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The Impact of Electoral Rules on Legislative Parties: Lessons from the Brazilian Senate and Chamber of Deputies

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In this paper, I reexamine the impact of electoral institutions on legislative party organization. A long-running theme in comparative politics is that Brazil's political party system is weakened by the structure of its electoral institutions. I revisit this research by comparing legislative parties in the Brazilian Chamber of Deputies with those in the Brazilian Senate. This comparison allows me to control for political history, constituents, and even the legislative agenda, while providing variance on the key explanatory variable—the electoral system. The Senate is very similar to the Chamber of Deputies, but does not use the much maligned OLPR rules. The result is a powerful opportunity for testing and inference. The comparisons reveal no consistent or significant differences between institutions.

Students of comparative legislative parties draw on diverse theoretical perspectives to explain cross-system variance. Scholars explain party institutionalization, strength, cohesion, effective number of parties, cleavages, and even party switching with both social-historical and institutional variables, including frozen social cleavages, patterns of labor incorporation, district magnitude, nomination procedures, federalism, congressional procedures, and electoral rules.¹ These two approaches—social-historical and institutional—are sometimes complementary but often in conflict.

Among institutional explanations for party systems, electoral rules have taken an increasingly prominent role in scholars' theories and empirical tests. A well-established literature ties electoral rules to the number of parties in a political system, focusing on district magnitude and thresholds for entry.² More

recent is the argument examined in this paper. A growing literature argues that electoral rules can be linked to legislative party strength.³ In fact, the link between electoral rules and party strength is so respected that scholars will even use rankings of electoral rules as a proxy for party cohesion.⁴

Some electoral rules, the argument goes, create incentives for individualistic career strategies and encourage legislators to eschew party ties and loyalty. Other sets of rules make collective party efforts the optimal choice for political advancement. These theories have broad implications for many facets of legislative behavior, including roll-call votes and coalition-building, party switching, and electoral strategies.⁵

There are, however, significant challenges for testing the relationship between electoral rules and legislative parties. Much research on this question

¹See Chandler (1987); Scharpf (1995); Ross (2000); Mainwaring (1997); Suberu (2001); Haspel, Remington, and Smith (1998); Mainwaring (1991); Ames (2001); Carey and Shugart (1995); Lipset and Rokkan (1967); Cox (1997); Ordeshook and Shvetsova (1994); Wilson (1997); Crook and Hibbing (1985); Collier and Collier (1991).

²See Cox (1997); Ordeshook and Shvetsova (1994); Taagepara and Shugart (1993) are three of many examples.

³Recent examples include Ames (2001, 1995); Mainwaring (1999, 1991); Geddes and Ribeiro Neto (1992); Morgenstern (2004); Wilson (1997); Haspel, Remington, and Smith (1998); Sartori (1976); Epstein (1980).

⁴See Johnson and Crisp (2003), for example.

⁵Following Carey and Shugart (1995), I include ballot control as well as seat distribution formulas in the definition of electoral rules.

relies on examination of single institutions—with no variance on the explanatory variable. That is, most previous work looks at a single institution with a single set of electoral rules to argue that the electoral system is an important determinant of the party system. But without any comparative work, we do not know if the electoral system or some other variable explains party systems. For that matter, we are not even sure if the parties are weak at all without at least some cross-system comparison.⁶

Cross-country studies provide more leverage than single case studies in theory, but in practice risk a plethora of confounding variables. Differences observed across countries may be attributable to differences in the electoral system, but they may also be a function of other variables: institutions, historical legacies, cultural, developmental, or some other factor. Similarly, countries sharing the same electoral rules may have different systems as a function of other variables. Finland and Brazil share the same electoral system—OLPR—but Finland has an institutionalized party system, while Brazil has been labeled the “anti-party system.”

Do electoral rules shape party strength? Or do noninstitutional features of political systems explain the nature of legislative parties? Answering these questions is an important challenge to students comparative institutions and parties; it is also of substantial importance, as many countries have on-going debates on the potential of electoral system reform to solve political and policy problems. But empirically demonstrating that electoral rules “matter” is methodologically challenging when working with cross-country comparisons.

In this paper, I take advantage of within-country variance to more rigorously isolate the impact of electoral rules on political parties. Specifically, I compare parties in the Brazilian Senate and Chamber of Deputies. These legislatures share similar internal rules, elect members from the same districts, and even vote on the same legislation. They also face the same broader political and economic environment: they have to negotiate with the same executive, confront the

same issues, and deal with the same major political events. But while the two legislatures share many formal and informal institutions, they use different electoral rules. The Chamber of Deputies elects members using open-list proportional representation (OLPR); Senators are selected via single and multi-member plurality elections. Previous work suggests that these institutional differences should lead to very different kinds of legislative parties.

Comparing multiple measures of party cohesion and discipline, across multiple time periods, I consistently find no significant difference between the two institutions. These results are surprising, given the existing literature on Brazilian politics. Many scholars argue that Brazil’s Open-List PR rules contribute to that country’s weak legislative parties. Electoral system change has been a center piece of most major political reform proposals in Brazil during the last 15 years, with a general consensus that Brazil’s current system is the worst of all worlds.⁷

The next section examines the electoral rules of the Chamber and Senate and discusses the literature’s predictions about their incentives for legislative party strength. Following that, I examine several measures of party cohesion and discipline, using roll-call votes and party-switching data. Finally, I conclude by reexamining the relationship between electoral rules and legislative parties.

