Legislative Policy-Making Authority, Party System Size, and Party System Aggregation

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Abstract:
How does the size of the legislative prize, particularly the internal organization of legislatures, shape the legislative party system? While existing studies focus upon the electoral system and the regime type, we argue that the nationalization and fragmentation of the national legislative party system are related to the size of the legislative prize itself: that is, how the legislature’s internal rules and structures concentrate policy-making authority in the hands of the governing or majority party, and the external constraints on the legislature. To test this argument, we draw on recent studies of legislative organization to develop a measure of the internal concentration of legislative policy-making authority. Using a time series cross section of approximately 400 post-war elections in twenty-five advanced industrial democracies, we find support for our argument. Of particular note, we find that the effect of internal legislative structures is larger than that of the electoral system.

Which factors shape the size and nationalization of the legislative party system in democracies? For decades, political scientists have pointed to the electoral system as the primary political institutional explanatory factor (e.g., Duverger 1963; Rae 1967; Lijphart 1990; Lijphart 1994; Amorim Neto and Cox 1997; Cox 1997; Jones 2004; Clark and Golder 2006; Moser and Scheiner 2012). However, in recent years, a number of studies have turned their lenses upon other political institutions, both arguing and presenting evidence that political institutions besides the electoral system have a significant impact upon the party system (e.g., Shugart and Carey 1992; Chhibber and Kollman 1998, 2004; Golder 2006; Hicken and Stoll 2008, 2011; Hicken 2009; Samuels and Shugart 2010; Elgie, Bucur, Dolez, and Laurent 2013; Stoll 2013, 2015).

Next to the electoral system, the system of government is the political institutional variable that has received the most attention to date. For one, where policy-making authority and the perks of office are concentrated at the national level of government, as opposed to being dispersed among multiple sub-national units, candidates face strong incentives to coordinate across districts under the banner of a single party in elections for the national legislature. For another, the more political power is concentrated in the hands of a popularly elected chief executive (i.e., president), the generally stronger the incentives

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for cooperation or aggregation across districts in a bid to capture that valuable executive prize, a process that casts a shadow over the legislative electoral contest itself (an effect usually called presidential coattails). This recent focus on the system of government, and even more so upon the office of the presidency, is understandable. A popularly elected chief executive is often the most valuable prize in a political system, so it should naturally influence voters’, candidates’, and parties’ incentives for electoral coordination. However, such a focus has the unfortunate side-effect of obscuring interesting variation in other national government institutions that might also shape the electoral incentives that actors face, and thereby the party system.

In this paper, we turn our lens upon a political institutional variable that has thus far received little attention: the internal organization of the national legislature itself. The question this paper asks is: how does the way in which power is concentrated or dispersed within the legislature affect the size and nationalization of the legislative party system? Specifically, we explore the ways in which the legislature’s internal rules and structures affect the distribution of policy-making authority and the perks of office. Even more specifically, we ask: to what extent is this authority concentrated in the hands of the governing or majority party, versus being shared between the governing or majority party and smaller opposition parties? In other words, this paper asks how the size of the legislative prize shapes the party system.

Our answer to this question is that, holding constant the distribution of power between the legislative and executive branches, the incentives for aggregating across districts in a bid to create large, national parties are strongest where the size of the legislative prize is large. Specifically, where the legislature’s internal rules and structure concentrate policy-making authority and perks in the hands of the governing or majority party, we should see higher levels of aggregation and less fragmentation in legislative party systems. We also argue that the incentives to aggregate and consolidate the legislative party system are stronger where there are few external constraints on the legislature.

To test this argument, we draw on a recent study of legislative organization to develop an original measure of our key independent variable, the internal distribution of legislative policy making authority. Using a time series cross section of approximately 400 post-war elections in twenty-five advanced industrial democracies, we find support for our argument that both the nationalization and fragmentation of the national legislative party system are related to the concentration of policy-making authority within the legislature, as well as to some external constraints on the legislature’s authority. Of particular importance, we also find that our internal legislative centralization variable has a larger substantive impact than the electoral system does.

1.0 Literature and Theory

In the last two decades, political scientists have begun studying the relationship between the national level party system and political institutions besides the electoral system in democracies. Of particular note, a growing literature focuses upon how the system of government either concentrates or disperses policy-making authority. This literature has two branches.

The first branch studies the vertical relationship between different levels of government. The classic work is by Chhibber and Kollman (1998, 2004), who found that the vertical centralization of policy-making authority in the national level of government vis-à-vis sub-national levels induces greater electoral coordination across electoral districts
(better aggregation or linkage). This in turn leads to fewer, more nationalized political parties, resulting in more nationalized and less fragmented legislative party systems.

The second branch studies the relationship between political institutional actors within the national level of government. A number of scholars ranging from Shugart and Carey (1992) to Hicken and Stoll (2008, 2013) have found that how policy-making authority is distributed within the national level of government—what Hicken and Stoll (2008) label horizontal centralization—also shapes electoral coordination. Focusing upon the regime type, and usually the existence of a popularly elected chief executive (i.e., a president), these studies generally argue that presidential systems should have more nationalized and fewer parties competing in legislative elections, and that the larger the size of the presidential prize, the more nationalized and fewer parties we should see.¹

In this paper, by way of contrast, we directly consider the size of the legislative prize. That is, we study how much policy-making authority the largest party in the legislature wields. In so doing, we widen the scope of national-level institutions beyond the regime type. Our argument is that the size of the legislative prize is a function of two distinct variables: first, the internal organization of the legislature; and second, the external constraints on the legislature, such as those imposed by a president or upper chamber.

1.1 Internal Legislative Organization

Our primary interest is in how the distribution of policy-making authority within the legislature shapes the legislative party system. This is a topic that has received little attention to date. We argue that the greater the concentration of authority within the legislature, the greater the size of the legislative prize and the fewer and more nationalized parties there will be.

Imagine, for example, that you are the leader of a party weighing the costs and benefits of trying to coordinate across electoral districts to create a nationally competitive party that will capture at least a plurality of seats in the legislature.² The greater the rewards associated with being the largest party in the legislature, the larger the size of the legislative prize. A larger prize translates into stronger incentives for all actors concerned—from candidates to voters—to coordinate in order to try and capture that prize. And legislatures do in fact vary in the extent to which policy-making authority and the perks of office are awarded on a winner-take-all versus a power-sharing basis. In some legislatures, committee assignments and agenda control are disproportionally awarded to the largest legislative party. In other legislatures, the rules (or norms) and structures are such that all parties receive a proportional share of legislative resources.

Compare, for example, the legislative arrangements in the United Kingdom and Norway. In Norway, opposition parties wield significant authority over the policy agenda. They are able to utilize oversight mechanisms within the parliament to challenge and constrain the majority (Maor 1998). By way of contrast, a defining feature of the United Kingdom’s Westminsterian model is majority party control of the executive and legislature with very little power for the opposition. Opposition parties rarely hold any cabinet

¹ See also relatively recent work by Cox and Knoll (2003), Elgie et al. (2013), Golder (2006), Hicken (2009), Stoll (2013, 2015), and Tzelgov (2008).
² In true presidential regimes, this party is often referred to as the “majority” party. In other regimes (i.e., in parliamentary or premier-presidential regimes), the largest party usually forms (or at least usually has a first shot at forming) the government, either alone or in coalition with other parties. Hence, it is often referred to as the “governing” party.
positions and exercise little control of the legislative agenda. Given the differences in the way in which authority is distributed in the Norwegian and British legislatures, we would expect political party leaders in each system to face different incentives for creating large, national parties.

