

# Presidents and Parties: How Presidential Elections Shape Coordination in Legislative Elections<sup>†</sup>

Allen Hicken

Heather Stoll\*

## Abstract

This paper explicates the mechanisms through which presidential elections shape the legislative party system, an issue that has received little attention to date. We argue that presidential elections exert their influence through two distinct channels. First, they affect the incentives of candidates, voters and parties to coordinate within electoral districts. Second and most importantly, they shape the incentives of candidates to coordinate across legislative electoral districts under a common party banner, leading to more aggregated or nationalized party systems when there are few presidential candidates. We find support for the relative importance of this cross-district effect using a unique dataset of district-level election results from approximately 600 elections in seventy countries.

By one measure, the 2004 legislative and presidential elections in the Philippines were crowded affairs. Dozens of the parties and groups fielded candidates for the legislative contest and initially six candidates entered the race for president. It soon became apparent, however, that the presidential contest was really a two-way race between the incumbent Gloria Macapagal Arroyo and her popular movie star challenger (and ally of deposed presidents Marcos and Estrada) Fernando Poe Jr. As the realities of the race became apparent, it cast a shadow across the concurrent legislative election. Legislative candidates as well as parties worked to ally themselves with one of the two presidential frontrunners, while for their part the presidential candidates aggressively tried to woo candidates and parties to their side. In the end, the typically fragmented legislative party system consolidated into two main party blocks centered on the two presidential frontrunners (Hicken, 2009). Together, the two party alliances garnered seventy-six percent of the presidential votes and eighty-four percent of the seats in the House of Representatives.

Doubtless the pattern of this Philippine election is familiar to students of legislative elections in many others democracies with presidential regimes. A defining feature of presidential democracy is the separate election of the chief executive and the legislature. Yet even as scholars acknowledge the importance of separate electoral origins, they also recognize that presidential and legislative elections are not independent. Most importantly, a large literature in comparative politics has argued that presidential elections shape the legislative party system when presidential and legislative elections are held either concurrently or in otherwise close temporal proximity to one another.<sup>1</sup> Specifically, when there are few viable presidential candidates (as in the Philippines in 2004), there tend to be few legislative parties, and when there are many viable presidential candidates, there tend to be many

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\* Hicken is Associate Professor, Department of Political Science, University of Michigan ([ahicken@umich.edu](mailto:ahicken@umich.edu)); Stoll is Assistant Professor, Department of Political Science, University of California, Santa Barbara ([hstoll@polsci.ucsb.edu](mailto:hstoll@polsci.ucsb.edu)).

legislative parties (Shugart & Carey, 1992; Jones, 1994, 1999; Shugart, 1995; Amorim Neto & Cox, 1997; Cox, 1997; Mozzafar, Scarritt & Gladich, 2003; Golder, 2006; Clark & Golder, 2006; Hicken, 2009).

But exactly how do presidential elections shape the legislative party system? Discussions in the existing literature often suggest mechanisms by which presidential elections shape legislative contests, but surprisingly these mechanisms have rarely been directly tested. This paper attempts to fill this gap by explicating the precise ways in which presidential and legislative elections are linked. Its focus on the mechanisms by which a causal relationship is exerted instead of on establishing the relationship itself follows other recent scholarship in different literatures (e.g., Habyarimana, Humphreys, Posner & Weinstein, 2007). Specifically, we distinguish between electoral coordination within districts and electoral coordination across districts. Some scholars have focused on presidential elections' effects on the former while others scholars have focused on their effects on the latter. We attempt to connect the dots by arguing here that these are related but distinct effects, each of which needs to be studied if we want to understand the effects of presidential elections. For example, while presidential elections with few candidates may tend to induce fewer parties in each district, which often may go hand in hand with better cross-district coordination and hence with fewer parties nationally, this need not always be the case. Accordingly, we derive hypotheses about how proximate presidential elections affect *both* within- and cross-district coordination.

In the empirical analysis, we test our hypotheses using a unique dataset of district-level election returns from minimally democratic legislative elections between the years 1900 and 2005. From this sample of all legislative elections, we additionally pull a second sample consisting solely of elections in presidential regimes. Existing studies, by way of contrast, rely primarily on national level data. As useful as the latter data are for empirically identifying the *overall effects* of proximate presidential elections, they do not allow us to empirically isolate the *mechanisms* at work. Of particular import for constitutional engineers, our new dataset allows us to undertake the most extensive test to date of the hypothesis that only presidential elections with few candidates promote better cross-district coordination, as well as of the relationship between party system aggregation and various other institutional and social factors.

Using these district level data, we find that, conditional on there being few presidential candidates, proximate elections reduce the number of parties by lowering the number of electoral parties in each district, at least when the electoral system is permissive, *and* by encouraging greater coordination across districts. We also find some evidence that when there are many presidential candidates, proximate elections conversely *increase* both the number of electoral parties in the districts, again when the electoral system is permissive, and *decrease* cross-district coordination. Hence, we demonstrate that not all types of presidential elections promote more nationalized party systems. Finally, commensurate with our argument about the primacy of the cross-district effect, we find more consistent empirical support for the cross-district relative to the within-district effect. The take-away message is accordingly that the ability of proximate presidential elections to promote more nationalized party systems is the primary mechanism by which presidentialism shapes the national level legislative party system.

## 1.0 Literature and Theory

The electoral system is viewed by most political scientists as the primary institutional determinant of the legislative party system (e.g., Cox, 1997). However, another political institution that plays a role in shaping competition for legislative office is the political regime. Initially, scholars simply compared presidential and parliamentary regimes, finding support for the well-known proposition that “presidential systems, all other factors being equal, will have smaller effective numbers of

parties than non-presidential systems of government” (Lijphart, 1994, p. 131). Not surprisingly, this dichotomy between presidentialism and parliamentarism was eventually refined. Shugart and Carey’s (1992) path-breaking study found presidentialism’s effect to be mediated by both the presidential electoral formula (i.e. the use of the more restrictive plurality versus the less restrictive dual ballot formula), and the electoral cycle (i.e. the proximity of presidential and legislative elections). More recently, Amorim Neto and Cox (1997) and Cox (1997) suggested focusing upon the presidential party system instead of the presidential electoral formula, arguing that the actual competition observed in the presidential contest, which is a function of the presidential electoral formula, should be what shapes competition in the legislative contest. The current state of the literature is best captured by Golder’s (2006) recent study, which adopts Cox’s approach. Using national level (aggregate) data, he finds that presidential elections temporally proximate to legislative elections reduce legislative fragmentation when there are few presidential candidates, but increase legislative fragmentation when there are many presidential candidates.<sup>2</sup>

What is missing from this literature, however, is an investigation of the different processes by which presidential elections shape the national number of parties in legislative elections. This number is the product of two sets of interactions—those that occur between voters, candidates and parties *within* a given electoral district (district effects) and those that occur between candidates and parties *across* districts (cross-district or aggregatory effects) (Cox, 1997; Chhibber & Kollman, 1998, 2004; Hicken, 2009). We elaborate upon how presidential elections affect both dimensions below.

### ***1.1 District Effects***

Within districts, proximate presidential elections with few candidates induce strategic behavior by both candidates and voters. The issues and parties that are in contention in the nationwide presidential race tend to migrate down the ballot and influence voter choices within the district. In effect, voters use the presidential campaign as an information shortcut to help guide their choice of legislative candidates (Samuels, 2003; Golder, 2006). For their part, legislative candidates, recognizing that voters will rely on the presidential contest as a cue in reasonably proximate elections, face strong incentives to try and coordinate their campaigns with one of the leading presidential candidates in the district. Legislative candidates who do not belong to the party of one of the presidential front-runners have an incentive to drop out of the legislative contest, or to not enter in the first place. In the event that trailing legislative candidates or parties remain in the race, voters have an incentive to act strategically by voting for their most preferred of the legislative contenders affiliated with the presidential front-runners. Legislative candidates also gain valuable economies of scale from coordinating with a presidential front-runner (Samuels, 2002; Golder, 2006). To illustrate, consider Country B in Figure 1, which has a legislative electoral system that normally supports six parties in each district.