Electoral Rules and Parties

The Chamber of Deputies

The Brazilian Chamber of Deputies, the lower house, currently has 513 members, up from 503 in 1994. Seats are distributed among states according to population, with two important exceptions: no state can have more than 70 seats, and all states are guaranteed a minimum of eight. All deputies are elected from state-wide, multimember districts, all using open-list proportional representation (OLPR) electoral rules. Under OLPR, citizens cast a single vote, either for an individual candidate or for a party list (in Brazil, most vote for an individual). After election results are tallied, seats are distributed in two steps. First, seats are distributed to parties in proportion to the share of the votes received by all their candidates. Second, seats are distributed within the parties to the top vote-getters.

⁶This weakness is reflected in the ongoing debate on the nature of Brazilian political parties. For example, some maintain that parties are uncohesive and “inchoate,” while others arguing that they are reasonably disciplined and consolidated. For example, compare Mainwaring (1999), Ames (2001), and Figueiredo and Limongi (1995). One exception is Ames (2001). While still a single-case study examining only the Brazilian Chamber of Deputies, he dissects the logic and implications of the Brazilian political institutions. He traces deputies’ electoral and legislative strategies and compares them with the logic implied by the institutional arguments.

⁷Proposals for single-member districts, mixed-member systems, and closed-list pr have all been floated.

TABLE 1 Hypothetical Election Results

Rank	Party X		Party Y		Party Z	
	Candidate	Votes	Candidate	Votes	Candidate	Votes
1	Miriam	7	Ruy	11	Cesar	18
2	João	6	Eudoro	9	Marta	8
3	Angelica	4	Jorge	7	Trinidade	7
4	Darcy	3	Udson	2	Ze	4
5	Carlos	2	Patricia	0	Walter	1
List votes	Party X	1	Party Y	8	Party Z	2
Total votes		23		37		40
Seats		1		1		2

Parameters: Four seats, three parties, 15 candidates, and 100 voters.

Tables 1 illustrates. In this hypothetical district, there are four seats, three parties, five candidates per party, and 100 voters. Seats are distributed among the parties according to their total vote share, and within the parties to the top vote-getters: Miriam (party X), in Ruy (party Y), and Cesar and Marta (party Z).

According to the literature, three primary features of OLPR should weaken parties. First, the vote aggregation rules encourage intraparty competition. Candidates' best strategy is usually to take votes from members of their own party rather than from competing parties. For example, Candidate Miriam (Party X) was elected over João by just one vote. For João to earn a seat, either party X needs to take at least 11 votes from Party Y and Z or João needs to take just one vote from Miriam.⁸ Clearly, João's best strategy is to compete with Miriam, not to attempt to increase his overall party vote share by 50%. Many political observers and scholars have noted these incentives (Ames 2001; Graeff 2000; Mainwaring 1999; Pinheiro Filho 1998).

Second, the system limits party leaders' ability to step in and impose discipline. The usual mechanisms of party control over ballot access and rank are absent. Party leaders cannot pre-order ballots as under closed-list PR; order of election is determined directly by the votes each candidate receives. Until recently Brazilian party leaders were further limited by the *candidato nato* rule.⁹ *Candidato nato* literally means "birthright candidate," referring to incumbents' guaranteed right of renomination: incumbent deputies were guaranteed inclusion in their parties' electoral lists in the next

election. Even if deputies switched party, their new party was required to nominate them for reelection (Mainwaring 1991, 1997).

Third, high district magnitude should exacerbate problems associated with the first two features, above. Carey and Shugart (1995) argue that the antiparty incentives of personalistic systems only increase with district magnitude. As mentioned, Brazilian states all have district magnitudes of eight or more, with a maximum of 70. Further, high district magnitude reduces leaders' incentives to discipline legislators. To maximize seats, parties must nominate as many candidates as possible, most of whom know they will lose. This reduces leaders' incentives to restrict ballot access to the party faithful and rewards party leaders who overlook vote-getting but rebellious candidates.

Scholars and politicians agree that OLPR has weakened parties in Brazil. Graeff writes that "The system . . . makes the competition between candidates of the same party fiercer than competition between parties. . . . It would be difficult under any hypothesis to impose strict party discipline on a deputy elected under these conditions" (2000, 2). Ames analyzes the incentives of Brazilian OLPR and concludes, "By this point it should be clear that open-list PR personalizes politics and hinders party building" (2001, 65). Mainwaring writes, "The Brazilian electoral system offers a number of incentives to antiparty behavior on the part of individual representatives. Foremost among these incentives is a peculiar system of proportional representation, which gives the electorate exceptional choice in choosing individual candidates and weakens party control over candidates" (1999, 23). And a former deputy concludes: "The inevitable result is that each [candidate] fights during the election to put themselves in a better position than their list colleagues and avoid falling with the substitutes . . . The

⁸The exact amount depends on which parties contribute the votes and whether the Party Y/Party Z ratio changes in any other ways.

⁹This provision was eliminated in 2002. See Morgenstern (2004).

candidate is practically compelled to seek votes just for herself, and the tendency to seek votes from your *correligionarios* is irresistible, a condition for political survival. Thus disappear any incentives for party solidarity in the state campaign.” (Pinheiro Filho 1998, 15–16).

