THE ORIGINS AND IMPACT OF INFORMAL RULES: THE BRAZILIAN LEGISLATURE IN COMPARATIVE PERSPECTIVE

Danilo Medeiros
Department of Politics
University of Virginia
dbm7dm@virginia.edu

Carol Mershon
Department of Politics
University of Virginia
mershon@virginia.edu

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Abstract. Under what conditions do legislative party leaders create an informal rule that conflicts with a formal one? We argue that legislators are relatively likely to adopt a new informal rule when they face particular types of changes in the legislature or in the legislature's relationships with an external actor. Legislators are relatively likely to invent an informal rule at odds with a formal one both when a subset of them perceives a shift in the costs and benefits of formal institutions and when this subset, led by the most powerful among them, can coordinate on the informal rule. To appraise our argument, we compare two informal rules in the Brazilian legislature. By one informal rule, party switching in the Chamber of Deputies proceeded under formal rules intended to prohibit it. We also examine constitutional amendments gaining approval despite circumvention of the constitutional requirement that both houses of the legislature approve exactly the same reform. With Brazil providing our two in-depth cases, we close by briefly considering informal rules in Italy and Sweden.

1. Introduction

Under what conditions do legislative party leaders create an informal rule that contravenes a formal one? Why do they and the legislative rank and file adhere to the new informal rule under some conditions, and yet shift to complying with the formal rule under other conditions? These questions not only hold intuitive interest but also advance the frontier of legislative research. They integrate the theoretical inquiries guiding Helmke and Levitsky's (2006b, 3–4) influential research, which centered on the interactions between formal and informal institutions, the origins and effects of informal rules, and the bases for change and stability in them. Our questions enable us to tackle both the conceptual challenge of clarifying what informal institutions are and are not, and the methodological challenge of measuring behavior conforming to one rule or another (Helmke and Levitsky 2006b, 3–4). Our second question places us at the research frontier identified by O'Donnell (2006, 286).

Building on Helmke and Levitsky (2004, 2006b) and Mershon (1994), we argue that legislators are relatively likely to adopt a new informal rule when they face particular types of changes in the legislature or in the legislature's relationships with an external actor. Legislators are relatively likely to create an informal rule conflicting with a formal one both when a subset of them perceives a shift in the costs and benefits of formal institutions and when this subset, led by the most powerful among them, can coordinate on the informal rule.

We appraise the argument via in-depth study of the emergence and operation of two informal rules in the Brazilian legislature. First, we look at party switching proceeding under formal rules intended to prohibit it. In October 2007, the Superior Electoral Court (TSE) issued a ruling that mandated removal from office for legislators who switched party. In the TSE ruling, the legislative seat belongs to the party (or electoral coalition), not the individual. Consider, however, that if a legislative party leader does not appeal to the TSE after seeing her party's size shrink due to switching, the switcher can retain the seat. By the informal rule devised in May 2009, legislative party leaders did not in fact report the exit of switchers. Rank-and-file legislators joined party leaders in upholding the informal rule: legislators switched expecting that the informal rule, not the formal one, would apply. To convey this evolution in rules and behavior, Figure 1 depicts the total number of party switches per quarter in the Chamber of

Deputies since 1987, the opening of Brazil's first democratic legislature.[1] The red dashed line marks the date of the TSE's 2007 ruling on party loyalty. The grey vertical lines indicate the opening February session of a new four-year legislature, elected in October of the preceding year. As shown, the switching rate drops to zero after the TSE's 2007 ruling. Immediately after the quarter ending in March 2009, we observe a resumption of party switching in the Brazilian Chamber, due to the May 2009 emergence of a new informal rule. The figure also conveys a degree of regularity in fluctuations in switches starting in May 2009, discussed below.

[Figure 1 about here.]

Second, we investigate constitutional amendments gaining approval despite their circumvention of the constitutional requirement that both legislative chambers approve exactly the same reform. The Brazilian Constitution provides that, as in the French "*navette* system" (Tsebelis and Money 1995), constitutional proposals must be analyzed by Deputies and Senators alternately and indefinitely until they approve the same draft. By the new informal rule, the reviewing house (or the originating house, if it returns the bill with amendments) hives off the uncontroversial portion of a bill and enacts that portion without sending it back to the originating house (or reviewing house if the original house analyzed the bill more than once). The controversial portions of what started as a unified bill typically languish unapproved. Moreover, constitutional reform becomes possible when otherwise it would have stalled.

