

Legislative Policy-Making Authority, the Number of Parties, and Party System Aggregation

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Abstract:

This paper explores the way in which the internal organization of legislatures, in addition to the power of legislatures relative to their institutional rivals, shapes the legislative party system. We argue that the incentives for aggregating across districts in a bid to create large national parties are strongest where legislative policy-making authority is concentrated in the hands of the largest party. To test this argument, we draw on recent studies of legislative organization to develop measures of our key independent variable, the distribution of legislative policy-making authority. Using two different data sets, one a cross-section of recent elections from approximately fifty minimally democratic countries and the other a time series cross section of approximately 300 post-war elections in twenty advanced industrial democracies, we find support for our argument that party system aggregation and the number of electoral parties are related to the concentration of policy-making authority within the legislature, as well as to external constraints on the legislature's authority.

How does the way in which power is organized within the legislature affect candidate and party strategies during legislative elections? There is now a burgeoning literature on the different ways in which the centralization or decentralization of power shapes electoral incentives. Specifically, we know that that where power and control of resources are concentrated at the national level of government (as opposed to dispersed among multiple sub-national units), candidates face strong incentives to coordinate across districts under the banner of a single party. Likewise, the more political power is concentrated within a separately elected chief executive's (i.e., president's) office, the stronger the incentives 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.

This focus on the office of the presidency is understandable. Executive office is typically the most valuable prize in a political system and should naturally influence candidates' and parties' incentives for electoral coordination. However, such a focus has the unfortunate effect of obscuring interesting variation in other national government institutions—specifically the legislature—that might also have a bearing on electoral incentives. The variation that interests us in this paper is not just the power of the legislative

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branch relative to the executive branch, which is how operationalizations of presidential power are explicitly defined in existing studies. Instead, we are interested in how legislatures are organized internally—specifically, the extent to which policy-making authority is concentrated by the legislature’s internal rules and structures in the hands of the largest (ruling) party versus shared between the ruling party and the opposition. We argue that the incentives for aggregating across districts in a bid to create large national parties are strongest where power is concentrated in the hands of the largest party.

To test this argument, we draw on two recent studies of legislative organization to develop measures of our key independent variable, the distribution of legislative policy making authority. Using two different data sets, one a cross-section of recent elections from approximately fifty minimally democratic countries and the other a time series cross section of approximately 300 post-war elections in twenty advanced industrial democracies, we find support for our argument that party system aggregation and the number of electoral parties are related to the concentration of policy-making authority within the legislature, as well as to external constraints on the legislature’s authority.

The rest of the paper proceeds as follows. We first develop an argument for why and how legislative policy making authority affects the size of the national party system. We then discuss the various strategies for measuring legislative policy making authority, and define and operationalize the other variables in our analysis, in the second section. The third section then describes the model specifications and data we use to test our hypotheses and the fourth section presents the results of our analysis. The final section concludes.

1.0 Literature and Theory

There is an abundance of work that links the size of the party system to the relative concentration of policy-making authority within a polity. The earliest work is that of Chhibber and Kollman (1998, 2004), who find that the vertical centralization of power in the national level of government induces greater cooperation across districts (better aggregation or linkage) and hence results in fewer national level political parties; conversely, dispersing power between the national government and sub-national units induces less cooperation and leads to more political parties at the national level. More recently, scholars such as Cox and Knoll (2003), Hicken and Stoll (2008, 2009a, 2009b), Hicken (2009) and Tzelgov (2008) have begun studying the centralization of power *within* the national level of government (horizontal centralization), in addition to the vertical centralization of power in the national level of government vis-à-vis sub-national levels. Horizontal centralization, like vertical centralization, is associated with better aggregation and fewer political parties. Focusing upon elections for separately elected chief executives (usually known as presidents), these scholars argue that the larger the prize associated with capturing this office, the fewer, more nationalized parties we should see.¹

To elaborate, Hicken and Stoll (2009a, 2009b) argue that presidentialism shapes the legislative party system through two distinct mechanisms. First, a higher concentration of power in the office of the president indirectly shapes the legislative party system by reducing the effective number of presidential candidates (2009b)²: fewer presidential candidates are

¹ The partial exception is Tzelgov (2008), who studies prime ministerial power (an index) in ten Western European countries employing either parliamentary or semi-presidential regimes.

² The effect of presidential power on the number of presidential candidates is actually non-linear. See Hicken and Stoll (2008) for more details.

associated with fewer legislative parties when presidential elections are temporally proximate to legislative elections. Second, presidential power has a direct reductive effect on the number of parties in legislative elections (2009a, 2009b): up to a point, more powerful presidents are associated with fewer parties in each district, better coordination across districts, and accordingly fewer and more nationalized parties at the national level. In these studies, the power of the separately elected chief executive, or the size of the presidential prize, is explicitly discussed in relative terms—e.g., how powerful the president is relative to other national level actors in the political system, with a particular focus upon the national legislature. This suggests a straightforward hypothesis regarding the power of the legislature: the converse of the size of the presidential prize argument outlined above. Accordingly, our first hypothesis is:

H1: More powerful legislatures are associated with a greater number of less-nationalized political parties.

As straightforward as this hypothesis may seem, there are reasons to expect that the relationship between legislative policy-making authority and the legislative party system is more complicated than it at first appears. To begin with, all else being equal, more powerful legislatures should make the national legislative office more valuable—à la Chhibber and Kollman (1998) and Cox (1999). For example, consider the effect of an increase in the number of committee assignments in the legislature. Such an increase provides more opportunities for legislators to gain a seat at the table, credit claim, and perhaps capture government resources. *Ceteris paribus*, such a change should make legislative office more appealing to politicians.