This literature has been met with a volley of criticism and empirical evidence suggesting that the “anti-party” thesis has been overstated and that a number of other mechanisms more than make up for the anti-party incentives of Brazil’s electoral rules. The most important of these is the work of Figueiredo and Limongi (1995, 2000, 1999; henceforth F&L) who challenge the notion that Brazil’s combination of presidentialism and multiparty democracy is ungovernable and that Brazilian parties are weak and inchoate. Their empirical work reports unexpectedly high party cohesion scores, evidence of consistent ideological positioning, and indicators of presidential success in advancing their agendas. Other scholars have found similar results: relatively high cohesion, a lack of stalemate, and the existence of party agenda cartels that control legislative policymaking (Amorim Neto, Cox, and McCubbins 2003; Pereira and Mueller 2004; Santos 2003).

However, while there is substantial debate over the nature of the Brazilian party system—antiparty system, or model-party system—there is much less debate over the incentives of the electoral rules. Even scholars arguing that Brazil’s party system is consolidated tend to agree that OLPR provides antiparty incentives—they just identify other factors that make up for the electoral rules. For example Pereira and Mueller (2004) acknowledges the antiparty incentives of the electoral system, but find that Presidential power allows the executive to impose order on the legislative party system, overcoming the electoral rules’ incentives. F&L acknowledge that the electoral rules encourage personal vote seeking and restrict party leaders’ capacity to discipline deputies, but they find that intralegislative procedures more than make up for the electoral rules, leading to a system of strong and stable legislative parties.¹⁰

The Senate

If the mechanisms discussed above do shape legislators’ strategic behavior, the Brazilian Senate should be a very different political arena. While the Senate and

Chamber are identical in many respects, the Senate’s electoral rules lack all the mechanisms just described: intraparty conflict, low-value and easy nominations, and guaranteed renomination. In the following paragraphs, I first introduce the Senate, then examine its electoral rules and their incentives.

While almost all prior research has focused on the Chamber of Deputies, the Senate is actually the more powerful of the two institutions. The Senate has the sole authority to set total debt limits for all levels of the Brazilian government, from national to municipal, and to approve any international financing. The Senate has the exclusive power to impeach and try the President, Vice President, Ministers, Supreme Court Justices, and Attorney Generals. The Senate approves many key appointments and chooses many federal judges.¹¹ There are 81 Senators, three from each of the 26 states and three from the Federal District of Brasília. Senators serve staggered eight-year terms. Elections are held every four years, concurrent with the other federal and state elections. Consequently, every four years, either one or two seats are open in each state. One-third of the Senators were elected in 1990 and again in 1998; two-thirds were elected in 1994 and 2002.

Senators are elected via simple plurality rules: the top vote-getters take office, without any party vote pooling. In “one-third” years, when there is one open seat per state, this is effectively a single-member plurality electoral system. Each party nominates one candidate, voters cast a single vote, and whichever candidate receives the most votes wins. In “two-third” years, when two seats are open, parties nominate two candidates, voters cast two votes (not for the same candidate), and the top two vote-getters take office.

According to the literature discussed above, this electoral system should produce significantly more cohesive parties than in the Chamber of Deputies, because it lacks the problematic features of Brazilian OLPR: incentives for intraparty competition and weak party control over ballot access combined with high district magnitude. Under the Senate’s rules, there are no incentives for candidates to attack their copartisans, because of plurality rules. During one-third elections, there is simply one candidate per party per district and no possibility of intraparty competition. During two-third elections, there are two candidates per party per district, but there are also two seats, and voters cast two votes with no plumping. Consequently,

¹⁰Not all agree that OLPR weakens parties: Santos (2003) argues that OLPR effectively eliminates linkages between legislators and constituents.

¹¹See Artigo 51, Seção IV of the Brazilian Constitution República Federativa do Brasil (December 31, 1998), Stepan (2000), and Robson Pereira Neiva (2004).

there are no extra incentives for competing with copartisans as under OLPR.

In addition, party leadership retains the means to punish legislators through control of ballot access. The Senate does not use *candidato nato*, so incumbent Senators are not guaranteed renomination—rebellious Senators can be denied renomination. Finally, district magnitude is low—never more than two. The effect is to reduce incentives for personalism and increase the value of party nominations.

Consequently, when compared with Deputies, Senators should have weaker incentives for personalistic behavior and substantially stronger incentives for cooperating with party leaders. They have no electoral incentives to distinguish themselves from or compete with other members of their own party. Reelection is not assured, so rebellious behavior can be punished. The result should be stronger legislative parties than in the Chamber of Deputies.

Evidence

The preceding discussion suggests a simple testable hypothesis to examine the role of OLPR in Brazil's weak party system and the link between electoral systems and party systems more generally. If the conventional wisdom regarding Brazil's electoral system is correct, we should find evidence that the Brazilian Senate has more disciplined and cohesive parties than those in the Chamber of Deputies. But if the commonly cited features of Brazilian OLPR—intraparty competition, low nomination value, and *candidato nato*—do not directly affect the behavior of legislators, then we should find no significant differences in legislative behavior across the two institutions.

I carry out the tests with several measures of party cohesion in roll-call votes. First, I examine the most common measure, roll-call vote cohesion scores. Following that, I estimate ideal points for the legislators and compare parties' dispersion in a spatial analysis. Third, I use a model of party switching to measure party influence over legislators. All these measures of party strength are based on roll-call votes. While the use of roll-call votes to measure legislative behavior has been criticized (Krehbiel 2000), such votes remain the single most widely used measure of legislative party strength. In addition, several authors have argued that the incentives of electoral rules have direct implications for roll-call voting behavior. Most notably, Carey and Shugart (1995) themselves note that their theory of electoral incentives can be tested with roll-call voting records. Further, roll-call based

scores have the additional advantage of capturing representatives' behavior on their institutions' primary responsibility—the evaluation and passage or rejection of legislation. Finally, for most legislatures, there are no available better indicators of legislative behavior.