Or consider the difference between legislative arrangements under the Fourth and Fifth French Republics. The constitution of the Fifth Republic famously sought to create a stronger executive in order to reduce the political fragmentation that had been the bane of the Fourth Republic. Most scholars have focused on the changes to the electoral system and the introduction of a directly elected president, but the reforms also concentrated authority within the legislature. For example, legislative committees were put more firmly under the control of the governing party and new restrictions were introduced on the ability of private members to bring forward bills. These changes should also affect the incentives for electoral coordination.

Accordingly, we hypothesize that legislatures that concentrate authority internally in the hands of the largest legislative party should produce a high payoff to being the largest (or at least a large) legislative party. They should therefore provide strong incentives for elites to form, and for voters to support, large, national parties over smaller, regionally-based ones. Alternatively, legislatures that disperse legislative resources among many parties, even small ones, undermine the incentives for forming and supporting large, national parties. Thus, our first hypothesis is:

\[ \text{H1: Legislatures that concentrate authority in the hands of the largest party are associated with fewer, more nationalized political parties.} \]

1.2 External Constraints on Legislative Power

The internal rules and structures of the legislature are not the only institutional determinant of the size of the legislative prize, however. Building upon existing work, we argue that where there are significant institutional checks on the legislature, there will be more, less-nationalized parties.

Take, for example, a second legislative chamber. An upper chamber that exercises at least some authority acts as an external check on the (lower) legislature’s policy-making authority (Hicken 2009, Hicken and Stoll 2011). This diminishes the size of the legislative prize and hence the payoff to winning control of the lower chamber. Party leaders and other political elites therefore have less incentive to link across electoral districts to form large, national parties that have a chance of capturing at least a plurality of the chamber’s legislative seats. Similarly, voters have less incentive to support large, nationally competitive parties over smaller, regionally competitive ones. The result is more, less-nationalized parties.

A similar logic applies to other kinds of external constraints, such as an independent judiciary exercising judicial review over legislation. By reducing the size of the legislative prize and hence the potential rewards that follow from being the largest legislative party, external constraints on the legislature diminish the incentives for all actors to coordinate in an effort to produce large, nationally competitive parties. Thus, our second hypothesis is as follows:

\[ \text{H2: The presence of external constraints on the legislature is associated with a greater number of less-nationalized political parties in legislative elections.} \]
One common external constraint we have not discussed so far is a directly elected president. In a later section, we consider the more complicated effect of directly elected presidents, but first, confine ourselves to the effect of constraints within parliamentary systems.

To reiterate, H1 and H2 refer to distinct dimensions of the size of the legislative prize. H2 focuses on the authority of the legislature relative to other institutions, such as an upper chamber and the judiciary. Any gain for these actors is a loss for the legislature. Yet, the legislature’s internal capabilities and hence the payoff to being the largest party might vary independently of the legislature’s relationship with its institutional competitors. This then raises the question of how this variation relates to the variation in the size and nationalization of the party system—a question to which H1 provides an answer. Thus, in our empirical tests below, we distinguish between those legislative powers that compete directly with the authority of external institutional actors (e.g., legislative veto overrides) and those that are internal to the legislature and relatively independent of these external constraints (e.g., committee structures).

2.0 Variable Operationalization and Measures

We have two dependent variables for each hypothesis. The first is simply the fragmentation or size of the national legislative party system. We operationalize this variable in the conventional manner as the \textit{size-weighted} number of electoral parties. More specifically, we use the well-known effective number statistic of Laakso and Taagepera (1979) to measure this concept, which is applied to the vote distribution of the parties competing in a given country and election. We label this variable “ENEP nat”.

The second dependent variable is the extent of cross-district coordination or party system aggregation in a legislative election. One way to operationalize this concept is to calculate the difference between the effective number of electoral parties nationally (calculated as just described) and the average effective number of electoral parties in the districts for a given country and election (e.g., Chhibber and Kollman 1998, 2004; Hicken 2009; Hicken and Stoll 2011). Formally, this difference score, denoted “\(D\)”, is calculated as follows:

\[
D = \text{ENEP nat} - \text{Mean ENEP} ,
\]

where “Mean ENEP” is the average effective number of electoral parties in the districts.

To illustrate, a country that has an average of two effective parties per district (Mean ENEP = 2.0) would have a difference score of five if the effective number of parties nationally was

\[
\text{ENEP} = \frac{1}{n} \sum_{i=1}^{n} v_i^2.
\]

Morgenstern and Pothoff (2004) refer to this as “static nationalization” and contrast it with “dynamic nationalization”.

This variable is closely related to Cox’s (1999, 17) inflation score, which divides the difference measure \(D\) by the effective number of electoral parties at the national level (ENEP nat). We use the simpler \(D\) instead of the inflation score as our dependent variable because the former, which is unbounded on the real line, is more suitable for regression analysis than the latter, which is constrained by definition to be less than or equal to one.

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3 We do not use the effective number of legislative or parliamentary parties as the operationalization of the dependent variable for the reasons discussed in Benoit (2002). Letting \(v_i\) represent the \(i\)th party’s vote share in a given country and election, the effective number of electoral political parties, \(\text{ENEP}_i\), is calculated as follows: \(\text{ENEP}_i = 1/\sum_{i=1}^{n} v_i^2\).

4 Morgenstern and Pothoff (2004) refer to this as “static nationalization” and contrast it with “dynamic nationalization”.

5 This variable is closely related to Cox’s (1999, 17) inflation score, which divides the difference measure \(D\) by the effective number of electoral parties at the national level (ENEP nat). We use the simpler \(D\) instead of the inflation score as our dependent variable because the former, which is unbounded on the real line, is more suitable for regression analysis than the latter, which is constrained by definition to be less than or equal to one.
seven (ENEP nat = 7.0). That same country would have a difference score of zero if there were only two parties nationally (ENEP nat = 2.0). Larger difference scores signal poorer cross-district aggregation. In other words, the country with the difference score of seven has less cross-district aggregation and hence a less-nationalized party system than the country with the difference score of zero. To provide a real world example, a country that often has a large difference score and hence poor cross-district coordination is Belgium, where regional parties have contested national legislative elections since the late 1960s. Conversely, a country that usually has a small difference score and hence good cross-district coordination is the United States, where two nationally competitive parties have dominated politics in the post-World War II era.

We construct measures of both dependent variables using district level electoral returns from the Constituency Level Electoral Archive (CLEA) at the University of Michigan.6 While not shown here for reasons of space, a plot of the two variables shows that while countries with highly nationalized party systems tend to have a small effective number of national electoral parties (e.g., the United States), and that countries with poorly nationalized party systems tend to have a large effective number of national electoral parties (e.g., Belgium), the relationship is far from perfect: in particular, there are countries with highly nationalized party systems that nevertheless have a large number of electoral parties at the national level (e.g., Norway). Moreover, the Pearson’s correlation coefficient between ENP nat and D is 0.81 in our data set (described below), which means that only about sixty percent of the two variables’ variance is shared—a strong but far from perfect relationship. This is why we investigate the effect of the size of the legislative prize upon both of these dependent variables.

Turning to the right-hand side of the equation, we begin with our most important independent variable: the internal centralization of policy-making authority in the legislature. To develop a measure of this variable, we draw upon data collected by Siaroff (2003) on ten institutional features of national legislatures.7 These features are as follows:

- government or majority party control of committee chairs;
- the ability of the plenary to determine the principles of bills before sending them to committees;
- the inability of committees to rewrite the legislation they receive;

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6 CLEA is a multi-institutional effort housed at the University of Michigan, Ann Arbor whose goal is to collect, archive and make public all available constituency-level electoral results. The archive continues to expand and currently has data for nearly 1,500 elections in 129 countries (http://electiondataarchive.org). For the effective number of electoral parties, we supplement the CLEA data with data from Golder (2005).