In addition to the *amount* of legislative power and resources (the absolute size of the legislative prize) its *distribution* might also affect the incentives of candidates and party leaders to cooperate across districts under the banner of a single party. Imagine, for example, that you are the leader of a party weighing the costs and benefits of trying to coordinate across districts to create a large, national party and capture at least a plurality of seats in the legislature.³ The greater the rewards associated with being the largest party in the legislature, the stronger should be the incentives to coordinate in order to try and capture that prize. We know that legislatures vary in the extent to which legislative prizes are awarded on a winner-take-all versus a power-sharing framework. In some legislatures, committee assignments and agenda control are concentrated, i.e., are disproportionately 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. We hypothesize that legislatures that concentrate power 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, and that they should accordingly provide strong incentives for parties to try and form large, national parties in a bid to capture that prize. Alternatively, legislatures that disperse legislative resources among multiple parties, even small ones, undermine the incentives for forming large, national parties. Thus, our second hypothesis is:

³ 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.

H2: Legislatures that concentrate power in the hands of the largest party are associated with fewer, more-nationalized political parties, controlling for the external constraints on legislative power.

To reiterate, H1 and H2 refer to distinct dimensions of legislative power. H1 primarily focuses on the power of the legislature relative to the president. Any gain for the legislature is a net loss for the president. Yet, the legislature's internal capabilities and hence its power might vary independently of its relationship with this institutional competitor. Relatedly, it seems plausible that the distribution of legislative policy-making authority can vary in non-presidential regimes where this major institutional competitor does not exist, an issue that existing studies have largely left explored (Tzelgov 2008 is the one partial exception). This then raises the question of how any such variation relates to variation in the party system, a question to which H2 provides a natural answer. Thus, in our empirical tests below, we try and distinguish between those legislative powers that compete directly with the authority of presidents and other external institutional actors (e.g. legislative veto overrides, budget review powers, etc.) and those that are internal to the legislature and relatively independent of these external constraints (e.g. committee structures, partisan distribution of committee chairmanships, etc.).

2.0 Variable Operationalization and Measures

We begin with our key independent variable. To test our first hypothesis (H1), we need an measure of overall legislative policy-making authority, one that specifically focuses on how legislative policy-making authority is constrained by the existence of a separately elected chief executive (usually called a president, as discussed above). Unfortunately, suitable comparative measures of the power of national legislatures have historically been in short supply.⁴ Recently, however, Fish and Kroenig (2009) have developed a measure of the power of national legislatures that seems to fit the bill. Their Parliamentary Powers Index (PPI) is the proportion of thirty-two possible powers that a country's national legislature possessed in 2007.⁵ Expressed as a decimal, it theoretically ranges from zero, indicating that a legislature possessed none of the thirty-two powers, to one, indicating that a legislature possessed all thirty-two powers. These powers, derived from their Legislative Powers Survey (LPS), primarily focus on external constraints on legislative authority, particularly those imposed by non-democratic aspects of the regime and by presidentialism.⁶ For

⁴ A prominent example is provided by Lijphart (1999), who seeks to measure the majoritarian nature of democracies. He identifies two key dimensions of majoritarianism, one of which concerns the relationship between the executive and the legislature (a continuum of executive dominance versus executive-legislative balance). The problem with using his measure of this "executive-parties" dimension as a measure of overall legislative policy-making authority is that it is endogenous: it includes one of the outcomes that we are interested in explaining, the number of legislative political parties, not to mention outcomes even further up the causal chain such as cabinet durability.

⁵ Not surprisingly, we obtain effectively identical findings from using the raw count of powers possessed by the legislature, the Fish and Kroenig (2009) measure LPS, instead of the percentage. This alternative measure ranges from a theoretical minimum of zero to a maximum of thirty-two.

⁶ One way to see the latter is to confine our attention to the minimally democratic countries appearing in our analysis (more on these cases below) and comparing the scores for those that possess a separately elected chief executive with the scores for those that lack one. The median score for the former is 0.56 (example: France under the Fifth Republic) while the median score for the latter is 0.72 (example: Sweden). In other words, in general, legislatures in democracies with

example, one of the thirty-two powers is the ability to initiate bills in all policy jurisdictions; another is the absence of judicial review, which renders the legislature's laws supreme. This measure is available for the 158 countries in 2007 with populations in excess of half a million. The observed scores range from a minimum of zero for countries such as Somalia and Myanmar to a maximum of 0.84 for countries such as Germany and Italy. The median score of 0.50 is received by countries such as Argentina and Ethiopia.

However, for these same reasons, the PPI is not suitable for testing H2.⁷ As argued above, there are two distinct dimensions of legislative authority to consider: first, external constraints, most importantly the existence of a president but also the existence of other national level institutional actors such as a judiciary with the power of judicial review; second, internal constraints on the largest (i.e., governing or majority) party's policy-making authority, such as a strong committee system where committee chairmanships are shared proportionally with opposition parties. Testing H2 requires us to hold constant these external constraints in order to assess the effect of the internal centralization of authority within the legislature, something that it is difficult to do using the LPS's coding scheme.⁸ Accordingly, we develop a new measure of the internal centralization of policy-making authority in the legislature. To do so, we draw upon data recently collected by Siaroff (2003) on twelve institutional features of national legislatures.⁹ These features are as follows:

- government (i.e., majority party) control of the plenary agenda;
- restrictions on the introduction of private members' bills;
- the lack of more than ten standing committees corresponding to and hence exercising oversight over government ministries;
- government control of committee chairs;
- the ability of the plenary to determine the principles of bills before sending them to committees;
- the requirement that a vote of investiture be held before a government can take office;

presidents are substantially less powerful than legislatures in democracies without presidents, as we argued above. Further, the LPS and hence the PPI ignores many of the internal features of legislatures that we suspect provide incentives for electoral coordination. A prime example is the committee structure.

⁷ Note that this is in no way a criticism of the PPI and LPS; rather, it merely recognizes that these measures were developed for purposes other than our own, which limits their usefulness in portions of our empirical inquiry.