*Figure 1 about here.*

When presidential elections are held proximately to the legislative election, however, parties Y and G gain such an advantage from the coattails of their presidential candidates that parties B, R and O are eliminated from the race. Hence, the strategic behavior of candidates and voters combine to reduce the number of parties within each district (e.g., Shugart, 1995; Cox, 1997).

This downward or deflationary pressure on the number of parties in the districts is strongest the greater the temporal proximity of legislative and presidential elections. It is also strongest when there are at most two presidential contenders: as the number of presidential candidates rises above two, it gradually disappears. In situations where several presidential candidates appear viable, legislative candidates, parties and voters lack the information necessary to act strategically. Moreover, once the number of presidential candidates becomes large enough, reasonably proximate presidential elections may actually begin to have an *inflationary* effect on the district level party

system, leading to *more* legislative parties within each district than there otherwise would be (Golder, 2006; Hicken, 2009). This is because once several presidential candidates have already entered the race, additional candidates are likely to be either outsiders unaffiliated with an existing party; familiar figures affiliated with a minor party that does not typically compete nation-wide; or a representative of one faction in a party that has split. New legislative candidates may then enter the race under the banner of these new contenders in some districts, and voters may support them. Combined, the result will be the fragmentation of the district level legislative party system.

One implication of the above argument is that the effect of presidential elections at the district level should vary with the nature of the legislative electoral system. Where the electoral system is permissive (e.g., proportional representation with large district magnitudes), reasonably proximate presidential elections with few candidates have the potential to sharply reduce the number of parties from what would otherwise be the norm. Similarly, many presidential candidates can readily increase the number of parties, given the normally permissive district level electoral environment. Where the legislative electoral system is highly restrictive (e.g. plurality rule with single member districts), however, there may be little room for presidential elections with few candidates to further reduce the number of parties in each district. Similarly, even where presidential elections have many candidates, this type of electoral system is likely to act as a ceiling on the district level effective number of parties. Hence, if presidential elections are going to reduce or inflate the number of parties nationally in restrictive systems, they must do so through a different mechanism (discussed in the next section). From this discussion, we derive our first hypothesis:

*Hypothesis 1 (H1): More proximate presidential and legislative elections are associated with a smaller (larger) effective number of parties in each district, conditional upon there being few (many) presidential candidates and the legislative electoral system being permissive.*

This hypothesis captures a common if implicit assumption within the existing literature: that presidential elections exert an effect at the district level. However, it is not hard to imagine a counter argument—namely, that presidential elections have little or no predictable effect on the district level party system, regardless of the legislative electoral system employed. To see this, consider three stylized examples. First, imagine that for whatever reason, there is a large number of presidential candidates. We know that this undermines the deflationary effects of proximate elections, and we might assume that this is due to a breakdown in coordination within districts. Yet this need not be the case. While it may be unclear which of these candidates are the front-runners nationally, it may be very clear which are the most preferred candidates in a given district or region. Thus, we may continue to see coordination within a given district on the small number of parties that are associated with the presidential front-runners, but those parties will vary from district to district and from region to region (e.g., Country C in Figure 1). Second, say that a country has two presidential candidates from parties A and B and three legislative electoral districts, with parties A, B, and C competing in the first two districts and parties A, E and F competing in the third. The advantages of linking with a presidential candidate may lead one of parties E or F to strategically unite under a common banner with party B; while this reduces the national number of parties nationally, it leaves unchanged the number of parties competing in each district. Finally, consider a third example with the same parameters as the previous example, save that instead of one of parties E or F making common cause with party B, party B decides to ride its presidential candidate's coattails and run its own candidate in the third district for the first time. This increases the average number of parties in the districts while leaving the national number of parties unchanged. Hence, contrary to Hypothesis 1, the theoretical effect of presidential elections upon competition in legislative districts is unclear. Rather, we argue that presidential elections' primary influence is exerted via a competing mechanism, one that has varying implications for district level competition. It is to this competing mechanism that we now turn.

## ***1.2 Cross-District Effects***

The result of the within-district coordination occurring in each country is numerous district-level party systems. How, though, do these district-level party systems map onto the national level one? Mathematically speaking, the set of parties competing at the national level is the union of the district level sets. But this begs the question of what the district level sets look like. At one extreme, a unique set of parties runs in each district; at the other extreme, each district contains the same set of parties. The missing ingredient is the degree of cross-district coordination, which is otherwise known as the party system's degree of aggregation or nationalization (e.g., Cox, 1997; Cox & Knoll, 2003; Chhibber & Kollman, 1998, 2004; Hicken, 2009). If the same parties are the front-runners in all districts nationwide, the national level party system is simply a mirror of the district level party system: cross-district coordination is extensive and the party system is nationalized. Often, however, the competitiveness of parties will vary from district to district and, more broadly, from region to region, with the front-runners in one district differing from the front-runners in another. In this case, the number of parties at the national level exceeds the number of parties in the average district: cross-district coordination is negligible and the party system is localized instead of nationalized (see Country C in Figure 1).

Empirically, we know that cross-district coordination varies both over time within a country and across countries. Which factors are responsible? Existing studies point to the size of the electoral prize as a key factor that shapes candidates' incentives to coordinate across districts under a common party banner (Ibid.). Presidential elections, when proximate to legislative contests, greatly raise the stakes of the election and thereby induce greater cross-district coordination in a bid to capture those stakes. The result should be fewer national level legislative parties. This is the mechanism that many scholars seem to have had in mind, at least implicitly, when they talk about the deflationary effects of proximate presidential elections (e.g. Cox, 1997; Cox & Knoll, 2003; Golder, 2006; Samuels, 2002, 2003; Shugart & Carey, 1992). To illustrate, compare Countries A and C in Figure 1. In both, the electoral system in place already restricts the number of parties in each district to two, which means that the addition of proximate presidential elections can have no further deflationary effect at the district level. Presidential elections can, however, shape the identity of these two parties from district to district. To see this, say that the presidential candidates of parties Y and G are the clear front-runners or only candidates in Country A but that there are no clear front-runners and many candidates in Country C. In A but not in C, legislative candidates in all districts should have strong incentives to ally with one of the two front-runners, such as by switching parties. The district level legislative party systems accordingly come to resemble the presidential party system, as well as each other—reducing the national number of legislative parties, controlling for the number of district level parties.

However, the mere existence of proximate presidential elections, the focus of much of the literature (e.g., Cox & Knoll, 2003), does not tell the whole story. Like the district level deflationary effect, the cross-district deflationary effect of proximate presidential elections should be strongest when elections are most proximate (i.e., concurrent) and there are at most two presidential contenders. As the number of viable presidential contenders rises above two, the incentive for legislative candidates to engage in cross-district coordination by allying themselves with a presidential frontrunner weakens. This in turn yields a larger number of parties at the national level. As the number of presidential contenders continues to grow and becomes much larger than two, an *inflationary* cross-district effect may be induced. As discussed above, which of the several presidential contenders are perceived as the favorites may vary from district to district and region to region. Alternatively, these additional presidential candidates might not be affiliated with an existing party, perhaps because they have split off from a preexisting party, and some legislative candidates may

then switch party affiliation to ally with them. The result of either of these scenarios will be more parties at the national level, holding constant the number of district level parties. To illustrate, take Figure 1’s Country A with presidential elections, and imagine four new presidential candidates from parties P, B, R and O entering the race; if legislative candidates in districts 2 and 3 then switch their affiliation from parties Y and G to P, B, R and O, the national level party system will be inflated.