7 Data is for the lower house if the legislature is bicameral. We used Siaroff's schema to additionally code Israel from 1996 onwards; the United States; and Switzerland, none of which were included in his original data set. We also used his schema to update his data set through 2005 for the remaining countries. A case could be made for incorporating four additional variables from his data set in our measure: formal rank and privileges for the leader of the opposition; the difficulty of no confidence motions; the need for a formal investiture; and restrictions on early dissolution of the assembly. However, because at least one of these variables is not applicable to Switzerland, which lacks a government responsible to the legislature, doing so means that Swiss elections must be excluded from the analysis. Using either our original measure or this modified index while excluding Switzerland does not substantively alter our conclusions. These and other models discussed but not reported here are available in a supplemental paper posted on Stoll’s website.
• the lack of more than ten standing committees corresponding to and hence exercising oversight over ministries;
• government or majority party control of the plenary agenda;
• restrictions on the introduction of private members’ bills;
• provisions that money bills are a prerogative of the government;
• provisions for early curtailment of debate on a bill, usually by the government or majority party;
• the lack of minority vetoes on non-constitutional legislation;
• the legislature being run by a speaker instead of by a collective presidium.

The first four of these features relate to the committee system. The last six, by way of contrast, capture other important features of the internal organization of legislatures. For each feature, its presence in a given country and year is scored a two, its absence is scored a zero, and intermediate cases are scored a one. Higher scores accordingly denote a greater concentration of authority in the hands of the largest (i.e., governing) party within the legislature and lower scores indicate that authority is dispersed, facilitating the influence of smaller (i.e., opposition) parties.

To create our measure, which we label the “index of internal legislative centralization” (IILC), we add together a country’s scores on these ten variables at the time of each election. Higher scores on this index denote a greater concentration of authority within the legislature and hence a larger legislative prize, just as they do on the individual components. Given H1, we expect this variable to have a negative relationship with the dependent variables. The resulting measure ranges from a theoretical minimum of zero to a theoretical maximum of twenty. The observed minimum, three, is held by France in 1951 (under the 4th Republic); the observed maximum, twenty, is held by Australia, Ireland, New Zealand and the United Kingdom throughout the post-war period; and the median score of ten is held by pre-2003 Israel, pre-1972 Italy, and both Japan and the United States throughout the post-war period. Table 1 displays descriptive statistics for this variable, as well as for the other quantitative variables featured in our models.

This index, like Siaroff’s (2003) work, has intellectual roots in two strands of scholarly inquiry. On the one hand, it draws upon studies by scholars such as Doring (1996) on the “rationalization” of parliamentarism in Western Europe. Specifically, this literature is concerned with the strengthening of governments at the expense of ordinary members of parliament, a process in which legislative rules such as government control of the plenary agenda and restrictions on the introductions of private members’ bills have played a large

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8 See Siaroff (2003) for a more detailed discussion of each feature and its coding.
9 Our combination of these variables into a single additive index is empirically supported by a principal components analysis. This analysis reveals that all ten variables load negatively and reasonably strongly (>0.2) onto a single dimension, with the exception of the minority veto variable, which has a smaller but still non-trivial loading of -0.086. This single dimension explains fifty-five percent of the variance and has an eigenvalue of 2.3, whereas the second dimension only explains about thirteen percent of the variance and has an eigenvalue of 1.1. A simple screeplot accordingly suggests that only the first dimension should be retained.
role (see also Cox 1987). On the other hand, it also draws upon work by scholars such as Strom (1984, 1990) and Powell (2000) on the way in which the committee system shapes the concentration of power in the assembly (Powell), and accordingly the influence exercised by opposition parties (Strom). We note the strong correspondence between countries’ scores on our index and their classification using Powell’s (Ibid., 34) ordinal schema measuring the concentration of power in the assembly.\footnote{For example, Powell (2000, 34) classifies countries as either having rules facilitating opposition influence in the legislature (e.g., Norway); rules encouraging a limited dispersal of influence in the legislature (e.g., the United States); or rules concentrating power in the hands of the government (e.g., the United Kingdom). By way of comparison, our average IILC scores for these three groups of countries are 6.5, 12 and 19, respectively. Canada, Finland, Spain and Switzerland are the only countries for which the two portraits differ substantially, and even then, our index scores suggest moving these countries either up or down Powell’s ordinal schema by a single category. We also note that for the reduced set of cases for which Powell’s ordinal schema is available, substituting it (assigning the scores of zero, one and two to his three categories, respectively) for our IILC yields even stronger support for H1.}

Testing our hypotheses also requires us to develop measures of the external constraints on legislative policy-making authority at the national level of government. One constraint that has received a good of attention elsewhere is bicameralism (e.g., Tsebelis and Money 1999). For consistency with the other external constraint variables (discussed below), we construct a dummy variable for unicameralism, a variable that is coded one if a country possessed only a single legislative chamber (i.e., was unicameral) at the time of an election and zero otherwise (i.e., if the country was bicameral). Because the absence of an upper chamber increases the policy-making authority of the largest party in the lower chamber and hence the size of the legislative prize, H2 predicts that unicameralism should increase the incentives for electoral coordination in lower house elections. This means that unicameralism should be negatively related to both dependent variables. Data for this variable is drawn from Hicken and Stoll (2011).

The second external constraint we test for is judicial review. At the time of each election, countries are coded two if there was no judicial review; one if there was some judicial review; and zero if there was strong judicial review. Because higher numbers indicate more centralization of policy-making authority in the legislature vis-à-vis other national level institutions and hence a larger legislative prize, which H2 posits should increase the incentive for electoral coordination in legislative elections, we again expect this variable to be negatively related to both dependent variables. As with the internal institutional features of national legislatures, our data builds upon that originally collected by Siaroff (2003): we both extend his data to additional countries and update it through 2005.

The third external constraint is an independent central bank. At the time of each election, countries are coded two if the independence of the central bank was limited or weak; one if it was moderate; and zero if it was high. Because higher numbers again indicate a larger legislative prize, H2 as before leads us to expect this variable to be negatively related to both dependent variables. Also as before, data is taken from Siaroff (2003) and then extended both forward in time and to other advanced industrial democracies.

We first test our hypotheses by focusing solely on parties and legislatures in pure parliamentary systems. Afterwards, we discuss and analyze the effects of presidentialism.
3.0 Model Specifications and Data

To test H1 and H2, we estimate the following models:

\[
\text{ENEP nat}_{it} = \beta_0 + \beta_1 \text{IILC}_{it} + \beta_2 \text{Unicameral}_{it} + \beta_3 \text{Judicial Review}_{it} + \beta_4 \text{Central Bank}_{it} + \beta_5 \text{Government Revenue (% GDP)}_{it} + \beta_6 \text{Logged Magnitude}_{it} + \varepsilon_{it}
\]

\[
\text{D}_{it} = \beta_0 + \beta_1 \text{IILC}_{it} + \beta_2 \text{Unicameral}_{it} + \beta_3 \text{Judicial Review}_{it} + \beta_4 \text{Central Bank}_{it} + \beta_5 \text{Government Revenue (% GDP)}_{it} + \beta_6 \text{Logged Magnitude}_{it} + \varepsilon_{it}
\]

The first of these models, labelled Model 1A, tests for the hypothesized relationship between party system fragmentation (measured as the effective number of electoral parties, ENEP), internal legislative policy-making authority (measured using the IILC), and the key external constraints on the legislature’s authority: the cameral structure of the legislature; the strength of the judiciary; and the independence of the central bank. The second model, labelled Model 1B, tests for the hypothesized relationship between party system nationalization (measured using the difference score, D) and the same independent variables. Note that \(i\) indexes countries and \(t\) indexes elections throughout. Country fixed effects are included in all models.\(^{11}\)