⁸ For example, in democratic presidential regimes, the legislature's right to initiate bills is likely assessed vis-à-vis the president, yet we are also interested in the rights of individual legislators and/or opposition parties to initiate bills vis-à-vis the government (i.e., the largest or majority party).

⁹ Siaroff (2003) actually collected data on twenty-seven different institutional variables. However, some of them are external constraints, such as the lack of a judiciary with the powers of judicial review; some are not formal political institutions, such as a pluralist mode of interest intermediation; and others are problematic for our purposes. In the problematic category, we include variables that do not strike us as providing incentives for electoral coordination to become the largest party in the legislature, such as cabinet ministers also being legislators, as well as variables for which it is not clear which institutional configurations favor becoming the largest party, such as the existence of formal rank and privileges for the leader of the opposition. We note that including the latter, either in their original form or with the codings reversed, does not affect our conclusions. Note that the data is for the lower house if the legislature is bicameral.

- the lack of restrictions on the dissolution of the legislature by the government;
- provisions that money bills are a prerogative of the government;
- provisions for early curtailment of debate on a bill, usually by the government;
- the lack of minority vetoes on non-constitutional legislation;
- the legislature being run by a speaker instead of a collective presidium.¹⁰

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 greater centralization of authority in the hands of the governing (i.e., largest) party within the legislature and lower scores signal that authority is dispersed, facilitating the influence of opposition parties.

The resulting index of internal legislative centralization (IILC) ranges from a theoretical minimum of zero to a theoretical maximum of twenty-four. The observed minimum, five, is held by both Norway and pre-1976 Sweden; the observed maximum, twenty-four, is held by Ireland throughout the post-war period; and the median score of twelve is held by both pre-1996 Israel and post-1968 Italy. 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 role. On the other hand, it also draws upon studies by scholars such as Strom (1984, 1990) and Powell (2000) on the way in which the committee system shapes the concentration as opposed to the dispersion 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) categorical schema of the concentration of governmental power.¹¹

Finally, testing our second hypothesis also requires us to control for the external constraints on legislative policy-making authority within the national level of government. One constraint that has received a good of attention elsewhere is bicameralism (e.g., Tsebelis and Money 1999). We include this as a separate dummy variable in our models. Because the existence of an upper house decreases the policy-making authority of the governing (i.e., majority) party in the lower house, we expect bicameralism to decrease the incentives for

¹⁰ See Siaroff (2003) for a more detailed discussion of each feature and its coding.

¹¹ For example, countries classified by Powell (2000, 34) as having rules facilitating opposition influence in the legislature include Austria (11), Belgium (8-10), Denmark (9-11), Germany (10), Netherlands (9), Norway (5), Spain (15) and Sweden (5-6). (Our index scores are shown in parentheses with a range indicating changes over time.) Countries classified in the intermediate category of having rules encouraging some dispersal of influence in the legislature include Canada (19), Italy (12-14), Japan (14) and Finland (6). Finally, countries classified as having rules supporting the domination of the legislature by the government include Australia (22), France under the Fifth Republic (18), Greece (20), Ireland (24), New Zealand (22) and the United Kingdom (22). More succinctly, the average index scores for the countries in these three categories are eleven, nineteen and twenty-two, respectively. Canada, Finland and Spain 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 the schema by only a single category.

electoral coordination in lower house elections. The second external constraint we control for is judicial review. Cases are coded either zero, one or two as before, with two indicating no judicial review; one indicating judicial review of medium strength; and zero indicating strong judicial review. Data is taken from Siaroff (2003), although the codings are reversed. Because higher numbers again indicate more centralization of policy-making authority in the legislature vis-à-vis other national level institutions and hence increased incentive for electoral coordination in legislative elections, we expect this variable to be negatively related to both dependent variables. The final external constraint is presidentialism, which we posit takes the form of an interaction between the effective number of presidential candidates in the concurrent or preceding presidential election¹² and the proximity of the presidential and legislative elections.¹³ This approach follows the literature in recognizing that the shadow cast by proximate presidential elections is contingent upon the amount of coordination that actually occurs in the presidential contest. Somewhat counterintuitively compared to the prior constraints but in keeping with H1, we hypothesize that there will be fewer, more nationalized legislative parties if elections are proximate and there are few presidential candidates (e.g., Amorim Neto and Cox 1997; Cox 1997; Golder and Clark 2006; Golder 2006, Hicken and Stoll 2009a).¹⁴ Data on the latter variables is drawn from our other work (Hicken and Stoll 2009a, 2009b), where it was assembled using a variety of primary and secondary sources.

Turning to the left-hand side of the equation, we have two dependent variables for each hypothesis. The first is simply the number of electoral parties competing in a national level legislative election. We operationalize this variable in the conventional manner as the *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.¹⁵ 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

¹² The effective number of presidential candidates is calculated by dividing 1 by the sum of the i th candidate's squared vote share, v_i : $1/\sum v_i^2$. For non-presidential regimes, we follow the standard practice in the literature (e.g., Golder 2006) and assign them a value of zero. Larger values of this measure obviously indicate a larger number of presidential candidates

¹³ To operationalize this variable, we use a continuous measure ranging from zero to one that was originally developed by Amorim Neto and Cox (1997), which is the measure of choice in several recent studies (e.g., Golder 2006). It takes the value of zero either for midterm legislative election in presidential regimes or for elections in non-presidential regimes (i.e., when the elections are minimally proximate); conversely, it takes the value of one when legislative and presidential elections are concurrent (i.e., when the elections are maximally proximate). Hence, larger values of this measure indicate more temporally proximate elections. More specifically, proximity is calculated as

follows: $2 \left| \frac{L_t - P_{t-1}}{P_{t+1} - P_{t-1}} - 1/2 \right|$, 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.

