Presidentialism, Parliamentarism, and Redistribution*

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Abstract

Why is public spending considerably lower in presidential than in parliamentary democracies? This paper proposes and tests a new argument to explain differences in fiscal policies between presidential and parliamentary democracies. In contrast to the conventional political economy explanation based on rent-seeking politicians, I argue that executive-legislative institutions matter for taxes and transfers because they shape who gets what in partisan conflict over redistribution. The model I develop highlights that executive-institutions influence redistributive policy by shaping the distribution and effectiveness of partisan governments. Accordingly, redistribution is lower in presidential than in parliamentary democracies because the separation of executive and legislative power under presidentialism reduces the frequency and bargaining power of left governments. I test implications of this argument using cross-sectional and panel data covering a large set of democracies. As predicted by the model, the estimation results indicate that the occurrence of left governments accounts for a significant portion of the cross-sectional variation in public spending and that the fiscal effects of changes in government partisanship are stronger in parliamentary than in presidential democracies. Taken together, the results imply that one important reason for why we observe lower taxes and transfers in presidential than parliamentary democracies is because presidentialism advantages partisan interests in favor of low redistribution, not because it is better at controlling rent-seeking politicians.

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1 Introduction

A fundamental difference in the design of democratic constitutions is whether they are parliamentary or presidential, and it is well-documented that this difference in political institutions is associated with different fiscal policies. In particular, public spending and taxation are lower in presidential than in parliamentary democracies (Persson and Tabellini, 2003).\footnote{Persson and Tabellini (2003) show that in cross-section of about 80 democracies, after controlling for various confounders central government spending as a percentage of GDP is roughly 5\% of GDP lower in presidential systems.} While it is notoriously difficult to infer a causal impact of political institutions on policy from observational data (Acemoglu, 2005), theoretical models may provide plausible explanations for the association between presidentialism and the size of government that can be subjected to empirical scrutiny. The model of Persson, Roland and Tabellini (2000) is the seminal account of the fiscal consequences of executive-legislative institutions in the literature.\footnote{The model is widely recognized as a hallmark in the comparative study of the economic effects of political institutions. It rigorously compares fiscal policymaking in presidential and parliamentary democracies and makes clear predictions that have been tested in subsequent empirical studies (e.g., Persson and Tabellini, 2003; Acemoglu, 2005; Blume et al., 2009; Rockey, 2012). Reflecting on its contribution to the literature, a recent review emphasizes that “Persson, Roland and Tabellini exemplify one of the distinguishing marks of modern analytical approaches to economic performance, namely, taking features of the political landscape as explanatory variables.” (Dewan and Shepsle, 2008, p. 544)} It argues that the difference in fiscal policies reflects how executive-legislative institutions shape the principal agent problem between voters and opportunistic politician. Accordingly, the stricter separation of powers in presidential systems compared to parliamentary systems leaves less room for collusion between rent-seeking politicians. This leads to lower spending. The explanation based on identical and purely opportunistic politicians is part of a large class of rent-seeking models of the fiscal consequences of democratic institutions (for an overview, see Persson and Tabellini, 2000; Dewan and Shepsle, 2008).

In this paper, I provide an alternative explanation for why presidential democracies have smaller governments than parliamentary democracies. Building on partisan accounts of economic policymaking (e.g., Hibbs, 1977; Boix, 1998), the argument is that differences in executive-legislative institutions between presidential and parliamentary democracies matter for fiscal policy because they shape whether parties representing the rich or parties representing the poor tend to win the democratic contest over redistributive policy. To make this case, I develop and test a simple model of redistribution that is based on partisan politicians that represent distinct economic interests.
rather than identical rent-seeking politicians. The model highlights that executive-legislative institutions influence general transfer policies through the distribution and effectiveness of partisan governments. In particular, redistribution is lower in presidential than in parliamentary democracies because the separation of executive and legislative power under presidentialism reduces the frequency and bargaining power of left governments. Going beyond the reduced-from relationship between presidentialism and fiscal policies, the partisan model also accounts for the redistributive effect of the welfare state, partisan differences in tax-and-transfer polices, and suggests novel implications such as constitution-contingent partisan effects.  

In the theoretical part of the paper, I formulate a simple political economy framework to analyze how two key institutional differences between parliamentary and presidential democracies affect partisan conflict over redistribution. The institutional comparison reveals two distinct mechanisms. The first mechanism is based on the existence of a dissolution procedure in the parliamentary but not in the presidential model (separation of survival effect). The power to dissolve the government gives the chief executive in the parliamentary system the opportunity to turn a vote over fiscal policy into a vote over parties’ immediate political survival. It increases the proposal power of the chief executive in the parliamentary model. Chief executives facing opposition from veto players with divergent preferences can use the dissolution threat to push their programmatic agenda. The separation of survival effect implies that governments should be more able to pursue their tax-and-spend policies in parliamentary democracies. The second mechanism is based on the direct election of the chief executive in the presidential but not in the parliamentary model (separation

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3There is evidence that on the whole taxes and transfers redistribute income in a way that benefits the poor at the expense of the rich. Data from the Luxembourg Income Study shows that households in the lower half of the pre-tax and transfer income distribution benefit from tax-and-transfer policies whereas those in the upper part of the income distribution tend to be net losers (Milanovic 2000, pp. 375-384; also see Alesina and Glaeser 2004, pp. 21-38). The empirical literature on the fiscal effects of partisan governments is substantial and often is separated in studies focusing on the advanced industrial democracies and those focusing on less affluent democracies. In the advanced countries, the bulk of the evidence shows that left and center-left parties were associated with the increase of taxes and transfers, the reduction in income inequality, and increases in spending aimed at human capital formation. For examples, see Hicks and Swank (1992); Huber, Ragin and Stephens (1993); Alt and Lowry (1994); Boix (1998); Franzese (2002); Korpi and Palme (2003); Bradley et al. (2003); Iversen and Soskice (2006). Consistent with macro-level studies, the analysis of voting behavior of individual legislators in the United States’ Congress reveals substantial differences between Republican and Democratic legislators representing similar constituencies (e.g., Bartels 2008, p. 256; Lee, Moretti and Butler 2004). In less developed economies, there is conflicting evidence about the fiscal effects of partisan governments (e.g., Johnson and Crisp, 2003; Tavits and Letki, 2009), but research confirms that conflict over taxes and transfers is a key dimension of party competition (e.g., Londregan, 2000; Wiesehomeier and Benoit, 2009).
of origin effect). Holding the electoral rules for the legislature constant, the separate election of
the chief executive and the legislature makes the emergence of divided partisan control in the leg-
islative arena, which tends to favor the status quo, more likely. In general, these two differences
in executive-legislative institutions shape the policymaking capacity of democracies. In a context
where introducing and maintaining redistributive programs requires legislative action, the sepa-
ration of power in presidential democracies implies less public policies aimed at reducing income
inequality.

In the empirical part of the paper, I confront key implications of the partisan model with ev-
idence using cross-sectional and panel data covering a large set of democracies between 1975 and
2008. While there are several studies that examine the fiscal effects of executive-legislative in-
stitutions, they do not consider the role of government partisanship as a channel through which
executive-legislative institution may shape fiscal policies.\(^4\) Consistent with the thrust of the partisan
model, the cross-sectional analysis shows that the occurrence of left governments accounts for a
significant portion of the cross-sectional variation in public spending across presidential and parlia-
mentary democracies. In the panel analysis, I estimate how changes in the partisan composition of
government affect spending and whether the impact of partisanship varies across parliamentary and
presidential democracies. Controlling for country heterogeneity using fixed effects, the estimation
results indicate that the fiscal effect of left governments (relative to right governments) varies by
institutions. In line with the separation of survival effect highlighted by the model, left majority
governments in presidential democracies spend significantly less than left majority governments in
parliamentary democracies, and left minority governments in presidential democracies spend less
than left minority governments in parliamentary democracies. Altogether, the evidence makes it
difficult to ignore partisan politics as an important channel through which executive-legislative
institutions influence fiscal policies.

Conceptually, this paper builds on the large body of scholarship on the role of parties and insti-
tutions in redistributive politics, especially models like those of Alesina, Londregan and Rosenthal
(1993), Alt and Lowry (1994), and Iversen and Soskice (2006) that combine partisan accounts of
\(^4\)For prominent examples, see Persson and Tabellini (2003); Acemoglu (2005); Cheibub (2006); Blume et al. (2009);
Andersen (2011); Caruso, Scartascini and Tommasi (2011); Rockey (2012).
economic policymaking with an emphasis on political institutions. The approach taken here is perhaps most closely related to the model of Iversen and Soskice (2006), which argues that electoral rules for the legislature affect redistribution through the partisan composition of government. This paper shares the same theoretical outlook, emphasizing that political institutions matter for redistribution by affecting the outcome of partisan conflict, and applies it to the comparison of presidential and parliamentary democracies. Both electoral rules and executive-legislative institutions are fundamental and empirically distinct features of democratic constitution (Lijphart, 1999), but executive-legislative institutions have been relatively neglected in the literature on redistribution. Similar to the effect of electoral rules identified by Iversen and Soskice (2006), I argue that executive-legislative institutions affect the distribution of partisan governments. The compositional effect is not driven by credible commitment problems, as in Iversen and Soskice (2006), but by the uncertainty inherent in democratic elections, which makes is less likely that the same party (or bloc of parties) wins the legislative and the executive election.

The model suggests that executive-legislative institutions may also, and possibly more so, matter for redistribution because they affect the ability of elected partisan policymakers to implement their desired policies. The institution-varying effectiveness of partisan governments is caused by differences in dissolution power between presidential and parliamentary systems. The separation of survival effect incorporates insights from the literature on the role of confidence and dissolution procedures in legislative bargaining (Lupia and Strom, 1995; Huber, 1996; Baron, 1998; Diermeier and Feddersen, 1998; Huber and McCarty, 2001; Diermeier and Vlaicu, 2011). It implies that the impact of executive-legislative institutions on redistribution is not merely driven by the number of veto players, as it is often assumed in studies of welfare-state policymaking (Huber, Ragin and Stephens, 1993). While the partisan model clearly reflects the well-established argument that the partisan distribution of veto and proposal power matters for policymaking (Tsebelis, 1995, 2002), it illustrates that the number of veto players and the value of veto power are endogenous to institutional differences between presidentialism and parliamentarism. Holding constant electoral

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5 Most work comparing the policy consequences of presidential and parliamentary democracies is empirical, leading some scholars to decry a lack of clearly specified theoretical mechanisms between institutions and policy outcomes (Gerring, Thacker and Moreno, 2009). One theoretical approach subsumes the parliamentary-presidential distinction as part of the more encompassing concept of centripetal institutions (Gerring, Thacker and Moreno, 2005).
rules for the legislature, the separation of electoral origin under presidentialism means that it should generate more partisan veto players. The difference in the separation of survival between presidential and parliamentary systems implies that the effect of presidential versus parliamentary systems on policy stability is not subsumed by the number and ideological distance of veto players. Holding the veto player constellation constant, chief executives in parliamentary systems are in a stronger position to change the status quo than those in presidential systems.

The paper proceeds as follows. Section 2 introduces two simple models of redistribution, one with a parliamentary and one with a presidential constitutional structure. Section 3 compares executive-legislative bargaining and policy across the parliamentary and the presidential model. It provides the intuition of the argument and spells out its empirical implications. All formal statements and proofs are in Appendix A. Section 4 confronts the partisan-institutional argument with cross-national evidence. Section 5 concludes.

2 Two models of executive-legislative institutions

I propose a simple theoretical framework to analyze how differences between presidential and parliamentary constitutions shape the nature and outcome of redistributive conflict. It reflects a stripped-down version of a complex process and captures a democratic political economy with self-interested citizens and rational partisan politicians, who represent the economic interests of distinct constituencies (e.g., Hibbs, 1977). In the electoral part of the game, voters determine the partisan composition of government. Subsequently, elected politicians bargain over redistributive policy, which consists of a general transfer financed by a proportional income tax. Crucially, the political process varies according to the constitutional structure of the polity.

Variation in executive-legislative institutions is captured by two distinct models. In the parliamentary model, there is a fusion of both the electoral origin and the survival of the executive and the legislature. The chief executive (i.e., prime minister) is not elected directly by voters but emerges from the legislature (fusion of electoral origin). Voters directly determine the composition of the legislature. The prime minister has the power to trigger a dissolution of the legislature (fusion of survival). The dissolution procedure allows the prime minister to tie the fate of a policy proposal
to a vote over the survival of the government (Huber, 1996; Diermeier and Feddersen, 1998). If
the proposal fails to win a majority, the legislature is dissolved and a new election is called. In
the presidential model, by contrast, there is a separation of both the origin and the survival of
the chief executive (i.e., president) and the legislature. Voters separately elect the president and
the legislature (separation of origin). The terms of office for the president and the legislature are
fixed. There is no dissolution procedure for the legislature and the legislature may not remove the
president from office (separation of survival). Comparing equilibrium behavior and outcomes in
the presidential and the parliamentary model sheds theoretical light on how executive-legislative
institutions influence redistribution while holding primitive assumptions about the structure of the
economy and the motivation of citizens and politicians constant.

I now specify the components of the models in more detail, beginning with a description of
the basic political-economic framework that is common across executive-legislative institutions. It
includes the economic environment, agents and their preferences, and the nature of political uncer-
tainty in the electoral process. Next, I describe how agents interact depending on the constitutional
structure.

2.1 Basic framework

2.1.1 Agents and preferences

To simplify, suppose that there are two groups of citizens \( j \in \{p, r\} \) that differ in their exogenous
income \( y_j \): poor (\( p \)) and rich (\( r \)), so \( y_r > y_p > 0 \). This is a stylized way to capture pre-tax-and-transfer
income inequality that induces redistributive conflict. The overall population size is normalized to
unity. The share of relatively poor citizens is denoted by \( \delta_p \) and the share of relatively rich citizens
is denoted by \( \delta_r \). Naturally, \( \delta_p + \delta_r = 1 \). The relatively poor constitute a majority in the population.
The mean income in the political economy is denoted by \( \bar{y} \equiv \delta_p y_p + \delta_r y_r \).

Citizens care about their disposable income. Hence, they have induced preferences over re-
distributive policy. The redistributive policy consists of a general lump-sum transfer, \( g \), that is
financed by a linear income tax \( t \) (in line with a large literature, e.g., Meltzer and Richard, 1981;
Acemoglu and Robinson, 2006). The government budget constraint is \( g = ty - \frac{t^2 \bar{y}}{2} \), where the last
term, $\frac{t^2\bar{y}}{2}$, is a quadratic deadweight cost capturing economic distortions due to taxes and transfers in a reduced form (as in Bolton and Roland, 1997). The disposable (i.e., post-tax-and-transfer) income of a citizen belonging to group $j$ is $V_j(y_j,t) = (\bar{y} - y_j)t + y_j - \frac{t^2\bar{y}}{2}$. Maximizing $V_j(y_j,t)$ (with respect to $t$) yields the induced preferred tax rate

$$
t_j = \begin{cases} 
\frac{\bar{y} - y_j}{\bar{y}} & \text{if } \bar{y} > y_j \\
0 & \text{if } \bar{y} \leq y_j
\end{cases} \quad (1)
$$

This restates the familiar results that in this economic setting preferences for redistribution are monotonic in income. Richer individuals prefer lower tax rates, entailing less redistributive transfers. Those with income above the mean prefer no redistribution at all.

There are two types of partisan politicians $J \in \{L, R\}$: left politicians ($L$) represent the interests of poor citizens, and right politicians ($R$) represent the interests of rich citizens. Left (right) politicians share the policy preferences of the poor (rich), $t_L = t_p$ ($t_R = t_r$). Specifically, for a given policy $t$ the policy preferences of partisan politicians of type $J$ are represented by a linear spatial utility function

$$
u_J(t, t_J) = -|t - t_J| \quad (2)
$$

Left politicians constitute the left party and right politicians constitute the right party. A party in this framework is a team of like-minded politicians. Without loss of generality with respect to the institutional analysis, elected politicians belonging to the same party are assumed to coordinate their behavior.\(^6\)

### 2.1.2 Political uncertainty

Across political institutions there is a common electoral environment that is characterized by political uncertainty about the distribution of redistributive preferences in the electorate. It reflects the idea that stochastic variation in turnout creates uncertainty about the electoral strength of parties\(^6\).