These models additionally include two control variables. The first is the vertical centralization of policy-making authority in the national level of government vis-à-vis the sub-national level of government (e.g., Chhibber and Kollman 1998, 2004; Hicken and Stoll 2008). As discussed above, greater vertical centralization of authority in the national level of government is predicted to lead to fewer, more nationalized parties competing in legislative elections, which means that it should be negatively related to both dependent variables. This variable is operationalized as national government revenue as a percent of gross domestic product (GDP) and measured using data from the World Development Indicators (World Bank Group 2007) and Polity II (Gurr 1990), as described in Hicken and Stoll (2008), from whom data is taken.\(^{12}\)

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\(^{11}\) Theoretically, country fixed effects have the advantage of controlling for the many unmeasured and stable features of countries that might shape the party system (e.g., political culture); empirically, F-tests for the nested models support their inclusion. However, most quantitative studies in this literature (e.g., Clark and Golder 2006) are fully pooled. When estimating fully pooled versions of our models for comparability, we draw the same conclusions about H1. The only differences of note regarding H2 are that the judicial review variable changes signs in both models, providing less support for the hypothesis, and that the unicameralism dummy variable changes sign in Model 1A, providing more support. We also note that because of the fixed effects specification, as well as the time series cross-sectional structure of the data, we eliminate countries for which only a single election otherwise qualifies for inclusion in the models: that is Finland in both Models 1A and 1B and France in Model 1B. However, including these cases yields nearly identical results.

\(^{12}\) See Hicken and Stoll (2008, 2011) for more details. An alternative operationalization that has the advantage of not being vulnerable to charges that it is a proxy for economic development is national government revenue as a percentage of total government revenue. However, data for this measure, obtained from the World Bank (N. d.), is only available from the 1970s onwards. Using this alternative measure yields similar results regarding vertical centralization to those reported here, but
The second control variable is the restrictiveness of the legislative electoral system, operationalized as per convention as the logged average magnitude of the lower tier electoral districts. A large and well-known literature in comparative politics has linked this variable to the fractionalization of the legislative party system (see, for example, Duverger 1963; Cox 1997; and Clark and Golder 2006). The larger the logged average district magnitude, the less incentive there is for actors to coordinate in legislative elections. This leads us to expect this variable to be positively related to the effective number of electoral parties. Similarly, Cox and Knoll (2003) argue that because more restrictive electoral systems produce more wasted votes, elites have a greater incentive to engage in cross-district coordination when the electoral system is restrictive. Yet, the more districts there are, the more difficult cross-district coordination should be (Hicken 2009, Hicken and Stoll 2011). Hence, given that the number of districts is inversely related to the average district magnitude, \( ceteris paribus \), we have contradictory predictions regarding the relationship between the logged average district magnitude and party system aggregation (positive and negative, respectively). Data on the average district magnitude is taken from Hicken and Stoll (2011), who in turn drew upon various primary and secondary sources. We note that despite arguments that proportional representation electoral systems tend to go together with committee systems that disperse power within the assembly, facilitating opposition influence (e.g., Powell 2000; Cusack, Iversen and Soskice 2007), the correlation between our measures of the restrictiveness of the electoral system (the logged average district magnitude) and the extent to which internal legislative structures concentrate power (the IILC) is only -0.62. Hence, while there is a relationship between these variables, a substantial proportion of the variation in the IILC is not explained by variation in the electoral system.

To estimate the models, our cases are all lower or single house national legislative elections held between 1945 and 2005 in advanced industrial democracies with pure parliamentary systems of government. Pure parliamentary systems provide the cleanest test results that are less consistent with the hypothesis than our original measure when combined with the same reduced set of cases.

13 In explaining the effective number of electoral parties (Model 1A), the logged average district magnitude is usually interacted with social heterogeneity, which is typically operationalized as the effective number of ethnic groups (e.g., Clark and Golder 2006). However, this variable is time invariant, which precludes its inclusion in our fixed effects model. When explaining party system aggregation (Model 1B), social heterogeneity is usually included additively (e.g., Cox and Knoll 2003; Hicken and Stoll 2011). Controlling for this variable in fully pooled versions of either model, including its interaction with the logged average district magnitude in Model 1A, does not alter the conclusions that would otherwise be drawn about H1 and H2, although it does provide results more commensurate with the literature regarding the effect of the electoral system.

14 Future work might also additionally control for the percentage of legislative seats distributed in an upper tier, despite the mixed results obtained to date regarding this variable (e.g., Cox and Knoll 2003; Tzelgov 2008; Hicken and Stoll 2011).

15 This is contrary to Hicken and Stoll (2011, 866), who argued that both predicted a negative relationship between the logged average district magnitude and party system aggregation. The number of districts and the logged average district magnitude are not jointly included in the model due to their high correlation.

16 Moreover, the correlation between the average district magnitude (unlogged) and the IILC is even lower: -0.31.

17 Our operational definition of a pure parliamentary system of government is the most stringent possible: that there is no popularly elected chief executive, usually known as a president. This is due
of our hypothesis; also, to date, they have been neglected in studies of how the size of the electoral prize shapes electoral coordination. We confine our analysis to this time period because data was not available for many variables for more recent years. Moreover, by restricting our cases to post-war elections in the advanced industrial democracies, we largely avoid the thorny issue of whether or not political institutions have the same effects in consolidated and unconsolidated democracies (e.g., Shugart 1999; Moser 1999; Clark and Golder 2006; Moser and Scheiner 2012).

After list-wise deleting the cases with missing data, the resulting data set consists of 283 elections in nineteen advanced industrial democracies.¹⁸ For Model 1B, however, we must drop elections in Israel and the Netherlands because of their single, nation-wide electoral districts: it is logically impossible to speak of formal cross-district coordination when there is only one nation-wide electoral district (e.g., Cox and Knoll 2003; Hicken and Stoll 2011). After list-wise deleting these elections as well as elections for which we were not able to obtain district level data, we are left with 216 elections in fifteen countries.¹⁹ A list of the countries and elections used to estimate the various models can be found in the paper’s Appendix.

4.0 Results and Discussion

We use OLS to estimate the six models. The coefficient estimates are shown in Table 2.

Not surprisingly in light of the structure of the data, Breusch-Pagan tests reject the null hypothesis of homoskedasticity, and simple regressions of the OLS residuals on their lags reveal unignorable autocorrelation. Accordingly, the table reports Newey-West (1987) standard errors, which are robust to both autocorrelation and heteroskedasticity, in parentheses.²⁰

¹⁸ The single Finnish (Model 1A) and Finnish and French elections (Model 1B) are also deleted, as discussed earlier. There is not much missing data: thirty-one cases in total. Much of this missing data is from the vertical centralization control variable, which seems to be missing at random. Re-estimating the models without this variable, which increases the number of cases for Model 1A to 298 and for Model 1B to 224, generally provides stronger support for the hypotheses.

¹⁹ Eliminating these two countries from Model 1A in the name of commensurability yields stronger support for the hypotheses, notably for H2 (the unicameralism variable changes sign). Additionally eliminating the elections for which district level data was not available from the CLEA from Model 1A, as well as the single French election, so that the model is estimated using the same set of cases as Model 1B, yields very similar results.