¹⁴ In future work, we will also explore the simple institutional presence or absence of a president.

¹⁵ Letting v_i represent the i th party's vote share in a given country and election, the effective number of electoral political parties, $ENEP$, is calculated as follows: $ENEP = 1/\sum_{i=1}^n v_i^2$.

(calculated as just described) and the average effective number of electoral parties in the districts for a given country and election (see Chhibber and Kollman 1998). Formally, this difference score, denoted “ D ”, is calculated as follows:

$$D = \text{ENEP nat} - \text{Mean ENEP} , \quad (4)$$

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 seven (ENEP nat = 7). That same country would have a difference score of zero if there were only two parties nationally (ENEP nat = 2).¹⁶ Larger difference scores signal poorer cross-district coordination. In other words, the former country with the difference score of seven has poorer cross-district coordination and hence a less aggregated or nationalized party system than the latter 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 India, where state- and region-specific parties commonly contest national legislative elections. Conversely, a country that usually has a small difference score and hence good cross-district coordination is Austria, 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. 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 600 elections in over 80 countries. A beta version of the public website is available at <http://electiondataarchive.org>.

3.0 Model Specifications and Data

To test Hypothesis 1, we estimate the following two models, one for each dependent variable:

$$\begin{aligned} \text{ENEP nat}_i = & \beta_0 + \beta_1 \text{PPI}_i + \beta_2 \text{Logged Magnitude}_i + \\ & \beta_3 \text{Effective Number of Ethnic Groups}_i + \\ & \beta_4 \text{Logged Magnitude} \times \text{Effective Number of Ethnic Groups}_i + \\ & \beta_5 \text{Government Revenue (\% GDP)}_i + \varepsilon_i \end{aligned} \quad (5)$$

$$\begin{aligned} D_i = & \beta_0 + \beta_1 \text{PPI}_i + \beta_2 \text{Logged Magnitude}_i + \\ & \beta_3 \text{Effective Number of Ethnic Groups}_i + \\ & \beta_4 \text{Government Revenue (\% GDP)}_i + \beta_5 \text{Number Districts}_i + \varepsilon_i \end{aligned} \quad (6)$$

¹⁶ 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.

The first of these models, which we label Model 1, tests for the hypothesized relationship between the effective number of electoral parties in the legislative contest and overall legislative policy-making authority, measured using the PPI. The second, labelled Model 2, tests for the hypothesized relationship between party system aggregation and overall legislative policy-making authority, again measured by PPI. Note that here and below, i indexes countries.

To test Hypothesis 2, we again estimate one model for each dependent variable:

$$\begin{aligned} \text{ENEP nat}_{i,t} = & \beta_0 + \beta_1 \text{IILC}_{i,t} + \beta_2 \text{Judicial Review}_{i,t} + \beta_3 \text{Proximity}_{i,t} + & (7) \\ & \beta_4 \text{Effective Number of Presidential Candidates}_{i,t} + \\ & \beta_5 \text{Proximity} \times \text{Effective Number of Presidential Candidates}_{i,t} + \\ & \beta_6 \text{Logged Magnitude}_{i,t} + \beta_7 \text{Effective Number of Ethnic Groups}_{i,t} + \\ & \beta_8 \text{Logged Magnitude} \times \text{Effective Number of Ethnic Groups}_{i,t} + \\ & \beta_9 \text{Government Revenue (\% GDP)}_{i,t} + \epsilon_{i,t} \end{aligned}$$

$$\begin{aligned} \text{D}_{i,t} = & \beta_0 + \beta_1 \text{IILC}_{i,t} + \beta_2 \text{Judicial Review}_{i,t} + \beta_3 \text{Proximity}_{i,t} + & (8) \\ & \beta_4 \text{Effective Number of Presidential Candidates}_{i,t} + \\ & \beta_5 \text{Proximity} \times \text{Effective Number of Presidential Candidates}_{i,t} + \\ & \beta_6 \text{Logged Magnitude}_{i,t} + \beta_7 \text{Effective Number of Ethnic Groups}_{i,t} + \\ & \beta_8 \text{Government Revenue (\% GDP)}_{i,t} + \beta_9 \text{Number Districts}_{i,t} + \epsilon_{i,t} \end{aligned}$$

First is Model 3, which tests for the hypothesized relationship between the effective number of electoral parties in the legislative contest and internal legislative policy-making authority, measured using our IILC, while controlling for the key external constraints on the legislature's authority at the national level of government: the strength of judicial review and the interaction between the proximity of presidential and legislative elections and the effective number of presidential candidates. The second model, labelled Model 4, tests for the hypothesized relationship between party system aggregation and internal legislative policy-making authority (IILC), again controlling for the same external constraints on the legislature at the national level. Note that t indexes elections in these models.

Several control variables are included in the four models. Each is described in turn. First, drawing upon work by Chhibber and Kollman (1998, 2004), all four models control for what Hicken and Stoll (2008) have called the vertical centralization of policy-making authority in the national level of government vis-à-vis the sub-national level of government. As discussed above, this variable combines with the horizontal centralization of authority in the legislature at the national level of government to determine the size of the national legislative prize. Accordingly, greater vertical centralization of authority in the national level of government is predicted to lead to fewer and more nationalized parties competing in legislative elections. 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).¹⁷

¹⁷ When election year data was not available, we took data from the closest available year up to five years preceding (first preference) or following (second preference) the election year. Our preference for revenues over expenditures as a measure of the scope of the public economy follows the classic rationale laid out by Cameron (1978). An alternative operationalization that has the advantage of not being vulnerable to charges that it is a proxy for economic development and/or democratic

Second, Models 1 and 3 control for the interaction between the restrictiveness of the electoral system, operationalized as logged average lower tier district magnitude, and social heterogeneity, operationalized as the effective number of ethnic groups. A large and well-known literature in comparative politics has linked the interaction between these variables to the number of parties competing in legislative contests at the national level (see, for example, Amorim Neto and Cox 1997; Cox 1997; and Golder and Clark 2006). Specifically, scholars have hypothesized that an increase in social heterogeneity (i.e., in the number of ethnic groups) will increase the number of national level electoral parties if the electoral system is sufficiently permissive; similarly, more restrictive electoral systems (i.e., electoral systems with smaller logged average district magnitudes) are predicted to reduce the number of national level electoral parties if the country is sufficiently socially heterogeneous. We take data on the average district magnitude from our other work (Hicken and Stoll 2009a, 2009b), which in turn draws upon various sources such as Golder (2005) and the CLEA. Data on the effective number of ethnic groups is obtained from Fearon (2003).

