential or parliamentary regime.

4.3 Voting and equilibrium

We now investigate the equilibrium in the case of sincere voting among citizens and in the case where citizens vote strategically, starting out with the former.

Sincere voting

Under sincere voting all voters vote for politicians from their own group. Thus in this case the share of group L politicians in the legislature will equal the share of group L in the population λ,

and the share of group S politicians in the legislature will equal $1 - \lambda$. Under presidentialism the president elected will be the leader of group L. Thus it is obvious that all minority politicians prefer parliamentarism, as presidentialism means a low quantity of public goods of a type the minority does not prefer, and since minority politicians will never receive rents because only majority politicians will be included in the minimum winning coalition.

The situation is more involved for majority politicians, and let us start out with discussing the constitution preferred by the majority group leader. Consider first a (stable) presidential regime. Under presidentialism the elected president will be the group L leader, thus $\Pi^L(pr) = 1$. Inserting this as well as $\Omega(pr) = 1$ and the policy under presidentialism into (3) we obtain the utility of the majority group leader as

$$V^{p^L}(pr) = \frac{1}{1 - \beta} \left(\frac{M + 2}{2M} B + \frac{M}{2} F(G^L(pr)) - G^L(pr) + \delta \right). \tag{16}$$

Consider next a (stable) parliamentary regime. In this case there is a probability $\Pi^L(pa) = \lambda$ the majority leader is elected prime minister, in which case the minimum winning coalition consists of majority politicians only. With the converse probability $1 - \lambda$ the minority group leader is elected prime minister. Inserting this as well as $\Omega(pa) = 1$ and the policy under parliamentarism into (3) we obtain the utility of the majority group leader as

$$V^{p^L}(pa) = \frac{1}{1 - \beta} \left(\lambda \frac{2}{M}(B - G^L(pa)) + \lambda F(G^L(pa)) + (1 - \lambda)(1 - \gamma)F(G^S(pa)) + \lambda \delta \right). \tag{17}$$

To see which constitution the majority group leader prefers, define δ_* as the δ that solves the equation $V^{p^L}(pr) = V^{p^L}(pa)$. Thus

$$\delta_* \equiv \frac{1}{1 - \lambda} \left(\begin{array}{c} -\left(\frac{1}{2} - \frac{2\lambda - 1}{M}\right) B - \frac{M}{2} F(G^L(pr)) + G^L(pr) \\ -\lambda \frac{2}{M} G^L(pa) + \lambda F(G^L(pa)) + (1 - \lambda)(1 - \gamma)F(G^S(pa)) \end{array} \right). \tag{18}$$

From this an obvious but important result follows:

Proposition 3 *Under sincere voting then when $\delta < \delta_*$ parliamentarism is the unique equilibrium, i.e. $\Omega(pa) = 1$ and $\Omega(pr) = 0$. When $\delta > \delta_*$ presidentialism is an absorbing state, i.e. $\Omega(pr) = 1$.*

Proof. Consider first the case where $\delta < \delta_*$. In this case, whatever the initial constitution the majority group leader prefers a parliamentary constitution. It is obvious that if the majority group leader prefers a parliamentary constitution then so does the rest of the majority politicians, as they have a lower utility than the group leader of a presidential constitution and a higher utility of a parliamentary constitution (the latter as now and then they will be included in a parliamentary coalition formed by the minority group). Thus all politicians will prefer a parliamentary constitution, which is then the unique equilibrium.

Consider next the case where $\delta > \delta_*$. In this case the majority group leader under presidentialism will be elected president, and will not propose to switch the constitution as his utility is higher with a presidential than with a parliamentary constitution. Thus presidentialism is an absorbing state. ∎

Note first that δ_* may perfectly well be negative, implying that even without ideological disagreement the majority group leader prefers to be president rather than prime minister. Then we can never have parliamentarism as an unique equilibrium. In such a case, the higher expected rents to the group leader under presidentialism are sufficient for him to prefer presidentialism even without ideological disagreements, and thus he would never propose a switch away from presidentialism. In such a case presidentialism will always be an absorbing state.