²⁰ Beck and Katz (1995) also raised the issue of cross-country contemporaneous correlation in the context of time series cross-sectional models. However, this problem seems unlikely to surface in our electoral data. Moreover, it is difficult to obtain a good estimate of the contemporaneous correlation when there are hardly any common time periods across countries, as is the case in our
4.1 Hypothesis 1

In both models, the coefficient on our index of internal legislative centralization (IILC) is negatively signed as well as statistically significant at conventional levels, supporting H1.\textsuperscript{21} This means that an increase in the concentration of authority within the legislature in the hands of the governing party is predicted to lead to fewer and more nationalized parties competing in national legislative elections, controlling for external constraints on the legislature’s policy-making authority, as well as for other relevant factors such as the electoral system.

This effect is also substantively significant. For example, consider the effect on party system size of increasing the IILC by its observed inter-quartile range of ten points. This is predicted to lead to a whopping decrease of 6.9 in the effective number of electoral parties, \textit{ceteris paribus}. For a similar real world example, consider the French Fourth Republic in 1951 holding all else constant but altering the internal structure of its legislature so that it otherwise resembled Switzerland’s, an extreme but not completely unrealistic institutional reform (this would entail an increase in the IILC from 3 to 9). The predicted effective number of electoral parties would change from 6.2 to a mere 2.0---a substantively significant decrease in party system size. However, most real world changes in the IILC are, at any one time, smaller in magnitude: the most common is a 2 point change. We would therefore usually expect to see the effective number of electoral parties change by 1.4 in response to these more realistic changes in the IILC, a still non-trivial substantive effect.

Regarding party system nationalization, the same ten point increase in the IILC is predicted to decrease the difference between the national effective number of electoral parties and the average district level effective number of electoral parties by approximately 3.8, \textit{ceteris paribus}. This is roughly equivalent to a party system like Belgium’s in recent years nationalizing until it is akin to one like Austria’s.

4.2 Hypothesis 2

The first external constraint on legislative authority at the national level of government is unicameralism. Unicameralism is only negatively signed and statistically significant when the dependent variable is party system aggregation (Model 1B). Specifically, unicameral legislatures are predicted to have a difference of 0.38 between the national and average district level effective number of electoral parties, \textit{ceteris paribus}. Conversely, unicameralism is positively signed and both statistically and substantively insignificant in Model 1A. The finding that the cameral structure of the legislature has a significant effect only upon the nationalization of the party system, and not upon its size, can be explained by the special incentives that upper chambers---which often have a geographic basis---provide to regional parties. In fact, bicameralism is often an indicator of political (as opposed to fiscal) decentralization, which is known to facilitate the success of regional parties and hence to

---

\textsuperscript{21} Even though our hypotheses are one-sided, we assess statistical significance conservatively using two-sided tests throughout.
decrease party system aggregation (Brancati 2008). Hence, the empirical evidence regarding unicameralism partially supports H2.

The second external constraint is judicial review. The coefficient on this variable is negative and statistically significant in both models, consistent with H2. As hypothesized, the weaker the power of judicial review, and hence the larger the size of the legislative prize, the fewer, more nationalized electoral parties there are predicted to be in legislative elections, all else being equal. Moreover, this variable also has a substantively significant effect. For example, holding other factors constant, in countries lacking judicial review, the effective number of electoral parties is predicted to be approximately 0.85 less than in countries with moderate levels of judicial review and about 1.7 less than in countries with strong judicial review.

The third external constraint is central bank independence. Again as posited by H2, the coefficient on this variable is negative and statistically significant in both models. This means that as hypothesized, the less independent the central bank, the greater the size of the legislative prize and hence the more consolidated and aggregated the party system is predicted to be, *ceteris paribus*. While less substantively meaningful than judicial review, the impact of this variable is not trivial: for example, in countries lacking an independent central bank, the effective number of electoral parties is predicted to be about 0.55 less than in countries with a moderately independent central bank, all else being equal.

4.3 Control Variables

Our final task is to briefly describe our findings regarding the control variables. The first of these control variables is vertical centralization. This is also an external (but not a horizontal) constraint on the policy-making authority of the legislature. Contrary to the literature’s hypotheses, in both models, the coefficient on this variable has a positive sign, which means that increasing the authority of the national level of government is predicted to lead to more, less-nationalized legislative parties. Moreover, these coefficients are statistically significant at conventional levels. On the one hand, this is surprising. On the other hand, it is not: similarly counterintuitive results regarding vertical centralization have also been found by other studies, which might be due to measurement issues (e.g., Brancati 2008; Hicken 2009; Hicken and Stoll 2011).

Last but not least is the electoral system. Our finding regarding the relationship between legislative party system fragmentation and the restrictiveness of the electoral system (Model 1A) is also contrary to both the literature’s hypotheses and past findings. The estimated coefficient fails to attain conventional levels of statistical significance, and its negative sign indicates that the less restrictive the electoral system, the less fragmented a party system a country is (counterintuitively) predicted to have, all else being equal. Our failure to find the expected, statistically significant relationship between the restrictiveness of the electoral system and the effective number of electoral parties is best attributed to our exclusion of the variable of social heterogeneity and its interaction with the electoral system from the models, which in turn is attributable to our use of a country fixed effects instead of a fully pooled model. As we explain in footnote 13, dropping fixed effects and including the electoral system and heterogeneity interaction yields results consistent with those in the literature. Turning to party system aggregation (Model 1B), we fail to find support for Cox and Knoll’s (2003) “wasted vote” argument. By way of contrast, we do find support for the competing argument that a greater number of electoral districts makes cross-district coordination more difficult: the coefficient on the logged average district magnitude is both negatively signed and statistically significant, as this argument predicts.
Finally, we note in closing that our index of internal legislative centralization (IILC) has a larger substantive effect on the effective number of electoral parties than does the electoral system. Recall that a change in the IILC of ten points (the inter-quartile range) is predicted to decrease the effective number of electoral parties by 6.9. By way of contrast, even the maximum observed change in the logged average district magnitude, an increase in the average district magnitude from one to 150, and hence an increase in the logged average district magnitude from zero to five, is predicted to decrease the effective number of electoral parties by only 2.1. The substantive magnitude of the IILC, in other words, is several times that of the electoral system.22

5.0 The Effects of Presidentialism

Thus far, we have confined ourselves to cases of pure parliamentarism, where the legislator’s major external competitor, a president, does not exist. We now turn to the question of how a popularly elected president affects the size of the legislative prize.

5.1 Hypotheses

On the one hand, it seems reasonable to suppose that a president will have an effect similar to that of the other external constraints discussed above. By reducing the size of the legislative prize and hence the potential rewards that follow from being the largest legislative party, the presence of a president diminishes the incentives for electoral coordination. If this is the case, H2 should apply.

Astute readers will note, however, that this hypothesis seemingly turns earlier work on the effect of presidentialism on its head. The finding in this literature is that the more powers a president wields relative to the legislature, the more nationalized and less fragmented the party system (e.g., Hicken and Stoll 2013).23 In other words, according to the extant literature, the most constrained legislatures (those with the most powerful presidents) should be those with the fewest and most nationalized parties—contra H2. How, then, do we resolve this apparent theoretical conundrum?

We do so by offering a caveat to this hypothesis. It is important to emphasize that the effect of presidentialism on the legislative party system is contingent on both the number of presidential candidates and the proximity of legislative and presidential elections.24 When presidential elections for at least moderately powerful to powerful presidents with few presidential candidates are held concurrently or in otherwise reasonable temporal proximity to legislative elections (a common occurrence), a reductive or deflationary shadow is cast over the legislative party system that leads it to become more consolidated and nationalized (e.g., Hicken and Stoll 2011, 2013), contrary to H2. Golder (2006, 36) has referred to this as the “short coattails” of presidentialism. Conversely, when presidential elections are held non-concurrently with legislative elections—at the extreme, when the legislative election falls at the presidential midterm—and/or where there are a large number of presidential

22 This is also the case in the fully pooled models, even when holding the effective number of ethnic groups at its observed maximum to produce the maximal electoral system effect.