Unlike the district effect, the cross-district effect of presidential elections should be relatively independent of the permissiveness of the legislative electoral system.<sup>3</sup> While a fall in the number of parties in each district will often go hand in hand with improved cross-district coordination (see Figure 1’s Country B), this need not be the case: cross-district coordination should also have a distinct, independent effect on the effective number of parties at the national level, controlling for the number of parties in the districts (see Figure 1’s Country A). Hence, the two processes are related, but distinct. From this discussion, we derive the following hypothesis:

*Hypothesis 2 (H2): More proximate presidential and legislative elections are associated with greater (less) cross-district coordination, conditional upon there being few (many) presidential candidates.*

## 2.0 Variables

We now turn to the operationalization and measurement of the variables appearing in our hypotheses. The first of our two dependent variables is the extent of coordination within electoral districts. We operationalize this variable as the average number of electoral parties at the district level, and specifically as the *size-weighted* or effective number of electoral parties in each district, averaged across districts (Laakso & Taagepera, 1979).<sup>4</sup> This variable is labeled “Mean ENEP”.

Our second dependent variable is the extent of cross-district coordination. One way to operationalize this concept is to calculate the difference between the effective number of electoral parties nationally and the average effective number of electoral parties in the districts (see Chhibber & Kollman, 1998).<sup>5</sup> Formally, this difference score, denoted “*D*”, is calculated as follows:

$$D = \text{ENEP nat} - \text{Mean ENEP} \tag{1}$$

where “ENEP nat” denotes the national effective number of electoral parties. A country that has an average of two parties per district (Mean ENEP = 2.0) would have a difference score of 5 if the effective number of parties nationally was seven (ENEP nat = 7). That same country would have a difference score of 0 if there were only two parties nationally (ENEP nat = 2). The larger the difference score *D*, the poorer the cross-district coordination. For example, a country with a relatively large difference score and hence with poor cross-district coordination is South Korea, where region-specific parties commonly contest legislative elections. Conversely, a country with a generally small difference score and hence with good cross-district coordination is the U.S., where two nationally competitive parties dominate elections.

We calculate the data for both dependent variables using district level electoral returns from the Constituency Level Electoral Archive (CLEA) at the University of Michigan.<sup>6</sup> Figure 2 plots the average effective number of electoral parties in the districts against the difference score for our set of cases (described below).

*Figure 2 about here.*

The random scatter of cases throughout the plane supports our contention that there is little relationship between coordination within districts and coordination across districts: the two do appear to be distinct processes. For example, while some countries have both a few parties competing at the district level on average and highly nationalized party systems (i.e., a small difference score), other countries with a similarly consolidated district level party system have poorly nationalized party systems (i.e., a large difference score). It is for this reason that we investigate the effect of presidential elections upon each type of coordination.<sup>7</sup>

This leaves us with our independent variables. To operationalize the proximity of legislative and presidential elections, we use a continuous measure originally developed by Amorim Neto and Cox (1997) and Cox (1997), the measure of choice in several recent studies (e.g. Golder, 2006). 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).<sup>8</sup> The primary independent variable that conditions the relationships between proximity and our dependent variables is the presidential party (or candidate) system: specifically, the number of national level presidential candidates. Comparable to how we operationalized the legislative electoral party system, this variable is operationalized as the effective number of (electoral) presidential candidates in either the concurrent or preceding presidential election,<sup>9</sup> where legislative elections in non-presidential regimes receive a value of zero—again following the standard practice in the literature. Larger values of this measure indicate a larger number of (size-weighted) candidates, with the maximum observed value being 8.7. The final conditioning variable is the restrictiveness of the legislative electoral system. We operationalize this variable as the logged average lower tier district magnitude, as is conventional. The observed values range from 0.0 to 3.4, corresponding to observed average lower tier district magnitudes that range from 1.0 to 30, respectively. Our data for all three independent variables was obtained by both extending and correcting Golder’s (2005) original data using a variety of primary and secondary sources, such as the CLEA.

### 3.0 Model Specifications and Data

First, to test our hypotheses about the *district* level effects of presidential elections (H1), we estimate the following model:

$$\begin{aligned} \text{Mean ENEP}_{i,t} = & \beta_0 + \beta_1 \text{Proximity}_{i,t} + \beta_2 \text{ENPRES}_{i,t} + \beta_3 \text{Proximity}_{i,t} \times \text{ENPRES}_{i,t} + (2) \\ & \beta_4 \text{Log Mean Magnitude}_{i,t} + \beta_5 \text{Proximity}_{i,t} \times \text{Log Mean Magnitude}_{i,t} + \\ & \beta_6 \text{ENPRES}_{i,t} \times \text{Log Mean Magnitude}_{i,t} + \\ & \beta_7 \text{Proximity}_{i,t} \times \text{ENPRES}_{i,t} \times \text{Log Mean Magnitude}_{i,t} + \varepsilon_{i,t} \end{aligned}$$

In this model, which we label Model 1, the dependent variable (Mean ENEP) is the average effective number of electoral parties in the districts. To test the hypothesized conditional relationship, we include a three-way interaction term between the proximity of presidential and legislative elections (Proximity); the effective number of presidential candidates (ENPRES); and the logged average district magnitude (Log Mean Magnitude), as well as all constituent lower order terms (see Brambor, Clark & Golder, 2006). While we would ideally like to additionally control for an interaction between the restrictiveness of the legislative electoral system and ethnic heterogeneity in the districts, we are unaware of extant district level measures of the latter (see Stoll, 2008). Note that  $i$  indexes countries and  $t$  elections throughout.

Second, to test our hypothesis about the *cross-district* effects of presidential elections (H2), we estimate one additional model:

$$\begin{aligned} D_{i,t} = & \beta_0 + \beta_1 \text{Proximity}_{i,t} + \beta_2 \text{ENPRES}_{i,t} + \beta_3 \text{Proximity}_{i,t} \times \text{ENPRES}_{i,t} + (3) \\ & \beta_4 \text{Bicameral}_{i,t} + \beta_5 \text{Logged Mean Magnitude}_{i,t} + \\ & \beta_6 \text{Effective Number of Ethnic Groups}_{i,t} + \varepsilon_{i,t} \end{aligned}$$

In this model, which we label Model 2, the dependent variable is the difference between the effective number of electoral parties at the national level and the average effective number of electoral parties at the district level (D).<sup>10</sup> As before, to test the hypothesized conditional relationship, we include a two-way interaction between proximity and effective number of presidential candidates, as well as the constituent lower order terms.

Model 2 additionally controls for several other variables that have been hypothesized to shape cross-district coordination in legislative elections.<sup>11</sup> Only Cox and Knoll (2003), Tzelgov (2008) and

Hicken (2009) have empirically tested the relationship between some of these variables and party system aggregation, but all have done so with much more restricted sets of cases. The first of these variables is legislative bicameralism, which should decrease the size of the prize available to the largest party in the lower chamber and therefore decrease the incentives for cross-district coordination (Hicken, 2009). Previous studies have found the presence of a second chamber to reduce cross-district coordination (Ibid.). Our bicameralism dummy variable extends data from Beck, Clarke, Groff, Keefer, and Walsh (2001). The second variable is the logged average lower tier district magnitude. Two arguments exist for controlling for this variable: first, because the more districts there are, the more difficult cross-district coordination should become (Hicken, 2009); second, because more restrictive electoral systems produce more wasted votes, providing elites with an incentive to engage in cross-district coordination (e.g., Cox & Knoll, 2003). Given that the number of districts is inversely related to the average district magnitude, *ceteris paribus*, both of these arguments predict a negative relationship between the logged average district magnitude and the difference score.<sup>12</sup> The third variable is the effective number of ethnic groups: higher levels of ethnic heterogeneity provide incentives for elites to form regional parties, decreasing the incentives for cross-district coordination (Cox & Knoll, 2003). Data is taken from Fearon (2003).