If on the other hand δ_* is positive and also at the same time $\delta < \delta_*$, then it might be the case that even the majority group leader prefers parliamentarism. In such a case the benefits to a majority group prime minister of parliamentarism outweigh the increased rents a majority group president will get. Then no politicians face a trade-off in our model.

Thus the interesting case to study is what happens when $\delta > \delta_*$. We already know that in such a case presidentialism is an absorbing state, and so in line with our motivation the relevant case to study is when the initial constitution is parliamentary.

Proposition 4 *Assume that a group leader prefers to be president rather than prime minister (i.e. $\delta > \delta_*$). Then with a parliamentary constitution and sincere voting*

i) When

$$\frac{(2\lambda - 1)}{2\lambda}\left(-\frac{B}{M}(3 - 2\lambda) + F(G^L(pr))\right) + (1 - \lambda)\delta + \frac{G^L(pa)}{M} - \lambda F(G^L(pa)) \leq \quad (19)$$
$$\frac{(1 - \lambda)(2\lambda - 1)}{\lambda}\left(-\frac{G^S(pa)}{M} + \left((1 - \lambda)\gamma + \frac{\lambda(1 - \gamma)}{2\lambda - 1}\right)F(G^S(pa))\right)$$

parliamentarism is an absorbing state , i.e. $\Omega(pa) = 1$.

ii) When (19) does not hold then parliamentarism is not a stable constitution. The probability the constitution is switched to a presidential one in a given period is $\lambda > \frac{1}{2}$. (From then on, presidentialism is the absorbing state).

Proof. Starting out with a parliamentary constitution it follows directly from Proposition 3 that if there is a prime minister from the majority, then he will propose a change in the constitution if he can mobilize sufficient support for such a regime change. The remaining question is now if majority politicians in the legislature will support a proposal from the majority prime minister to change the constitution into a presidential one. We first find the payoff of politicians if the constitution becomes presidential. Then we already know that $\Omega(pr) = 1$ and $\Pi^L(pr) = 1$. There is a probability $\Phi^{i,L}(pr) = \frac{1}{2\lambda}$ a politician $i \in P^L$ is included in the minimum

winning coalition.[11] Inserting this and presidential policy outcomes from Proposition 1 in (4), solving for the expected payoff from presidentialism we get

$$W^{i,L}(pr) = \frac{1}{(1-\beta)2\lambda}\left(\frac{B}{M} + (2\lambda - 1)F(G^L(pr)) + 2\lambda(1-\gamma)\right), \forall i \in P^L.$$

If the majority politicians in the legislature does not support a shift to presidentialism, then there is a probability $\Pi^L(pa) = \lambda$ the majority politician is elected prime minister, in which case there is a probability $\Phi^{i,L}(pa) = \frac{1}{2\lambda}$ a politician from the majority group is included in the minimum winning coalition. With probability $1 - \lambda$ the group S leader becomes prime minister, in which case there is a probability $\Phi^{i,S}(pa) = \frac{2\lambda-1}{2\lambda}$ a majority politician becomes part of the winning coalition. Also, if a shift to presidentialism is not preferred today neither will it be tomorrow, thus $\Omega(pa) = 1$. Inserting in (4) and solving for the expected payoff from parliamentarism we get

$$W^{i,L}(pa) = \frac{1}{(1-\beta)}\left(\begin{array}{c} \frac{B}{M}\left(1 + \frac{(1-\lambda)(2\lambda-1)}{\lambda}\right) - \frac{G^L(pa)}{M} + \lambda F(G^L(pa)) + \lambda\delta \\ + \frac{(1-\lambda)(2\lambda-1)}{\lambda}\left(-\frac{G^S(pa)}{M} + \left((1-\lambda)\gamma + \frac{\lambda(1-\gamma)}{(2\lambda-1)}\right)F(G^S(pa))\right) \end{array}\right), \forall i \in P^L.$$

$W^{i,L}(pa) \geq W^{i,L}(pr)$ implies inequality (19) which gives part (i) of the proposition since then politicians from the majority will not support a change in the constitution, and therefore the majority prime minister finds no reason to propose such a shift. Part (ii) of the proposition follows since when (19) does not hold then $W^{i,L}(pr) > W^{i,L}(pa)$, and majority politicians support a shift in the constitution. Such a shift will be proposed by a prime minister from the majority group (but not from the minority group). The probability there is a prime minister from the majority group is $\lambda > \frac{1}{2}$. ∎