23 The exception concerns extremely powerful presidents, and to a lesser extent, extremely weak presidents. See Hicken and Stoll (2013) and Elgie et al. (2013). For more on the logic behind and mechanisms underlying these arguments, see Shugart (1995); Cox (1997); Samuels (2002, 2003); Golder (2006); and Hicken and Stoll (2011).

24 For a recent argument that proximity does not matter, however, see Elgie et al. (2013).
candidates, presidentialism should instead cast the inflationary shadow over the legislative party system postulated by H2. Hence, this leads to our third hypothesis:

\[ H3: \text{Temporally proximate presidential elections with few candidates will mitigate the inflationary effect of the external constraint of a president.} \]

5.2 Variables, Data, and Model Specifications
To test for the effect of presidentialism, we first need to decide how to operationalize the variable. The simplest and first operationalization is a dummy variable for the existence of a popularly elected president at the time of the legislative election. However, this equates figurehead presidents with little policy-making authority, such as the Irish president, with powerful presidents with substantial policy-making authority, such as the American president.

The second, and we think preferable, operationalization is an index of de jure presidential powers, which distinguishes both between presidential and non-presidential regimes and between presidential regimes with more or less policy-making authority vested in the presidency. For this index, we rely upon the measure of presidential powers developed by Shugart and Carey (1992) and employed by Hicken and Stoll (2008, 2013).\(^{25}\) This scheme measures ten dimensions of legislative and non-legislative presidential powers. Based on the constitution in effect at the time of each election, countries with a popularly elected president are assigned a score ranging from zero (minimal presidential authority) to four (maximal presidential authority) on each dimension. An overall index of presidential powers is then created by adding the scores on all ten dimensions. The index values were then incremented by one and non-presidential regimes were assigned a value of zero. The resulting observed index values range from zero to fourteen, with the maximum value being taken by the United States. Because presidents, and particularly more powerful presidents, diminish the size of the legislative prize, H2 predicts that both of these variables will be positively related to the dependent variables.

Last but not least, to test H3, we operationalize the temporal proximity of presidential elections using a continuous measure originally developed by Amorim Neto and Cox (1997)—the measure of choice in many recent studies (e.g., Cox 1997; Clark and Golder 2006; Golder 2006; Hicken and Stoll 2011). It ranges from zero (minimally proximate, i.e., the legislative election either occurs at the presidential midterm or in a non-presidential regime) to one (maximally proximate, i.e., concurrent). The effective number of (electoral) presidential candidates is then calculated for either the concurrent (if there is one) or preceding presidential election (if not). In non-presidential regimes, this variable takes the

\(^{25}\) See Hicken and Stoll (2008) for more details. To address concerns that have been raised about this index (e.g., Fortin 2013), Hicken and Stoll (2008, 2013) also employed a simple trichotomy designed to capture basic differences in presidential policy-making authority, classifying popularly elected presidents as either weak, moderately powerful, or powerful. However, in our advanced industrial sample of cases (described below), there is only one country with a powerful president: the United States. Moreover, this variable is time invariant, which is problematic when employing country fixed effects, as we do. Accordingly, we instead compared countries with moderately powerful or powerful presidents on the one hand to countries with pure parliamentary regimes or weak presidents on the other. Both substantively and statistically similar results were obtained using this alternative measure.
value of zero, again following the standard practice in the literature (Ibid.). To test H2 with respect to presidentialism, we estimate two models, versions of Equations (2) and (3) that include one of the measures of presidentialism (Presidential) on the right-hand side:

\[
\text{ENEP nat}_{it} = \beta_0 + \beta_1 \text{ILC}_{it} + \beta_2 \text{Unicameral}_{it} + \beta_3 \text{Judicial Review}_{it} + \beta_4 \text{Central Bank}_{it} + \beta_5 \text{Presidential}_{it} + \beta_6 \text{Government Revenue (\% GDP)}_{it} + \beta_7 \text{Logged Magnitude}_{it} + \varepsilon_{it},
\]

(4)

\[
\text{D}_{it} = \beta_0 + \beta_1 \text{ILC}_{it} + \beta_2 \text{Unicameral}_{it} + \beta_3 \text{Judicial Review}_{it} + \beta_4 \text{Central Bank}_{it} + \beta_5 \text{Presidential}_{it} + \beta_6 \text{Government Revenue (\% GDP)}_{it} + \beta_7 \text{Logged Magnitude}_{it} + \varepsilon_{it},
\]

(5)

The versions of these models that include the presidentialism dummy variable are labelled Models 2A (Equation 4) and 2B (Equation 5), and the versions that include the presidential powers index are labelled Models 3A (Equation 4) and 3B (Equation 5). All other variables and details of model specification (such as the inclusion of country fixed effects) are as before.

To test H3, two additional models, which we label Models 4A and 4B, are estimated:

\[
\text{ENEP nat}_{it} = \beta_0 + \beta_1 \text{ILC}_{it} + \beta_2 \text{Unicameral}_{it} + \beta_3 \text{Judicial Review}_{it} + \beta_4 \text{Central Bank}_{it} + \beta_5 \text{ENPRES}_{it} + \beta_6 \text{Proximity}_{it} + \beta_7 \text{ENPRES}_{it} \times \text{Proximity}_{it} + \beta_8 \text{Government Revenue (\% GDP)}_{it} + \beta_9 \text{Logged Magnitude}_{it} + \varepsilon_{it},
\]

(6)

\[
\text{D}_{it} = \beta_0 + \beta_1 \text{ILC}_{it} + \beta_2 \text{Unicameral}_{it} + \beta_3 \text{Judicial Review}_{it} + \beta_4 \text{Central Bank}_{it} + \beta_5 \text{ENPRES}_{it} + \beta_6 \text{Proximity}_{it} + \beta_7 \text{ENPRES}_{it} \times \text{Proximity}_{it} + \beta_8 \text{Government Revenue (\% GDP)}_{it} + \beta_9 \text{Logged Magnitude}_{it} + \varepsilon_{it},
\]

(7)

Here, the measure of presidentialism is omitted in favour of an interaction between the effective number of presidential candidates (ENPRES) and the temporal proximity between the presidential and legislative elections (Proximity), as well as all constitutive lower order terms. All else is again as before.

To estimate the models, our cases are all lower or single house national legislative elections in advanced industrial democracies that were held between 1945 and 2005. After list-wise deleting the cases with missing data, the resulting data set consists of 395 elections.

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26 Here, as elsewhere in the paper, we follow the literature’s empirical approach to ensure the comparability of our results (e.g., Golder 2006). Accordingly, proximity is calculated in the conventional manner: 

\[
\frac{2 \cdot \left( L_t - P_{t-1} \right)}{P_{t+1} - P_{t-1} - 1/2},
\]

where \(L_t\) is the year of the legislative election; \(P_{t-1}\) is the year of the previous presidential election; and \(P_{t+1}\) is the year of the following presidential election.

The effective number of presidential candidates is calculated as follows: 

\[
\frac{1}{\sum v_i^2},
\]

where \(v_i\) is a candidate’s vote share. For presidential elections with a run-off, the first round election results are used. See Stoll (2015) for a discussion of potential problems with this approach to modeling the presidential coattails, but also for evidence that conclusions are reasonably robust to alternatives.
in twenty-five advanced industrial democracies. For Models 2B, 3B, and 4B, however, we again drop elections in Israel and the Netherlands because of their single, nation-wide electoral districts. After list-wise deleting these elections as well as elections for which we were not able to obtain district level data, we are left with 324 elections in twenty-two countries.