\(^6\)This is equivalent to eliminating weakly dominating strategies in legislative voting. Policymakers always behave as if they are pivotal.
that represent conflicting redistributive agendas.\textsuperscript{7} Turnout shocks consist of an idiosyncratic component affecting each individual voter as well as a national-level component capturing differences in party organization and valence that affect the distribution of individual-level shocks. While there is a majority of poor citizens in the population, variation in turnout implies that there need not be a majority of poor voters in the electorate.

The approach to capture turnout is simple as the theoretical focus is on variation in executive-legislative institutions. In large elections, voting is typically a low-cost, low-benefit action and relatively small changes in the cost of voting may affect turnout (Aldrich, 1993). In this context, the turnout decision is not considered a strategic choice. Citizens turn out to vote if the individual cost of voting is (weakly) negative (as in Campante, 2011). In particular, suppose that the idiosyncratic cost of voting, $c_{ij}$, for an individual member of group $j$ is uniformly distributed on the interval

$$[-1, \phi_j]$$

where $\phi_j$ is uniformly distributed on

$$[0, \gamma_j]$$

and $\gamma_r = 0$ and $\gamma_p > 0$ (sufficiently large, see Appendix A). This assumption means that there is full turnout among rich voters and incomplete turnout among poor voters. It captures the fact that there is a socio-economic turnout differential across a large range of democratic contests.\textsuperscript{8} The turnout differential between rich and poor and consequently, for given group sizes, the relative strength of income groups in the electorate depends on two factors. First, $\phi_p$ is an election-wide mobilization shock affecting all low-income citizens. In substantive terms, it can be thought to represent the relative strength of left-party organization and valence that shape the mobilization of low-income voters. Second, $c_{ij}$ is an idiosyncratic shock at the individual level. For a given $\phi_p$, it captures individual variation in the propensity to turnout due to, for example, normative concerns

\textsuperscript{7}Recovering the same qualitative results, an alternative way to capture political uncertainty in this framework is to model stochastic variation in group size $\delta_j$ rather than turnout.

\textsuperscript{8}For example, Leighley and Nagler (1992) show for the United States that affluent individuals are more likely to vote than poor individuals and González and Snell (2011) demonstrate that there is socio-economic turnout gap in Latin America even in those countries where compulsory voting is enforced. For a general discussion of unequal participation, see Lijphart (1997).
(civic duty) and the cost of voting (e.g., information, foregone leisure or work). The distribution of the individual-level shocks depends on the election-wide shock. Hence, a large $\phi_p$ means that the average voting cost for the poor are large (e.g., because of low left-party organizational capacity or low valence of left party candidates) and thus the turnout differential between rich and poor will be large.

2.2 Political institutions

2.2.1 A parliamentary model

Key features of the parliamentary model are that the chief executive emerges from the legislature and has the power to trigger a dissolution of the legislature. The dissolution procedure is an important mechanism to break the separation of survival between the chief executive and the legislature. A divided control of legislative power - capturing the possibility of coalition or minority government - can emerge endogenously through elections.

Consider a legislature with a finite and even number of $N \geq 2$ seats where a simple majority of $\frac{N}{2} + 1$ votes is required to pass legislation. Focusing on an even number of legislative seats is a straightforward way to allow for the possibility of a divided parliament where neither left policymakers nor right policymakers on their own can change the status quo policy.

In the electoral stage, voters can either support the left party or the right party. The resulting distribution electoral votes determines the partisan allocation of seats in the legislature. The share of legislative seats received by a party is proportional to the share of votes it receives in the legislative election. A party wins a legislative majority (i.e., obtaining a seat share of at least $\frac{1}{2} + \frac{1}{N}$) if it wins more than $\frac{N+1}{2N}$ of the votes.

In the legislative stage, parties bargain over redistributive policy. There are two types of relevant players. First, each party whose consent is needed to change the status quo is a veto player (Tsebelis, 2002), denoted by $V$. Second, there is an agenda-setter. The prime minister ($PM$)

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9 Introducing a supermajoritarian decision rule in the legislature would be straightforward and does not affect the logic of the argument.

10 The model focuses on institutional differences in executive-legislative institutions across parliamentary and presidential democracies. In order to facilitate the comparison of executive-legislative institutions, it holds the electoral rules for the legislature constant across the form of government. An alternative framework for legislative elections based on single-member districts yields the same qualitative results.
proposes a proportional income tax rate \( b \in [0,1] \). This is in line with the prevalent view that in parliamentary systems, the executive controls the legislative agenda (Tsebelis, 2002, pp. 82-84). Recall that by the government budget constraint, the transfer \( g \) is determined residually. Policy \( b \) passes if it attracts a majority of votes in the legislature - in other words, if all veto players accept it. A veto can trigger a new election and, once this possibility is exhausted, it maintains the status quo policy \( t_q \in [0,t_L] \).

More specifically, the sequence of interactions in the parliamentary model is as follows:

1. Nature draws \( \phi_p \) and \( c_{ij} \).

2. Citizens decide whether to turn out to vote and, if turning out, which party to support.

3. If a party wins a majority of legislative seats, it obtains the position of the prime minister \((PM)\). If no party wins a legislative majority, nature randomly recognizes one party to obtain the position of the \( PM \).

4. \( PM \) can propose a bill specifying an income tax rate \( b \in [0,1] \). The government budget constraint residually determines the corresponding lump-sum transfer \( g \). If \( PM \) endorses the status quo (i.e., \( b = t_q \)) the game ends with the status quo policy.

5. If \( PM \) proposes \( b \neq t_q \), the proposal is considered in the legislature. If all veto players \((V)\) accept \( b \), it becomes the new policy. If at least one \( V \) rejects \( b \), the legislature is dissolved and a new election takes place.

   *If there is a new election:*

6. Nature draws \( \phi_p \) and \( c_{ij} \).

7. Citizens decide whether to turn out to vote and, if turning out, which party to support.

8. If a party wins a majority of legislative seats, it obtains the position of the prime minister \((PM)\). If no party wins a legislative majority, nature randomly recognizes one party to obtain

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\(^{11}\) The focus is on the interesting cases of policy conflict.

\(^{12}\) The formalization builds on models of the confidence vote or dissolution power (especially Huber, 1996; Baron, 1998; Diermeier and Feddersen, 1998; Huber and McCarty, 2001; Diermeier and Vlaicu, 2011).

\(^{13}\) This reflects the ability of a majority in the legislature to remove the prime minister.
the position of the PM.

9. PM can propose a bill specifying an income tax rate \( z \in [0, 1] \). The government budget constraint residually determines the corresponding lump-sum transfer \( g \). If PM endorses the status quo (i.e., \( z = t_q \)) the game ends with the status quo policy.

10. If PM proposes \( z \neq t_q \), the proposal is considered in the legislature. If all veto players \( (V) \) accept \( z \), it becomes the new policy. If at least one \( V \) rejects \( z \), the game ends with the status quo, \( t_q \), in place.

There are four relevant cases concerning the partisan allocation of proposal and veto power in the legislative arena. (1) Left-unified government: the left party wins a majority of seats and thus it controls proposal and veto power and can unilaterally set policy. (2) Right-unified government: the right party wins a majority of seats and can unilaterally set policy. (3) Left-divided government: a government with a left prime minister facing a right veto player. (4) Right-divided government: a government with a right prime minister facing a left veto player.

The analysis uses a tie-breaking assumptions that does not affect equilibrium policy, but simplifies the notation and is substantively plausible. A prime minister that is indifferent between breaking and maintaining the government will maintain it.\(^{14}\)

\[2.2.2 \text{ A presidential model}\]

In the presidential model, executive-legislative institutions are characterized by a separation of origin and survival between the chief executive and the legislature. The chief executive (i.e., president) is directly elected. The president is a powerful actor in the lawmaking process but does not have the power to dissolve the legislature. The consent of the legislature is required to pass legislation, but it does not have the power to remove the president. Elections in this separation of powers system endogenously generate a unified or a divided partisan control of proposal and veto power.

\(^{14}\)In particular, this means that when the prime minister is indifferent between the best accepted proposal and the expected policy induced by a new election, the prime minister opts for the proposal that will be accepted. A possible interpretation of this assumption is that in such a tie-breaking situation, politicians are risk-averse and favor maintaining the known partisan allocation of policymaking power over an electoral lottery.
The model assumes that de facto proposal power is vested in the president (following Londregan, 2000; Saiegh, 2011). Some constitutions grant presidents the power to propose the budget and restrict legislative amendments (Shugart and Carey 1992, pp. 139–158; Cheibub 2006), and presidents derive de facto proposal power from their privileged access to the executive bureaucracy (not unlike chief executives in parliamentary democracies).\footnote{Tsebelis (2002, pp. 82-84) argues that the legislature controls proposal power. Section 3.4 discusses this possibility. Allowing for congressional agenda control does not change the main institutional comparison.}

The sequence of interactions in the presidential model is as follows:

1. Presidential election
   
   (a) Nature draws $\phi_p^P$ and $c_{ij}$.

   (b) Citizens decide whether to turn out to vote and, if turning out, which party to support in the presidential election.

2. Legislative election
   
   (a) Nature draws $\phi_p^C$ and $c_{ij}$.

   (b) Citizens decide whether to turn out to vote and, if turning out, which party to support in the legislative election.

3. The president ($P$) can propose a bill specifying an income tax rate $b \in [0, 1]$. The government budget constraint residually determines the corresponding lump-sum transfer $g$. If $P$ endorses the status quo (i.e., $b = t_q$) the game ends with the status quo policy.

4. If $P$ proposes $b \neq t_q$, the proposal is considered in the legislature. If all veto players ($V$) in the legislature accept $b$, it becomes the new policy. If at least one veto player rejects $b$, the status quo remains in place.

As in the parliamentary model, there are four relevant cases concerning the partisan allocation of proposal and veto power. (1) Left-unified government: the left party wins the presidential election and a majority of legislative seats, controlling proposal and veto power and thus being able to unilaterally set policy. (2) Right-unified government: the right party controls the legislature and
the presidency and can unilaterally set policy. (3) Left-divided government: the left party controls the presidency but not the legislature. (4) Right-divided government: the right party controls the presidency but not the legislature.\textsuperscript{16}

3 Comparing models

The analysis of the parliamentary and the presidential model spelled out in the previous section highlights two particular mechanisms through which executive-legislative institutions may affect redistribution, namely, the distribution and effectiveness of partisan governments. The separation of origin makes the emergence of left unified governments, which are most willing and able to redistribute income from the rich to the poor, less likely in the presidential than in the parliamentary model (separation of origin effect). The dissolution procedure ensues that chief executives are in a stronger bargaining position in parliamentary than in presidential systems (separation of survival effect). In a context where redistribution requires policy change, both effects imply that, on average, presidentialism leads to less redistribution than parliamentarism.\textsuperscript{17}

3.1 Separation of survival

The effect of the dissolution procedure is driven by differences in executive-legislative bargaining between the parliamentary and the presidential model for a given partisan allocation of proposal and veto power. In both models, the chief executive proposes an income tax $b$, which is used to finance transfer spending, to the legislature. The difference is that a veto has different consequences in the two models. In the presidential model, a veto protects the status quo. In the parliamentary model, it can trigger new election, meaning that the relevant reversion outcome is the expected policy after the new election. A chief executive is never worse off and sometimes strictly better off having dissolution power. If the electoral prospects for the party of the chief executive are bad, which means that the expected redistributive policy after a new election is worse than the

\textsuperscript{16}The order of the executive and legislative election does not matter. Moreover, an alternative interpretation consistent with simultaneous elections is that the electoral shocks affect citizens’ policy preferences or valence attributions (rather than turnout cost).

\textsuperscript{17}All proofs are in Appendix A.
status quo, chief executives in the parliamentary model are better off by simply sitting out their term, just as chief executives do by constitutional fiat in the presidential model. But in case of good electoral prospects for the party of the chief executive, meaning that the expected policy after the new election is better than the status quo, the chief executive can credibly use the threat to call a new election to extract concessions from veto players with divergent policy preferences. In principle, both left and right chief executives can benefit from dissolution power. But starting from a status quo that favors the right, left executives have greater incentives to use them to increase redistribution. In this situation, right executives do not benefit from dissolution power, as they are content with the status quo. For them, a new election brings the risk, however small, that the left wins a majority and gets to implement its redistributive agenda.

To illustrate the role of dissolution power more clearly, Figure 1 shows the outcome of executive-legislative bargaining with and without dissolution procedure for the case of no redistribution under the status quo. The logic of the argument holds more generally. But this is the prominent scenario in the institutional literature (e.g., Persson, Roland and Tabellini, 2000; Iversen and Soskice, 2006). It reflects the notion that providing government transfers to particular constituencies requires legislative action. It also appears a natural starting point for models aiming to explain differences in the growth of government under different democratic constitutions.

For the presidential model, where there is no dissolution procedure, Table (a) of Figure 1 shows the resulting redistributive income tax for all possible partisan constellations of veto and proposal power. This is a version of the canonical agenda-setter model (Romer and Rosenthal, 1978) applied to executive-legislative relations. Veto players only accept a tax-and-transfer bill \( b \) that makes them better off than the status quo policy, \( t_q \). Given this constraint, the president proposes the bill \( b \) she most prefers from those bills veto players will accept. The exception is the case where the president prefers the status quo to any accepted policy. In this case the president will simply endorse the status quo. The right party prefers to maintain the low-redistribution status quo. It will neither propose nor accept any increase in redistributive taxation. As a veto of the bill preserves the status quo, it is a powerful weapon to protect the interests of relatively well-off citizens. In this context, redistribution only occurs if the government is dominated by pro-redistribution politicians.
In particular, left-unified governments will implement its preferred policy and thus considerably increase redistribution. Divided or right-unified governments, by contrast, will maintain the status quo.

Table (b) in Figure 1 illustrates the bargaining outcomes in the parliamentary model, where the prime minister can make the survival of the government contingent on the passage of her policy proposal. In particular, it illustrates the argument that the dissolution power may allow left prime ministers to achieve some redistribution even if they face veto players that prefer the status quo to an increase in redistribution. A rejection of $b$ in the initial round leads to a new election and another round of bargaining. This means that a veto may not be an effective move to protect the status quo, as a new election may generate an alternative legislative majority. For a given new partisan allocation of proposal and veto power, politicians can predict the resulting policy. As the parliamentary model rules out a repeated dissolution, it just as in the model without the dissolution procedure. But there is uncertainty about the post-electoral distribution of legislative prerogatives. Denote the expected reversion policy as $E[t|\text{reject } b] \equiv \hat{x}$, where the expectation operator $E[\cdot]$ refers
to the political uncertainty in the election and the government formation process. It captures the common belief about the partisan composition of government after a new election. The expected reversion tax rate is positive as there is some chance that right politicians will not have veto power after the new election. It is less than the left party’s most preferred policy, \( t_L \), because the probability of a landslide electoral victory by the left party, leading to a left-unified government, is less than 1. Its magnitude depends on the relative mobilization capacity of the left party.

In situations of divided partisan control of proposal and veto power, the prime minister would like to use the dissolution procedure motion to extract concessions from divergent veto players. The ability to do so depends on the probability with which a new election will result in a partisan allocation of support favorable to the party of the prime minister. Given linear utility functions a veto player with divergent preferences from the prime minister accepts any \( b \) in the interval between \( t_q \) and \( E[t|\text{reject } x] \). Thus, a left prime minister’s optimal proposal is to set \( x_L^* = E[t|\text{reject } x] \) and the right veto player accepts. In the context of a low redistribution status quo, the dissolution threat allows left prime ministers to extract policy concessions from veto players that are less supportive of redistribution.

In sum, the argument illustrated by Figure 1 shows that existence of a dissolution procedure affects redistribution by changing the nature of proposal power in the legislative process. It affects the ability of chief executives to pursue their party’s redistributive programs. Holding the preferences of policymakers constant, chief executives are in a stronger position to pursue their party’s program in parliamentary than in the presidential model. This is true regardless of the status quo policy. Dissolution procedures do not intrinsically favor left or right policies. But in a context where the status quo level of taxation favors the rich and is low relative to the left party’s preferred level, left prime ministers can use their institutional prerogative to increases taxes and transfers where left presidents will not be able to do the same. If the status quo level of taxes and transfer is high, right prime ministers can use the dissolution procedure to extract some concessions from the left and reduce redistributive policy.

The separation of survival effect qualifies the argument that accounting for the number and ideological distance of veto players makes obsolete the institutional distinction between presidential
and parliamentary systems (Tsebelis, 1995, 2002). The veto player constellation matters for policy stability. But in the same veto player constellation, chief executives should be more effective in changing policy (toward their preferred outcome) in parliamentary democracies.