I test for differences between the two legislatures at three levels: overall, party, and district party. In the first, I compare overall mean party cohesion for the Senate and Chamber without any controls. In the second, I control for party differences, as there is significant variance in cohesion across Brazilian parties (Amorim Neto and Santos 2001). In the last, I examine cohesion at the district level, again controlling for party membership. The theoretical literature on electoral rules has the strongest implications for behavior within electoral districts, hence its impact on legislative behavior should be most readily apparent at that level.¹²

Roll-Call Vote Cohesion

This section tests the impact of electoral rules by comparing party cohesion on roll-call votes in the Chamber and Senate. The above discussion suggests that if Brazil's electoral system affects legislative behavior, we should observe higher levels of party cohesion in the Federal Senate than in the Chamber of Deputies.¹³

While comparing the Chamber and Senate does control for many possible confounding variables, one problem with such a comparison is that the two legislatures may not have identical agendas. It is easy to imagine how a bill might be killed by a committee in one house and pushed through in another. These agenda differences could bias comparisons of party cohesion. My solution is to use two sets of cohesion scores. One uses all roll-call votes from each house; the other only uses matched votes from the *Congresso Nacional*. The National Congress is a joint session of the Chamber and Senate. When seated at the National Congress, members of the Chamber and Senate vote sequentially on the same bill. The Chamber members vote first, and if they approve the bill, the senators vote on the same measure.

¹²Note that the district-party comparisons do come at a price—many observations must be left out. There are only three senators per state, and their cohesion can only be measured if two or more are from the same party.

¹³I measure party cohesion with the Rice (1928) cohesion score, corrected for small party inflation (Desposato 2005). Mean party cohesion is weighted by the number voting, and bills are excluded if fewer than 5% voted for the the minority position. Alternative weighting schemes produced identical results.

TABLE 2 Overall Party Cohesion

All Votes				
Session	Senate	Chamber	Difference	SE
49th	.77	.84	-.07	.01*
50th	.79	.85	-.05	.01*
51st	.80	.89	-.09	.01*
Matched Votes				
Session	Senate	Chamber	Difference	SE
49th	.80	.80	.01	.06
50th	.99	.92	.07	.03*
51st	.90	.90	.00	.08

* $p < .01$.

Tables 2 compares overall average party cohesion in the Senate and Chamber during the last three legislatures. For both institutions over all time periods, cohesion is relatively stable and quite high, echoing the findings of Figueiredo and Limongi (1995). Using all votes, the mean Chamber cohesion is between .84 and .89 and mean Senate cohesion between .77 and .80 over the three periods. Matched cohesion is slightly higher: between .80 and .92 for the Chamber, and .80 and .99 for the Senate.

More importantly, there is no consistent evidence that cohesion in the Senate is higher than in the Chamber of Deputies. Using all votes, Chamber cohesion is actually greater than Senate cohesion, and consistently significant at the .01 level. With matched votes, parties in the two legislatures are virtually identical during the 49th and 51st sessions. Of the six comparisons, Senate cohesion is only significantly greater than Chamber cohesion once, during the 50th legislature.

As discussed above, I repeated the same analysis for three units of analysis: overall party cohesion, matched party cohesion, and matched state party cohesion.¹⁴ Tables 3 reports Senate-Chamber differences in party cohesion with national party controls and with state-party controls. Again, if electoral rules

¹⁴In each case, I estimated a simple linear model:

$$C = \beta_0 + \beta_1 I_{Senate} + \beta_2 I_{Match}$$

where C is the relevant cohesion score, I_{Senate} is an indicator variable for Senate scores and I_{Match} is a set of indicator variables for party, or state-party, depending on the model. The parameter of interest, β_1 , is the mean difference between Senate and Chamber party cohesion scores. Positive values indicate more cohesion in the Senate, negative values more cohesion in the Chamber.

TABLE 3 Senate-Chamber Party Cohesion Differences

	All Votes		Matched Votes	
	Difference	SE	Difference	SE
National Parties				
49th	-.05	.01*	.02	.04
50th	-.05	.01*	.06	.03
51st	-.09	.01*	.03	.05
State Parties				
49th	.00	.02	.21	.13
50th	-.03	.01*	.06	.04
51st	-.06	.01*	.00	.08

Level fixed-effects not shown.