5.3 Results

The results are presented in Table 3. As before, Newey-West robust standard errors are reported.

First, $H_1$ continues to enjoy strong support. In all of the models presented in Table 3, the coefficient on our index of internal legislative centralization ($IILC$) is negatively signed as well as statistically significant. Moreover, while the substantive magnitude of the coefficient is reduced, it remains an important effect---and in fact, at this reduced magnitude, the substantive impact of the variable is more reasonable. We also obtain similar findings (sign, statistical significance, and substantive significance) for the non-presidential external constraints of cameral structure, judicial review, and central bank independence---the components of $H_2$ that were already tested.

Second, turning to the presidential component of $H_2$, the estimated coefficients on both measures of presidentialism (Models 2A, 2B, 3A, and 3B) are positively signed and statistically significant in all models, as hypothesized. Specifically, the existence of a popularly elected president, which reduces the size of the legislative prize, is predicted by Models 2A and 2B to result in more, less-nationalized political parties in legislative elections: to be exact, an effective number of electoral parties that is 2.0 higher and a difference score that is greater by 0.74 than in countries with pure parliamentary regimes, all else being equal. Further, the more powerful this president is, the more pronounced this effect is predicted to be by Models 3A and 3B. For example, adding a weak, figurehead president like Ireland's to a formerly purely parliamentary regime is predicted to increase the effective number of electoral parties by only 0.14 and to increase the difference between the national effective number of electoral parties and the average district level number of electoral parties by 0.062, ceteris paribus. This is not a large effect because the size of the legislative prize has not been greatly reduced by such a political institutional reform. But adding a powerful popularly elected president like the United States's (the most powerful presidency in this sample of countries) is predicted to increase the effective number of electoral parties by 2.0 and the difference score by 0.87, all else being equal. This is a substantively significant effect, reflecting the fact that this political institutional reform does greatly reduce the size of the legislative prize.

But what about presidential coattails? Let us now take a more nuanced look at the effect of presidential elections, as predicted by Models 4A and 4B. In accordance with $H_3$, when legislative elections are held at the presidential midterm---and hence the presidential race does not cast a shadow over the legislative contest---there are more, less-nationalized political parties than in a purely parliamentary regime. This is shown by the positive and statistically significant coefficient on the effective number of presidential candidates variable in Models 4A and 4B.27 That is, the “presidentialism as external constraint” effect predominates when presidential and legislative elections are not temporally proximate.

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27 See Stoll (2015) for more on the interpretation of this, and the other, coefficients in interaction models designed to measure the presidential coattails.
paralleling our earlier findings from Models 2A-3B using the measures of presidentialism that did not account for the presidential coattails.

By way of contrast, when legislative and presidential elections are held concurrently, or otherwise in temporal proximity to one another, the presidential race does cast a shadow over the legislative contest. While not shown here for reasons of space, the marginal effect of proximity is always negative and statistically significant when the effective number of presidential candidates is greater than about 2.0,\(^28\) largely in accordance with H3. Hence, presidential elections in temporal proximity to legislative elections have coattails that reduce the size and boost the aggregation of the legislative party system---an effect that ultimately overwhelms the effect from the reduction in the size of the legislative prize just described. However, this marginal effect remains negative even when there are a large number of presidential candidates, contrary to H3 and the existing literature. The explanation for the latter is our inclusion of fixed effects: when we estimate fully pooled versions of Models 4A and 4B, we obtain conventional findings regarding the presidential coattails that are in full accordance with H3.

6.0 Conclusion

In this paper, we found strong and consistent evidence that internal legislative centralization, which increases the size of the legislative prize, is associated with fewer, more national political parties. In the same way that all presidents are not created equal, legislatures vary in how they internally concentrate or disperse authority and the perks of office via features such as their committee systems. This variation then affects the behaviour of political elites, voters, and political parties, and hence the size and nationalization of the legislative party system in democracies.

We also generally found that, as expected, the existence of institutions that compete with the lower legislative house---the external dimension of the size of the legislative prize---affect the incentives for electoral coordination in the legislative race. An independent judiciary was found to lead to more, less-nationalized political parties, as hypothesized. To a lesser extent, the presence of an upper house and an independent central bank were also found to effectively reduce the size of the prize associated with becoming the largest party in the lower chamber, and hence lead to more, less-nationalized political parties.

The relationship between the legislature and a separately elected president that we uncovered was more nuanced. The presidency represents a potential check on the power of the legislature and hence might be expected to also lead to a less consolidated and nationalized legislative party system. Yet when presidential and legislative elections are proximate, the reductive shadow of the presidential election is ultimately the dominant effect, often leading to fewer, more nationalized parties. However, as elections grow less proximate, more, less-nationalized parties are seen, in line with \textit{a priori} expectations about the effect of the size of the legislative prize upon the legislative party system. Finally, it is worth noting in conclusion that we found the effect of internal legislative centralization to be more substantial than that of the political institutional variable upon which the literature has focused the bulk of its attention to date: the electoral system. Our findings therefore lend weight to the arguments of scholars such as Chhibber and Kollman.

\(^{28}\) For example, for Model 4A, this negative marginal effect ranges from a miniscule -0.034 to a substantial -3.2 when the effective number of presidential candidates is equal to 2.2 and 9.0, respectively.
(2004), Samuels and Shugart (2010), and Stoll (2013), who have pushed for greater attention to be paid to political institutions besides the electoral system. This paper has demonstrated that the size of the legislative prize, not just the electoral system, matters when it comes to party system size and nationalization, two important and oft-studied dimensions of democratic party systems. Hence, scholars of party systems interested in maximizing their explanatory leverage should look beyond the ballot box to the broader political institutional framework of democracies.

6.0 Appendix

Legislative elections used to estimate Model 1A (number of elections per country in parentheses):

Australia 1946-2004 (24); Belgium 1946-1999 (18); Canada 1949-2004 (18); Denmark 1945-2005 (24); France 1951-1958 (3); Germany 1953-2002 (14); Greece 1974-2004 (11); Israel 1951-1992, 2003 (13); Italy 1948-2001 (14); Japan 1947-1993 (18); Luxembourg 1968-1999 (7); Malta 1971-1998 (7); Netherlands 1948-2003 (17); New Zealand 1946-2005 (21); Norway 1949-2005 (15); Spain 1977-2004 (9); Sweden 1948-2002 (18); Switzerland 1947-2003 (15); United Kingdom 1945-2005 (17).

Legislative elections used to estimate Model 1B (number of elections per country in parentheses):

Australia 1946-2004 (24); Belgium 1946-1999 (18); Canada 1972-2004 (10); Denmark 1945-2005 (24); Germany 1953-2002 (14); Greece 1974-2004 (11); Italy 1948-2001 (14); Japan 1947-1993 (18); Luxembourg 1968-1994 (6); New Zealand 1966-2005 (5); Norway 1949-2005 (15); Spain 1977-2004 (9); Sweden 1948-2002 (18); Switzerland 1947-2003 (13); United Kingdom 1945-2005 (17).

Legislative elections used to estimate Models 2A, 3A, and 4A (number of elections per country in parentheses):

Australia 1946-2004 (24); Austria 1949-1999 (16); Belgium 1946-1999 (18); Canada 1949-2004 (18); Denmark 1945-2005 (24); Finland 1945-2003 (17); France 1951-2002 (14); Germany 1953-2002 (14); Greece 1974-2004 (11); Iceland 1967-1999 (10); Ireland 1948-2002 (17); Israel 1951-2003 (15); Italy 1948-2001 (14); Japan 1947-1993 (18); Luxembourg 1968-1999 (7); Malta 1971-1998 (7); Netherlands 1948-2003 (17); New Zealand 1946-2005 (21); Norway 1949-2005 (15); Portugal 1976-1999 (9); Spain 1977-2004 (9); Sweden 1948-2002 (18); Switzerland 1947-2003 (15); United Kingdom 1945-2005 (17); United States 1946-2004 (30).