Third and finally, building upon arguments developed by Cox and Knoll (2003), Models 2 and 4 control for electoral system restrictiveness, again operationalized as the logged average lower tier district magnitude, and social heterogeneity, again operationalized as the effective number of ethnic groups.¹⁸ Because more restrictive electoral systems produce more wasted votes, Cox and Knoll argue that elites have a greater incentive to engage in cross-district coordination to combine votes across districts when the electoral system is restrictive; hence, the less restrictive the electoral system (i.e., the larger the logged average district magnitude), the less aggregation we expect to see. Turning to social heterogeneity, they argue that higher levels provide incentives to form regional parties, or equivalently a disincentive to link across districts, which yields the prediction that the greater the social heterogeneity (i.e., the larger the number of ethnic groups), the less the aggregation. Note, however, that these variables enter the two models additively, in contrast to their interactive relationship in the prior two models, because we are aware of no existing theories that claim the effect of one variable is conditional upon the value of the other. Fourth and finally, these two models also control for the number of lower tier districts because the more districts there are, the more difficult cross-district coordination should be (Hicken 2009; Hicken and Stoll 2009a, 2009b). Data for the latter variable is drawn from our other work, as referenced above.

To estimate Models 1 and 2, our cases are elections for lower or single house national legislatures in all countries that are independent; that are minimally democratic according to the criteria of Alvarez et al. (1996); that have populations greater than one half

consolidation is national government revenue as a percentage of total government revenue, with data obtained from the World Bank (N. d.). See Hicken and Stoll (2008, 2009a) for further information. However, the two measures yield similar results, consistent with Hicken and Stoll (2008) if not with Hicken and Stoll (2009a).

¹⁸ In future work, we plan on additionally controlling for the percentage of legislative seats distributed in an upper tier: Cox and Knoll (2003) persuasively argue that the larger the upper tier, the more incentive there is for elites to link across districts (i.e., to aggregate), an argument that their empirical evidence supports. See also Tzelgov (2008), who included separate dummy variables for the existence of an upper tier and a national level threshold, although we note that he never found the latter to be significant.

a million; and that have identifiable political parties.¹⁹ In order to ensure as close a correspondence as possible between Fish and Kroenig's (2009) measure of legislative power (PPI), data for which was collected in 2007, and the other variables appearing in the models, the analysis includes each country's most recent election between 2000 and 2005 for which we were able to gather data on the dependent variables. For Model 1, after list-wise deleting the cases with missing data on the remaining variables (mostly on the control variable of vertical centralization), the resulting data set consists of a cross-section of forty-nine elections.²⁰ For Model 2, we additionally eliminated the two countries with only a single electoral district, Israel and the Netherlands, because it is logically impossible to speak of formal cross-district coordination when there is only one nation-wide electoral district (Cox and Knoll 2003; Hicken and Stoll 2009a, 2009b). This leaves us with a cross-section of forty-seven elections.

Finally, for Models 3 and 4, our cases are all lower or single house national legislative elections in advanced industrial democracies with populations of at least half a million that were held between 1945 and 2002.²¹ We confine our analysis to this time period and set of countries for two reasons: first, it is for these cases that Siaroff's (2003) data, which is used to generate our key independent variable, are available²²; second, restricting our cases to industrialized regimes has the advantage (relative to Models 1 and 2) of allowing us to avoid the thorny issue of whether or not political institutions have the same effects in consolidated and unconsolidated democracies.²³ After list-wise deleting the cases with missing data on the various variables in Model 3, the resulting data set consists of 310 elections in twenty advanced industrial democracies. The number of elections per country ranges from eight to twenty-three. Accordingly, the structure of this data set is non-rectangular and somewhere between time series cross-sectional and panel.²⁴ For Model 4, however, as with Model 2, we must additionally drop elections in Israel and the Netherlands because of their single, nation-wide electoral districts. Elections for which we were not able to obtain district level data

¹⁹ It is only for countries of this size that both the Fish and Kroenig (2009) and Fearon (2003) data is available. Regardless, comparing elections in tiny countries such as Nauru (population approximately thirteen thousand) to elections in the United States (population approximately three hundred million) seems akin to comparing apples and oranges.

²⁰ Future work will explore the use of multiple imputation as an alternative missing data strategy.

²¹ Naturally, these countries are all independent; minimally democratic; and in possession of identifiable political parties, which means that they satisfy the more general criteria set out above for Models 1 and 2.

²² There are two prominent advanced industrial democracies that are excluded from Siaroff's (2003) data set: Switzerland and the United States. He also only codes Israel through 1995 due to its 1996 switch to a presidential-parliamentary type of political regime. In future work, we hope to code these cases ourselves and hence to be able to incorporate them in the analysis.

²³ For more on this point, and particularly for arguments and/or evidence that institutions' effects upon the party system are conditional upon the rule of law and democratic consolidation, see Shugart (1999), Moser (1999), Mainwaring and Torcal (2006); Golder and Clark (2006); Golder (2006); and Hartlyn, McCoy and Mustillo (2008).