One other variable should be controlled for in Model 2: the degree of vertical centralization. There should be more cross-district coordination where there is greater vertical centralization, i.e. where policy-making authority is more centralized in the national level of government vis-à-vis the sub-national level (Chhibber & Kollman, 1998, 2004; Cox & Knoll, 2003; Hicken, 2009; Hicken & Stoll, 2008). We operationalize this variable as national government revenue as a percentage of total government revenue, a measure of which we obtain from the World Bank (N. d.),<sup>13</sup> and then include it in a version of Model 2 that we label Model 3. However, data for this variable are only available from approximately the mid-1970s onwards for a limited number of countries, which severely truncates our set of cases. As a result, we also estimate a version of Model 2 that uses the same reduced sample as Model 3 but does not include vertical centralization, which we label Model 4. This allows us to disentangle any differences in results due to the different set of cases from any differences in results due to the additional control variable.

Our cases for estimating these models are all national, legislative elections from 1900 to 2005 in independent countries that were minimally democratic at the time of the election; that had a population of at least one million in 2006; that employed a non-fused electoral system with more than one lower tier electoral district at the time of the election; and for which we were able to obtain district level election results.<sup>14</sup> If the legislature was bicameral at the time of the election, we took elections for the lower house, as is conventional. The resulting data set consists of 595 elections in sixty-six countries, with between one and forty (on average, nine) elections observed per country. A list of these countries and elections is found in the Appendix to the supplemental paper, as is the reduced set of cases used to estimate Models 3 and 4.

Two final notes are in order. First, we generally do not include country fixed effects in the models reported here in the interests of comparability with the literature: existing models, our benchmark, have been fully pooled. This is likely due to their use of a time invariant covariate, the effective number of ethnic groups, which also appears in some of our models and must be dropped in order to include fixed effects. Yet theoretically, country fixed effects have the advantage of controlling for the many unmeasured and (relatively) stable features of countries that might shape political competition (e.g., political culture); empirically, F-tests for the nested models support their inclusion. Accordingly, for the few instances where the results from the fixed effects version of a model differ in a substantively meaningful way from the results from the corresponding fully pooled model (i.e., in terms of the sign), we report both sets of results. For the most part, however, we obtain substantively similar if less significant results when including fixed effects.<sup>15</sup>

Second, we have some reservations about how non-presidential regimes are encompassed by the conventional operationalizations of key independent variables such as proximity. These concerns lead us to also estimate the models using only legislative elections in presidential regimes, a sub-set of our original set of cases: such a sample renders the issue of how to code elections in non-presidential regime moot, yet substantial variance remains on the key independent variables. The Appendix to the supplemental paper again lists the countries and elections used to estimate these models. The substantive results obtained from the two sets of cases are usually quite similar, a reassuring finding. While the significance is reduced, including the significance of the literature's original findings about the national level party system, this is not surprising in light of the great reduction in sample size: whereas we have almost six hundred cases to estimate Models 1 and 2 when using all legislative elections, we have only approximately two hundred cases to estimate these models when confining the analysis to elections in presidential regimes.

#### **4.0 Empirical Analysis**

We use OLS to estimate Models 1-4 for all legislative elections as well as for the sub-set of legislative elections in presidential regimes. The resulting coefficient estimates for the former are shown below in Table 1, while the latter are presented in the supplemental paper in the interests of space.

*Table 1 about here.*

Because of autocorrelation and heteroskedasticity, the tables report Newey-West robust standard errors (Newey & West, 1987) modified for panel data.<sup>16</sup>

#### **4.1 District Effects**

We begin with the first mechanism by which presidential elections may exert an effect: by shaping coordination within legislative electoral districts (H1). Model 1 finds some evidence that the effect of presidential elections at the district level is conditional upon the restrictiveness of the electoral system, commensurate with H1. However, the results differ in important if subtle ways depending upon whether or not fixed effects are included in the model, as well as whether or not the analysis is confined to elections in presidential regimes. This can be seen by the differing signs and magnitudes of the estimated coefficients across these four versions of the model. It can also be seen in terms of significance: two of the interaction terms involving the logged average district magnitude ( $\beta_5$  and  $\beta_7$  in Equation 2) are statistically significant when using all elections to estimate the model, regardless of whether or not country fixed effects are included; but none are significant when only presidential regime elections are used.

The nature of the relationship is conveyed by the estimated marginal effects of proximity over the range of the observed effective number of presidential candidates. This is the partial derivative of Equation 2 with respect to proximity (Brambor, Clark & Golder, 2005).<sup>17</sup> Figures 3a and 3b present this evidence for the fully pooled (3a) and fixed effects (3b) versions of the model.

*Figures 3a and 3b about here.*

Two different electoral systems, chosen for their collective representation of the typical observed variation in electoral system restrictiveness, are shown: a restrictive electoral system with an average district magnitude of one (i.e., the majoritarian, single member district plurality system employed by countries such as the United States), and a permissive electoral system with an average district magnitude of 7.9 (e.g., the proportional contemporary Danish electoral system, roughly the third quartile of the observed data). Ninety percent, two-sided or ninety-five percent, one-sided confidence intervals band the estimated marginal effects.<sup>18</sup>

These figures reveal that for relatively permissive electoral systems, concurrent presidential elections are generally predicted to have a statistically and substantively significant effect upon the

average number of parties in the districts: specifically, a deflationary effect when there are few presidential candidates, and an inflationary effect when there are many presidential candidates, in accordance with H1. While the deflationary effect is statistically significant in three of the four versions of the model as hypothesized, the substantive magnitude of this effect when there are two presidential candidates does vary widely with the model specification and set of cases used: it ranges from a substantively significant maximum of 0.83, i.e., a reduction of just less than one whole effective electoral party in the legislative contest, to a substantively trivial minimum of 0.13, i.e., a reduction of only one tenth of an electoral party. Also as hypothesized, the inflationary effect at the district level is statistically significant when all elections are used to estimate the model, but, as before, restricting the cases to presidential systems produces wider confidence intervals.

By way of contrast, when we turn to restrictive electoral systems, concurrent presidential elections are predicted to have little effect, as hypothesized. Where a deflationary effect is found with few candidates, it is statistically insignificant in two out of the three versions of the model. Moreover, this effect is of a smaller magnitude than that in permissive electoral systems, regardless of the set of cases and the model specification used. For example, the fully pooled version of the model estimated using all elections, the only version to find a significant deflationary effect in contravention of H1, predicts the deflationary effect of two presidential candidates to be only two-thirds of the magnitude of the comparable effect in the relatively more permissive electoral system (0.59 versus 0.83). In addition, as expected, the inflationary effect is never statistically significant. However, in contravention of H1, the usual pattern of a negative marginal effect for few presidential candidates and a positive marginal effect for many presidential candidates does not appear in two versions of the model: for the fully pooled, presidential regime elections version, the marginal effect is always negative, and for the fixed effects, all-elections version of the model, the opposite relationship—a positive effect for few candidates and a negative effect for many candidates—is puzzlingly predicted. These divergent findings are consistent with our counter-argument that presidential elections may not exert a predictable effect upon the number of parties in the districts. At the same time, the evidence is supportive of a core portion of H1, that restrictive electoral systems provide enough incentives for coordination within electoral districts that they leave little room for presidential elections to have an effect on the district level legislative party system.

#### **4.2 Cross-district Effects**

We now turn to the second mechanism by which the overall effect of presidentialism may be exerted: by shaping cross-district coordination in legislative elections (H2). The coefficients on the key variables of proximity, the effective number of presidential candidates and their interaction all have the expected signs, regardless of the set of cases to estimate Model 2. While the coefficient on the interaction term ( $\beta_3$  in Equation 3) is only statistically significant when using the larger sample of all elections, this was also the case in Model 1. We note that controlling for vertical centralization does not substantively affect our conclusions about the relationship between these variables and party system aggregation: there are no meaningful differences in the results of Models 3 and 4, which differ only in whether or not vertical centralization appears on the right-hand side.