The main comparative statics of our model are given by the following corollary to Proposition 4:

Corollary 1 *Assume that a group leader prefers to be president rather than prime minister. Then a parliamentary constitution is more likely to be unstable (in the sense that the set of parameters where the constitution is unstable is larger):*

i) The stronger is the conflict over public goods, that is the higher is γ.

ii) The stronger is ideological polarization, that is the higher is δ.

iii) The smaller is the public budget, that is the smaller is B.

Proof. Part i) follows by noting that the left hand side of (19) is independent of γ, while

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[11]Note that since the president is certain to be in the coalition the probability that another politician from group L is included is given by $\left(\frac{\frac{M}{2}-1}{\lambda M-1}\right)$. To save unnecessary notation we assume that M is sufficiently large that this can be approximated by $1/2\lambda$.

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the derivative of the right hand side of (19) is given by

$$\frac{(1-\lambda)(2\lambda-1)}{\lambda}\left(\begin{array}{c}\left(-(1-\lambda)+\frac{\lambda}{(2\lambda-1)}\right)F(G^S(pa))\\+\left(-\frac{1}{M}+\left((1-\lambda)\gamma+\frac{\lambda(1-\gamma)}{(2\lambda-1)}\right)F_G(G^S(pa))\right)\frac{dG^S(pa)}{d\gamma}\end{array}\right).$$

Inserting for $F_G(G^S(pa))$ from (12) and taking into account that $N=(\lambda-\frac{1}{2})M$ this reduces to

$$\frac{1-\lambda}{\lambda}\left((1-2\lambda(1-\lambda))F(G^S(pa))+\frac{1-\gamma(2\lambda-1)}{M}(1-\gamma)\frac{dG^S(pa)}{d\gamma}\right),$$

which is negative as it can be verified from (12) that $\frac{dG^S(pa)}{d\gamma}<0$. Then it follows that a higher γ makes it less likely that (19) holds.

Part ii) follows as the left hand side of (19) is increasing in δ while the right hand side is independent of δ.

Part iii) follows as the left hand side of (19) is decreasing in B while the right hand side is independent of B. Thus a smaller B makes it less likely that (19) holds. ∎

When the conflict over public goods is strong, the future utility of being included in minority coalitions under parliamentarism is low, making this regime relatively less attractive compared to presidentialism. Therefore, presidentialism, by ensuring that a politician from the majority group decides the type and quantity of public goods, becomes valuable for politicians. Similarly, presidentialism is more likely to be installed the higher is ideological polarization δ. With a strong ideological conflict it becomes attractive for majority politicians to install presidentialism, because compared to a parliamentary constitution this increases the future probability that ideology is in accordance with the majority view. Furthermore, for a sufficiently high δ it can easily be seen that (19) is never satisfied, so that a parliamentary constitution will never be stable.

Also, note that presidentialism is more likely to be installed the lower is the public budget B. The intuition for this is that politicians (other than group leader) have more political power with a parliamentary constitution. The marginal effect of an increase in the budget on utility is therefore higher under parliamentarism, and since the utility of parliamentarism increases relatively faster with the budget than the utility of presidentialism, this explains why a high public budget makes parliamentarism more likely while a low public budget makes presidentialism more likely. Thus if budgets are smaller in poor than in rich countries, presidentialism is a 'poor man's disease'.

Strategic voting

We have seen that when politicians originating from the majority group of citizens also constitute a majority in the legislature, these politicians may switch the constitution from being parliamentary to being presidential. Such a switch implies less provision of public goods and

more rents to politicians. For the citizens of the majority group this naturally raises the question if sincere voting in the elections for the legislature constitutes best response; if citizens from the majority group instead vote for politicians from the minority group they ensure that the constitution remains parliamentary. Thus the interesting case we need to consider is the case where a legislative majority of group L politicians would support a group L prime minister in switching the constitution from being parliamentary to presidential. If this is not the case, then sincere voting is best response for citizens in the majority group. Note also that sincere voting is always best response for the minority group citizens.