Depending on the partisan allocation of proposal and veto power, the level of taxation and transfer spending may be relatively low or relatively high in both the parliamentary and the presidential model. For example, a left-unified government will implement a high levels of taxes and transfers in both models. Hence, a full institutional comparison needs to incorporate how elections shape the partisan allocation of proposal and veto power. The electoral framework allows for the derivation the probabilities for the emergence of all four relevant partisan constellations of proposal and veto power. Thus, it is possible to compare the expected level of redistributive taxation across institutions before electoral results are realized. In doing so, one has to account for differences in the electoral origin of chief executives in the parliamentary and the presidential model.

3.2 Separation of electoral origin

The separate election of the chief executive in the presidential model implies different probabilities of a divided and a unified partisan control of proposal and veto power. Divided control of proposal and veto power is more likely to occur in the presidential than in the parliamentary model. The separation of votes for the chief executive and legislature in the presidential model make it more likely that the electoral fates of a party will vary across the executive and the legislative branch of government. In the theoretical framework, intra-party variation in electoral outcomes across electoral contests are driven by electoral (turnout) shocks. They increase the chance that neither party controls both proposal and veto power and policy change requires inter-party compromise. Therefore, elections are more likely to produce such minority situations in the presidential than in the parliamentary model. Put differently, due to the separation of electoral origin situations where the left controls both the executive and the legislature are less likely to emerge under presidentialism (for an illustration, see Figure 2).

The result is a straightforward consequence of the view that the exact outcome of democratic elections is uncertain ex-ante due to the large number of underlying individual decisions with a
stochastic component. While actors have rational expectations about which party is likely to win based on, among others, the distribution of support in the population and variation in electoral mobilization, no party can guarantee an electoral victory for sure, otherwise the contest would hardly be democratic (Przeworski et al., 2000, pp. 14-18).\footnote{This logic is distinct from arguments based on strategic voters that balance electoral outcomes (Alesina, Londregan and Rosenthal, 1993) or deal with credible commitment problems of partisan policymakers (Iversen and Soskice, 2006).}

Figure 2: The figure plots the probability that different partisan configurations of government emerge in the parliamentary model and in the presidential model, respectively, for varying distributions of the election-wide mobilization shock ($\gamma_p$) while holding constant the size of the poor group ($\delta_p = 0.65$) and the number of legislative seats ($N = 10$).

The higher probability of divided government under presidentialism is not driven by the electoral rules for the legislature, which are held fixed in the analysis. Elections may generate divided partisan control in both the parliamentary and the presidential model. To what extend this is the case depends, in practice, also on the electoral rules for the legislature and societal cleavages (e.g.,
Neto and Cox, 1997). The argument is that holding the factors determining legislative fractionalization constant, electing the chief executive in a separate electoral contests increases the chances of divergent electoral outcomes. This hypothesis is discussed in the literature on presidentialism and democratic survival (Linz, 1994). It matters empirically because executive-legislative institutions do not correlate highly with electoral institutions for the legislature (e.g., Persson and Tabellini, 2003, pp. 100-105).

How the difference in the likelihood of divided government affects the difference in expected policy depends on the status quo redistribution. If the status quo level of taxes and transfers is low relative to the left’s preferred level, then the higher probability of divided government under the presidential model will entail lower levels of expected taxes and transfers relative to the parliamentary model. In this case, divided government implies a protection of the low-redistribution status quo. If the status quo level of taxes and transfers is relatively high, then the higher probability of divided government under the presidential model will make it more likely that high taxes and transfers are maintained relative to the parliamentary model.

### 3.3 Empirical implications

The redistributive effects of executive-legislative institutions are summarized in Proposition 1.

**Proposition 1.** *For a given economic and electoral environment:*

1. *Expected redistribution is lower in the presidential than in the parliamentary model if the status quo redistribution is sufficiently conservative.*

2. *The expected difference in redistribution between the presidential and the parliamentary model consists of two distinct institutional effects, one reflecting differences in the partisan composition of government (separation of origin effect) and the other reflecting differences in bargaining power of the chief executive (separation of survival effect).*

The institutional analysis recovers the implication that the expected level of taxes and spending is lower in the presidential than in the parliamentary model. It holds as long as the status quo

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19It is conceptually distinct from the question of whether there are less incentives for coalition formation in presidential democracies (Cheibub, 2007).
policy is sufficiently conservative relative to the ideal policy of the left. It is more general in the sense that the status quo redistribution need not be zero. In fact, it can be substantially large.\textsuperscript{20} This reduced-form implication is practically identical in observational terms to the implication of the rent-seeking model (Persson, Roland and Tabellini, 2000), but the underlying mechanisms are fundamentally different.

In the partisan framework, the difference in expected redistribution is driven by how executive-legislative institutions affect the frequency and bargaining position of different partisan governments, not by variation in control over rent seeking politicians. The policy difference can be decomposed into a separation of origin effect, relating to the relative frequency of left unified governments, and a separation of survival effect, relating to differences in bargaining power reflecting the existence or absence of a dissolution procedure.

Beyond the previously documented association between executive-legislative institutions and the size of government and the core claim of the partisanship literature that the partisan composition of government matters for redistribution, the institutional analysis suggests several novel empirical implications that shed light on the partisan-institutional mechanisms. Holding everything else equal:

1. \textit{The separation of origin effect implies that in a cross-section of democracies, the partisan control of government should account for a part of the observed relationship between presidentialism and redistribution}. In particular, the average or cumulative control of government by the left should matter for differences average fiscal policies and reduce the impact of executive-legislative institutions. Partisan control alone need not capture the whole impact of executive-legislative institutions, however, as it ignores the separation of survival effect.

2. \textit{In the same veto player constellation, left (right) chief executives should be associated with...}

\textsuperscript{20}In practice, redistribution requires legislation. Even in countries where significant tax and transfer schemes are already place, achieving or maintaining an equitable distribution of income requires more than sporadic policy activity. Many transfer payments are not indexed to inflation (e.g., see the conditional cash transfer programs in Latin America or social assistance policies in Europe). So their real value declines over time. Furthermore, economic change affects the nature of poverty. Newly disadvantaged groups (e.g., immigrants, single mothers, working poor) are often not covered by previous transfer schemes. On the revenue side, the most efficient tax mix is likely to change with economic development. Thus, failing to update the existing tax code reduces the available revenue for redistribution. In short, in the absence of policy change the status quo redistribution is likely to decline over time.
more (less) redistribution in parliamentary than in the presidential democracies. This implication reflects the key bargaining mechanism driving the separation of survival effect. Taken as a prediction of how a change in the partisan composition of government affects redistributive policy, it is not contingent on the status quo. Holding fixed whether the party of the chief executive controls a majority of seats in the legislature, having dissolution power makes chief executives at least weakly better off.

In the empirical part of the paper, I use cross-sectional and panel data to confront these hypotheses with evidence.

3.4 Alternative assumptions

3.4.1 Proposal power

The presidential model assumes that the president has (de facto) proposal power. It is instructive to consider the alternative assumption according to which the legislature controls the agenda (e.g., Krehbiel, 1996; Tsebelis, 2002). For example, the majority party may control the agenda. This assumption does not change the main constitutional comparison. First, changing the institutional identity of the agenda but maintaining fixed terms of office does not alter the separation of power effect. The key feature of executive-legislative bargaining that distinguishes the presidential from the parliamentary model remains that the reversion policy is the status quo. Second, changing the identity of the agenda setter does not affect the separation of origin effect. The probability of unified or divided control of proposal and veto power is identical under the assumption of presidential and legislative proposal power.

3.4.2 Early dissolution

In the parliamentary model, dissolutions never occur in equilibrium. The absence of bargaining failure is typical of complete information models of veto bargaining. Empirically, although they appear to be relatively rare, there are examples of dissolutions in the context of bargaining over
Theoretically, it is straightforward to extend the parliamentary model to account for dissolutions in equilibrium. In particular, suppose that partisan politicians also care about the benefits of office that are not related to policy (one may think of exogenous ego rents). The degree of office motivation of each politician is private information. While party positions on redistribution are well publicized, individual politicians’ desires for office are not. For simplicity, suppose \( e \in \{e_o, e_p\} \) denotes the value a politician places on being in office independent of the policy outcome, where \( e_o > 0 \) denotes the office motivation of an opportunistic politician and \( e_p = 0 \) denotes the office motivation of an ideologue (normalized to zero). Altogether, there are now four types of politicians, depending on their partisan motivation and their office motivation: left ideologues, left opportunists, right ideologues, and right opportunists. The office motivation of each politician is private information. The distribution of office types is common knowledge. The prior probability that a given politician is an ideologue is \( q \) and the probability that a politician is an opportunist is \( 1 - q \).

In this setup, a dissolution may occur if there is a situation with an ideologue prime minister and an ideologue veto player with divergent policy preferences. Under certain conditions, the prime minister is willing to gamble and make a relatively extreme offer that will only be accepted by an opportunistic veto player, who is willing to accommodate on policy in order to maintain the benefits of office. Thus, the proposal fails if the veto player from the opposing party turns out to be an ideologue, who is not as susceptible to the threat of losing office benefits. Introducing private information about office motivation does not change the general logic of the argument and the qualitative features of the resulting institutional comparison.

## 4 Evidence

I now turn to evaluating key implications of the partisan model of executive-legislative institutions and redistribution. The empirical analysis proceeds in two steps. First, I use a cross-sectional data set covering 77 democracies to examine whether the previously documented association be-

\footnote{For example, in his study of Denmark Damgaard (2000, Table 7.7) documents several instances where the government dissolved the legislature after being defeated on the floor.}
tween presidentialism and public spending (Persson and Tabellini, 2003) is driven, at least in part, by variation in the frequency of left party control over the executive. I also explore whether the relationship between partisanship and spending varies across presidential and parliamentary democracies. Second, I use a panel data set of about 60 democracies to estimate how year-to-year changes in the partisan composition of government affect spending and whether the impact of partisanship varies across parliamentary and presidential democracies, as the model suggests. The panel analysis controls for unobservable country heterogeneity using fixed effects and captures the dynamics of fiscal policymaking. It allows me to distinguish the two mechanisms highlighted by the theoretical model. The cross-sectional analysis and the panel analysis are complementary and draw on the same underlying data sources with country-years as the unit of observation.

4.1 Data

4.1.1 Countries and years

The data I have assembled to test the model cover countries with at least 15 democratic years between 1975 and 2008, excluding micro-states with a population of less than one hundred thousand in 2008. Democracy is measured with the dichotomous measure from the Democracy-Dictatorship data set (introduced by Alvarez et al., 1996, updated by Cheibub, Gandhi and Vreeland, 2010). It is based on clear procedural criteria and does not entail any judgement about economic policy or the specific nature of executive-legislative relations. This is ideal for the purpose of assessing arguments about how differences in democratic constitutions shape redistribution. Requiring at least 15 years of democracy aims to ensure that there was sufficient time for the democratic process to unfold. In all included countries there were multiple electoral cycles, potentially allowing different parties to gain leverage over redistributive policy. The start date of the data set is constrained by data availability concerning partisan variables.

22The operational definition of democracy requires (1) selection of chief executive by popular election or a popularly elected legislature, (2) popular election of legislature, (3) the existence of more than one party competing in the elections and (4) at least one alternation in power must have taken place (for a more detailed discussion, see Cheibub, Gandhi and Vreeland, 2010, pp. 69-72).
4.1.2 Fiscal policies

The main dependent variable in both the cross-sectional and the panel analysis is central government expenditures as a percentage of GDP, collected and harmonized by the International Monetary Fund (IMF, 2011). Government spending is used widely in the literature and is available for most countries. In line with the theoretical argument and related models of redistribution, it is a proxy for the overall redistributive effort of the government. It does not directly capture to what degree redistribution is actually transferring income from the rich to the poor and may also include rents captured by politicians. Because the theoretical argument concerns national-level policymaking, I focus on central government spending. To assess the robustness of the results, I use two alternative measures: central government spending excluding military spending (as a percentage of GDP) and central government revenue (as a percentage of GDP).

4.1.3 Executive-legislative institutions

Executive-legislative institutions are measured in line with the model. Recall that the argument emphasizes two features of presidential democracies. There is a directly elected president and a separately elected legislature that both need to consent to make laws (separation of origin). The terms of office for the president and the legislature are fixed. In other words, the president has no unilateral power to dissolve the legislature and the legislature may not remove the president by majority vote (separation of survival). A parliamentary constitution, in contrast, is characterized by a fusion of the origin and the survival of the chief executive and the legislature. The chief executive (i.e., prime minister) emerges from the legislature and has the prerogative to turn a vote over policy into a vote over the survival of the government.

In operational terms, then, a democracy is coded as presidential if (1) there is a directly elected president that has veto power over legislation (i.e., a supermajority is required to override) and (2) neither the president nor the prime minister (if the office exists) has the power to unilaterally dissolve the legislature or to request a confidence motion that, if rejected, leads to a resignation of the government. A democracy is coded as parliamentary if (1) there is no directly elected president with veto or dissolution power and (2) the chief executive (i.e., prime minister) has to
power to dissolve the legislature or to request a confidence motion. All other executive-legislative arrangements are coded as mixed.

The coding is based on previous classifications of the election method, veto power, and dissolution power of the chief executive (especially Shugart and Carey, 1992; Huber, 1996; Bergman et al., 2003; Siaroff, 2003; Samuels and Shugart, 2010), complemented by constitutional texts (for which the principle source is CCW, ongoing) and country-specific literature on the constitutional practice.23 Existing work has documented the rules of the election of the chief executive as well as veto and dissolution power of elected presidents, at least until the 1990s. For these items, I have checked the consistency of the sources with each other and the constitutional texts and updated them where necessary. Detailed data on the power of prime ministers to dissolve the legislature or request a confidence motion are only available for a small set of mostly West European countries (Huber, 1996; Strøm and Swindle, 2002; Bergman et al., 2003). I have coded the remaining countries in the data set based on constitutional texts complemented by country-specific sources.24

Figure 3 plots the distribution of parliamentary, presidential, and mixed democracies between 1975 and 2008. Altogether, 57% of all country-years are parliamentary, 20% are presidential and 23% are mixed democracies. The percentage of “pure” parliamentary and parliamentary democracies, 77%, is higher than in recent studies that code constitutions as mixed whenever a directly elected president co-exists with an assembly-dependent prime minister (Amorim Neto and Strøm, 2006; Samuels and Shugart, 2010). Beyond the fact that some recent mixed democracies are not included because they have less than 15 years of democratic experience, this reflects a difference in theoretical emphasis, not a disagreement on rules. For the purpose of testing the predictions of the model proposed in this paper, adding a directly elected president with neither veto nor dissolution power to an otherwise parliamentary system does not change the logic of redistributive

23 The coding of executive-legislative institutions captures the formal rules spelled out in the constitution or basic laws for a particular country. The exception are cases where secondary sources indicate that the formal rules have been superseded by a commonly understood constitutional practice. This is often relevant for understanding the role of monarchs in executive-legislative relations. For example, according to a literal reading of the Commonwealth of Australia Constitution Act (sections 5 and 28), the Governor-General, appointed by the British monarch, can unilaterally dissolve the legislature. However, the constitutional convention is that only the prime minister can request a dissolution of parliament form the Governor-General, who proclaims the dissolution.

24 Table 8 in Appendix B lists the coding of the countries included in the analysis.
politics. Thus, countries like Ireland are coded as parliamentary, not as mixed.\textsuperscript{25} There is almost no over-time variation in the data. While there are some reforms, there is not a single change from a parliamentary to a presidential system or vice versa.\textsuperscript{26}

![Figure 3: The distribution of parliamentary, presidential, and mixed democracies.](image)

4.1.4 Government partisanship

To capture the partisan composition of the executive and the legislature, I primarily use variables from Beck et al. (2001, updated Dec. 2010) that measure the stated ideological orientation of

\textsuperscript{25}For example, the mixed category includes France (directly elected president with dissolution power and prime minister that is responsible to legislature and can request a confidence motion), Mongolia (directly elected president with veto power and prime minister that is responsible to legislature and can invoke confidence motion), Switzerland (executive elected by legislature but not responsible to it, no dissolution procedure), and Sri Lanka (directly elected president with dissolution power but no veto).