²⁴ The asymptotics are arguably in T for our data set, which suggests viewing it as time series cross-sectional in structure; however, the fact that we have $T < N$ suggests instead viewing it as panel in structure (see Beck and Katz 1995). We lean towards the former, which effectively rules out the use of a random effects model specification: our inferences, like those for most time series cross-sectional analyses, should be conditional on the observed cross-sectional units, here the set of minimally democratic countries existing from 1900 to 2005 (see Beck and Katz 1996).

also must be eliminated from this model. This leaves us with 234 elections in eighteen countries. 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 Models 1-4. The coefficient estimates are shown below in Table 1.

Table 1 about here.

Because a Breusch-Pagan test rejects the null hypothesis of homoskedasticity for Model 2, we report MacKinnon-White (1985) heteroskedastic-consistent standard errors modified for small samples (HC3) for both Models 1 and 2 in Table 1. Not surprisingly, for the time series cross-sectional Models 3 and 4, Breusch-Pagan tests reject the null hypothesis of homoskedasticity, and simple regressions of the OLS residuals on their lags reveal unignorable autocorrelation.²⁵ Accordingly, the table reports Newey-West (1987) standard errors, which are robust to both autocorrelation and heteroskedasticity, in parentheses for Models 3 and 4.²⁶

Hypothesis 1

Let us begin with the empirical findings regarding Hypothesis 1. From Table 1, we can see that in neither Model 1 nor Model 2 does the coefficient on the parliamentary powers index (PPI) come close to attaining conventional levels of significance using the appropriate one-sided test (let alone using a more general two-sided test). This is not surprising given the small sample size. However, the coefficient does have the correct sign in both models: it is positive as hypothesized, indicating that an increase in the percentage of powers that the legislature possesses (out of the possible thirty-two) is predicted to lead to more electoral parties competing in national level legislative elections (Model 1) as well as to a less aggregated party system (Model 2).

But we can be more specific. What if we increase the PPI score by the inter-quartile range of the observed data for the cases used to estimate Model 1? This is a change of nineteen percentage points, given that the 1st and 3rd quartiles are fifty-six and seventy-five percent, respectively—equivalent to bestowing upon a legislature like France’s additional

²⁵ Beck and Katz (1995) also raised the issue of cross-country contemporaneous correlation in the context of TSCS models. However, they were dealing with political economy data. This problem seems unlikely to surface in our *electoral* data. For example, there are few equivalents of even global economic shocks in legislative elections. 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 data set.

²⁶ We do not make use of the increasingly popular country-clustered robust standard errors for Models 3 and 4 because Kezdi (2004) has shown this estimator to be biased when the number of clusters (countries) is less than fifty, and we have a maximum of only twenty clusters with which to work. However, we note that our index of internal legislative centralization (IILC) remains significant at conventional levels using a two-sided test when employing the country-clustered estimator in Model 3, and only narrowly falls short of conventional levels of significance in Model 4 (which means that it is significant using the more appropriate one-sided test). This is remarkable in light of the fact that most of the other variables fall even further from conventional levels of significance when this estimator is employed.

powers to make it resemble one like Hungary's. Doing so yields a predicted increase in the effective number of electoral parties of 0.46, *ceteris paribus*—that is, an increase of approximately one-half a party. Further, holding all else constant and increasing the percentage of powers that the legislature wields from the observed minimum (twenty-eight percent) to the observed maximum (eighty-four percent), i.e., swapping a legislature like Zambia's for one like Italy's, is predicted to lead to an additional 1.3 effective electoral parties. These are substantively meaningful increases in party system fragmentation. Turning to party system aggregation, the same two increases in the PPI yield predicted increases in the difference between the national effective number of electoral parties and the average effective number of parties in the districts (i.e., predicted decreases in aggregation) of 0.091 and 0.27, respectively. While less substantively significant, the magnitudes of these effects are still nothing to be scoffed at: they roughly correspond to a very nationalized Austrian-style party system disaggregating to resemble a less but still reasonably nationalized German-style party system. Consequently, there is suggestive if not statistical support for H1: more powerful legislatures are found to have both larger and less nationalized legislative party systems.

Hypothesis 2

We now turn to our findings regarding Hypothesis 2. This time around, there is statistical support for the hypothesis: in both Models 3 and 4, the coefficient on our index of internal legislative centralization (IILC) is negative as hypothesized as well as statistically significant at conventional levels using the appropriate one-sided test (as well as using a more general two-sided test). This means that controlling for the various external constraints on legislative policy-making authority included in the models, as well as for other relevant factors such as the electoral system, an increase in the centralization of authority in the hands of the governing (i.e., majority) party within the legislature through a weakening of the committee structure, among others, is predicted to lead to fewer (Model 3) and more nationalized (Model 4) parties competing in national legislative elections, as posited by H2.

To elaborate, increasing the IILC by its observed inter-quartile range for the cases used to estimate Model 3 (i.e., by eleven points) is predicted to lead to 1.1 fewer effective electoral parties in the legislative contest, *ceteris paribus*. That is, one less political party is predicted to be the result of a country whose internal legislative rules and structures previously provided an opportunity for the opposition to exercise influence over policy, such as the Netherlands, instead concentrating power in the hands of the governing (majority) party until its legislature internally resembles that of Greece's. Moreover, an even more extreme but still plausible change of nineteen points on the IILC scale, the observed range of the data, is predicted to lead to approximately two fewer effective electoral parties—a substantively significant effect by any yardstick. This corresponds to an opposition-friendly legislature like Norway's adopting the legislative rules and structures of a largest party-privileging legislature like Ireland's. Regarding party system aggregation, the same two increases in the IILC are predicted to decrease the difference between the national effective number of electoral parties and the average effective number of electoral parties in the districts, i.e., to increase party system aggregation, by 0.52 and 0.89, respectively—i.e., by between one half and almost one whole effective electoral party. This roughly corresponds to a party system like Canada's aggregating until it is akin to one like Germany's. Hence, H2 is both suggestively and statistically supported: once external constraints on legislative policy-making authority are controlled for, countries whose legislatures internally centralize authority in the hands of the governing (i.e., majority) party in the lower or single house are

found to have both significantly smaller and significantly more nationalized legislative party systems.