The majority group citizens have to trade off voting sincerely and (sooner or later) get a presidential constitution, with voting strategically for minority group politicians so as to avoid a presidential constitution but (now and then) get a type of public goods and an ideology they do not prefer. This trade-off is captured in the following:

Proposition 5 *For majority group citizens sincere voting in the election for the legislature is best response when*

$$2\lambda F(G^L(pr)) \geq \frac{1}{\beta}\left(((2\lambda-1)+\beta(1-\lambda))\left((1-\gamma)F(G^S(pa))-\delta\right)+(1-\beta+\lambda(3\beta-2))F(G^L(pa))\right).$$
(20)

Proof. Consider first the case where citizens from the majority group decide to vote for politicians from the minority group so as to prevent politicians from switching the constitution. The best response given that they want to achieve this is to elect sufficiently many representatives from the minority that a switch to presidentialism is blocked, at the same time as they maximize the probability that a politician from their own group becomes prime minister. Thus the best response given that they will prevent a switch to presidentialism is to vote in such a way that the legislature consists of (approximately) $\frac{M}{2}$ politicians from the minority group S and $\frac{M}{2}$ politicians from the majority group L.[12] Then $\Omega(pa)=1$ and $\Pi^L(pa)=\frac{1}{2}$. Inserting in (5) we then find the utility of a group L voter under what we will term preventive voting, $X^{k,L}(pa|pv)$, as

$$X^{k,L}(pa|pv) = \frac{F(G^L(pa))+(1-\gamma)F(G^S(pa))+\delta}{(1-\beta)2}.$$
(21)

The alternative is to vote sincerely for politicians from own group, implying that at the first instance a politician from own group is elected prime minister, then the constitution switches to a presidential one (and stays so). Thus in this case $\Omega(pa)=1-\lambda$ and $\Pi^L(pa)=\lambda$. Inserting in (5) the expected utility of a group L voter under sincere voting, $X^{k,L}(pa|sn)$, is given by

$$
\begin{aligned}
X^{k,L}(pa|sn) =\ & \lambda(F(G^L(pa))+\delta)+(1-\lambda)(1-\gamma)F(G^S(pa)) \\
& +\beta((1-\lambda)X^{k,L}(pa|sn)+\lambda X^{k,L}(pr)).
\end{aligned}
$$
(22)

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[12]Again we assume to save unnecessary notation that M is sufficiently large that $\frac{M}{2}+1\approx\frac{M}{2}-1\approx\frac{M}{2}$.

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Furthermore, $\Omega(pr) = \Pi^L(pr) = 1$, which implies

$$X^{k,L}(pr) = \frac{F(G^L(pr)) + \delta}{1 - \beta}. \tag{23}$$

Inserting (23) in (22) and solving we get

$$X^{k,L}(pa|sn) = \frac{1}{(1 - (1 - \lambda)\beta)} \left(\begin{array}{c} \lambda F(G^L(pa)) + (1 - \lambda)(1 - \gamma)F(G^S(pa)) \\ + \frac{\lambda\beta}{1-\beta}F(G^L(pr)) + \frac{\lambda(1-\gamma)}{1-\beta} \end{array} \right). \tag{24}$$

The proposition then follows by inserting from (24) and (21) in $X^{k,L}(pa|sn) \geq X^{k,L}(pa|pv)$. ∎

The main noteworthy implication of Proposition 5 is given in the following corollary:

Corollary 2 *Sincere voting is more likely to constitute best response for citizens:*
  i) The stronger is the conflict over public goods, that is the higher is γ.
  ii) The stronger is ideological polarization, that is the higher is δ.
  iii) The higher is the valuation of the future, that is the higher is β.

Proof. Part i) follows by noting that the left hand side of (20) is independent of γ, while the right hand side is decreasing in γ.

Part ii) follows as the left hand side of (20) is independent of δ while the right hand side is decreasing in δ.