\textsuperscript{26}As discussed in the results section, the empirical findings are robust to using alternative measures of executive-legislative institutions.
parties. There is no other data source with the same coverage. The variables focus on the brand name of parties - whether they lean toward the left or right on economic policy - rather than their actions once in office, mitigating concerns about coder-driven endogeneity. I will separately introduce the specific measures used in the cross-sectional and the panel analysis when discussing the relevant statistical specification. The resulting measures of government partisanship are not perfect. But they are transparent, based on stated ideology, consistent with expert judgements where available and cover a large set of countries.

4.2 Cross-sectional analysis

To test the cross-sectional thrust of the partisan explanation for why presidential democracies redistribute less than parliamentary democracies, I estimate two different cross-national regression equations by ordinary least squares. In each specification, the dependent variable is the level of spending (or revenues) averaged over the period between 1990 and 2008. The goal of the analysis is to evaluate to what degree executive-legislative institutions and the cumulative partisan composition of government going back to 1975 explain variation in the recent level of redistributive policies, which are the results of many incremental policy decision. More specifically, the first specification considers the impact of left partisanship on the reduced-form relationship between executive-legislative institutions and fiscal policies

\[ Y_i = \beta_1(Presidential)_i + \beta_2(Left\ chief\ executive)_i + X_i'\gamma + \epsilon_i \]  

where \( Y_i \) is average spending (or revenues) in country \( i \) between 1990 and 2008, \( Presidential_i \) is the measure of presidential democracy introduced above (leaving parliamentary and mixed democracies as the comparison group), \( Left\ chief\ executive_i \) is the share of years between 1975 and 2008 during which the chief executive belongs to a left party and \( X_i \) is a vector of control variables (also

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27 Thus, parties that run on a left platform and then switch to neoliberal policy once they are in office are coded as left.

28 In the subset of countries for which there are expert surveys on the position of political parties, the correlation between a left chief executive measured by the variable from Beck et al. (2001, updated Dec. 2010) and the left-right position from Benoit and Laver (2006) is 0.7.
including an intercept). The restricted version of the model excludes \textit{Left chief executive}_i. It essentially replicates the standard specification in the literature (Persson and Tabellini, 2003) with an alternative measure of executive-legislative institutions in a different data set. Both the partisan model developed in this paper and the opportunistic model (Persson, Roland and Tabellini, 2000) imply that spending should be lower in presidential systems ($\beta_1 < 0$). The less restrictive version of the model includes left partisanship. The partisan argument implies more spending in countries dominated by left than right governments ($\beta_2 > 0$). Beyond the standard institution-blind partisan account, the argument suggests that the effect of presidentialism on spending works through partisanship. If that is the case, the coefficient on presidentialism should be reduced once partisanship is entered into the analysis. It need to be zero, however, as the linear specification does not account for the possibility that the impact of partisanship varies by constitution (separation of survival effect).

The second specification allows for a constitution-dependent impact of partisanship by including the interaction between presidentialism and left chief executive

$$Y_i = \beta_1(Presidential)_i + \beta_2(Left\ chief\ executive)_i + \beta_3(Presidential)_i \times (Left\ chief\ executive)_i + X_i'\gamma + \epsilon_i$$

The partisan model implies that left chief executives tend to be in a stronger position to pursue redistributive policies in parliamentary democracies ($\beta_3 < 0$). Using the dissolution threat they should be able to extract concessions from veto players that would not be forthcoming in a presidential system (separation of survival effect). Moreover, the absence of a separate electoral contest for the chief executive should make left unified control more likely (separation of origin effect).

The theoretical predictions are derived holding constant the distribution of market income and left mobilization. The empirical analysis uses the Gini index of inequality for pre-tax and transfer household income and voter turnout as proxies for those parameters. Electoral rules for the legis-

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29 Left chief executives includes all chief executives belonging to parties that branding themselves communist, socialist, social-democratic, or centrist - rather than right - on economic policy. For a similar approach, see Johnson and Crisp (2003). The underlying data from Beck et al. (2001, updated Dec. 2010) also contains some cases where the party of the chief executive does not have a clear ideology. Including a variable to capture those cases does not qualitatively change the results.
ture, which are fixed in the theoretical analysis, are perhaps the most important political institution used to explain redistribution in the literature (e.g., Iversen and Soskice, 2006). Empirical variation in electoral rules is captured by a variable measuring whether the legislature (lower house) is elected by plurality rule and by the mean district magnitude.\textsuperscript{30}

In addition, there is a large number of potential confounding variables that do not feature in the theoretical model. Political institutions are not randomly distributed. The literature shows that presidential democracies are more frequent in younger and poorer democracies and is the predominant democratic constitutional type in Latin America. Hence, the analysis follows Persson and Tabellini (2003, section 3.2.1) and controls for a set of covariates that are commonly thought to influence public spending and may also be related to executive-legislative institutions and the partisan control of government. These standard controls include (the natural logarithm of) GDP per capita, trade openness, the age distribution of the population (measured by the percentage of population over 64 and and between 15 and 64 years), federalism, membership in the OECD, the quality of democracy and (going beyond the core specification in Persson and Tabellini 2003) ethnic fractionalization and the age of democracy. Following Persson and Tabellini (2003), the analysis also examines whether the results are robust to including controls for geography and colonial history.\textsuperscript{31}

4.2.1 Cross-sectional results

Table 1 presents the main cross-sectional estimation results. In the specification without left chief executives, central government spending is significantly lower in presidential democracies (columns 1 and 4). In the partisanship-free model with the full set of control variables (column 4), including colonial origin and continental location, the estimate suggests that spending is about 3.5 percentage points lower on average in presidential than in parliamentary and mixed democracies. The size of the coefficient is substantively important and close to previous studies (Persson and Tabellini, 2003, section 6.2.1). Adding left chief executive (column 2 and 5) produces the result suggested by the partisan model of presidentialism, parliamentarism and redistribution that I have proposed. Left

\textsuperscript{30}The results are robust to including the interaction between plurality rule and district magnitude and to controlling for legislative fractionalization as a proxy for common-pool problems in fiscal policymaking.

\textsuperscript{31}For the definitions and sources of the control variables, see Table 9 in Appendix B.
Table 1: Cross-sectional regression results for government spending

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<td>Presidential</td>
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<td></td>
<td>(1.70)</td>
<td>(1.78)</td>
<td>(2.59)</td>
<td>(1.99)</td>
<td>(2.07)</td>
<td>(2.73)</td>
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<td>6.76**</td>
<td>5.67**</td>
<td>7.37**</td>
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<td></td>
<td>(2.32)</td>
<td>(2.42)</td>
<td>(2.45)</td>
<td>(2.64)</td>
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<tr>
<td>Presidential × Left CE</td>
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<td>-10.07**</td>
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<td>(4.83)</td>
<td>(4.70)</td>
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<td>Plurality rule</td>
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<td>-1.67</td>
<td>-2.34</td>
<td>-1.71</td>
<td>-1.87</td>
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<td>(1.52)</td>
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<td>0.05**</td>
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<td>0.04*</td>
<td>0.04**</td>
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<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Federalism</td>
<td>-3.77</td>
<td>-3.58</td>
<td>-4.27*</td>
<td>-4.65*</td>
<td>-4.35</td>
<td>-4.80*</td>
</tr>
<tr>
<td></td>
<td>(2.30)</td>
<td>(2.26)</td>
<td>(2.24)</td>
<td>(2.70)</td>
<td>(2.62)</td>
<td>(2.54)</td>
</tr>
<tr>
<td>FH democracy</td>
<td>-0.66</td>
<td>-0.27</td>
<td>-0.49</td>
<td>-0.75</td>
<td>-0.41</td>
<td>-0.71</td>
</tr>
<tr>
<td></td>
<td>(0.58)</td>
<td>(0.57)</td>
<td>(0.57)</td>
<td>(0.61)</td>
<td>(0.54)</td>
<td>(0.57)</td>
</tr>
<tr>
<td>Age democracy</td>
<td>0.07*</td>
<td>0.07*</td>
<td>0.07*</td>
<td>0.06</td>
<td>0.05</td>
<td>0.06</td>
</tr>
<tr>
<td></td>
<td>(0.04)</td>
<td>(0.04)</td>
<td>(0.04)</td>
<td>(0.05)</td>
<td>(0.05)</td>
<td>(0.05)</td>
</tr>
<tr>
<td>Continents &amp; origins</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Observations</td>
<td>77</td>
<td>77</td>
<td>77</td>
<td>77</td>
<td>77</td>
<td>77</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>0.700</td>
<td>0.718</td>
<td>0.731</td>
<td>0.698</td>
<td>0.722</td>
<td>0.732</td>
</tr>
</tbody>
</table>

Note: Robust standard errors in parentheses. The dependent variable is central government spending (% of GDP), averaged over democratic year 1990-2008. All other time-varying variables are averaged over democratic years 1975 - 2008. All models include controls for turnout, plurality rule, district magnitude, federalism, FH democracy, age democracy, GDP per capita (log), market inequality, trade openness, population 15-64, population 65+, ethnic fractionalization, OECD member and an intercept.

* $p < 0.1$, ** $p < 0.05$ (two-tailed tests)

Partisanship is significantly associated with more public spending. In the model with all controls (column 5), adding partisanship substantively reduces the coefficient on presidentialism, which is no longer statistically significant at the 10 percent level.

This finding is consistent with partisanship being one important mechanism through which
executive-legislative institutions affect spending - a mechanism that has been neglected by rent-seeking models of executive-legislative institutions. While the finding rules in partisanship as possible institutional mechanism explaining why presidential spend less than parliamentary democracies, it does not rule out an institutions-free omitted variables story where left government is exogenous to executive-legislative institutions. For some reason that is not captured by the control variables and that is unrelated to the workings of executive-legislative institutions, left governments may be less frequent in presidential systems. At this point, it is noteworthy to recall that the specification includes controls for the electoral rules of the legislature, ruling out the possibility that the finding is driven by the impact of electoral rules on government partisanship (Iversen and Soskice, 2006). Similarly, the analysis controls for ethnic fractionalization, which has been argued to be linked to the strength of left parties by shaping the opportunity of conservative politicians to appeal to ethnic divisions and thus diminish support for redistribution (e.g., Alesina and Glaeser, 2004).

The results of the models including the presidentialism-partisanship interaction (columns 3 and 6 Table 1) shed more light on the plausibility of the two competing interpretations. They show that as implied by the partisan model, the relationship between left government and spending is significantly stronger in parliamentary than in presidential democracies. The interactive finding holds controlling for continental indicators and colonial origins. It increases the credibility of the partisan-institutional account as it is in line with the argument that left chief executives are in a weaker bargaining position and are more likely to face opposing veto player in presidential than in parliamentary democracies. A simple omitted story does not account for why the impact of left partisanship varies across democratic constitutions.

While the goal of the empirical analysis is not to conduct a horse-race between the fiscal effects of executive-legislative institutions and other political institutions, it is nonetheless worthwhile to briefly discuss the institutions that are included in the analysis as control variables. The coefficient estimates for plurality rule, district magnitude, and federalism are broadly in line with the literature and the coefficients for district magnitude and federalism are significant at conventional levels (see Table 1). Everything else equal, public spending tends to be lower in federal countries and higher in countries with large multi-member electoral districts. Democratic constitutions comprise a bundle
of political institutions, and executive-legislative institutions are an important subset thereof.

Table 2: Cross-sectional analysis controlling for military legacy

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presidential</td>
<td>-4.36**</td>
<td>-3.96**</td>
<td>-0.55</td>
<td>-4.20**</td>
<td>-3.77**</td>
<td>0.19</td>
</tr>
<tr>
<td></td>
<td>(1.86)</td>
<td>(1.90)</td>
<td>(2.61)</td>
<td>(1.76)</td>
<td>(1.81)</td>
<td>(2.41)</td>
</tr>
<tr>
<td>Left chief executive (CE)</td>
<td>6.11**</td>
<td>7.45**</td>
<td>6.27**</td>
<td>7.84**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.47)</td>
<td>(2.63)</td>
<td>(2.44)</td>
<td>(2.57)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presidential × Left CE</td>
<td>-8.31*</td>
<td>-9.62**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(4.65)</td>
<td>(4.62)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Military legacy</td>
<td>3.21*</td>
<td>3.72**</td>
<td>3.19**</td>
<td>-0.19</td>
<td>0.08</td>
<td>-0.95</td>
</tr>
<tr>
<td></td>
<td>(1.66)</td>
<td>(1.60)</td>
<td>(1.53)</td>
<td>(2.28)</td>
<td>(2.23)</td>
<td>(1.99)</td>
</tr>
<tr>
<td>Age democracy</td>
<td>0.07</td>
<td>0.07</td>
<td>0.07</td>
<td>0.07</td>
<td>0.06</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td>(0.05)</td>
<td>(0.05)</td>
<td>(0.05)</td>
<td>(0.05)</td>
<td>(0.05)</td>
<td>(0.05)</td>
</tr>
<tr>
<td>Age democracy × Military legacy</td>
<td>0.27**</td>
<td>0.28**</td>
<td>0.32**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.10)</td>
<td>(0.11)</td>
<td>(0.10)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>77</td>
<td>77</td>
<td>77</td>
<td>77</td>
<td>77</td>
<td>77</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>0.706</td>
<td>0.735</td>
<td>0.740</td>
<td>0.713</td>
<td>0.744</td>
<td>0.753</td>
</tr>
</tbody>
</table>

Note: Robust standard errors in parentheses. The dependent variable is central government spending (% of GDP), averaged over democratic year 1990-2008. All other time-varying variables are averaged over democratic years 1975 - 2008. All models include controls for turnout, plurality rule, district magnitude, federalism, FH democracy, age democracy, GDP per capita (log), market inequality, trade openness, population 15-64, population 65+, ethnic fractionalization, OECD member, indicators for continents and colonial origin, plurality rule, district magnitude, federalism and an intercept.

$^{*}p < 0.1, ^{**}p < 0.05$ (two-tailed tests)

4.2.2 Robustness

The comparative politics literature suggests an alternative account based on the correlation between presidentialism and a legacy of military dictatorships that may explain the cross-sectional findings summarized in Table 1. Left executives governing in the “shadow of the military regime” pre-disposed towards the interests of the rich have incentives to be cautious in their redistributive policies to avoid a coup (Stokes, 2001, p. 33). Crucially, there is evidence that legacies of mili-
Table 3: Cross-sectional analysis excluding affluent and established democracies

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presidential</td>
<td>-3.52*</td>
<td>-2.81</td>
<td>0.81</td>
<td>-3.35*</td>
<td>-2.86</td>
<td>1.65</td>
</tr>
<tr>
<td></td>
<td>(1.94)</td>
<td>(1.93)</td>
<td>(2.26)</td>
<td>(1.79)</td>
<td>(1.84)</td>
<td>(1.94)</td>
</tr>
<tr>
<td>Left chief executive (CE)</td>
<td>5.98**</td>
<td>7.74**</td>
<td>5.87**</td>
<td>8.05**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.58)</td>
<td>(2.53)</td>
<td>(2.64)</td>
<td>(2.42)</td>
<td>(2.58)</td>
<td>(2.53)</td>
</tr>
<tr>
<td>Presidential × Left CE</td>
<td>-9.04**</td>
<td></td>
<td></td>
<td></td>
<td>-11.38**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(4.36)</td>
<td></td>
<td></td>
<td></td>
<td>(4.25)</td>
<td></td>
</tr>
</tbody>
</table>

Sample Excluding richest democracies\textsuperscript{a} Excluding oldest democracies\textsuperscript{b}

<table>
<thead>
<tr>
<th></th>
<th>Excluding richest democracies\textsuperscript{a}</th>
<th>Excluding oldest democracies\textsuperscript{b}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observations</td>
<td>58</td>
<td>58</td>
</tr>
<tr>
<td></td>
<td>58</td>
<td>58</td>
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<tr>
<td>Adjusted $R^2$</td>
<td>0.716</td>
<td>0.748</td>
</tr>
<tr>
<td></td>
<td>0.761</td>
<td>0.729</td>
</tr>
<tr>
<td></td>
<td>0.758</td>
<td>0.784</td>
</tr>
</tbody>
</table>

Note: Robust standard errors in parentheses. The dependent variable is central government spending (% of GDP), averaged over democratic year 1990-2008. All other time-varying variables are averaged over democratic years 1975 - 2008. All models include controls for turnout, plurality rule, district magnitude, federalism, FH democracy, age democracy, GDP per capita (log), market inequality, trade openness, population 15-64, population 65+, ethnic fractionalization, OECD member, indicators for continents and colonial origin, plurality rule, district magnitude, federalism and an intercept.

\textsuperscript{a}Log of per capita GDP in 2008 < 10. \textsuperscript{b}Age of democracy in 2008 < 50 years.