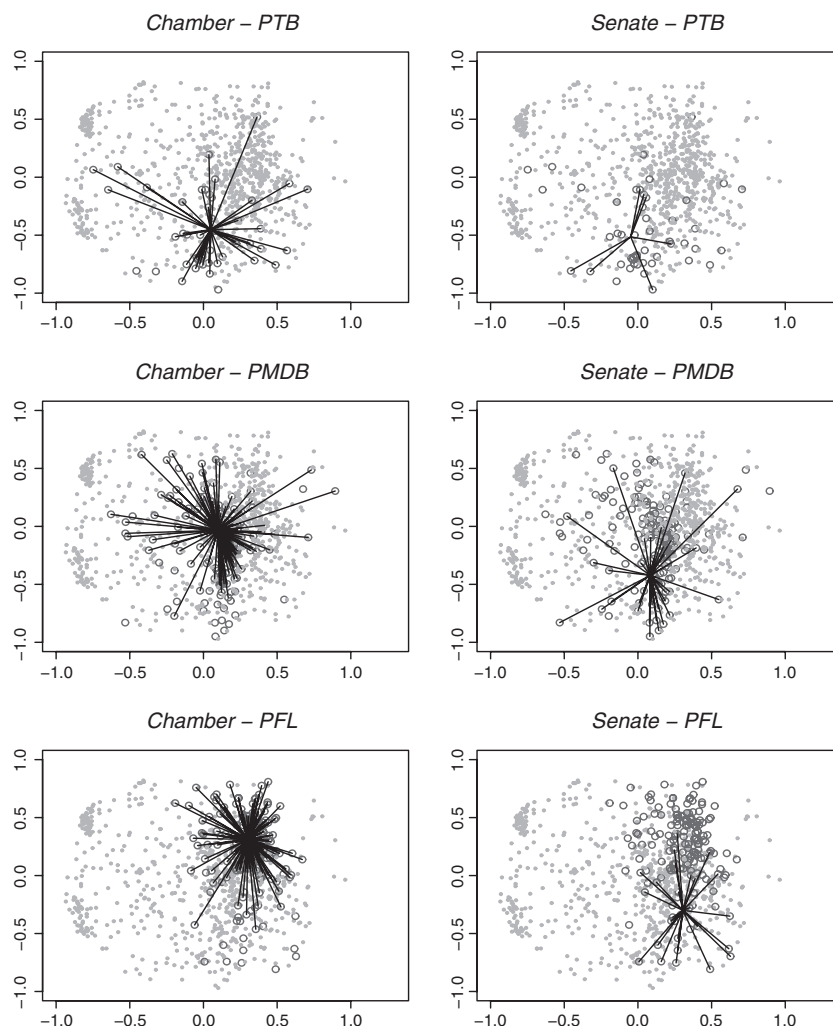
* = .01.

have the expected effects, the difference should be consistently positive, with Senate cohesion significantly greater than Chamber cohesion. The results do not strengthen the case for the electoral system hypothesis. Using all votes (the first column), Senate parties are significantly *less* cohesive than those in the Chamber across almost all three time periods and levels of analysis. Using only matched votes, Senate parties are usually more cohesive than those in the Chamber, but the difference is never significant.

These findings suggest two central conclusions. First, and most importantly, contrary to theoretical predictions, and after controlling for constituents, internal rules, the broader political environment, and even the legislative agenda, there is no evidence that intraparty competition has a substantively or statistically significant effect on party discipline. Apparently, intraparty competition, easy ballot access, and *candidato nato* have do not reduce the cohesiveness of Brazilian legislative parties. Second, the analysis also shows the problems associated with comparative roll-call analysis. Some results of the analysis fluctuate with measurement and unit of analysis. The sign of the difference, for example, is usually positive when using matched votes and negative when using all votes. These findings further challenge the validity of cross-country roll-call vote comparisons. Legislative agendas can sometimes be controlled for using within-country studies; this is usually out of the question with cross-country studies.¹⁵

¹⁵One possible solution might be votes on international agreements, like NAFTA, Mercosur, or the European Union. Such votes could provide some important leverage to cross-country analyses.

FIGURE 1 Senate-Chamber Party Dispersion, 51st Congress



Spatial Dispersion

For the second test, I apply a spatial model to the roll-call votes and explore party cohesion using estimated ideal points. I test visually and statistically for differences in dispersion in parties. If the electoral system hypothesis is correct, then we should observe significantly more cohesive and less dispersed parties in the Senate than in the Chamber. In other words, parties should be more “spread out” across the policy space in the Chamber than in the Senate. As in the previous section, I will compare both national and state parties. The estimates use the standard WNominat algorithm developed by Poole and Rosenthal (1997).

A challenge is that separately estimating idea points for the two legislatures does not guarantee us that they will be comparable. Like Rice scores, comparisons of estimated ideal points across legislatures

can capture real party differences, or differences, in legislative agendas, membership, or electoral cycle, as discussed above.

I solve this problem and map both legislatures into the same space by leveraging National Congress votes. Again, these are votes cast in joint sessions with both the Chamber and Senate present. These votes anchor the Senators and Deputies into the same space and make comparisons across institutions possible.

Figure 1 compares party dispersion during the 51st legislature for three parties: the PTB, PMDB, and PFL.¹⁶ The first column of graphs shows dispersion for Chamber parties; the second column shows the same for Senate parties. In each graph, the party of interest is highlighted. The lines in the graph go from the

¹⁶Graphs for the 49th and 50th legislatures and for other parties are in the online appendix.

party's centroid to its members (centroids and lines in the left are for the Chamber, in the right column the Senate). All other members' locations are represented in the background with the grey symbols. These graphs show the extent of party cohesion, or lack thereof. Uncohesive parties should have members distant from their party's center, and long lines. Cohesive parties should have members close to their party center, and short lines.

The figures shows some differences in party centers across legislatures. For example, the Senate PFL and PMDB are both slightly below the Chamber centroids. There might be some real differences in ideal points across the Chamber and Senate, reflecting different legislator or constituent pressures, or they might simply reflect the fact that the two institutions do not have enough overlapping roll-call votes to anchor their positions. However, there are not consistent differences in the key quantity of interest: the extent of party dispersion. In the 51st legislature, the PMDB is quite dispersed on both dimensions in both legislatures. The PSDB has less variance on dimension one than the PMDB, but again without obvious cross-institutional differences. The PTB appears to be slightly more dispersed in the Chamber than in the Senate.