The posited relationship is more clearly visible in Figure 4, which graphs the predicted marginal effect of proximate elections on our measure of cross-district coordination, D.

*Figure 4 about here.*

Concurrent presidential elections are predicted to have a deflationary effect upon the difference between the national and district level party systems, i.e. to promote greater cross-district coordination, when there are few (at most four) presidential candidates. They are conversely predicted to have an inflationary effect, i.e. to promote less cross-district coordination, when there

are many presidential candidates. To illustrate, take the case of a proximate presidential election with two presidential candidates. Its predicted deflationary effect ranges from a substantial 0.81 if all elections are used to estimate the model to a less but still substantial 0.62 if only elections in presidential regimes are used. This means that the difference between the national and district level party systems is predicted to decrease by at most a little less than one party on average, roughly akin to increasing the nationalization of a German-style party system until it resembles that of a more nationalized Danish-style party system. Similarly, the predicted inflationary effect of a presidential election with six presidential candidates is approximately one more effective electoral party in the national contest relative to the district level. Both of these effects are statistically significant when estimating the model using all elections; however, when confining the sample to elections in presidential regimes, only the deflationary effect achieves significance. Hence, the data suggests that presidential elections do affect cross-district coordination—perhaps even more so than they affect within-district coordination, given the greater statistical significance of the terms in Model 2, combined with the different relationships observed at the district level.

We close with the findings regarding the control variables, which are generally mixed. First, the existence of a second legislative chamber decreases cross-district coordination, as hypothesized: the coefficient on the bicameralism dummy variable is both statistically significant and positive in Model 2 when using all elections and positive if insignificant when using presidential regime elections, indicating that bicameralism is predicted to induce a greater difference between the national and district level party systems. Second, the effective number of ethnic groups also always has the hypothesized positive sign, and it is significant regardless of the set of cases used to estimate Model 2. Both of these variables have approximately equal maximal substantive magnitudes of about an additional one third of a party difference between the national and the district levels, although the substantive effect of ethnic heterogeneity will usually be less in practice. Note that these effects are dwarfed by the effect of concurrent presidential elections with few candidates. Turning to the results less supportive of the literature's hypotheses, our third control variable is the logged average district magnitude. It has the correct (negative) sign only when using all elections to estimate the model; moreover, this variable is never statistically significant, in keeping with the findings of other scholars such as Tzelgov (2008), contrary to Cox and Knoll (2003). Fourth and finally, vertical centralization, i.e. national government revenue as a percentage of total revenue, is also predicted to have different effects and significance depending upon the set of cases used. These mixed findings regarding vertical centralization, also obtained by other scholars, may be attributed to either poor measures (Brancati 2008) and/or a lack of substantial variation over time in our twentieth century sample (Cox & Knoll, 2003).

## 5.0 Conclusion

This paper's goal was to explore how presidential elections shape the legislative party system. We departed from previous work by demonstrating that there are two distinct yet related processes by which presidential elections shape the legislative party system—a fact that has received little theoretical or empirical attention to date. To do so, we used a unique dataset of district instead of national level election results, which also covers a wider time period than that of existing studies. We further used two samples, the first consisting of all minimally democratic legislative elections and the second consisting only of legislative elections in presidential regimes, in order to demonstrate that our conclusions were not unduly driven by the somewhat problematic ways in which non-presidential regimes are treated by conventional measures.

Our findings were four-fold. First, there is some evidence that presidential elections shape electoral coordination *within* electoral districts. If the legislative electoral system is permissive (proportional), presidential elections with few candidates were found to encourage coordination on a

small number of parties within each electoral district, just as presidential elections with many candidates were found to discourage coordination. By way of contrast, when the legislative electoral system is restrictive (majoritarian), there seems to be little room for presidential elections to have much of an effect at the district level because the electoral system is *already* promoting extensive coordination. However, the substantive magnitudes, statistical significances and even at times the signs of these district level effects varied greatly with the sample of cases and the model specification. Second, there is stronger evidence that presidential elections shape electoral coordination *across* districts. Presidential elections with few candidates were more consistently found to induce better cross-district coordination, creating fewer parties and a more nationalized or aggregated party system, whereas presidential elections with many presidential candidates were found to undermine the incentives to cooperate across districts. Hence, the cross-district mechanism appears to be the primary way in which presidential elections cast their shadow, given our theoretical argument about its primacy combined with the relative strength and sensitivity of the empirical results regarding the two mechanisms. In fact, the sometimes contradictory findings regarding the within-district effect were not surprising in light of our discussion of the ways in which presidential elections can shape cross-district coordination while having different effects on the number of parties in each district. Third, there is also stronger evidence for the deflationary than for the inflationary effect of presidential elections: while a coordination failure in the presidential contest does have a tendency to migrate down the ballot to the legislative contest at both the within- and cross-district levels, just as a coordination success does, the latter was more significant. Fourth and finally, ethnic homogeneity and unicameralism were both found to significantly encourage party system aggregation. However, the effects of the logged average district magnitude and vertical centralization on party aggregation were mixed, and even the substantive effects of the former were dwarfed by the effects of proximate presidential elections.

Understanding the two different mechanisms by which presidential elections shape the legislative party system is important if we seek to predict the effects of certain institutional reforms on the number of legislative parties. Some reforms will primarily shape the incentives of voters and candidates within districts, while others will have their primary impact on elite coordination and cooperation across districts. The ability to shape party system aggregation is of particular importance to constitutional engineers because it in turn has been shown to affect both the incentives and capabilities of politicians to provide public goods (e.g., Hicken, Kollman & Simmons, 2007). A key implication of our findings is that merely adding a popularly elected president, even one with elections in temporal proximity to legislative elections, is not enough to promote more aggregated party systems. Under some circumstances (i.e. when there are many presidential candidates), proximate presidential elections may actually undermine aggregation. If the goal is a more nationalized party system, popularly elected presidents should be paired with a restrictive presidential electoral system so that there will tend to be few presidential candidates. Something that we did not incorporate in this analysis, though, is any distinction between different types of presidential regimes. Future research should explore whether or not the regime type also conditions the effect of presidential elections upon the legislative party system, which would better enable constitutional engineers to assess the merits of proposed political institutional reforms.