Our empirical analysis focuses chiefly on Brazil and briefly treats Italy and Sweden as subsidiary cases. For Italy, we investigate the informal rules conflicting with constitutional provisions on the role of the President in government formation. For Sweden, we look at an informal revision of executive-legislative relations at odds with the Constitution. Our choice of cases affords variation in formal institutions, and enables us to observe different types of informal rules, including some competing with the formal rules in operation. So designed, the paper contributes to scholarship on the emergence and evolution of informal rules and the extent to which informal rules are fulfilled and are at odds with formal rules. The paper also contributes to the study of legislative parties, legislative party leaders, bicameralism, and constitutional reform.

[1] Members of Congress elected in 1986 took their seats in the inaugural democratic legislature on February 1, 1987, but were also elected to the National Constitutional Assembly. Hence, between that date and October 5, 1988, they served as both ordinary legislators and drafters of the new Constitution.

2. Perspectives on Formal and Informal Institutions

Institutions may be defined as constraints on human behavior that rest on shared expectations and understandings of what behavior is likely and what is not, what is permissible and what instead will meet punishment. Political institutions pertain in some way to the use of power (e.g., Calvert 1995; Knight 1992; Mahoney and Thelen 2010; North 1990; Ostrom 2015; Riker 1990; Shepsle 1989, 2008). With Helmke and Levitsky (2006b, 5), we define informal institutions as "*socially shared rules, usually unwritten, that are created, communicated, and enforced outside of officially sanctioned channels*" (emphasis in original; cf. Knight 1992; Mershon 1994; North 1990). Like O'Donnell (2006, 286) we further underscore that informal institutions have the property that they are common knowledge.

Political institutions typically work to uphold the interests of the powerful (e.g., Knight 1992). Whenever a reform of rules appears that at least at first blush does not favor the powerful, political scientists have a compelling puzzle to investigate. For instance, why would a legislature in a dictatorship agree to "commit institutional suicide" by enacting legislation paving the way for a democratically elected assembly? Gunther (1991, 48) framed his analysis of the Spanish transition from authoritarianism to democracy in just these terms. Why would political parties controlling the executive introduce new electoral institutions bound to weaken them? This puzzle has anchored vigorous debate among scholars from multiple research traditions on the origins on proportional representation rules in Europe (e.g., Boix 1999, 2010, Cusack, Iversen, and Soskice 2007, 2010; Kreuzer 2010; Leemann and Mares 2014). The questions at the heart of these studies spotlight the wisdom that institutions privilege individuals and collectivities advantaged by the status quo. The wisdom, in turn, makes clear that the rise of informal rules deviating from formal rules is keenly perplexing. If advantage reigns and is entrenched in the formal rules, why would actors shift to new informal rules? The puzzle deepens when the new informal rules clash with the formal ones.

Despite recent advances, relatively little research exists on informal rules. The comparative study of Helmke, Levitsky, and collaborators (2004, 2006a) stands as one prominent exception. Case studies seeking to fit the analysis of the evolution of informal rules in a broader framework join the Helmke and Levitsky volume (e.g., Grzymala-Busse 2010; Krouwel and Koedam 2015; Mershon 1994). The specific insights of the case studies complement but do not replace those of the landmark Helmke and Levitsky (2006a) volume.

Helmke and Levitsky (2006) identify several reasons for the rise of informal rules. They assert that "incomplete" formal rules can spur the creation of informal rules (19), and one element of our logic subsumes this idea. In addition, Helmke and Levitsky (19-20) suggest that the weakness of extant formal rules and the pursuit of publicly unacceptable aims can prompt actors to turn to informal rules. We leave these hypotheses aside for the purposes of this paper. As noted, we focus instead on specific types of changes in the legislature and in its relationships to external actors. We consider as well the costs and benefits of reforms of formal institutions. Moreover, the reasoning we develop shares with that of Helmke and Levitsky (2006, 21) and Mershon (1994) an emphasis on unequal bargaining power. We thus emphasize also the need for coalitions mustered by the most powerful to back any change in rules, whether informal or formal.