Part iii) follows as the left hand side of (20) is independent of β while the right hand side is decreasing in β. ∎

Thus sincere voting is more likely to be best response when there is a strong conflict over the type of public goods and strong ideological polarization. For γ sufficiently close to zero and δ sufficiently high sincere voting will always be best response. Exactly the circumstances that make politicians want to introduce presidentialism give rise to a situation where it is not optimal for citizens to vote preventive to stop it. The intuition for this is that as long as politicians are elected from the citizens, their preferences are aligned with citizens when it comes to ideology and provision of public goods. Then exactly when it is attractive for politicians to switch to presidentialism so as to lock in ideology and public goods provision in their preferred direction, it is also unattractive for citizens from the majority group to vote preventive.

Also, sincere voting is more likely to be best response when citizens place a high value on the future. The intuition for this is as follows: under preventive voting the expected utility of majority group voters in each period is constant (which can be verified from (21)). In contrast, under sincere voting then the expected per period utility of majority voters is increasing over time, because these voters prefer a presidential regime with their own president rather than a parliamentary regime where the minority group may get the prime minister. The probability they have a presidential regime is increasing over time. Thus, starting out in a situation where

majority voters are indifferent between the two regimes, the marginal effect of an increase in β on discounted expected utility in the sincere voting regime exceeds that in the preventive voting regime.

When politicians and citizens of the majority group have exactly the same preferences for public goods and ideology, then how could best response by majority citizens be to prevent majority politicians from getting a majority in the legislature - wouldn't sincere voting always be best response? The answer to this is no, and the reason is that the majority politicians may want a switch to presidentialism when the majority voters do not because presidentialism may imply higher personal rents. In particular presidentialism is relatively more attractive to politicians when budgets are small, while for voters the size of the budget is irrelevant in the trade-off between voting strategically or sincerely.[13]

5   Extensions

The model we have presented so far included only two groups of politicians and citizens. We now extend the model to include more groups, and show that the main trade-off in the choice between presidentialism and parliamentarism is present also in such a setting. Next, we discuss what our approach may suggest about claims that presidential regimes are less able to consolidate democracy.

5.1   More than two groups

Assume now that there are more than two groups. To present the main intuition as simple as possible consider the case where we have five groups of citizens of equal size which are each represented by one politician from their group. The groups (and politicians) differ in their preferences over public goods and ideology. Each politician $j \in \{1, ..., 5\}$ is identified by his number j, and politicians are ordered such that the more distant their number the more distant their preferences. In particular assume that group and politician j receives utility $F(G^j)$ from the provision of public good of type j, $(1-\gamma)F(G^{j\pm1})$ from the provision of public good of types $j \pm 1$, $(1 - 2\gamma)F(G^{j\pm2})$ from the provision of public goods of type $j \pm 2$, and so on. A natural requirement is that utility of a public good can not be negative for any group and thus $\gamma < \frac{1}{4}$. Moreover, assume that the ideological value of group j of having a president or prime minister

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[13]It is straight forward formally to show that sincere voting is not always best response. To see this in an easy way, for instance let $\gamma = 0$ so that under strategic voting $G^L(pa) = G^S(pa)$, and let $\beta \to 1$ and $\lambda \to 1/2$. Then from (19) we know that majority politicians are indifferent between switching the constitution or not when $\delta/2 = F(G^L(pa)) - G^L(pa)/M$. Assume that this condition holds and that politicians of group L switch the constitution to a presidential one if they form a majority in the legislature. From (20) majority voters *strictly* prefer to vote preventive when $F(G^L(pr)) < F(G^L(pa)) - \delta/2$. Inserting for δ from the first equation this reduces to $F(G^L(pr)) < G^L(pa)/M$ which is always fulfilled provided the provision of public goods is sufficiently high under parliamentarism compared to under presidentialism. This contradicts a claim that sincere voting is always best response.

from own group is 3δ, the ideological value of a president or prime minister from groups $j \pm 1$ is 2δ, and so on.

Compared to the basic model no single group will ever have a majority in the presidential election. The most conventional way to model the election in such a case is to apply the median voter theorem. In our setting the median voter theorem applies under several different specifications of the election game. Since the way we model this has no bearing on our results (as long as the median voter theorem holds) we simply assume that we are in a setting where in the election of president the median voter is the decisive one. Thus under presidentialism we assume that the president elected will be politician 3 and that the legislature will consist of the other politicians. Since the politicians with preferences most closely aligned with the president will be the cheapest to buy, the coalition in addition to the president consists of politicians 2 and 4. The provision of public goods is given by $F_G(G^3(pr)) = 1$, and rents to politicians 2 and 4 by $B/5 - (1 - \gamma)F(G^3(pr))$. The president receives rents $3B/5 + 2(1 - \gamma)F(G^3(pr))$.