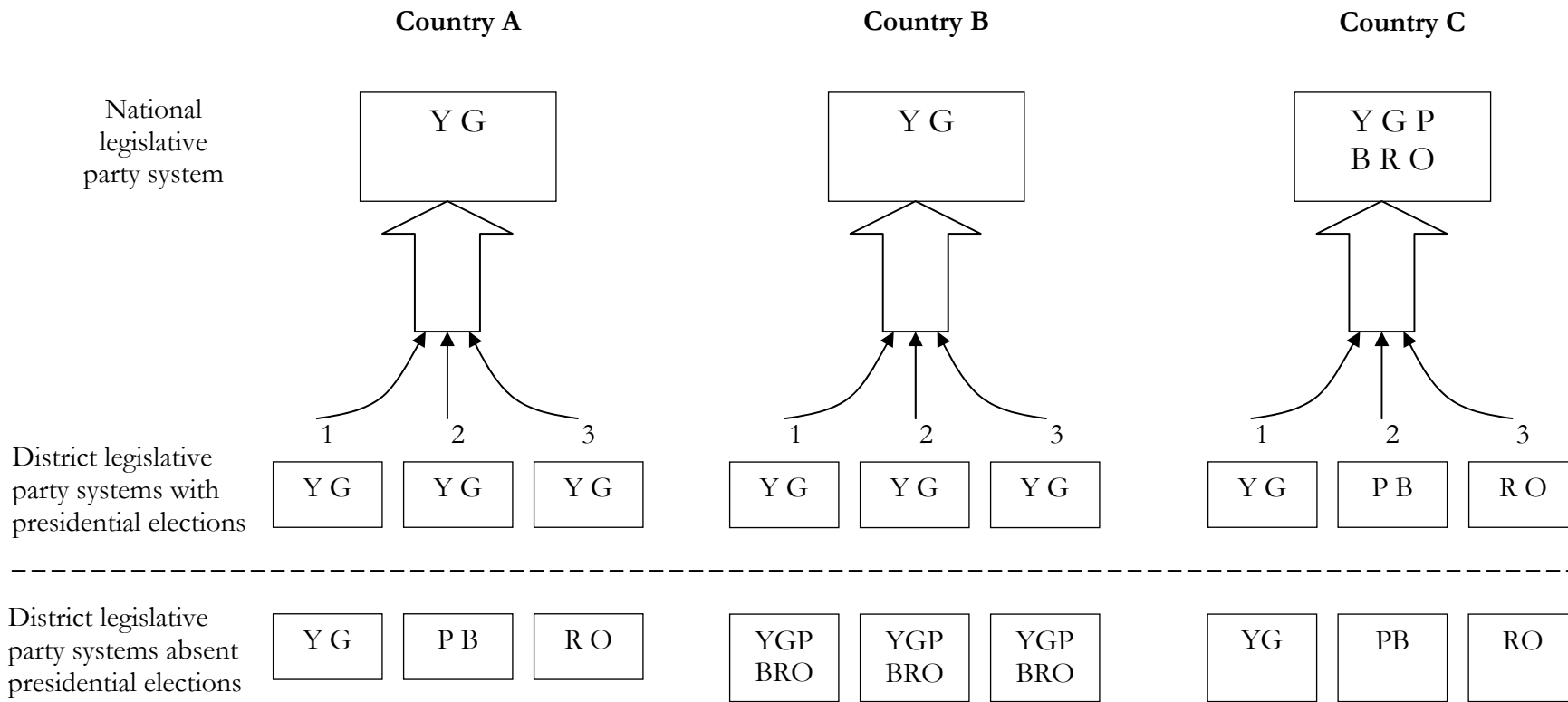
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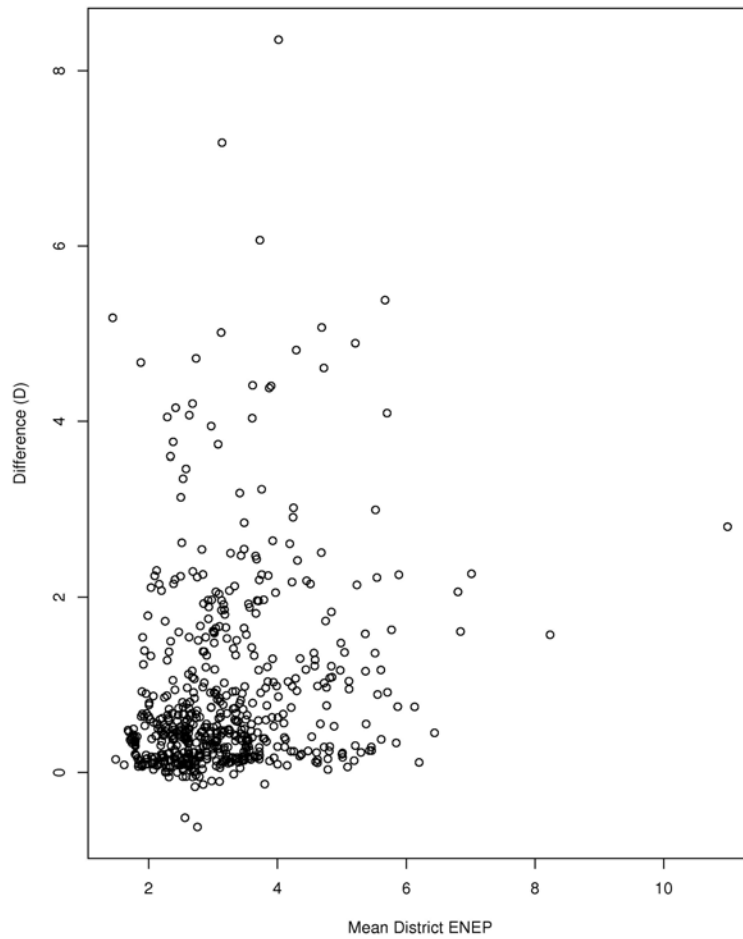
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Model	1	1	2	3	4
Dependent Variable	Mean District ENEP, Fully Pooled	Mean District ENEP, Fixed Effects	D (National ENEP – Mean District ENEP)	D (National ENEP – Mean District ENEP)	D (National ENEP – Mean District ENEP)
Intercept	2.4*** (0.056)	2.4*** (0.15)	0.28* (0.16)	-0.98 (0.60)	-0.045 (0.32)
Proximity	-0.95*** (0.21)	0.49 (0.33)	-1.8*** (0.34)	-1.8*** (0.33)	-1.8*** (0.32)
ENPRES	0.14 (0.10)	0.27** (0.13)	0.070 (0.065)	0.12 (0.11)	0.098 (0.11)
Proximity × ENPRES	0.18 (0.13)	-0.17 (0.14)	0.48*** (0.17)	0.39** (0.19)	0.41** (0.19)
Log Mean Magnitude	0.52*** (0.042)	0.67*** (0.073)	-0.034 (0.047)	0.028 (0.096)	0.052 (0.096)
Effective Number of Ethnic Groups			0.27*** (0.066)	0.38*** (0.19)	0.37*** (0.12)
Log Mean Magnitude × Effective Number of Ethnic Groups					
Proximity × Log Mean Magnitude	-0.56*** (0.18)	-0.86*** (0.24)			
ENPRES × Log Mean Magnitude	-0.044 (0.053)	-0.075 (0.057)			
Proximity × ENPRES × Log Mean Magnitude	0.22** (0.098)	0.29*** (0.089)			
Bicameral			0.32*** (0.080)	0.52*** (0.19)	0.49** (0.19)
Nat'l Government Revenue (% Total)				0.012* (0.0065)	
N	595	595	595	242	242
MSE	0.87	0.63	1.0	1.2	1.2
R <sup>2</sup>	0.32	0.69	0.16	0.18	0.18