This brings us to our findings regarding the three external constraints on legislative authority at the national level of government that are controlled for by Models 3 and 4. First is bicameralism. The coefficient on the bicameralism dummy variable has the hypothesized sign (positive) and is statistically significant using either a one-sided or two-sided test in both Models 3 and 4, as hypothesized. More specifically, bicameral legislatures are predicted to have approximately one half of an effective electoral party more than unicameral legislatures, a non-trivial if not overwhelming difference. They are also predicted to have approximately an additional one half a party difference between the average district and national levels of competition (i.e., to have less aggregated party systems), another non-trivial if not overwhelming difference.

The second external and horizontal constraint is judicial review. The coefficient on this variable is negative as hypothesized in both models, indicating that the weaker the powers of judicial review exercised by the judiciary, and hence the more centralized authority is in the legislature, the fewer, more nationalized electoral parties there are predicted to be in legislative elections. However, this variable is only statistically significant in Model 3, where the dependent variable is the national level effective number of electoral parties. This is also where it has the larger maximal substantive effect, one that is fairly consequential: countries lacking judicial review are predicted to have approximately two-thirds of an effective electoral party less than countries with judicial review.

The third horizontal constraint is presidentialism, as mediated by the interaction between the proximity of presidential elections and the effective number of presidential candidates. In both Models 3 and 4, the coefficients on the main effect and interaction terms are all of the proper, hypothesized signs, consistent with those obtained in other studies such as Golder's (2006, 39) and Hicken and Stoll's (2009a); further, all are significant at either conventional or close to conventional levels, with the exception of the interaction term in Model 4. The real interest is not in these coefficients, however, but in a quantity derived from them: the marginal effect of proximate elections (see Brambor, Golder and Clark 2005). While not shown here in the interests of space, the estimated marginal effects and hence our findings replicate those of the literature: proximate presidential elections with few candidates are predicted to lead to fewer and more nationalized parties in legislative elections, while proximate presidential elections with many candidates are predicted to lead to more and less nationalized parties. This is as expected. Where elections are proximate and the number of candidates few, the largest legislative party has a better chance of also capturing the presidency, compared to where there are numerous candidates and/or elections are not proximate. Hence, even though the existence of a separately elected executive (i.e., a president) represents a reduction in the legislature's authority, as long as there is a fair amount of coordination in the proximate presidential election, the consolidatory impetus of the shadow cast by the presidential race outweighs the fragmentary impetus of the decrease in the size of the legislative prize.

Other Control Variables

Vertical centralization is also an external (but not a horizontal) constraint on the policy-making authority of the legislature. Our findings regarding this variable are mixed. In Models 1 and 2, the coefficients on national government revenue as a percentage of GDP have the hypothesized negative sign but are insignificant. In Models 3 and 4, by way of contrast, the coefficients have a positive sign, at odds with the hypothesis, and are significant

at conventional levels. These mixed findings regarding vertical centralization, which have also cropped up in other work (e.g., Hicken 2009, Hicken and Stoll 2009a), may pertain to the difference between fiscal and political centralization, as suggested by Brancati (2008) and Tzelgov (2008), given that our measure primarily taps the former. Poor measures are also a possible explanation, as suggested by Brancati. Yet another possible explanation is the lack of substantial variation over time in the role played by the national government in the sample of cases for Models 3 and 4, relative to the variance that Chhibber and Kollman (1998, 2004) observed in their much longer time series analysis, as suggested by Cox and Knoll (2003). Similarly, only cross-sectional variation exists in Models 1 and 2, which suggests that we should not read too much into those findings.

Three other variables are also hypothesized to relate to our dependent variables: the number of lower tier electoral districts; electoral system restrictiveness; and ethnic heterogeneity. Beginning with party system aggregation, findings are mixed regarding the number of lower tier electoral districts (see Hicken and Stoll 2009a for similarly mixed findings). In Model 2, the sign is positive as hypothesized but insignificant, whereas in Model 4, it is negative in contradiction of our hypothesis and significant at close to conventional levels. Next, we fail to find support for Cox and Knoll's (2003) "wasted vote" argument that more permissive electoral systems, i.e., electoral systems with larger average district magnitudes, will promote less party system aggregation: in both Models 2 and 4, the estimated coefficient on the logged average district magnitude variable is negatively signed, contrary to the hypothesis, and it attains conventional levels of significance using both one- and two-sided tests in Model 4. We note that Tzelgov (2008) obtained similar findings, contrary to Cox and Knoll's own empirical results. By way of contrast, we do find support for the Cox and Knoll argument that ethnic heterogeneity will encourage the formation of regional parties and hence discourage party system aggregation: the estimated coefficient on the effective number of ethnic groups is positively signed in both Models 2 and 4 and significant at conventional levels in Model 4.

Wrapping up with the relationship between the national level effective number of electoral parties and the interaction between ethnic heterogeneity and electoral system restrictiveness in Models 1 and 3, our findings are largely commensurate with the literature's, which are somewhat mixed. This is the case whether we focus upon the signs and significances of the estimated coefficients or upon the marginal effect of ethnic heterogeneity (see, for example, Golder and Clark 2006, 698 and Golder 2006, 39 for comparison of the former).

5.0 Conclusion

On balance, we find strong and consistent evidence that internal legislative centralization is associated with fewer, more national political parties. The rules that govern the internal distribution of power within the legislature thus have the predicted effects on the legislative party system. In the same way that all presidents are not created equal, we find that legislatures vary in terms of their internal distribution of power and that this variation affects the behavior of politicians and political parties.