Under parliamentarism all groups are represented by one politician (and in contrast to in the basic model no single group can have a majority in the legislature). A politician is drawn at random to propose the ruling coalition, and again payoffs of those in the coalition are determined by symmetric Nash bargaining. All politicians in the coalition will receive the same utility which will be strictly higher than those not included in the coalition. Realizing this any politician asked to form a coalition will propose to be included in the coalition and moreover propose a coalition consisting of politicians with minimal preference disagreement (as this maximizes the total pie to negotiate about). The coalition will agree to provide the public good of the median member of the coalition (again as this maximizes joint utility). Politicians 1 and 5 will be included in the coalition with probability $\frac{2}{5}$, politicians 2 and 4 with probability $\frac{3}{5}$, and politician 3 with certainty. Public goods of types 1 and 5 will never be offered.[14]

Denote the median politician of a parliamentary coalition by m. The symmetric Nash bargaining solution yields the provision of public goods by

$$F_G(G^m(pa)) = \frac{1}{1 + 2(1 - \gamma)}, \tag{25}$$

the rents to the median politician m as

$$R^m(pa) = \frac{1}{3}\left(B - G^m(pa) - 2\gamma F(G^m(pa))\right),$$

---

[14]Note that if there are more than five groups then for the politician drawn to propose a coalition there are in general many possible coalitions which are payoff equivalent. But in such a case with the additional assumption that between payoff equivalent alternatives a politician prefers the one that yields the highest utility for agents in his own group, coalition formation is unique also in this case. To see this assume that there are D politicians. Then all politicians with numbers between $D/4$ and $3D/4$ propose a coalition with themselves as the median member. Politicians with numbers smaller propose a coalition with $D/4$ as the median politician, while politicians with higher numbers propose a coalition with $3D/4$ as the median politician.

and rents to politicians from groups $m \pm 1$ as

$$R^{m\pm1}(pa) = \frac{1}{3}\left(B - G^m(pa) + \gamma F(G^m(pa))\right).$$

Comparing the extended model to the basic model set out in Section 2, it is worth noting that although all groups are of equal size and no single group has majority, groups close to the median have a higher probability of being part of ruling coalitions in both regimes. The key insight, however, is that as long as the median voter theorem holds the groups close to the median have a *relatively* higher probability of being part of presidential compared to parliamentary coalitions, while groups that are minority groups under presidentialism have a positive probability of being part of parliamentary constitutions. The median politician is always included in both types of coalitions.

As in the basic model we focus on the case where the greater power of a president maps into a higher payoff than a prime minister gets. Thus politician 3 prefers presidentialism. For politicians 2 and 4 the trade-off between the two regimes is essentially the same as in the basic model: a parliamentary regime yields a higher utility than a presidential regime conditional on being part of the ruling coalition, but the probability of being of a parliamentary coalition falls short of the probability of being part of a presidential coalition. Taking into account that all parliamentary coalitions will provide the same amount of public goods which we denote by $G(pa)$, this trade-off is captured in the following proposition:

Proposition 6 *Assume we start out with a parliamentary constitution*

i) When

$$2\delta \leq -G(pa) + (5 - 6\gamma)\, F(G(pa)) \tag{26}$$

parliamentarism is an absorbing state , i.e. $\Omega(pa) = 1$.

ii) When (26) does not hold then parliamentarism is not a stable constitution. The probability the constitution is switched to a presidential one in a given period is $\frac{3}{5}$. (From then on, presidentialism is the absorbing state).

Proof. Note first that the decisive politicians will be politicians 2 and 4. Politicians 1 and 5 will always oppose a presidential constitution as their expected per period payoff under a parliamentary constitution given by $(1 - 2\gamma)F(G(pa)) + \delta + \frac{2}{5}R^{m\pm1}(pa)$ will always exceed their expected per period payoff under a presidential constitution which is given by $(1 - 2\gamma)F(G(pr)) + \delta$.