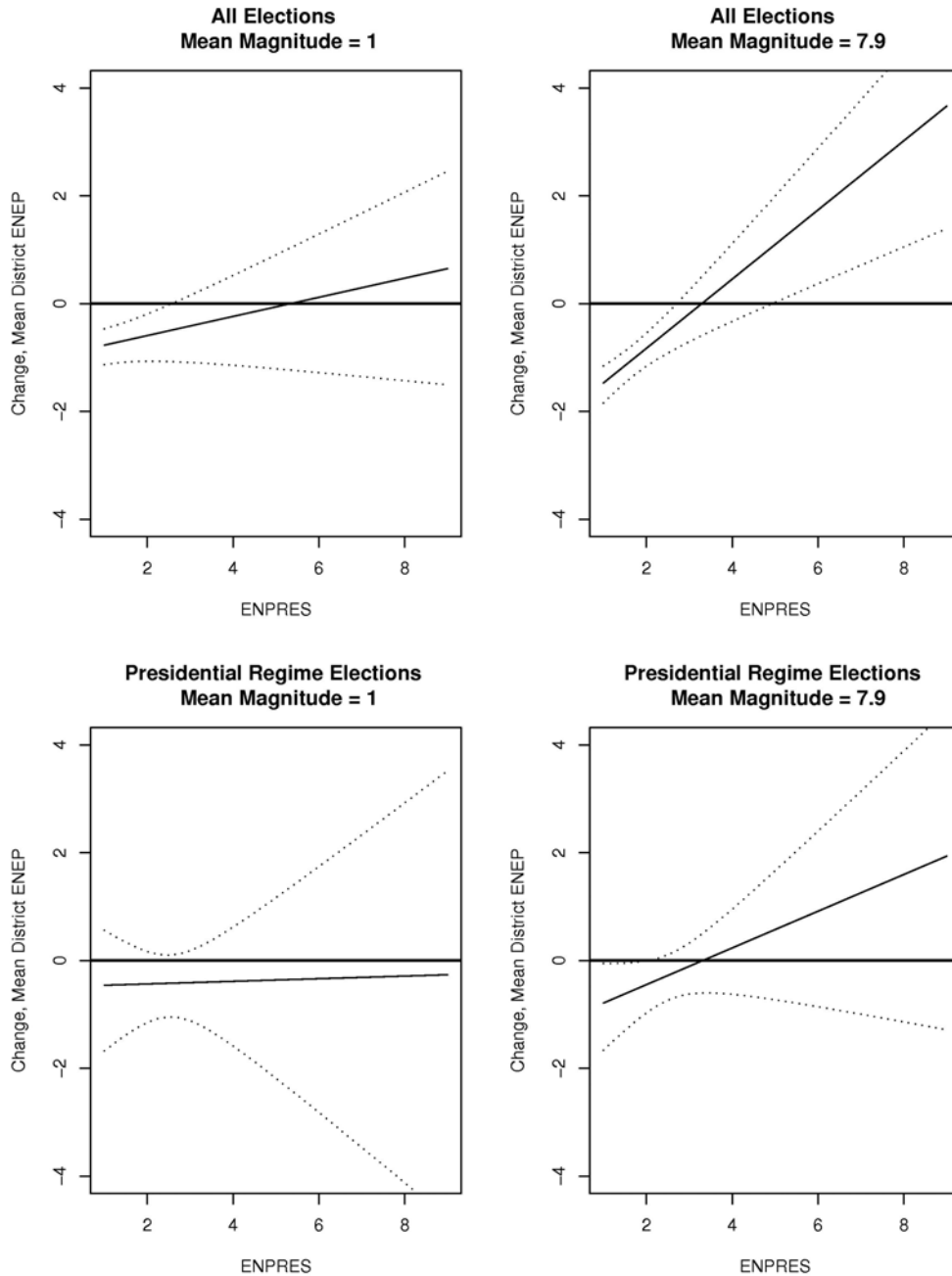
**Table 1.** Coefficient estimates and Newey-West robust standard errors in parentheses for Models 1—4. Cases are *all* legislative elections. Country fixed effects, where included, are not shown. Significance codes are for two-sided tests, all calculated prior to rounding to two significant digits: 0.01, \*\*\*; 0.05, \*\*; 0.10, \*.



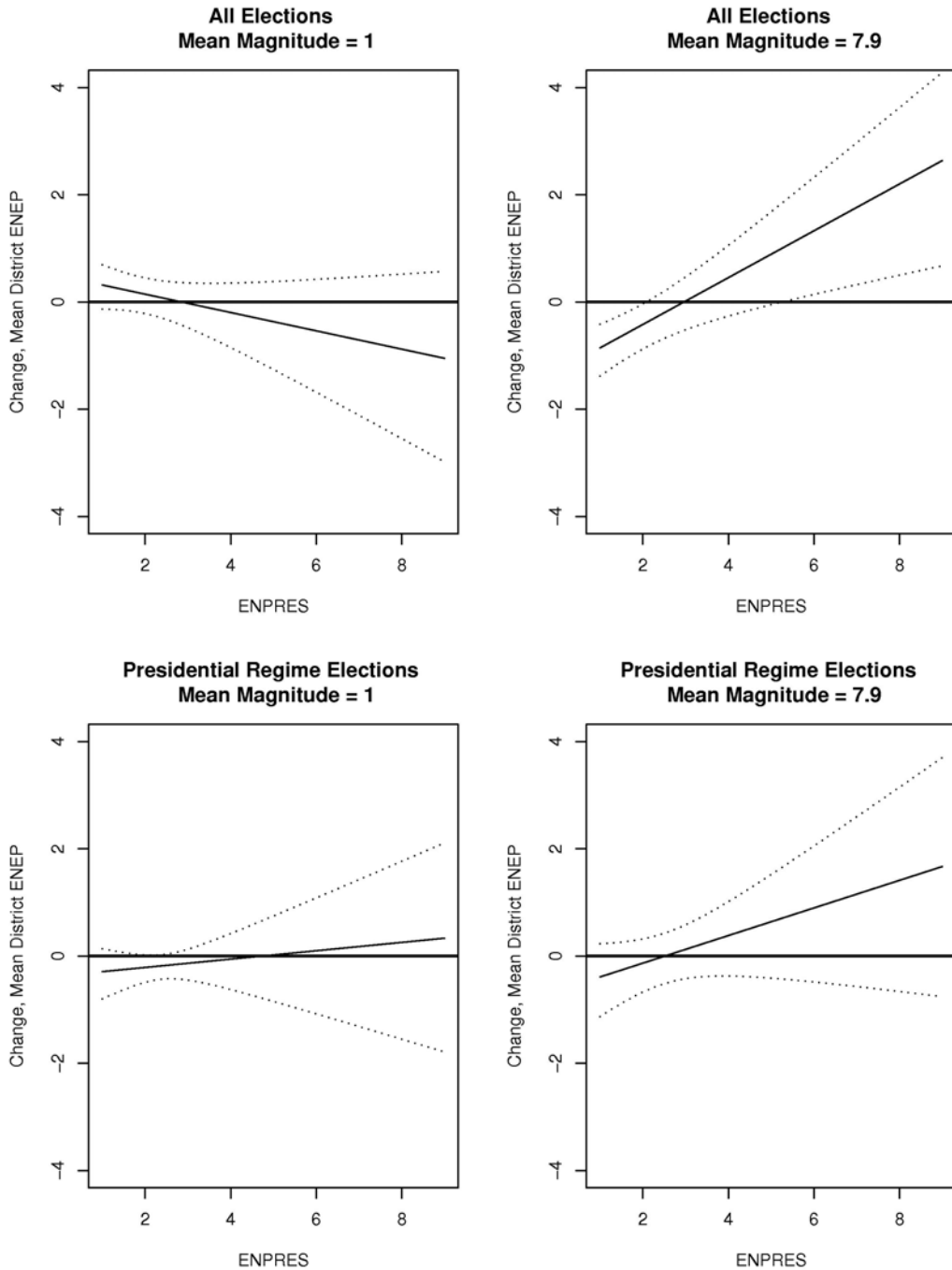
**Figure 1.** Three hypothetical countries and the effect of presidential elections upon both their district and national level legislative party systems. Hypothetical political parties Y, G, P, B, R, and O are used to illustrate.