\* $p < 0.1$, ** $p < 0.05$ (two-tailed tests)

Military dictatorships are more frequent in presidential than in parliamentary democracies (Cheibub, 2007, pp. 140-145). Hence, the presidential-military nexus may account for the weaker association between left chief executives and public spending as well as lower overall spending under presidentialism. For the purpose assessing the empirical robustness of the partisan-institutional explanation, it is not relevant whether the presidential-military nexus is accidental or reflects a preference of the military for presidential institutions.

To assess the possibility that the results are driven by the military-presidential nexus, I control for observables related to the military threat of overthrowing a leftist, pro-redistributive government. I take the military legacy variable from Cheibub (2007), which is an indicator for whether the previous non-democratic government was led by a retired or active military official. As the military threat may decline over democratic time, I also consider an interaction between military legacy and age of democracy. Table 2 shows that the results are robust to controlling for military legacy. The
coefficients on the variables of interests, presidential democracy and the partisanship of the chief executives, are substantively unchanged. Excluding partisanship, the coefficient on presidentialism is negative and precisely estimated (columns 1 and 4). Left partisanship has a positive effect and its inclusion dampens the impact of presidentialism (columns 2 and 4). The interaction terms has the predicted sign in all models and is precisely estimated (column 3 and 6).

Table 4: Cross-sectional analysis using alternative dependent variables

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
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<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
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<tbody>
<tr>
<td>Presidential</td>
<td>-4.08**</td>
<td>-3.60*</td>
<td>-1.30</td>
<td>-5.65**</td>
<td>-5.26**</td>
<td>-0.45</td>
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</tr>
<tr>
<td></td>
<td>(1.83)</td>
<td>(1.87)</td>
<td>(2.56)</td>
<td>(2.39)</td>
<td>(2.49)</td>
<td>(3.42)</td>
<td></td>
</tr>
<tr>
<td>Left chief executive (CE)</td>
<td>5.46**</td>
<td>6.44**</td>
<td>6.85**</td>
<td>3.66</td>
<td>5.69*</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.06)</td>
<td>(2.17)</td>
<td>(2.06)</td>
<td>(2.90)</td>
<td>(3.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presidential × Left CE</td>
<td>-5.83</td>
<td>-7.82**</td>
<td>-11.98**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(4.11)</td>
<td>(3.06)</td>
<td>(5.48)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observations</td>
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<td>77</td>
<td>77</td>
<td>77</td>
<td>70</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>0.722</td>
<td>0.750</td>
<td>0.752</td>
<td>0.755</td>
<td>0.720</td>
<td>0.727</td>
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</tbody>
</table>

Note: Robust standard errors in parentheses. Dependent variables are central government revenue (% of GDP) in columns (1) - (3) and central government minus defense spending (% of GDP) in columns (4) - (6), each averaged over democratic years 1990 - 2012. All other variables are averaged over democratic years 1975 - 2008. All models include controls for turnout, plurality rule, district magnitude, federalism, FH democracy, age democracy, GDP per capita (log), market inequality, trade openness, population 15-64, population 65+ , ethnic fractionalization, OECD member, indicators for continents and colonial origin, plurality rule, district magnitude, federalism and an intercept.

Some studies show that the relationship between democratic constitutions and fiscal policies is weaker or even absent in less institutionalized or less developed democracies (Blume et al., 2009; Caruso, Scartascini and Tommasi, 2011). This finding may reflect different degrees of institutionalization of democratic constitutions, different levels of state capacity, lower levels of economic development or some other (omitted) variable. As a straightforward way to assess the robustness of the estimation results to the concern about heterogenous effects, I sequentially exclude the richest and the oldest democracies from the analysis. The result is summarized in Table 3. The
Table 5: Cross-sectional analysis with an alternative measure of presidentialism

<table>
<thead>
<tr>
<th></th>
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<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presidential</td>
<td>-3.30</td>
<td>-2.54</td>
<td>0.81</td>
<td>-1.52</td>
<td>0.10</td>
<td>3.00</td>
</tr>
<tr>
<td></td>
<td>(1.85)</td>
<td>(1.94)</td>
<td>(2.57)</td>
<td>(1.72)</td>
<td>(1.84)</td>
<td>(2.49)</td>
</tr>
<tr>
<td>Left chief executive (CE)</td>
<td>4.63*</td>
<td>6.67**</td>
<td>6.12**</td>
<td>8.05**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.37)</td>
<td>(2.48)</td>
<td>(2.50)</td>
<td>(2.98)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presidential × Left CE</td>
<td>-9.19*</td>
<td>-8.02</td>
<td></td>
<td></td>
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<td></td>
<td>(4.82)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continents &amp; origins</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Observations</td>
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<td>77</td>
<td>77</td>
<td>77</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>0.682</td>
<td>0.695</td>
<td>0.705</td>
<td>0.684</td>
<td>0.710</td>
<td>0.713</td>
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</tbody>
</table>

Note: Robust standard errors in parentheses. The dependent variable is central government spending (% of GDP), averaged over democratic year 1990-2008. All other time-varying variables are averaged over democratic years 1975 - 2008. All models include controls for turnout, plurality rule, district magnitude, federalism, FH democracy, age democracy, GDP per capita (log), market inequality, trade openness, population 15-64, population 65+, ethnic fractionalization, OECD member, plurality rule, district magnitude, federalism and an intercept. The measure of presidentialism is from Samuels and Shugart (2010).

* $p < 0.1$, ** $p < 0.05$ (two-tailed tests)

The analysis displayed in columns 1-3 excludes the 19 richest countries in the data set, in terms of per capita GDP in 2008 US dollars. It drops one-forth of the countries, excluding the advanced industrial democracies that are often the focus of studies on parties and redistribution (e.g., Iversen and Soskice, 2006). The analysis in columns 4-6 excludes all countries with more than 50 years of democratic history in 2008, dropping about one-third of all observations. In addition to advanced industrial democracies, this also excludes some low-income and middle-income countries. Excluding the richest and oldest democracies does not substantially change the results. The pattern of estimated coefficients is the same as in the full data set.

Additional sensitivity analyses include using alternative measures of fiscal policy as dependent variables and using an alternative measure of presidentialism. As shown in Table 4, regressions using central government revenue and spending excluding defense, which is available for less countries, produce the same substantive results. In the analysis reported in Table 5, I measure presidential
democracy with the variable coded by (Samuels and Shugart, 2010). Again, the results hold up.

Altogether, the cross-sectional evidence is remarkably consistent with the partisan model of presidentialism, parliamentarism and redistribution. The findings are robust to a large set of control variables (going beyond the standard list of controls in the literature), to alternative measures of fiscal policies and executive-legislative institutions as well as dropping the usual suspects of rich, established democracies. Nonetheless, the nature of cross-sectional data makes it impossible to rule out the existence of unobserved confounders that may drive the results. Moreover, it does not shed light on the dynamics of fiscal policymaking and the more subtle partisan effects that are implied by the model. Turning to the panel data, I can address these issues.

4.3 Panel analysis

In the panel analysis, I estimate how year-to-year changes in the partisan composition of government affect central government spending (or revenues), allowing the partisan effects to vary by executive-legislative institutions. As there is little variation in executive-legislative institutions over time, analyzing the panel version of the data set does not provide additional leverage in estimating the effect of presidentialism on fiscal policies. Importantly, however, the panel data set provides a credible research design for testing the hypothesis of institutional-contingent partisan effects that is implied by the partisan model. Exploiting the time dimension of the data allows me to control for unobserved time-invariant country heterogeneity that may drive differences in partisan conflict over redistribution, such as initial economic or political conditions that have been argued to shape constitutional design and party formation (e.g., Ticchi and Vindigni, 2010).

4.3.1 Dynamic specification

In the panel setting, it is possible to capture a fairly rich set of partisan-institutional configurations that are close to the theoretical model. Using the partisan variables from Beck et al. (2001, updated Dec. 2010), I construct four indicators measuring the partisan orientation and majority status of the party of the chief executive. Left majority indicates a chief executive belonging to a left party that has a majority of seat in the legislature (i.e., lower house in bicameral systems). Left
**minority** indicates a chief executive belonging to a left or centrist party that has minority in the legislature. **Right majority** indicates a chief executive belonging to a right party that has majority in the legislature. It is the baseline category in the analysis. **Right minority** indicates a chief executive belonging to a right party that has minority in the legislature.\(^{32}\) I also use an alternative measure for the partisan orientation of the chief executive as left or right. It is taken from Samuels and Shugart (2010), who have conducted a content analysis of the campaign promises of the party that obtains the position of the chief executive after the election as either security-oriented (i.e., left) or efficiency-oriented (i.e., right) on economic policy. The campaign-specific measure is only available for a shorter time period (1978-2002) and a smaller set of countries, but it nonetheless covers all democratic constitutions and continents and provides a useful complement to the measure focusing on parties’ broad ideological orientation. To test for constitution-varying partisan effects, the partisan indicators are interacted with indicators for presidential and mixed democratic constitutions (with parliamentary democracies as the baseline). Formally, the basic panel specification is as follows:

\[
Y_{it} = \theta Y_{i,t-1} + \beta_1 (Left \ maj)_{it} + \beta_2 (Left \ minor)_{it} + \beta_3 (Right \ minor)_{it} \\
+ \beta_4 (Left \ maj)_{it} \times (Presid\)ial)_{it} + \beta_5 (Left \ minor)_{it} \times (Presid\)ial)_{it} \\
+ \beta_6 (Right \ minor)_{it} \times (Presid\)ial)_{it} + \beta_7 (Left \ maj)_{it} \times (Mixed\)it) \\
+ \beta_8 (Left \ minor)_{it} \times (Mixed\)it) + \beta_9 (Right \ minor)_{it} \times (Mixed\)it) \\
+ \beta_9 (Presid\)ential)_{it} + \beta_{10} (Mixed\)it) + X'_{it} \beta_{11} + \alpha_i + \gamma_t + \epsilon_{it}
\]  

where \(Y_{it}\) is central government spending (or revenue) as a percentage of GDP in country \(i\) and year \(t\), \(Y_{i,t-1}\) is spending (revenue) in the previous year, \(\alpha_i\) and \(\gamma_t\) are country-specific and year-specific intercepts, \(X'_{it}\) is a vector of time-varying control variables, the remaining variables are the partisan-institutional indicators of interest introduced above, and \(\epsilon_{it}\) is an idiosyncratic error. The

\(^{32}\)As in the cross-sectional analysis, left chief executives includes those belonging to parties that branding themselves communist, socialist, social-democratic, or centrist - rather than right - on economic policy. In this coding, right chief executives also include chief executives without a coded ideological leaning. Adding an indicator for those cases or dropping them does not change the results.
country fixed effects capture time-invariant country-specific confounders. The year fixed effects capture common trends such as oil prices or changes in international relations. Including a lagged dependent variable accounts for the persistence of overall government spending and proxies for the status quo policy.\textsuperscript{33}

The panel data allow me to distinguish between the two complementary mechanisms highlighted by the theoretical model. The novel prediction of the model is that holding constant the level of legislative support, left chief executives should spend less in presidential than in parliamentary democracies. This reflects what I have called the separation of survival effect in the theoretical part of the paper. It arises from the difference between joint survival of the executive and the legislature under parliamentarism, where prime ministers may use their dissolution power to extract concessions from party members, coalition partners, or opposition parties, and the separation of survival under presidentialism. The separation of origin effect is the second mechanism. At the policymaking stage, it boils down to the classic veto player argument. It implies that holding differences in dissolution power constant, left majority governments should spend more than left minority governments. According to the theoretical model, then, left majority governments under parliamentarism should be able and willing to increase spending relative to right majority governments ($\beta_1 > 0$). Left minority governments under parliamentarism also should have incentives to increase spending, but they are more constrained by their lack of a legislative majority ($\beta_1 > \beta_2$). Crucially, according to the separation of survival effect, the effect of left majority and left minority governments should be weaker in presidential systems ($\beta_4 < 0$, $\beta_5 < 0$). The model makes no theoretical predictions for mixed democracies. The interaction terms with mixed democracies are only included to obtain accurate estimates for the effects of theoretical interests.

The analysis includes all countries from the cross-sectional analysis for which there are at least 8 years of spending data. The resulting data set is an unbalanced panel of 64 countries between 1975 and 2008 (using the partisanship measure from Beck et al. 2001) or of 53 countries between 1978 and 2008.\textsuperscript{33} A more complicated dynamic specification, such as an error-correction formulation (which is equivalent to an autoregressive distributed lag model that also includes lags of each explanatory variable), produces qualitatively the same results, but there is not sufficient evidence to reject the simpler specification used here for a more complicated one with a considerable number of additional parameters.
and 2002 (using the partisanship measure from Samuels and Shugart 2010). There is no change from or to presidentialism in the data. So the indicator $Presidential_{it}$ is indistinguishable from the country fixed effect. Given the inclusion of country fixed effects, the identification of is driven by changes in the partisan composition of governments over time. In line with previous empirical studies, basic time-varying control variable are the level or quality of democracy, age of democracy in years, GDP per capita (logged), GDP growth, Gini index of market inequality, population between 15-64 years (% of total population), population 65+ years (% of total population), trade openness, and indicators for the electoral cycle.

4.3.2 Estimation issues

The most straightforward way of estimating the dynamic panel model in equation (7) is to use the common fixed effects or or least-squares dummy variable (LSDV) estimator. The main concern with this approach is that the LSDV estimator is inconsistent for a fixed number of time periods and a large number cross-sectional units. Even after controlling for country fixed effects, the lagged dependent variable remains correlated with the error term (Nickell, 1981). As the correlation is of order magnitude to the number of time periods, the asymptotic panel bias becomes smaller as the number as time periods increases. Monte Carlo studies show that the LSDV estimator behaves well for data sets with a structure similar to the one analyzed here, where the number of time periods is considerable larger and the number of cross-sectional units is much smaller than in most micro-level panel studies (Judson and Owen, 1999). In this context, bias is small and the estimator performs at least as well or better than more complex generalized methods of moments (GMM) estimators. Accordingly, the LSDV estimator provides a useful starting point (Beck and Katz, 2011). I use clustered standard errors to allow for correlation of the errors within countries.

I also estimate the bias corrected least-squared dummy variables (LSDVC) estimator, which was developed by Kiviet (1995) and has been extended to unbalanced panels by Bruno (2005b). It relies on a two-step procedure that first estimates an approximation of the dynamic bias using

34 After listwise deletion of missing values, in the analysis the average number of observations per country is 21, the minimum is 5 and the maximum is 32.
35 For the definitions and sources of the control variables, see Table 9 in Appendix B.
GMM and then corrects the LSDV estimates. Theoretically, the LSDVC estimator is superior to LSDV and in Monte Carlo studies it also outperforms GMM estimators (Judson and Owen, 1999). Given the data structure with a relatively large number of time periods, the LSDVC estimates should be fairly similar to those obtained by LSDV.\textsuperscript{36}

### 4.3.3 Panel results

Table 6 presents the panel estimates. The LSDV estimates are close to the ones obtained by the bias-corrected LSDVC. In all columns, the coefficient on the variable left majority government has the predicted positive effect and is statistically significant at the five percent level. It indicates that in parliamentary democracies, central government spending increases significantly when left majority governments take office compared to the baseline of right majority governments. The magnitude of the coefficient is substantively important. The smallest estimate (column 2) suggests that the short-run increase in spending is about 0.8 percentage points. The coefficient on left minority governments is positive, but smaller and not statistically significant from zero. A statistical test shows that left minority governments spend significantly less than left majority governments under parliamentarism.\textsuperscript{37} Accordingly, the partisanship of the chief executive matters conditional on the distribution of veto power in the legislative arena.\textsuperscript{38}

The finding that variation in the partisan composition of government explains variation in spending within parliamentary democracies is puzzling from the rent-seeking perspective on the fiscal effect of executive-legislative institutions, which implies a uniform impact of institutions on spending. It is in line with the prediction of the partisan model as well as partisan veto player approaches more generally. It does not rule out rent-seeking as a channel through which executive-legislative institutions influence policy, but it clearly belies the notion of exchangeable politicians and indicates the relevance of partisan conflict over public spending.

\textsuperscript{36}In the first stage of the procedure, I use the GMM estimator developed by Blundell and Bond (1998). Monte Carlo studies show that the asymptotic standard errors for the LSDVC do not perform well in finite samples. They tend to be too small. Hence I follow the practice of computing standard errors using bootstrap methods, drawing 500 bootstrap data sets (Bruno, 2005a).