For a more formal test of differences, I use a simple linear model:

$$D = \beta_0 + \beta_1 I_{Senate} + \beta_2 I_{Match}$$

where D is the squared distance between each legislator and her party's centroid, I_{Senate} is an indicator variable identifying Senators, and I_{Match} is a set of dummy variables controlling for party or state-party differences.¹⁷ β_1 is the quantity of interest. If dispersion in the Senate is significantly less than in the Chamber, β_1 should be negative.¹⁸

Tables 4 reports estimates of β_1 (labeled "Difference") for overall dispersion, controlling for party differences, and controlling for state-party differences over the three periods studied. The analysis provides no evidence that electoral rules affect parties' dispersion. In only two cases is the Senate less dispersed than the Chamber (state-party figures for the 50th and 51st legislatures), but neither is significantly different from zero. One might criticize the assumptions used for

TABLE 4 Difference in Senate-Chamber Party Dispersion

Level Session	Difference	SE
Overall		
49th	.025	.008*
50th	.006	.009
51st	.002	.009
National Parties		
49th	.025	.008*
50th	.004	.009
51st	.002	.008
State Parties		
49th	.000	.011
50th	-.009	.016
51st	-.006	.006

Level fixed effects not shown.

* $p < .01$.

inference here, but the results appear independent of inference method—because in most cases, the Senate parties are actually more dispersed than the Chamber parties. That is, without the key institutional features of the Chamber's electoral system—*candidato nato*, intraparty competition, and long party lists—the Senate does not appear to have any more cohesive parties than the Chamber of Deputies.

As with the roll-call cohesion analysis, an examination of legislator's ideal points finds no evidence of differences in party cohesion across the Brazilian Chamber and Senate. Visually, party dispersion appears roughly similar in the two institutions. A formal statistical test of the pattern could not reject the null hypothesis that there was no difference in dispersion across institutions. In many cases, dispersion was actually greater in the Senate than in the Chamber of Deputies. These results held for an analysis of both national parties and state-party delegations.

Party Influence

The preceding two tests produced identical results—parties in the Senate are not significantly more cohesive than those in the Chamber. But roll-call votes do not directly measure party strength or influence. High levels of cohesion or low spatial dispersion *may* reflect party discipline of legislators, or they may reflect simple congruence of opinion within a legislative party (Krehbiel 1993).

However, party-switching provides an additional way to separate party discipline from ideological congruence. With significant party discipline, legislators

¹⁷Effectively, a dummy variable for each party controls for the fact that party dispersion, like party cohesion, varies from party to party.

¹⁸To account for differences in uncertainty about legislators' ideal points, I follow Lewis (2000) and use robust standard errors.

TABLE 5 Senate and Chamber Party Influence Scores

Dim.	Session	Chamber	Senate	Difference	SE Diff
1	49th	.33	.48	.16	.20
	50th	.49	.45	-.04	.17
	51st	.64	.42	-.22	.18
2	49th	.40	.40	-.00	.47
	50th	.85	.64	-.21	.37
	51st	.82	1.51	.69	.42

* $p < .01$.

that switch party should also change their roll-call voting behavior to be consistent with their new party's policy positions. Without party discipline, switchers should not change behavior. More formally, we can measure parties' influence over legislators by modeling legislators' estimated ideal points as follows:

$$\theta_{ij} = (1 - \alpha)L_i + \alpha P_j$$

where θ_{ij} is the observed ideal point for legislator i while in party j , L_i is legislator i 's preferred ideal point, P_j is Party j 's preferred ideal point, and α measures the party influence. When α is "1," all legislators in party j converge to P_j . When α is 0, all legislators in party j occupy their own preferred positions. When α is between 0 and 1, legislators balance the demands of their parties with their own preferences those of their constituents. Without party switching, α cannot be identified. But when legislators switch party, as they do with some frequency in Brazil, we *can* measure α .

Tables 5 compares estimates of party influence for the Chamber and Senate and tests for differences between them.¹⁹ On the first dimension, party influence in the Senate is relatively steady across the three periods, falling slightly from .48 to .42. Influence in the Chamber appears to be rising steadily—from .33 to .64. But again, there are no significant differences between the two institutions. On the second dimension, Chamber party influence again is rising over time, but Senate influence is much more erratic, actually falling outside the expected range of α (0 to 1). This may reflect relatively few switchers in the 51st Senate. But most importantly, the results confirm the

earlier roll-call analysis: Senate parties are not consistently more disciplined than those of the Chamber.

Discussion

My comparison of legislative party strength in the Brazilian Chamber and Senate finds no significant differences between legislative parties facing different electoral incentives. Examining measures of roll-call cohesion, spatial dispersion, and party influence from the last three legislatures, at the national, party, and district party levels revealed no evidence that electoral rules have any impact on legislative party strength.

These results have several implications for Brazilian politics and the study of electoral rules and legislative parties more generally. First, the analysis showed the risks of cross-country roll-call comparisons. The sign and significance of estimates flipped when I controlled for the legislative agenda by only including identical bills that both chambers voted on. But cross-country studies can rarely find identical legislation across cases. The implication is that multicountry studies of roll-call voting should be undertaken with extreme caution. Substantively, however, there are at least three possible explanations for null results: misspecification, Type II error, or an incorrect alternative hypothesis. In other words, either there is something wrong with my methods, or Senate-Chamber differentials were just overrun by random error, or OLPR does not weaken Brazilian legislative parties. I cannot definitively exclude any of these, but I will consider each possibility, leveraging what additional evidence is available.