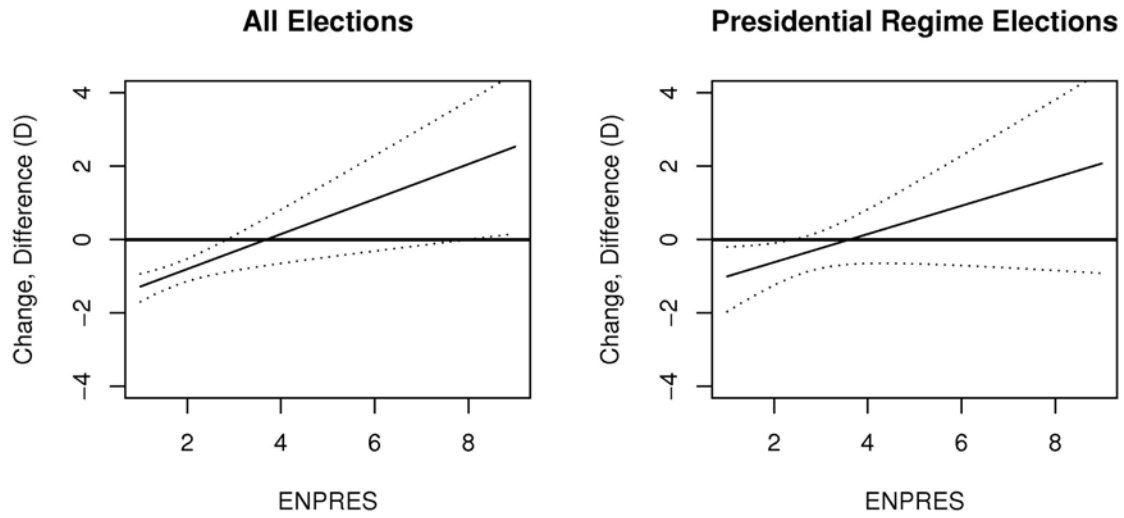
**Figure 2.** For each country and election used to estimate the all-elections versions of Models 1 and 2, the average effective number of electoral parties in the districts (Mean District ENEP) plotted against the difference between the national effective number of electoral parties and the average effective number of electoral parties in the districts (D).



**Figure 3a.** For all elections as well as elections in presidential regimes, the estimated marginal effect of proximity on the average district level effective number of electoral parties (Mean ENEP) from *fully pooled* versions of Model 1 for both a restrictive (Mean Magnitude = 1) and a permissive (Mean Magnitude = 7.9) electoral system. Marginal effects are shown for the range of the effective number of presidential candidates (ENPRES), and 90% percent two-sided (or 95% one-sided) confidence intervals band them.



**Figure 3b.** For all elections as well as elections in presidential regimes, the estimated marginal effect of proximity on the average district level effective number of electoral parties (Mean ENEP) from *country fixed effects* versions of Model 1 for both a restrictive (Mean Magnitude = 1) and a permissive (Mean Magnitude = 7.9) electoral system. Marginal effects are shown for the range of the effective number of presidential candidates (ENPRES), and 90% percent two-sided (or 95% one-sided) confidence intervals band them.



**Figure 4.** For all elections as well as elections in presidential regimes, the estimated marginal effect of proximity on the difference between the national level and average district level party systems (D) from Model 2. Marginal effects are shown for the range of the effective number of presidential candidates (ENPRES), and 90% percent two-sided (or 95% one-sided) confidence intervals band them.

## Notes

<sup>1</sup> Receiving less attention in the literature is the effect of legislative elections upon the presidential party system. While this is an intriguing avenue for future research to explore, this paper focuses on the arrow of causality that runs from presidential to legislative elections.

<sup>2</sup> For more on this logic, see Shugart (1995), Golder (2006), Samuels (2002, 2003), and Cox (1997).

<sup>3</sup> See the supplemental paper for other features of the electoral system that may affect presidentialism's ability to shape cross-district coordination.

<sup>4</sup> Letting  $v_i$  represent each party's vote share in a given district and election, the effective number of electoral political parties,  $ENEP$ , is calculated as follows:  $ENEP = 1 / \sum_{i=1}^n v_i^2$ .

<sup>5</sup> This variable is closely related to Cox's (1999, p. 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  $D$  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. However, using the inflation score yields results that are even more supportive of Hypothesis 2.

<sup>6</sup> All of the election return data used for this paper will eventually be available on the CLEA website, <http://electiondataarchive.org/>. Until then, data requests can be made directly to CLEA personnel.

<sup>7</sup> Logging the average number of electoral parties in the districts to address the distributional skew apparent in Figure 2 does not affect our results. While the difference measure  $D$  cannot be logged because it is unbounded on the real line, the use of the inflation score (discussed above) yields similar results, and the distribution of this variable is less skewed than that of  $D$ .

<sup>8</sup> 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 elections; and  $P_{t+1}$  is the year of the following presidential election. We recognize that it would be preferable to construct more finely-grained versions of this measure using days instead of years, as well as to construct alternative operationalizations that do not equate midterm elections with legislative elections in non-presidential regimes. These tasks are left to future work, however, because our goal is to explore the mechanisms that are underdeveloped or missing in the existing literature, and departing too drastically from previous approaches would reduce the comparability of the results. We do take a simple step to address the latter point below, though. Further, we also employ a dummy variable for concurrent (same day) elections as an alternate measure of proximity. This ameliorates some of concerns about the continuous measure and yields results that are more supportive of Hypothesis 2 but less supportive of Hypothesis 1, findings that together bolster the conclusions we ultimately draw regarding the relative empirical support for the two hypotheses.

<sup>9</sup> The effective number of presidential candidates is calculated by dividing 1 by the sum of each candidate's squared vote share,  $v_i$ :  $1 / \sum v_i^2$ .

<sup>10</sup> The drawback to Model 2 is that it ignores the endogeneity of the average district level party system, which goes into the calculation of the difference,  $D$ . We can see this by simply moving the average district level party system to the right-hand side of Equation 3 and letting the dependent variable be the national level party system. This model explicitly allows us to assess how proximate presidential elections and the presidential party system affect the national level party system, controlling for the average district level party system—i.e., to empirically assess the direct or independent effect of cross-district coordination. We estimated this alternative version of Model 2 using OLS as well as two stage least squares to address the potential endogeneity bias. Because we obtained similar conclusions from these models, and particularly from the latter, we opted to present the simpler if arguably less appropriate model here.

<sup>11</sup> Additionally controlling for upper tier seats does not alter our conclusions.

<sup>12</sup> The number of lower tier districts is not entered into the model as a separate variable because it is highly correlated with the logged average district magnitude.

<sup>13</sup> For our preference for revenues over expenditures as a measure of the scope of the public economy, see Cameron (1978). Chhibber and Kollman's (2004, p. 234) own operationalization closely resembles ours: the proportion of total wages attributed to the national government. An alternative operationalization is national government revenue as a percentage of gross domestic product (GDP), which yields results more consistent with hypotheses despite being vulnerable to criticism that it is a proxy for development.

<sup>14</sup> The supplemental paper contains more information about our case selection criteria. We replicate Golder's (2006) findings regarding the overall effect of presidential elections using our set of cases. Confining the analysis to the post-World War II period does not alter our conclusions. While there are good reasons to believe that political institutions and hence presidential elections might not have the same effects in both consolidated and unconsolidated democracies (see, for example, Shugart, 1999 and Hartlyn, McCoy & Mustillo, 2008), neither controlling for pre-1990 OECD membership nor eliminating elections in African countries (generally the least consolidated democracies in the sample) substantively affects our results. Similarly, our conclusions are not altered by eliminating the four single election countries.

<sup>15</sup> This reduced significance is not surprising given the well-known inefficiency of fixed effects models.

<sup>16</sup> There is little theoretical reason to believe that cross-country contemporaneous correlation is a problem in our electoral models. Moreover, it is difficult to obtain a good estimate of it without many common time periods across countries. Hence, Beck and Katz's (1995) panel-corrected robust standard errors are not appropriate. The only difference from using a common alternative robust standard estimator that is appropriate for the all elections models, the country-clustered, is that the inflationary effect loses significance. This robust estimator is not appropriate for the presidential elections versions of the models, however, because the number of countries is less than fifty (Kezdi, 2004).

<sup>17</sup> For example, the marginal effects of proximity in Model 1 are calculated as follows (using the notation of Equation 2):  $\beta_1 + \beta_3 \text{ENPRES} + \beta_5 \text{Log Mean Magnitude} + \beta_7 \text{ENPRES} \times \text{Log Mean Magnitude}$ .

<sup>18</sup> We use ninety percent, two-sided confidence intervals for consistency with previous studies (see, for example, Golder, 2006, p. 41) and because our hypotheses are directional (ninety percent two-sided confidence intervals are equivalent to ninety-five percent one-sided confidence intervals).