\textsuperscript{37}The F-test of the null hypothesis that the coefficients for left majority and left minority are equal in column 1 yields a p-value of 0.02.

\textsuperscript{38}There is no evidence of second-order autocorrelation. For the model in col. 1, the Arellano-Bond test for AR(2) in first differences fails to reject the null of no serial correlation at any conventional level (p = 0.93).
Table 6: Panel estimates for government spending

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spending in previous year</td>
<td>0.82**</td>
<td>0.89**</td>
<td>0.74**</td>
<td>0.80**</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
<td>(0.02)</td>
<td>(0.05)</td>
<td>(0.05)</td>
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<tr>
<td>Left majority</td>
<td>0.95**</td>
<td>0.90**</td>
<td>1.76**</td>
<td>1.72*</td>
</tr>
<tr>
<td></td>
<td>(0.45)</td>
<td>(0.43)</td>
<td>(0.54)</td>
<td>(0.98)</td>
</tr>
<tr>
<td>Left minority</td>
<td>0.17</td>
<td>0.15</td>
<td>0.62</td>
<td>0.54</td>
</tr>
<tr>
<td></td>
<td>(0.37)</td>
<td>(0.38)</td>
<td>(0.53)</td>
<td>(0.93)</td>
</tr>
<tr>
<td>Right minority</td>
<td>0.90**</td>
<td>0.83*</td>
<td>0.65</td>
<td>0.55</td>
</tr>
<tr>
<td></td>
<td>(0.41)</td>
<td>(0.47)</td>
<td>(0.55)</td>
<td>(0.83)</td>
</tr>
<tr>
<td>Presidential × Left majority</td>
<td>-1.76**</td>
<td>-1.75**</td>
<td>-1.88**</td>
<td>-1.85*</td>
</tr>
<tr>
<td></td>
<td>(0.58)</td>
<td>(0.63)</td>
<td>(0.58)</td>
<td>(1.11)</td>
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<tr>
<td>Presidential × Left minority</td>
<td>-0.97*</td>
<td>-0.98*</td>
<td>-1.63**</td>
<td>-1.57</td>
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<tr>
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<td>(0.50)</td>
<td>(0.59)</td>
<td>(0.67)</td>
<td>(1.21)</td>
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<tr>
<td>Presidential × Right minority</td>
<td>-1.43**</td>
<td>-1.42**</td>
<td>-0.47</td>
<td>-0.38</td>
</tr>
<tr>
<td></td>
<td>(0.52)</td>
<td>(0.58)</td>
<td>(0.60)</td>
<td>(0.98)</td>
</tr>
<tr>
<td>Mixed × Left majority</td>
<td>-1.19**</td>
<td>-1.13</td>
<td>-2.05*</td>
<td>-1.94</td>
</tr>
<tr>
<td></td>
<td>(0.59)</td>
<td>(0.72)</td>
<td>(1.11)</td>
<td>(1.96)</td>
</tr>
<tr>
<td>Mixed × Left minority</td>
<td>-0.70</td>
<td>-0.68</td>
<td>-1.26</td>
<td>-1.12</td>
</tr>
<tr>
<td></td>
<td>(0.55)</td>
<td>(0.59)</td>
<td>(1.11)</td>
<td>(1.79)</td>
</tr>
<tr>
<td>Mixed × Right minority</td>
<td>-0.88</td>
<td>-0.83</td>
<td>-0.40</td>
<td>-0.33</td>
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<td>(0.64)</td>
<td>(0.68)</td>
<td>(0.80)</td>
<td>(1.31)</td>
</tr>
<tr>
<td>Mixed</td>
<td>-0.40</td>
<td>-0.29</td>
<td>-0.92</td>
<td>-0.43</td>
</tr>
<tr>
<td></td>
<td>(1.05)</td>
<td>(0.69)</td>
<td>(1.81)</td>
<td>(1.75)</td>
</tr>
</tbody>
</table>

Measure of partisanship Beck et al. Samuels and Shugart
Estimator LSDV LSDVC LSDV LSDVC
Observations 1366 1366 833 833
Countries 64 64 53 53

Note: The dependent variable is central government spending (% of GDP). Standard errors are in parentheses. In col. (1) and (3), standard errors are clustered by country. In col. (2) and (4) standard errors are bootstrapped. All regressions include controls for democracy, age democracy, GDP per capita (log), GDP growth, market inequality, population 15-64, population 65+, trade openness and indicators for year and the electoral cycle.

* p < 0.1, ** p < 0.05 (two-tailed tests)
A novel prediction of the model concerns the interaction terms between left majority government and presidential democracy and left minority government and presidential democracy. In line with the separation of survival effect, both interaction terms are negative and precisely estimated. The estimates indicate that left majority governments in presidential democracies spend significantly less than left majority governments in parliamentary democracies, and that left minority governments in presidential democracies spend significantly less than left minority governments in parliamentary democracies. These estimates are consistent with the argument that differences in dissolution power shape the bargaining power of chief executives so that, given the same legislative support, chief executives are in a stronger bargaining position in parliamentary than in presidential democracies. The finding does not follow from the standard veto player logic.

The main results about the constitution-varying impact of left chief executives are the same for both measures of partisanship. The results differ, however, about the fiscal impact of right minority governments. Using the broad ideology-based measure of partisanship from Beck et al. (2001) suggests that in parliamentary democracies, left majority governments and right minority governments have very similar spending patterns. The estimates using the campaign-specific partisanship measure of Samuels and Shugart (2010) suggest, instead, that right minority governments do not spend significantly more than right majority governments and spend significantly less than left majority governments. The difference is not driven by the fact that the campaign-specific measure is only available for a subset of the data. Unsurprisingly perhaps, the measure that is more sensitive to the context of specific elections produces results that are more in line with traditional partisan theory.

The relatively large coefficient on the lagged dependent variable, typical for analyses of government spending, indicates that fiscal policymaking is relatively persistent. This suggests that changes in the partisan composition of government do not only have an immediate effect on spending, but also a lagged effect on future spending. To illustrate this, Figure 4 plots the immediate and the medium-run (i.e., cumulative 5-year) estimated effect of the three partisan configurations - left

39The coefficients for left majority and right minority governments are not statistically distinguishable. The F-test of the null hypothesis that the coefficients for left majority and right minority are equal in column 1 yields a p-value of 0.88.
majority, left minority, and right minority - relative to the baseline of right majority governments and varying by parliamentary, presidential and mixed democracies. The cumulative effects are approximately four times larger than the short-run effects. The figure also shows that the effect of left majority governments in presidential democracies is virtually null. While not following from a literal reading of the theoretical model, the finding is consistent with the more general logic behind dissolution bargaining. Thinking of parties as heterogeneous rather than unitary actors, chief executives also have incentives to use the dissolution procedure in situations of unified or single-party control of government to implement the party’s programmatic agenda against dissenters in their own party (e.g., Huber, 1996). The absence of dissolution power under presidentialism means that unified party government is no guarantee for coherent programmatic policy.

Beyond using alternative estimators and measures of partisanship, the results are also robust, in terms of the sign and significance of the coefficients of interest, to a range of additional alternative specifications (see Table 7). As in the cross-sectional analysis, the finding of constitution-contingent partisan effects holds when the richest or oldest democracies are excluded (cols. 1-2, 6-7). If anything, the coefficients of interest become larger. Moreover, using alternative indicators for executive-legislative institutions directly taken from the literature yields very similar estimates to those based on the measures constructed to test the model (col. 3, 8). The results are somewhat weaker using central government revenue as an alternative dependent variable (cols. 5, 10). There is the predicted significant increase in revenues under left majority governments in parliamentary democracies and the interaction terms between left governments and presidentialism have the expected negative sign, but in most cases they are not estimated precisely enough to be significant at conventional levels. Using central government spending excluding spending on defense as an alternative dependent variable, however, yields the same results as with central government spending, including large and precisely estimated interaction terms (cols. 4, 9).

\[40\] Further sensitivity analyses (available upon request) show that the results are robust to including additional time-varying control variables, such as military legacy interacted with age of democracy, turnout, mean district magnitude and an indicator for majoritarian electoral institutions, and sequentially dropping each country.
Figure 4: The figure depicts the estimated effects of a one-year spell of different partisan governments on central government spending varying by parliamentary, presidential and mixed democracies (based on the results in col. 3 of Table 6) with 90% confidence intervals. Panel (a) plots the immediate effects of one-year of left-majority, left-minority and right-minority governments relative to the baseline of right majority governments. Panel (a) plots the 5-year cumulative effects.
Table 7: Robustness of panel estimates

<table>
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<th>(7)</th>
<th>(8)</th>
<th>(9)</th>
<th>(10)</th>
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<td>Spending (revenue)</td>
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<td>0.71**</td>
<td>0.83**</td>
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<td>0.81**</td>
<td>0.68**</td>
<td>0.66**</td>
<td>0.74**</td>
<td>0.73**</td>
<td>0.75**</td>
</tr>
<tr>
<td>in previous year</td>
<td>(0.04)</td>
<td>(0.04)</td>
<td>(0.03)</td>
<td>(0.04)</td>
<td>(0.03)</td>
<td>(0.06)</td>
<td>(0.08)</td>
<td>(0.05)</td>
<td>(0.06)</td>
<td>(0.04)</td>
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<tr>
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<td>2.20**</td>
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<td>0.88*</td>
<td>0.60**</td>
<td>1.87**</td>
<td>2.41**</td>
<td>1.58**</td>
<td>1.99**</td>
<td>0.79**</td>
</tr>
<tr>
<td></td>
<td>(0.51)</td>
<td>(0.59)</td>
<td>(0.45)</td>
<td>(0.51)</td>
<td>(0.28)</td>
<td>(0.44)</td>
<td>(0.89)</td>
<td>(0.54)</td>
<td>(0.80)</td>
<td>(0.33)</td>
</tr>
<tr>
<td>Left minority</td>
<td>0.59</td>
<td>0.76</td>
<td>0.14</td>
<td>0.30</td>
<td>-0.08</td>
<td>0.53</td>
<td>0.42</td>
<td>0.30</td>
<td>0.64</td>
<td>0.66*</td>
</tr>
<tr>
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<td>(0.39)</td>
<td>(0.26)</td>
<td>(0.74)</td>
<td>(1.34)</td>
<td>(0.34)</td>
<td>(0.61)</td>
<td>(0.34)</td>
</tr>
<tr>
<td>Right minority</td>
<td>1.35*</td>
<td>1.83**</td>
<td>0.78**</td>
<td>1.02**</td>
<td>0.16</td>
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<td>0.99</td>
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<td>(0.79)</td>
<td>(1.05)</td>
<td>(0.36)</td>
<td>(0.58)</td>
<td>(0.25)</td>
</tr>
<tr>
<td>Presidential × Left major</td>
<td>-2.83**</td>
<td>-2.77**</td>
<td>-1.44**</td>
<td>-1.45**</td>
<td>-0.49</td>
<td>-1.83**</td>
<td>-1.68*</td>
<td>-1.42**</td>
<td>-2.31**</td>
<td>-0.60</td>
</tr>
<tr>
<td>majority</td>
<td>(0.67)</td>
<td>(0.94)</td>
<td>(0.56)</td>
<td>(0.61)</td>
<td>(0.50)</td>
<td>(0.56)</td>
<td>(0.90)</td>
<td>(0.67)</td>
<td>(0.82)</td>
<td>(0.51)</td>
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<td>-0.82*</td>
<td>-0.98**</td>
<td>-0.06</td>
<td>-1.33*</td>
<td>-1.50</td>
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<td>minority</td>
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<td>(0.82)</td>
<td>(0.47)</td>
<td>(0.49)</td>
<td>(0.47)</td>
<td>(0.77)</td>
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<td>(0.53)</td>
<td>(0.78)</td>
<td>(0.43)</td>
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<tr>
<td>Presidential × Right minor</td>
<td>-1.86**</td>
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<td>-0.92*</td>
<td>-1.31**</td>
<td>-0.20</td>
<td>-0.35</td>
<td>-1.32</td>
<td>0.41</td>
<td>-0.78</td>
<td>0.09</td>
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<td>(0.73)</td>
<td>(0.85)</td>
<td>(0.50)</td>
<td>(0.54)</td>
<td>(0.40)</td>
<td>(0.81)</td>
<td>(1.18)</td>
<td>(0.50)</td>
<td>(0.65)</td>
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Measure of partisanship


<table>
<thead>
<tr>
<th>Sample</th>
<th>Excl. richest(^a)</th>
<th>Excl. oldest(^b)</th>
<th>Full(^c)</th>
<th>Full</th>
<th>Full</th>
<th>Excl. richest(^a)</th>
<th>Excl. oldest(^b)</th>
<th>Full(^c)</th>
<th>Full</th>
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</thead>
<tbody>
<tr>
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<td>707</td>
<td>1366</td>
<td>1182</td>
<td>1361</td>
<td>522</td>
<td>433</td>
<td>833</td>
<td>716</td>
<td>826</td>
</tr>
</tbody>
</table>

Note: Estimation is by LSDV. Standard errors in parentheses are clustered by country. All models include the same time-varying controls as in Table 6. \(^a\)Log of per capita GDP in 2008 < 10. \(^b\)Age of democracy in 2008 < 50 years. \(^c\)Alternative institutional indicators (from Samuels and Shugart, 2010).

\(^*\) p < 0.1, ** p < 0.05 (two-tailed tests)
5 Conclusion

The last 15 years or so have seen a renewed effort to examine the fiscal consequences of presidential versus parliamentary democracies. With the notable exception of the influential theoretical model of Persson, Roland and Tabellini (2000), most of the literature has focused on trying to estimate the causal impact of presidentialism on fiscal policy. The contribution of this paper is to go beyond estimating the reduced-form relationship between executive-legislative institutions and fiscal policy and to propose and test an alternative explanation for the observation that the size of government is smaller in presidential than in parliamentary democracies. In contrast to the standard rent-seeking explanation, the explanation proposed here emphasizes that executive-legislative institutions matter for fiscal policymaking because they shape the outcome of partisan conflict over redistribution. Using cross-national and panel data covering a global set of democracies, the empirical analysis finds evidence consistent with key implications of the partisan account of presidentialism, parliamentarism, and redistribution.

As in any macro-level empirical analysis involving a heterogenous set of countries, there are limits to what inferences one can reliable draw from the analysis. Measuring partisanship across such a large set of cases requires a significant dose of pragmatism and the cross-sectional analysis cannot rule the existence of unobserved country-specific confounders. However, the cross-sectional analysis controls for a large set of possible confounders including variables, such as military legacy, that have been ignored in previous studies. And the results hold across a large set of different specifications, including alternative measures of fiscal policy and executive-legislative institutions. Moreover, the panel analysis accounts for country heterogeneity using fixed effects, ruling out the possibility that time-invariant unobserved characteristics such as initial levels of inequality drive the constitution-varying partisan effects.

Altogether, the evidence lends considerable empirical credibility to the argument that the institutional separation of power between the executive and the legislature shapes redistributive policy through the distribution and effectiveness of partisan governments. It bolsters the view that one important institutional reason for why we observe that presidential democracies tend to have smaller governments than parliamentary democracies is because they advantage partisan interests in favor
of low redistribution. The findings go beyond the common notion that veto players increase policy stability and point to the constitution-varying distribution and effectiveness of partisan governments. They are not easily explained in terms of the conventional argument based on rent-seeking politicians. This does not mean that rent-seeking does not matter. However, taken together the results of this paper suggest that its importance in explaining differences in fiscal policy between presidential and parliamentary systems has been overstated.

The results in this paper also relate to the question of whether democracy entails redistribution. The expectation that democratic competition should lead to an expansion of policies redistributing resources toward the poor is common in popular and academic discourse. However, the verdict of the empirical literature on the veracity of this belief is mixed, with several recent studies finding no relationship between democracy and redistributive outcomes (e.g., Timmons, 2010). One possible explanation for such null-findings is that not all democracies are designed equal, suggesting that the redistributive effect of democracy is heterogeneous. It should vary, among others, by whether a democracy is parliamentary or presidential.
A Model appendix

A.1 Preliminaries

Let me formalize two assumptions that are stated informally in the text:

1. Poor citizens are a majority in the population. In particular, \( \delta_p > \left( \frac{N+1}{N} \right) \delta_r \). This restriction ensures that there is a positive probability of a left legislative majority.