Thus focusing on the voting of politicians 2 and 4 we find by inserting the policy outcomes from above, and the corresponding probabilities that politicians 2 and 4 are included in the ruling coalition, that politicians 2 and 4 do not support a shift in the constitution to a presidential one if (26) holds. This proves part i). In the converse case they do support such a shift, which will

be proposed by a prime minister from the groups 2, 3, and 4 (but not from groups 1 and 5). This completes the proof of part ii). ∎

A corollary to Proposition 6 is that:

Corollary 3 *The comparative statics with respect to γ and δ from the basic model continue to hold in the model with more than two groups. Thus a parliamentary constitution is more likely to be unstable when γ is higher, and when δ is higher.*

Proof. The effect of γ follows by noting that the left hand side of (26) is independent of γ, while the derivative of the right hand side of (26) is given by

$$-6F(G(pa)) + ((5 - 6\gamma) F_G(G(pa)) - 1)\frac{dG(pa)}{d\gamma}$$

Inserting for $F_G(G(pa))$ from (25) this reduces to

$$-6F(G(pa)) + \frac{2 - 4\gamma}{1 + 2(1 - \gamma)}\frac{dG(pa)}{d\gamma},$$

which is negative as $\gamma < \frac{1}{4}$ and it can be verified from (25) that $\frac{dG(pa)}{d\gamma} < 0$.

The effect of δ follows as the left hand side of (26) is increasing in δ while the right hand side is independent of δ. ∎

Thus also in the case with more than two groups the main trade-off between political regimes is present for 'majority' politicians, although in this case who constitutes the 'majority' and who constitutes the 'minority' is endogenously determined.[15]

5.2   Presidentialism and democratic consolidation

What does the model imply about the argument associated with Linz (1978) that presidential regimes are less able to consolidate democracy? Though Linz and other authors that have debated these ideas have many different mechanisms in mind which are beyond the scope of the model that we have developed, the model does generate an answer to this question. We here simply present an intuitive discussion without introducing a full model to incorporate democratic consolidation.

The model we have developed so far generates payoffs to different agents in democracy which depend on the nature of the constitution. Now extend the game so that in any period either group of agents could pay some cost and attempt to overthrow the regime. If they do so, imagine they can create a dictatorship of the group and allocate the government budget from then on to

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[15]Moreover, note that the budget B has no effect on the trade-off in the simple way we have extended the model here. This is because we have only 5 groups and because in our setup in a parliamentary regime the 'extreme' groups 1 and 5 have the same probability of being chosen as agenda setter as groups closer to the median. If there are more groups, or if the probability of being chosen as agenda setter is higher for groups close to the median, then also in the extended model a higher B makes a parliamentary constitution more likely.

maximize the utility of the group. Assume that decisions to mount a coup are taken on the basis of whether or not it maximizes the sum of utilities of agents in the group (so we abstract from any issues of collective action or collective choice). If the cost of overthrowing democracy and the ability to do so is the same for all groups, it will tend to be minority groups which have the greater incentive to overthrow democracy. This is for the simple reason that under parliamentary democracy such groups rarely get the public good they prefer and its politicians get low rents. Note however, that under presidentialism the supply of public goods and rents are even lower and hence the utility of the minority group is lower under a presidential constitution. Since under a parliamentary constitution the minority has some probability of forming the government it is true, as we have already shown, that the minority are better off under parliamentarism. Thus for a given cost of undertaking a coup, the incentive to do so is clearly higher for the minority under presidentialism. Hence there exists a part of the parameter space where the minority will not mount a coup when the constitution is parliamentary and will do so when it is presidential.

If one introduces uncertainly and a stochastic opportunity to mount a coup along the lines of Acemoglu and Robinson (2006), the model can easily be extended to show that even though switching to presidentialism can unconsolidate democracy in the sense that it can induce the threat of a coup where none previously existed, nevertheless is can still be optimal to introduce presidentialism if, for example, preferences for the public good are sufficiently polarized or the budget sufficiently low. Thus the model provides one clear mechanism which supports Linz's ideas.