Legislative elections used to estimate Models 2B, 3B, and 4B (number of elections per country in parentheses):

Australia 1946-2004 (24); Austria 1949-1999 (16); Belgium 1946-1999 (18); Canada 1972-2004 (10); Denmark 1945-2005 (24); Finland 1945-2003 (17); France 1956, 1973-2002 (9); Germany 1953-2002 (14); Greece 1974-2004 (11); Iceland 1967-1999 (10); Ireland 1948-2002 (17); Italy 1948-2001 (14); Japan 1947-1993 (18); Luxembourg 1968-1994 (6); New Zealand 1966, 1990, 1999-2005 (5); Norway 1949-2005 (15); Portugal 1976-1999 (9); Spain 1977-2004 (9).
References


Table 1. Descriptive statistics for the quantitative variables based on cases for Model 1A. Exceptions are the variables “Difference,” which is based on cases for Model 1B; “Index of Presidential Powers,” which is based on cases for Model 3A; and the variables “Proximity” and “Effective Number of Presidential Candidates”, which are based on cases for Model 4A.
<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>National Effective Number of Electoral Parties (ENEP)</th>
<th>Difference (National – Average District ENEP)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1A</td>
<td>Model 1B</td>
</tr>
<tr>
<td>Intercept</td>
<td>18***</td>
<td>8,8***</td>
</tr>
<tr>
<td></td>
<td>(3.7)</td>
<td>(2.4)</td>
</tr>
<tr>
<td>IILC</td>
<td>-0.69***</td>
<td>-0.39***</td>
</tr>
<tr>
<td></td>
<td>(0.18)</td>
<td>(0.12)</td>
</tr>
<tr>
<td>Unicameralism</td>
<td>0.12</td>
<td>-0.38*</td>
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<tr>
<td></td>
<td>(0.19)</td>
<td>(0.19)</td>
</tr>
<tr>
<td>Judicial Review</td>
<td>-0.85***</td>
<td>-0.46**</td>
</tr>
<tr>
<td></td>
<td>(0.27)</td>
<td>(0.18)</td>
</tr>
<tr>
<td>Central Bank</td>
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<td>-0.30*</td>
</tr>
<tr>
<td></td>
<td>(0.13)</td>
<td>(0.16)</td>
</tr>
<tr>
<td>National Gov’t Rev., % GDP</td>
<td>0.021**</td>
<td>0.020**</td>
</tr>
<tr>
<td></td>
<td>(0.011)</td>
<td>(0.010)</td>
</tr>
<tr>
<td>Log Average Magnitude</td>
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<td>-0.99*</td>
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<tr>
<td></td>
<td>(0.59)</td>
<td>(0.59)</td>
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<td>N</td>
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<td>216</td>
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<tr>
<td>Root MSE</td>
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<tr>
<td>R²</td>
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<td>0.68</td>
</tr>
<tr>
<td>Adjusted R²</td>
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<td>0.65</td>
</tr>
</tbody>
</table>

Table 2. Coefficients and robust (Newey-West) standard error estimates for Models 1A and 1B. Country fixed effects not shown. Significance codes are for two-sided tests, all calculated prior to rounding to two significant digits: 0.01, ***; 0.05, **; 0.10, *. 
<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>National Effective Number of Electoral Parties (ENEP)</th>
<th>Difference (National – Average District ENEP)</th>
<th>National Effective Number of Electoral Parties (ENEP)</th>
<th>Difference (National – Average District ENEP)</th>
<th>National Effective Number of Electoral Parties (ENEP)</th>
<th>Difference (National – Average District ENEP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>11*** (1.7)</td>
<td>5.5*** (1.3)</td>
<td>9.4*** (1.3)</td>
<td>5.0*** (1.2)</td>
<td>9.5*** (1.3)</td>
<td>4.8*** (1.3)</td>
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<td>IILC</td>
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<td>-0.22*** (0.063)</td>
<td>-0.27*** (0.061)</td>
<td>-0.20*** (0.059)</td>
<td>-0.27*** (0.060)</td>
<td>-0.19*** (0.060)</td>
</tr>
<tr>
<td>Unicameralism</td>
<td>0.017 (0.19)</td>
<td>-0.44*** (0.15)</td>
<td>0.049 (0.18)</td>
<td>-0.43*** (0.15)</td>
<td>0.064 (0.19)</td>
<td>-0.42*** (0.15)</td>
</tr>
<tr>
<td>Judicial Review</td>
<td>-0.81*** (0.24)</td>
<td>-0.48** (0.19)</td>
<td>-0.83*** (0.24)</td>
<td>-0.48** (0.19)</td>
<td>-0.92*** (0.25)</td>
<td>-0.50*** (0.19)</td>
</tr>
<tr>
<td>Central Bank</td>
<td>-0.53*** (0.14)</td>
<td>-0.32* (0.16)</td>
<td>-0.54*** (0.14)</td>
<td>-0.33** (0.16)</td>
<td>-0.52*** (0.14)</td>
<td>-0.33** (0.16)</td>
</tr>
<tr>
<td>National Gov’t Rev., % GDP</td>
<td>0.032*** (0.0091)</td>
<td>0.024*** (0.0086)</td>
<td>0.034*** (0.0092)</td>
<td>0.025*** (0.0088)</td>
<td>0.032*** (0.0092)</td>
<td>0.025*** (0.0087)</td>
</tr>
<tr>
<td>Log Average Magnitude</td>
<td>-0.44 (0.42)</td>
<td>-0.75* (0.41)</td>
<td>-0.45 (0.42)</td>
<td>-0.76* (0.41)</td>
<td>-0.47 (0.42)</td>
<td>-0.77* (0.41)</td>
</tr>
<tr>
<td>Presidential</td>
<td>2.0** (0.95)</td>
<td>0.74* (0.43)</td>
<td>0.14* (0.073)</td>
<td>0.062* (0.028)</td>
<td>1.0** (0.51)</td>
<td>0.55** (0.26)</td>
</tr>
<tr>
<td>Proximity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.34*** (0.11)</td>
<td>0.11* (0.057)</td>
</tr>
<tr>
<td>ENPRES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.34*** (0.11)</td>
</tr>
<tr>
<td>Proximity × ENPRES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.47*** (0.17)</td>
<td>-0.23** (0.11)</td>
</tr>
<tr>
<td>N</td>
<td>395</td>
<td>324</td>
<td>395</td>
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<tr>
<td>Root MSE</td>
<td>0.80</td>
<td>0.56</td>
<td>0.79</td>
<td>0.56</td>
<td>0.80</td>
<td>0.56</td>
</tr>
<tr>
<td>R²</td>
<td>0.73</td>
<td>0.66</td>
<td>0.74</td>
<td>0.66</td>
<td>0.73</td>
<td>0.66</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.71</td>
<td>0.63</td>
<td>0.71</td>
<td>0.63</td>
<td>0.71</td>
<td>0.63</td>
</tr>
</tbody>
</table>

Table 3. Coefficients and robust (Newey-West) standard error estimates for Models 2A-4B. Country fixed effects not shown. Significance codes are for two-sided tests, all calculated prior to rounding to two significant digits: 0.01, ***; 0.05, **; 0.10, *. 

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