In the first case, my nonresults might reflect a flawed test, perhaps due to omitted variable bias or a lack of independence between the two institutions. Although a comparison of the Senate and Chamber of Deputies has many advantages, it is not perfect. A number of differences between the two institutions might counteract the incentives of the electoral rules, and other Brazil-specific features might also explain the nonresults herein, including term length, vote sequence, progressive ambition, cross-legislative career paths, and size differentials. However, a brief examination of these likely suspects suggests that they are not confounding results:

Term Length: Senators enjoy eight-year terms, while deputies are elected for only four years. Perhaps Senators behave more independently early in their terms, hoping the party will have forgotten about their indiscretions/rebellious roll-call votes later, when they approach reelection. However,

¹⁹Ideal points (θ) for each legislator-party are estimated using WNOMINATE (Poole and Rosenthal 1997), and α is estimated using fixed-effects regression. P_j is estimated using the median ideal point of party members.

several tests for term length effects produced no support for this hypothesis.²⁰

Vote Order: Many major policy initiatives are introduced and voted on first in the Chamber and only reach the Senate after having been approved by the Chamber. However, this sequencing should increase the probability of a false positive, making my null results even more robust.²¹

Progressive ambition: Senators and Deputies may leave Congress to run for local, state, or national executive office, though most run for reelection (Samuels 2003; Pereira and Renno 2006). Legislators that run for other offices may vote more consistently with their party, because they anticipate seeking other offices that will require party endorsement. Since Deputies are more likely to seek other offices than Senators, this could raise Chamber cohesion relative to Senate cohesion, cancelling out the effect of electoral rules. However, previous work suggests that reelection seeking has little or no impact on legislative voting. Ames (2002) finds inconsistent relationships between progressive ambition and party unity; Desposato (2001) finds no impacts.

Cross-legislature career paths: Senators may run for the Chamber, and Deputies may run for Senate. Cross-house candidacies might make the average incentives identical across both the Chamber and Senate. But very few deputies run for Senate, and fewer Senators run for the Chamber.

Legislative Size: Size differences may lead to differences in organizational capacity; the larger Chamber has a stronger leadership than does the Senate. Centralized agenda control in the Chamber could raise indicators of party cohesion above those of the Senate, where a less active leadership might allow more divisive bills to reach the floor. This argument is consistent

with the literature discussed earlier—that in spite of the electoral rules, legislators' collective incentives have led to high levels of party cohesion (Amorim Neto, Cox, and McCubbins 2003; Figueiredo and Limongi 1995; Santos 2003). However, the isolated comparison of National Congress bills (Tables 3) restricted the two institutions to identical agendas and still found no differences.

There certainly may be some other omitted variable that explains away my results; such is the nature of all nonexperimental work. But a cursory examination of the most likely alternatives suggests that their influence is not driving my findings.

Type II error is always a possibility with null results. Given that several different tests, over several time periods, repeatedly found that Senate parties were not significantly more cohesive than Chamber parties, either the substantive effect of electoral rules is very small or my sample selection was especially unlucky. Coincidentally, research adopting similar methods in Europe has suffered similarly unlucky draws: most within-country tests for electoral rules' impact on legislative parties tend to find nonresults. For example, recent within-country comparisons of behavior by closed-list and SMD legislators in Italy, the Ukraine, Hungary, and Russia almost always find no difference in discipline for legislators elected under different types of rules (Ferrara 2004; Haspel, Remington, and Smith 1998; Thames 2006).²²

In a surprising contrast, cross-country studies consistently find that electoral rules do matter. Morgenstern (2004) compares legislative behavior across five countries and finds that electoral rules do have a significant impact on cross-country party cohesion. Carey (2004) compares party cohesion across 17 countries and finds evidence that electoral rules promoting intraparty competition reduce party cohesion. Are within-country studies especially unlucky? Or is something else going on?

This leads me to consider the third possibility: that the alternative hypothesis is incorrect: intraparty competition, *candidato nato*, and high district magnitude do not in fact weaken legislative parties. I suspect that the problem is that we have overemphasized the exogenous power of electoral rules and underspecified the power of informal institutions. There is a tendency in

²⁰If there are term effects, then the Senators up for reelection should be more disciplined than those that are not. This implies that the 49th and 51st Senate sessions should have higher cohesion than the 50th, because more senators are facing reelection in those legislatures. The data do not support this hypothesis: the 49th and 51st Senate sessions have lower cohesion than the 50th.

²¹Sequencing implies that the most controversial bills—those that might divide the governing coalition are less likely to make it to the Senate floor. Consequently, sequencing should push up overall cohesion for the Senate, increasing the possibility of a false positive. However, in spite of this bias in favor of a false positive, my tests lead to null results. Consequently, sequencing implies that my findings are especially robust. Further, by examining cohesion for both matched votes and all votes, I have already controlled for this. The bias described above ought to be most pronounced when comparing all votes, but minimal when comparing matched votes (Congressional bills that both houses voted on). Ultimately, both approaches led to the same result: Senate cohesion is not higher than Chamber cohesion.