6 Concluding remarks

In this paper we developed a positive model of the choice of constitutions. Our approach was based on two principles which we consider capture key differences between presidential and parliamentary institutions. First, that minority groups in a legislature are more powerful in a parliamentary system, and second, that a president is more powerful with respect to his own coalition than a prime minister is. We showed that these assumptions imply that presidential systems lead to greater extraction of rents by politicians and lower provision of public goods. Moreover, while political leaders may wish to be presidents, members of their coalition do not necessarily favor this since they have greater power vis a vis a prime minister. However, parliamentarians may allow a prime minister to become a president if they fear losing agenda setting power to another group.

We showed that such a constitutional change is more likely to happen when the conflict over public goods is high, when ideological polarization is strong, and when public budgets are small. We argued that our conceptualization of the forces lying behind these two regimes seems to capture well the costs and benefits that politicians face in situations where presidents

are relatively powerful, as they are in Africa and Latin America. Our model complements and extends existing work by Persson, Roland and Tabellini (2000) who focused on situations with less presidential dominance, such as in the United States.

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8 Appendix

In this Appendix we show the solution for a parliamentary coalition where the coalition offer the type of the public good that the prime minister of the coalition values the least. The prime minister originating from group j thus provides public goods of type G^{-j}. We assume that the prime minister still includes the politicians from his own group in his coalition (because if not the other members of the coalition would not want him to be the leader of their group). Again the solution follows from the maximization of the symmetric Nash product, but now with public goods of type G^{-j}. The unique solution to this problem is that public goods are determined according to

$$F_G(G^{-j}(pa)) = \frac{1}{(1-\gamma)\frac{M}{2} + \gamma N},$$

and that the rents to a coalition member is given by

$$R^i(pa) = \frac{2}{M}\left(B - G^{-j}(pa) - \left(\frac{M}{2} - N\right)\gamma F(G^{-j}(pa))\right)$$

when coalition member $i \in P^{-j}$ and

$$R^i(pa) = \frac{2}{M}\left(B - G^{-j}(pa)\right) + \frac{2N}{M}\gamma F(G^{-j}(pa))$$

when coalition member $i \in P^j$. Thus is this case rents to coalition members from own group is higher than those to members from the other group, as the former are compensated for their lower valuation of public goods. As in the case studied in the main text the provision of public goods is higher than under presidentialism, decreasing in the extent of disagreement in the valuation of public goods γ, and the utility of a coalition member under a parliamentary regime is higher than under a presidential regime.

Country	Year of Independence	Constitution at Independence	Present Constitution
Botswana	1966	Parliamentary	Parliamentary
Burkina Faso	1960	**Presidential**	**Presidential**
Burundi	1962	Parliamentary	**Presidential**
Cameroon	1960	Parliamentary	**Presidential**
Central African Republic	1960	**Presidential**	**Presidential**
Chad	1960	Parliamentary	**Presidential**
Cote d'Ivoire	1960	**Presidential**	**Presidential**
Gabon	1960	Parliamentary	**Presidential**
Gambia	1965	Parliamentary	**Presidential**
Ghana	1957	Parliamentary	**Presidential**
Guinea	1958	**Presidential**	**Presidential**
Guinea-Bissau	1973	Parliamentary	**Presidential**
Kenya	1963	Parliamentary	**Presidential**
Malawi	1964	Parliamentary	**Presidential**
Mali	1960	Parliamentary	**Presidential**
Mauritius	1968	Parliamentary	Parliamentary
Niger	1960	**Presidential**	**Presidential**
Nigeria	1960	Parliamentary	**Presidential**
Rwanda	1962	**Presidential**	**Presidential**
Senegal	1960	Parliamentary	**Presidential**
Sierra Leone	1961	Parliamentary	**Presidential**
South Africa	1910	Parliamentary	Parliamentary
Sudan	1956	Parliamentary	**Presidential**
Tanzania	1964	Parliamentary	**Presidential**
Zaire	1960	Parliamentary	**Presidential**
Zambia	1964	Parliamentary	**Presidential**
Zimbabwe	1980	Parliamentary	**Presidential**

Source: Robinson and Torvik (2008)