2. Poor citizens are less likely to turn out to vote than rich citizens. In particular, \( \gamma_p > \left( \frac{\delta_r - \left( \frac{N-1}{N+1} \right) \delta_p}{\left( \frac{N-1}{N+1} \right) \delta_r} \right)^\gamma_r \). Given \( \gamma_r = 0 \), this assumption ensures that the economic turnout differential is sufficiently large so there is a positive probability of a right legislative majority.

To derive Proposition 1, the analysis first characterizes the subgame perfect Nash equilibrium in each model and then compares equilibrium behavior and redistribution across models. Before proceeding to the analysis, it is useful to define some additional notation. First, the type of constitution (parliamentary or presidential), as reflected in the extensive form of each model, is indicated by the superscript \( CON \in \{ parl, pres \} \). Second, for the analysis of the electoral stage it is convenient to define the number of voters supporting a particular party. In the parliamentary model, let \( v_J \) be the number of citizens voting for party \( J \in \{ L, R \} \) in the legislative election. In the presidential model, let \( v_J^G \) be the number of votes received by party \( J \) in the legislative (“congressional”) election and let \( v_J^P \) be number of votes for candidate of party \( J \) in the presidential election. Third, for the comparison of equilibrium policies define the ex-ante (i.e., before electoral results are realized) probabilities that a particular partisan allocation of proposal and veto power emerges in the legislative arena. As spelled out in the text, there can be a left-unified, right-unified or a divided partisan control of proposal and veto power. In a situation of divided government, proposal power may be in the hands of the left or right. The probability that a left (right) partisan wins the direct election for the chief executive is only defined for the presidential model. See the table below:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Definition</th>
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<tr>
<td>( Pr_{CON}^{LU} )</td>
<td>Probability of left-unified control of proposal and veto power</td>
</tr>
<tr>
<td>( Pr_{CON}^{RU} )</td>
<td>Probability of right-unified control of proposal and veto power</td>
</tr>
<tr>
<td>( Pr_{CON}^{D} )</td>
<td>Probability of divided control of proposal and veto power</td>
</tr>
<tr>
<td>( Pr_{CON}^{LD} )</td>
<td>Probability of divided control with a left proposer and at least 1 right veto player</td>
</tr>
<tr>
<td>( Pr_{CON}^{RD} )</td>
<td>Probability of divided control with a right proposer and at least 1 left veto player</td>
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<tr>
<td>( Pr_{CON}^{LE} )</td>
<td>Probability of left chief executive</td>
</tr>
<tr>
<td>( Pr_{CON}^{RE} )</td>
<td>Probability of right chief executive</td>
</tr>
</tbody>
</table>

As a final preliminary, a remark on voting behavior in the electoral stage of the models. The analysis takes for granted that voters vote for the party that represents their economic interest and focus on the behavior of partisan politicians. Given the two group-set up, it is clearly a best-response for voters to do so. They are never better off giving their vote (or, in the presidential model, any of their two votes) to the party representing the other economic group. As there is a continuum of voters, they may not be strictly worse off doing so. But by elimination of strictly dominated strategies, voting strategies that involve such behavior are ruled out.
A.2 Parliamentary model

Lemma 1. In the parliamentary model, the subgame perfect equilibrium is as follows:

1. Initial policymaking stage

(a) Acceptance sets: a veto player, $V$, of partisan type $J$ accepts any proposed tax rate $b$ in

$$A^V_L(b, t_q) = [\hat{x}, 2t_L - \hat{x}]$$
$$A^V_R(b, t_q) = [0, \hat{x}]$$

where $\hat{x} = p_{parl}^{LU}t_L + p_{parl}^{RD}t_q$.

(b) Optimal proposal: a prime minister, $PM$, of partisan type $J$ proposes tax rate

$$b^*_L(A^V_J) = \begin{cases} t_L & \text{if } V = L \\ \hat{x} & \text{if } V = R \land t_q \leq \left( \frac{p_{parl}^{LU}}{p_{parl}^{LU} + p_{parl}^{RD}} \right) t_L \\ t_q & \text{if } V = R \land t_q \geq \left( \frac{p_{parl}^{LU}}{p_{parl}^{LU} + p_{parl}^{RD}} \right) t_L \end{cases}$$

$$b^*_R(A^V_J) = \begin{cases} t_R & \text{if } V = R \\ t_q & \text{if } V = L \land t_q \leq \left( \frac{p_{parl}^{LU}}{p_{parl}^{LU} + p_{parl}^{RD}} \right) t_L \\ \hat{x} & \text{if } V = L \land t_q \geq \left( \frac{p_{parl}^{LU}}{p_{parl}^{LU} + p_{parl}^{RD}} \right) t_L \end{cases}$$

(c) Policy: equilibrium tax rate $t^*$ for a given partisan allocation of proposal and veto power

Case: $t_q \leq \left( \frac{p_{parl}^{LU}}{p_{parl}^{LU} + p_{parl}^{RD}} \right) t_L$

<table>
<thead>
<tr>
<th>Type of PM</th>
<th>$L$</th>
<th>$R$</th>
<th>Veto player with divergent type</th>
<th>$t_L$</th>
<th>$t_R$</th>
<th>$\hat{x}$</th>
<th>$t_q$</th>
<th>$\hat{x}$</th>
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<tr>
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<tr>
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</tbody>
</table>

Case: $t_q \geq \left( \frac{p_{parl}^{LU}}{p_{parl}^{LU} + p_{parl}^{RD}} \right) t_L$

(d) The expected level of taxation before voting cost and electoral results are realized is

$$E(t|CON = parl) = p_{parl}^{LU}t_L + \frac{p_{parl}^{RD}}{2} \hat{x} + \frac{p_{parl}^{RD}}{2}t_q$$

2. Policymaking after the new election
(a) Acceptance sets: a veto player, $V$, of partisan type $J$ accepts any proposed tax rate $z$ in

$$A^V_L(z, t_q) = [t_q, 2t_L - t_q]$$
$$A^V_R(z, t_q) = [0, t_q]$$

(b) Optimal proposal: a prime minister, $PM$, of partisan type $J$ proposes tax rate

$$z^*_J(A^V_J) = \begin{cases} 
t_L & \text{if } V = L 
t_q \lor b \notin A^V_J & \text{if } V = R
\end{cases}$$

$$z^*_R(A^V_J) = \begin{cases} 
t_R & \text{if } V = R 
t_q \lor b \notin A^V_J & \text{if } V = L
\end{cases}$$

(c) Policy outcome: tax rate $t^*$ for a given partisan allocation of proposal and veto power

<table>
<thead>
<tr>
<th>Veto player with divergent partisan type</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parisan type of $PM$</td>
<td>$L$</td>
<td>$t_L$</td>
</tr>
<tr>
<td></td>
<td>$R$</td>
<td>$t_q$</td>
</tr>
</tbody>
</table>

(d) The expected level of taxation before voting cost and electoral results are realized is

$$E(t|CON = parl) = Pr_{LU}^{parl} t_L + Pr_{RU}^{parl} t_q$$

3. Electoral outcomes

$$Pr_{LU}^{parl} = F_\delta \left( \frac{\delta_p - \left( \frac{N+1}{N} \right) \delta_r}{\left( \frac{N+1}{N} \right) \delta_r} \right), Pr_{RU}^{parl} = 1 - F_\delta \left( \frac{\delta_p - \left( \frac{N+1}{N} \right) \delta_r}{\left( \frac{N+1}{N} \right) \delta_r} \right), \text{ and } Pr_{RU}^{parl} = 1 - Pr_{LU}^{parl} - Pr_{RU}^{parl}.$$

Proof:

The game is sequential. The analysis proceeds by backward induction. It first characterizes behavior and outcomes if a new election is called in the first round of bargaining and then solves the initial part of the game.

1. Consider policymaking after the new election. For a given partisan allocation of legislative seats, a utility-maximizing veto player ($V$) of partisan type $J \in \{L, R\}$ only accepts a proposal $z$ that makes him better off than the status quo policy, $t_q$. Given the spatial utility function (equation 2) and partisan ideal points $t_L > t_R = 0$, accepting $z$ iff $u_J(b) \geq u_J(t_q)$ implies the familiar acceptance sets: $A^V_L(z, t_q) = [t_q, 2t_L - t_q]$ for the left type and $A^V_R(z, t_q) = [0, t_q]$ for the right type.

The prime minister ($PM$) chooses a proposal $z$ for a given status quo, $t_q$, to maximize her utility subject to the acceptance set of $V$, $A^V_J(z, t_q)$. Given this constraint the optimal proposal induces a tax rate that is as close as possible to $V$’s ideal policy. If $PM$ prefers
the status quo to any policy in $A_Y^V$, $PM$ should endorse the status quo or make a proposal that will be rejected and thus maintain $t_q$. Otherwise, $PM$ proposes the policy in $A_Y^V$ that is closest to her ideal policy. In the case of a unified partisan control of proposal and veto power, $PM$’s optimal action is to propose her ideal policy. In the case of a divided partisan control proposal and veto power (i.e., coalition government), note that the status quo policy lies in the Pareto set between $L$ and $R$, $t_q \in [t_R, t_L]$. $V$ will not accept any policy change that moves policy toward $PM$’s ideal policy. In this case, $t_q$ is the best outcome $PM$ can achieve, either by endorsing the status quo, $z = t_q$, or by proposing any bill that will be rejected. Thus,

$$z^*_L(A^V_Y) = \begin{cases} t_L & \text{if } V = L \\ t_q \lor b \notin A_R^V & \text{if } V = R \end{cases}$$

$$z^*_R(A^V_Y) = \begin{cases} t_R & \text{if } V = R \\ t_q \lor b \notin A_L^V & \text{if } V = L \end{cases}$$

For a given partisan allocation of proposal and veto power, equilibrium policy $t^*$ directly follows from the acceptance sets, $A^V_L(z, t_q)$ and $A^V_R(z, t_q)$, and best-responding proposals, $z^*_L(A^V_Y)$ and $z^*_R(A^V_Y)$.

Turning to the electoral stage (after dissolution). Given the outcome of the legislative subgame for a given partisan composition of government, $t^*$, the ex-ante (before voting cost are realized) expected level of redistributive taxation is

$$E(t | CON = parl) = P^\text{part}_L t_L + P^\text{part}_D t_q + P^\text{part}_R t_R$$

where $P^\text{part}_L$ and $P^\text{part}_D$ are determined by voting behavior and turnout shocks and are determined below.

2. Consider the initial policymaking stage. $V$ of partisan type $J \in \{L, R\}$ accepts any proposal $b$ that makes him at least weakly better off than rejecting $b$ (triggering a new election): $V$ accepts $b$ iff $u_J(b) \geq EU_J(t|\text{reject } b)$ and rejects $b$ otherwise. Given the outcome of the game after a new election (above), the expected utility of rejecting $b$ is

$$EU_J(t | \text{reject } b) = P^\text{part}_L u_J(t_L) + P^\text{part}_D u_J(t_q) + P^\text{part}_R u_J(t_R).$$

Given the spatial utility function (equation 2) and $t_R = 0$, a left partisan type ($V = L$) accepts $b$ iff $-|b| - t_L \geq -P^\text{part}_L |L| - P^\text{part}_D |q - t_L| - P^\text{part}_R |t_R - t_L| = -P^\text{part}_D (t_L - t_q) - P^\text{part}_R t_L$. If $b \leq t_L$, the acceptance condition holds iff $b \geq P^\text{part}_L t_L + P^\text{part}_D t_q \equiv \hat{x}$ (note that this is the expected policy after dissolution). If $b > t_L$, the acceptance condition holds iff $b \leq 2t_L - \hat{x}$. Therefore, $L$’s acceptance set is $A^V_L(b, t_q) = [\hat{x}, 2t_L - \hat{x}]$. By the same logic, $R$’s acceptance set is $A^V_R(b, t_q) = [0, \hat{x}]$.

The prime minister ($PM$) chooses a proposal $b$ to maximize her expected utility subject to the acceptance set of $V$, $A^V_Y(b, t_q)$. She faces a choice between endorsing the status quo, proposing the best policy $V$ is willing to accept, or making an unacceptable proposal that leads to a new election. First, consider a left $PM$ ($PM = L$). In the case of a left single-party majority government ($V = L$), it is straightforward that $PM$ proposes her ideal policy, $b^*_L = t_L$. If the
left PM faces a right veto player \((V = R)\), there is policy conflict \((t_L \notin A^V_R)\). Note that \(\hat{x}\) is PM’s most preferred policy in \(A^V_R\). Proposing \(\hat{x}\) is a best response if it makes PM better off than endorsing the status quo or triggering a new election: \(b^*_L = \hat{x}\) iff (1) \(u_L(\hat{x}) \geq u_L(t_q)\) and (2) \(u_L(\hat{x}) \geq EU_L(t|\text{reject } b)\). (1) holds iff \(t_q \leq \left(\frac{P_L^{\text{part}}}{P_{LU}^{\text{part}} + P_{RU}^{\text{part}}}\right) t_L\). Given the linear utility function, (2) always holds as \(u_L(\hat{x}) = EU_L(t|\text{reject } b) = -(P_{RU}^{\text{part}} + P_D^{\text{part}}) t_L + P_D^{\text{part}} t_q\). PM prefers to maintain the status quo, \(b^*_L = t_q\), iff (1) \(u_L(t_q) \geq u_L(\hat{x})\) and (2) \(u_L(t_q) \geq EU_L(t|\text{reject } b)\). (1) and (2) jointly require \(t_q \geq \left(\frac{P_L^{\text{part}}}{P_{LU}^{\text{part}} + P_{RU}^{\text{part}}}\right) t_L\). Finally, note that PM never has strict incentives to provoke a government dissolution (proposing \(b \notin A^V_R\)). She can obtain \(\hat{x}\) for sure (by proposing \(b = \hat{x}\)) rather than in expectation by proposing any \(b \notin A^V_R\). By the tie-breaking assumption, PM prefers the certain outcome \(\hat{x}\) over the lottery with the same expected tax rate induced by a new election. In sum, the optimal proposal strategy of a left PM is

\[
b^*_L(A^V_J) = \begin{cases} t_L & \text{if } V = L \\ \hat{x} & \text{if } V = R \land t_q \leq \left(\frac{P_L^{\text{part}}}{P_{LU}^{\text{part}} + P_{RU}^{\text{part}}}\right) t_L \\ t_q & \text{if } V = R \land t_q \geq \left(\frac{P_L^{\text{part}}}{P_{LU}^{\text{part}} + P_{RU}^{\text{part}}}\right) t_L \end{cases}
\]

Second, the argument for a right PM \((PM = R)\) is symmetric. Hence, the optimal proposal strategy of a right PM is

\[
b^*_R(A^V_J) = \begin{cases} t_R & \text{if } V = R \\ t_q & \text{if } V = L \land t_q \leq \left(\frac{P_L^{\text{part}}}{P_{LU}^{\text{part}} + P_{RU}^{\text{part}}}\right) t_L \\ \hat{x} & \text{if } V = L \land t_q \geq \left(\frac{P_L^{\text{part}}}{P_{LU}^{\text{part}} + P_{RU}^{\text{part}}}\right) t_L \end{cases}
\]

For a given partisan allocation of proposal and veto power, equilibrium policy \(t^*\) directly follows from the acceptance sets, \(A^V_J(b, t_q)\) and \(A^V_J(b, t_q)\), and best-responding proposals, \(b^*_L(A^V_J)\) and \(b^*_R(A^V_J)\). There is no dissolution in equilibrium.

Consider the initial election. Given the outcome of the legislative subgame for a given partisan composition, \(t^*\), the expected level of equilibrium redistributive taxation before the realization of turnout shocks is

\[
E(t|CON = \text{part}) = \begin{cases} P_L^{\text{part}} t_L + P_L^{\text{part}} \hat{x} + P_{RD}^{\text{part}} t_q + P_{RU}^{\text{part}} t_R & \text{if } t_q \leq \left(\frac{P_L^{\text{part}}}{P_{LU}^{\text{part}} + P_{RU}^{\text{part}}}\right) t_L \\ P_L^{\text{part}} t_L + P_L^{\text{part}} t_q + P_{RD}^{\text{part}} \hat{x} + P_{RU}^{\text{part}} t_R & \text{if } t_q \geq \left(\frac{P_L^{\text{part}}}{P_{LU}^{\text{part}} + P_{RU}^{\text{part}}}\right) t_L \\ P_L^{\text{part}} t_L + P_D^{\text{part}} \hat{x} + P_D^{\text{part}} t_q & \end{cases}
\]

The probabilities are derived below.