²²Thames (2006) examines three cases and does find a list-smd cohesion difference for one of them, Russia. He argues that this difference will appear in less institutionalized party systems, suggesting that institutional rules' effects will be most observable in such cases. However, Haspel, Remington, and Smith (1998) did not find a difference in Russia, using different methods and studying an earlier time period.

recent scholarship to treat electoral rules in discussion, in methods, and in theory, as exogenous causal determinants of legislative party strength, and to give less attention to social and historical determinants of party systems. However, we know very well that many other factors shape legislative behavior and that electoral rules are frequently endogenous to these other factors. This implies a different view of electoral rules, one where they are part of a broader equilibrium that includes party organizations, voters' characteristics, and other factors, all of which combine and define incentives for elite behavior.

A closer look at several features of the Brazilian party system illustrates these points. Consider the role of party leaders' control over ballot access; Senate parties ought to be more cohesive than Chamber parties, because party leaders can punish Senators by denying them renomination. But the logic breaks down when societal variables do not match formal institutions. In Brazil, denial of renomination is an idle threat for most Senators, because voter partisanship is weak. An incumbent Senator could just switch party and take most of her support with her. Further, the state parties that nominate senators are often dominated by the senators themselves. So in this case, the importance of the formal institution (control of ballot access) is contingent on the existence of informal institutions (partisanship and extralegislative party organizations), which are largely missing in Brazil. When the situation is reversed, with strong informal but weak formal institutions, what happens? If voters are very partisan, parties are well-organized outside the legislature, but incumbents enjoy *candidato nato*, will the legislative party suffer defections from "tenured" incumbents? This scenario describes the situation facing Workers' Party in the Chamber of Deputies. That party simply adopted other measures to enforce discipline, expelling any rebellious member (Keck 1995). Because PT supporters are relatively partisan and party activists very militant, expelled PT deputies are likely to lose their votes, their volunteers, and their reelection bids. Where societal incentives for strong parties exist but formal institutions are weak, politicians modify rules or institutions to compensate.

This explanation resolves the disparate results of within-country and cross-country studies. In systems where parties are strong and labels meaningful, politicians choose and create electoral rules that preserve party strength. Where parties are weak and voter partisanship low, politicians prefer personalistic rules consistent with individual political entrepreneurs. Consequently, cross-country analyses should find significant correlations between electoral rules and legis-

lative party organization—reflecting the endogeneity of electoral rules to the broader political environment. In contrast, within-system analyses should find no significant differences regardless of electoral rules because legislators in upper and lower houses respond to the same broader informal institutions, even with variance in electoral rules.

My results and argument do not mean that electoral rules never have effects on legislative parties. Previous work has found powerful institutional effects on effective number of parties, campaign strategies, mandate types, and proportionality.²³ Were leading institutionalists given the authority to freely rewrite constitutions, they could probably also have some effects on legislative party cohesion. But politicians' creativity in preserving strong parties or preventing their formation should not be underestimated, and political scientists are unlikely to be granted such authority. Electoral institutions should be seen as part of a self-reinforcing equilibrium that also includes voters and party organizations. Although they are widely treated as key explanatory variables, electoral institutions are probably the weakest and least important of these three, at least when it comes to explaining legislative party strength.

These observations are not particularly new. Indeed, the first discussions of electoral institutions in Brazil were highly contingent on rich analysis of informal institutions and endogeneity (Ames 2001; Mainwaring 1991).²⁴ And in economics, the field that gave birth to rational choice institutionalism, scholars take institutional endogeneity and informal institutions very seriously (Woodruff, 2006). But recent work in comparative politics has been seduced by the methodological ease and theoretical simplicity of simple unidirectional relationships.

Answering two related questions are important next steps. First, which formal institutions' effects are mechanical and exogenous, and which are contingent and endogenous, and on which areas of legislative politics? Second, how does formal institutions' impact vary with the strength of informal institutions? Answering these questions is important for legislative studies as well as for political reformers. Many

²³For example, the Brazilian Chamber and Senate do differ in terms of party fragmentation. In 1995, the effective number of parties in the Chamber was 7.9 versus 2.9 in the Senate. However, note that in Chile, the military's imposition of low district magnitude did not reduce party fragmentation. Instead parties with strong social roots formed coalitions and negotiated informal noncompetition agreements.

²⁴See also Ames (1999), who argues for taking the endogeneity of institutions seriously.

countries blame their woes on their political institutions. But many electoral system reforms have had very limited effects on party systems, reinforcing the need for research in this area.

I suggest two areas where political science may find answers to these questions. First, better specification of the theoretical roots of institutions will help clarify our predictions, assumptions, logic, and appropriate tests. In particular, formal theory on the relationship between electoral rules and legislative party cohesion is needed. Clarifying underlying assumptions that drive formal results will help us identify the informal institutions on whose presence formal institutions' impact are contingent. Second, careful research design may help us parse out which formal institutions matter and which do not. Multicase studies with instrumental variables for formal institutions are one approach that has been used with success in economics.²⁵ We should also seek natural experiments, including cases of institutional change. Finally, work that combines within and across-country comparisons could leverage within-country variance in formal institutions and cross-country variance in informal institutions.

But at least for Brazil, my findings suggest that electoral reforms alone will have limited short-term impact on legislative party strength. Even a current proposal for a closed-list proportional representation system might not have much impact. Given weak partisanship among voters, incumbents with proven vote-drawing ability will still have leverage with party leaders. Proven vote-getters could negotiate with multiple parties for high list spots and switch to the party making the best offer. Or the result could be like Colombia's Senate, where closed-list PR has been transformed into SNTV, since nearly all viable candidates form their own lists. Without the informal prerequisites, even major changes in formal rules may have no impact on legislative behavior.

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²⁵See Woodruff (2006) for some examples from the literature.

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