We also find that, as expected, the existence of institutions that compete with the lower house affects the incentives for electoral coordination in the legislative race. The presence of an upper house and, to a lesser extent, an independent judiciary 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 is more nuanced. While the presidency represents a potential check on the power of the legislature and hence might also be expected to lead to more, less nationalized political parties, where presidential and legislative elections are proximate and there are only a small number of presidential candidates, the reductive shadow of the presidential election is the dominant effect and we instead see fewer, more nationalized parties. However, as elections grow less proximate and/or the number of presidential candidates grows, we see more, less nationalized parties, in line with a priori expectations about the size of the legislative prize.

In future iterations of the paper, we would like to explore other ways of measuring the internal distribution of legislative authority, perhaps by parsing out the dimensions of the PPI that directly relate to this concept. To further evaluate H1, we could alternatively look more explicitly at the balance of power between the legislature and the executive, using perhaps a modified Shugart and Carey (1992) presidential powers index. We also hope to expand the data sets and to explore other alternative model specifications.

6.0 Appendix

Legislative elections used to estimate Model 1:

Albania 2005; Australia 2004; Bangladesh 2001; Bulgaria 2005; Canada 2004; Chile 2005; Colombia 2002; Costa Rica 2002; Croatia 2003; Czech Republic 2002; Denmark 2005; Dominican Republic 2002; El Salvador 2003; Estonia 2003; Finland 2003; France 2002; Greece 2004; Hungary 2002; India 2004; Indonesia 2004; Ireland 2002; Israel 2003; Italy 2001; Jamaica 2002; Kenya 2002; Latvia 2002; Lithuania 2004; Mauritius 2000; Mexico 2000; Netherlands 2003; New Zealand 2005; Norway 2005; Peru 2001; Poland 2005; Romania 2004; Russia 2003; Sierra Leone 2002; Slovenia 2000; South Africa 2004; South Korea 2000; Spain 2004; Sri Lanka 2004; Sweden 2002; Switzerland 2003; Thailand 2005; Trinidad and Tobago 2002; Turkey 2002; United States 2004; Zambia 2001.

After eliminating Israel 2003 and the Netherlands 2003, the remaining elections are used to estimate Model 2.

Legislative elections used to estimate Model 3 (number of elections per country in parentheses):

Australia 1946-2001 (23); Austria 1949-1999 (16); Belgium 1946-1999 (18); Canada 1949-2000 (17); Denmark 1945-1998 (21); Finland 1945-1999 (16); France 1951-2002 (14); Germany 1953-1998 (13); Greece 1974-2000 (10); Ireland 1948-2002 (17); Israel 1951-1992 (12); Italy 1948-2001 (14); Japan 1949-1993 (18); Netherlands 1948-2002 (16); New Zealand 1946-2002 (20); Norway 1949-2001 (14); Portugal 1976-1999 (9); Spain 1977-2000 (8); Sweden 1948-2002 (18); United Kingdom 1945-1997 (15).

Legislative elections used to estimate Model 4 (number of elections per country in parentheses):

Australia 1972-2001 (13); Austria 1949-1995 (15); Belgium 1946-1999 (18); Canada 1972-2000 (9); Denmark 1945-1998 (21); Finland 1945-1999 (16); France 1956-2002 (9); Germany 1953-1998 (13); Greece 1974-2000 (10); Ireland 1948-2002 (17); Italy 1948-2001 (14); Japan 1958-1993 (13); Netherlands 1948-2002 (16); New Zealand 1990-2002 (2); Norway 1949-2001 (14); Portugal 1976-1995 (8); Spain 1977-2000 (8); Sweden 1948-2002 (18); United Kingdom 1945-1997 (15).

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Dependent Variable	National Effective Number of Electoral Parties	Difference (National – Average District Effective Number of Electoral Parties)	National Effective Number of Electoral Parties	Difference (National – Average District Effective Number of Electoral Parties)
	Model 1	Model 2	Model 3	Model 4
Intercept	1.5 (2.4)	0.43 (1.6)	3.4*** (0.33)	-0.53* (0.30)
Parliamentary Powers Index	2.4 (3.3)	0.48 (2.1)		
Logged Average District Magnitude	0.80 (0.79)	-0.15 (0.21)	0.0099 (0.15)	-0.15** (0.072)
Effective Number of Ethnic Groups	0.43 (0.70)	0.17 (0.26)	0.48*** (0.17)	0.75*** (0.17)
Logged Average District Magnitude * Effective Number of Ethnic Groups	-0.21 (0.44)		0.054 (0.086)	
National Government Revenue, % GDP	-0.0046 (0.047)	-0.0075 (0.019)	0.032*** (0.0076)	0.028*** (0.0073)
Index of Internal Legislative Centralization			-0.10*** (0.017)	-0.047*** (0.011)
Bicameralism			0.45*** (0.16)	0.49*** (0.14)
Judicial Review			-0.29** (0.12)	-0.066 (0.091)
Proximity			-1.8*** (0.43)	-0.60* (0.30)
Effective Number of Presidential Candidates			0.26*** (0.074)	0.13** (0.053)
Proximity * Effective Number of Presidential Candidates			0.26* (0.16)	0.065 (0.13)
Number of Districts		0.00057 (0.0029)		-0.0062* (0.00035)
N	49	47	310	234
Root MSE	1.7	0.96	1.0	0.66
R2	0.18	0.12	0.45	0.43

Table 1. Coefficients and robust standard errors for Models 1-4. The robust standard errors for Models 1 and 3 are Huber-White HC3, while for Models 2 and 4, they are Newey-West. Significance codes are for two-sided tests, all calculated prior to rounding: 0.01, ***; 0.05, **; 0.10, *.