3. Election outcomes. Given that voters (rationally) support the party representing their own
economic group, party vote shares are a function of turnout. The group of voters supporting the left (right) party consists of poor (rich) citizens with negative voting cost $c_{ij}$. For a fixed common shock $\phi_{p} \geq 0$ and given the distribution of $c_{ij}$ (equation (3)), the size of the group of left party (L) voters is $v_{L} = F_{\phi_{p}}(c_{ij} \leq 0)\delta_{p} = \frac{\delta_{p}}{1+\phi_{p}}$. The size of right party (R) voters is $v_{R} = \delta_{r}$ because $\phi_{r} = 0$ by assumption.

A unified control of government by J partisans requires that they win an absolute majority of seats in the legislature and a situation of divided control emerges if no party wins a majority of seats. Given a legislature with an even number of $N \geq 2$ seats and the proportional (i.e., simple quota) electoral rule, the left party obtains a majority of legislative seats if $\frac{v_{L}}{v_{L}+v_{R}} > (\frac{N+1}{2N})$ and the right party wins a legislative majority if $\frac{v_{R}}{v_{L}+v_{R}} > (\frac{N+1}{2N})$. Otherwise, no party wins a legislative majority and a divided parliament occurs. Vote shares are a function of $\phi_{p}$, a continuous random variable. Hence, the probability that the left party wins a majority of seats is $P_{L}^{parl} = Pr\left(v_{L} \geq (\frac{N+1}{2N})(v_{L}+\delta_{r})\right) = F_{\phi_{p}}\left(\frac{\delta_{p}-(\frac{N+1}{N})\delta_{r}}{(\frac{N+1}{N})\delta_{r}}\right)$. Given the uniform distribution of $\phi_{p}$ (equation (4)), $P_{L}^{parl} = \left(\frac{\delta_{p}-(\frac{N+1}{N})\delta_{r}}{(\frac{N+1}{N})\delta_{r}}\right)$. By the same logic, $P_{R}^{parl} = 1 - F_{\phi_{p}}\left(\frac{\delta_{p}-(\frac{N+1}{N})\delta_{r}}{(\frac{N+1}{N})\delta_{r}}\right) = 1 - \left(\frac{\delta_{p}-(\frac{N+1}{N})\delta_{r}}{(\frac{N+1}{N})\delta_{r}}\right)$. Note that $P_{L}^{parl} > 0$ as $\delta_{p} > (\frac{N+1}{N-1})\delta_{r}$ and $P_{R}^{parl} > 0$ as $\gamma_{p} > (\frac{\delta_{p}-(\frac{N+1}{N})\delta_{r}}{(\frac{N+1}{N})\delta_{r}})$. By the random selection of the PM in the case of a divided legislature, $P_{L}^{parl} = P_{R}^{parl} = \frac{1}{2}P_{L}^{parl}$.

\[\square\]

A.3 Presidential model

Lemma 2. In the presidential model, the subgame perfect equilibrium is as follows:

1. Acceptance sets: veto players, $V$, accept any proposed tax rate $b$ in

$$A_{L}^{V}(b,t_{q}) = [t_{q}, 2t_{L} - t_{q}]$$

$$A_{R}^{V}(b,t_{q}) = [0, t_{q}]$$

2. Optimal proposal: president, $P$, of partisan type $J$ proposes tax rate $b$

$$b_{L}^{*}(A_{J}^{V}) = \begin{cases} t_{L} & \text{if } \exists V = R \\ t_{q} \land b \notin A_{L}^{V} & \text{if } \exists V = R \end{cases}$$

$$b_{R}^{*}(A_{J}^{V}) = \begin{cases} t_{R} & \text{if } \exists V = L \\ t_{q} \land b \notin A_{L}^{V} & \text{if } \exists V = L \end{cases}$$

3. Policy: equilibrium tax rate $t^{*}$ for a given partisan allocation of proposal and veto power
<table>
<thead>
<tr>
<th>Type of president</th>
<th>Veto player with divergent partisan type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
</tr>
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<td></td>
<td>$t_L$</td>
</tr>
<tr>
<td></td>
<td>$t_R$</td>
</tr>
</tbody>
</table>

4. The expected level of taxation before voting cost and electoral results are realized is

$$E(t|CON = \text{pres}) = Pr_{LU}^{pres} t_L + Pr_{D}^{pres} t_q$$

where $Pr_{LU}^{pres} = F_{\phi_p} \left( \delta_p - \delta_r \frac{N+1}{N+1} \delta_r \right)$, $Pr_{D}^{pres} = [1 - F_{\phi_p} \left( \delta_p - \delta_r \right)] \left[ 1 - F_{\phi_p} \left( \delta_p - \frac{(N-1)\delta_r}{N+1} \right) \right]$,

and $Pr_{D}^{pres} = 1 - Pr_{LU}^{pres} - Pr_{RU}^{pres}$.

Proof:

The proof of legislative bargaining is symmetric to the to the parliamentary model in the subgame after dissolution. Notationally, one simply has to replace $PM$ by $P$ and account for the possibility of that there are two distinct veto players in the legislature (in case of a divided legislature). The electoral process is different. Given the outcome of the legislative subgame for a given partisan allocation of veto and proposal power, $t^*$, the ex-ante (before turnout shocks) expected level of redistributive taxation is

$$E(t|CON = \text{pres}) = Pr_{LU}^{pres} t_L + Pr_{D}^{pres} t_q + Pr_{RU}^{pres} t_R$$

where $Pr_{LU}^{part}$ and $Pr_{D}^{part}$ are determined by voting behavior and turnout shocks. As voters (rationally) support the party and the presidential candidate representing their economic group, the group of voters supporting the left (right) party and left (right) presidential candidate consists of poor (rich) citizens with negative voting cost. Accordingly, for a fixed common shock $\phi_p$ and given the distribution of $c_{ij}$ (equation (3)), the number of citizens voting for presidential candidate is $v^p_L = F_{\phi_p}(c_{ij} \leq 0) \delta_p = \frac{\delta_p}{1 + \phi_p}$. The number of voters supporting the right presidential candidate is $v^p_R = \delta_r$ because $\gamma_r = 0$. By the same logic, for the legislative election $v^C_L = \frac{\delta_p}{1 + \phi_p}$ and $v^C_r = \delta_r$.

A unified control of government by $J$ partisans requires that they win an absolute majority of seats in the legislative election and a plurality of votes in the presidential election. A situation of divided control emerges if no party wins both control over the legislature and the presidency. Given a legislature with an even number of $N \geq 2$ seats and the proportional (i.e., simple quota) translation of votes into seats for both the legislative and the presidential election, the probability
that the left party wins a unified control of government is

\[ P_{\text{pres}}^{LU} = Pr(v^P_L \geq \delta_r)Pr\left(v^C_L \geq \left(\frac{N+1}{2N}\right)(v^C_L + \delta_r)\right) \]

\[ = F_{\phi_p}\left(\frac{\delta_p - \delta_r}{\delta_r}\right)F_{\phi_p}\left(\delta_p - \frac{(N+1)}{(N+1)}\delta_r\right) \]

\[ = \left(\frac{\delta_p - \delta_r}{\gamma_p} \frac{\delta_p - \frac{(N+1)}{(N+1)}\delta_r}{\gamma_p(\frac{N+1}{N+1})}\right) \]

by the uniform distribution of \(\phi_p\) (equation (4)).

By the same logic, the probability that the right party wins a unified control of government is

\[ P_{\text{pres}}^{RU} = Pr(v^P_L \leq v^P_R)Pr\left(v^C_R > \left(\frac{N+1}{2N}\right)(v^C_L + v^C_R)\right) \]

\[ = \left[1 - F_{\phi_p}\left(\frac{\delta_p - \delta_r}{\delta_r}\right)\right] \left[1 - F_{\phi_p}\left(\frac{\delta_p - \frac{(N+1)}{(N+1)}\delta_r}{\delta_r}\right)\right] \]

By Lemma 1 and Lemma 2

After substituting \(\hat{x} = P_{\text{part}}^{LU}t_L + P_{\text{part}}^{RU}t_q\) and rearranging, it follows that

\[ \beta_{\text{CON}} \geq 0 \text{ if } t_q \leq \left[\frac{P_{\text{part}}^{LU} t_L + P_{\text{part}}^{RU} t_q}{P_{\text{part}}^{LU} P_{\text{RE}} + P_{\text{part}}^{RU} P_{\text{LE}} + \frac{1}{2} P_{\text{part}}^{LU}(1 - P_{\text{part}}^{LU})} \right] t_L \]

A.4 Institutional analysis

A.4.1 Proof of Proposition 1

Statement (1). The institutional effect follows directly from comparing expected policy in Lemma 1 and Lemma 2:

\[ \beta_{\text{CON}} \equiv E[t|CON = \text{part}] - E[t|CON = \text{pres}] \]

\[ = \left(\frac{P_{\text{part}}^{LU}}{2} \hat{x} + \frac{P_{\text{part}}^{RU}}{2} t_q\right) - \left(P_{\text{pres}}^{LU} t_L + P_{\text{pres}}^{RU} t_q\right) \]

by Lemma 1 and Lemma 2

After substituting \(\hat{x} = P_{\text{part}}^{LU}t_L + P_{\text{part}}^{RU}t_q\) and rearranging, it follows that

\[ \beta_{\text{CON}} \geq 0 \text{ if } t_q \leq \left[\frac{P_{\text{part}}^{LU} t_L + P_{\text{part}}^{RU} t_q}{P_{\text{part}}^{LU} P_{\text{RE}} + P_{\text{part}}^{RU} P_{\text{LE}} + \frac{1}{2} P_{\text{part}}^{LU}(1 - P_{\text{part}}^{LU})} \right] t_L \]
Statement (2). From (1),

\[ \beta_{\text{CON}} = \left( P_{\text{parl}}^{LU}t_L + \frac{P_{\text{parl}}^{D}}{2} \bar{x} + \frac{P_{\text{parl}}^{D}}{2} t_q \right) - \left( P_{\text{pres}}^{LU}t_L + P_{\text{pres}}^{D} t_q \right) \]

Adding \( (P_{\text{parl}}^{LU}t_L + P_{\text{parl}}^{D} t_q) - (P_{\text{parl}}^{LU}t_L + P_{\text{parl}}^{D} t_q) \) to each side yields

\[ \beta_{\text{CON}} = \left[ \left( P_{\text{parl}}^{LU}t_L + P_{\text{parl}}^{D} t_q \right) - \left( P_{\text{pres}}^{LU}t_L + P_{\text{pres}}^{D} t_q \right) \right] \]

\[ + \left[ \left( P_{\text{parl}}^{LU}t_L + \frac{P_{\text{parl}}^{D}}{2} \bar{x} + \frac{P_{\text{parl}}^{D}}{2} t_q \right) - \left( P_{\text{parl}}^{LU}t_L + P_{\text{parl}}^{D} t_q \right) \right] \]

where (i) is the difference in expected policies given the probabilities of different partisan governments (i.e., left-unified, right-unified and divided) in the presidential and the parliamentary model while fixing bargaining outcomes for a given partisan constellation at those resulting in the presidential model (separation of origin effect), and (ii) is the difference in expected policies given bargaining outcomes in the presidential and the parliamentary model, holding constant the probabilities of different partisan governments at those in the parliamentary model (separation of survival effect). □
### Data appendix

Table 8: Coding of parliamentary, presidential and mixed constitutions

<table>
<thead>
<tr>
<th>Parliamentary</th>
<th>Presidential</th>
<th>Mixed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania (since 1998), Australia, Austria, Bahamas, Bangladesh, Barbados, Belgium, Belize, Bulgaria, Canada, Cape Verde, Croatia, Denmark, Estonia, Finland (since 1991), Germany, Greece, Hungary, Iceland, India, Ireland, Israel (except 1996-2001), Italy, Jamaica, Japan, Luxembourg, Macedonia, Madagascar (1993-1998), Malta, Mauritius, Netherlands, New Zealand, Norway, Papua New Guinea, Romania, Slovakia, Slovenia, Spain, Sweden, Trinidad and Tobago, Turkey, United Kingdom</td>
<td>Argentina, Chile, Columbia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Ghana, Guatemala, Honduras, Panama, Philippines, South Korea, Ukraine, United States of America, Uruguay</td>
<td>Albania (1991-1997), Armenia, Benin, Bolivia, Brazil, Central African Republic, Cyprus, Finland (1975-1990), France, Israel (1996-2001), Latvia, Lithuania, Madagascar (since 1999), Moldova, Mongolia, Nicaragua, Paraguay, Peru, Poland, Portugal, Sri Lanka, Switzerland, Thailand, Venezuela</td>
</tr>
</tbody>
</table>

Notes: see text for definitions and principal sources.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition and source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age democracy</td>
<td>Years since transition to democracy. Source: Cheibub, Gandhi and Vreeland (2010).</td>
</tr>
<tr>
<td>Democracy</td>
<td>Sum of Freedom House civil rights and civil liberties scores, varying between 2 (most free) and 14 (least free). Source: Teorell et al. (2011).</td>
</tr>
<tr>
<td>Ethnic fractionalization</td>
<td>Measures the probability that two randomly selected people from a given country will not belong to the same ethnolinguistic group (available until 2001). Source: calculated by Alesina et al. (2003) and retrieved from Teorell et al. (2011).</td>
</tr>
<tr>
<td>Federalism</td>
<td>Dummy equal to 1 for federal political structure. Source: Persson and Tabellini (2003) and, where missing, CCW (ongoing).</td>
</tr>
<tr>
<td>Market inequality</td>
<td>Estimated Gini coefficient for household income calculated before taxes and transfers (ranging from 0 to 100). Source: Solt (2009, Version 3.1).</td>
</tr>
<tr>
<td>Military legacy</td>
<td>Dummy equal to 1 if previous non-democratic regime was led by a military official, active or retired. Source: Cheibub (2007).</td>
</tr>
<tr>
<td>OECD member</td>
<td>Dummy equal to 1 if country was OECD member before 1993 (excluding Turkey). Source: Persson and Tabellini (2003).</td>
</tr>
<tr>
<td>Plurality rule</td>
<td>Dummy equal to 1 if a majority of legislative seats in lower house is elected using a first-past-the-post rule. Source: Beck et al. (2001, updated Dec. 2010) and, where missing, Adam Carr’s election archive.</td>
</tr>
<tr>
<td>Turnout</td>
<td>Voter turnout in legislative election (total votes cast as % of voting age population). Source: International IDEA (2012).</td>
</tr>
<tr>
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</tr>
<tr>
<td>--------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Colonies</strong></td>
<td></td>
</tr>
<tr>
<td>Portuguese/Spanish</td>
<td>Portuguese or Spanish colonial origin, weighted by years since independence as a fraction of 250 years prior to 1998 (following Persson and Tabellini, 2003, p. 41). Source: colonial origin is coded according to Persson and Tabellini (2003) and, where missing, the CIA World Factbook. The year of independence is from Cheibub, Gandhi and Vreeland (2010). Source: same as Portuguese/Spanish.</td>
</tr>
<tr>
<td>British</td>
<td>British colonial origin, weighted by years since independence as a fraction of 250 years prior to 1998 (following Persson and Tabellini, 2003, p. 41). Source: same as Portuguese/Spanish.</td>
</tr>
<tr>
<td>Other</td>
<td>Other colonial origin, weighted by years since independence as a fraction of 250 years prior to 1998 (following Persson and Tabellini, 2003, p. 41). Source: same as Portuguese/Spanish.</td>
</tr>
<tr>
<td><strong>Continents</strong></td>
<td></td>
</tr>
<tr>
<td>ASIAE</td>
<td>Dummy equal to 1 for countries in Eastern and Southern Asia (excluding Japan, which is included in OECD group). Source: same as AFRICA.</td>
</tr>
<tr>
<td>LAAM</td>
<td>Dummy equal to 1 for countries in South and Central America, including the Caribbean. Source: same as AFRICA.</td>
</tr>
<tr>
<td><strong>Electoral cycle (panel analysis only)</strong></td>
<td></td>
</tr>
<tr>
<td>Legislative election</td>
<td>Dummy equal to 1 if there is a legislative election in the current year. Source: Beck et al. (2001, updated Dec. 2010).</td>
</tr>
<tr>
<td>Executive election</td>
<td>Dummy equal to 1 if there is an election of the chief executive in the current year. Source: Beck et al. (2001, updated Dec. 2010).</td>
</tr>
</tbody>
</table>

Note: In the cross-section data set, time-varying variables are averages for 1975-2008 (democratic years only).
References