3. Argument: Creating and Complying with New Rules

We assume that legislators, like all political actors, have imperfect information and operate under uncertainty. Legislators and all political actors seek institutions that advantage them. Elected politicians, including legislators, are strategic, and their success at winning office testifies to their strategic acumen. In our argument, legislators have the capacity to maneuver around institutional constraints, and to codify their maneuvers as informal rules. The questions are when they are most likely to do so, and when those rules fly in the face of the written rules.

Legislators learn about the workings of institutions by engaging in repeated interactions as structured by the rules they face. Their experience in time may bring them to perceive a gap between what they anticipated and what they have observed as the institution's effects.[2] Legislators may be motivated to attempt to adjust the rules as a result. Consider, too, that when a new formal rule is introduced within the context of the other institutions structuring their behavior, legislators may reach a new understanding of institutional effects, and may have incentives to revise the extant rules. This reasoning culminates in the first two hypotheses, the first of which regards interactions occurring within the legislative arena.

[2] This element of the logic subsumes Helmke and Levitsky's (2006b, 19) incompleteness hypothesis on the creation of informal rules.

H1: *Legislative arena*: Legislators should be relatively likely to devise a new informal rule when at least one of three features of the legislative arena changes.
H1a: When the *balance of power* in the legislature changes, legislators should be relatively likely to create new informal rules.
H1b: When *preferences* shift in the legislature, legislators should be relatively likely to create new informal rules.
H1c: When *new actors* arise in the legislature, legislators should be relatively likely to create new informal rules.

The second hypothesis, like the first, envisions a process in which legislators learn, given repeated interactions, and in which the repeated interactions lead legislators to update their expectations about the operation of institutions. And legislators may in consequence be induced to attempt a reform of rules. Unlike the first hypothesis, the second focuses on interactions involving actors outside the legislative arena. The need to look beyond the legislature is perhaps clearest in a presidential regime, in which the president derives independent authority from an election separate from legislative elections, has resources at her disposal independent of those of the legislature, and exerts some degree of authority over the legislature and can to some degree check legislative action. Yet the logic on actors external to the legislature can also apply to judicial bodies and jurists of various kinds. As legislators observe change in an independent, powerful judiciary, here too they may be motivated to try to revise rules.

H2: *Legislative and non-legislative actors*: When change appears in at least one of three features of the relationships between the legislature and an actor external to it (the executive or judiciary), legislators should be relatively likely to devise a new informal rule.
H2a: When the *balance of power* between the legislature and the external actor changes, legislators should be relatively likely to create new informal rules.
H2b: When the external actor's *preferences* shift, legislators should be relatively likely to create new informal rules.
H2c: When *new actors* enter the external body, legislators should be relatively likely to create new informal rules.

When are legislators likely to devise informal rules conflicting with formal ones? The simple statement that political institutions both empower and constrain political actors accompanies, of course, a complex reality. At any given time, multiple institutions interact, any given rule that empowers a given actor constrains another actor (or the same actor, if a given condition applies), and multiple actors are jostling for advantage while maneuvering by or around the rules. And conditions holding at a given time do not persist. To illustrate, when national elections hand defeat to a party once seen as invincible, a subset of legislators can come to perceive that an institution that once favored them no longer does. That subset can draw up a new balance sheet of the costs and benefits of abiding by the extant bundle of formal rules. That subset can thus come to prefer some change in formal rules. Yet institutional reform hinges not merely on preference but also on power. A coalition of the most powerful must narrow attention on one reform option and spearhead and coordinate movement in favor of it. In the legislature, coalitions are made more and less likely by policy positions, and power is denominated in seat shares and reinforced by executive responsibility. Thus, if a subset of legislators shifts their perceptions of the relative costs and benefits of extant formal rules, and if a coalition of the most powerful comes forward to coordinate action on reform, then a change in rules should ensue. To be sure, it can be quite costly to rewrite some formal rules: constitutions routinely require legislative supermajorities for particular rules. This suggests that, if the costs of changing a given formal rule are relatively high, then the coalition backing reform should be likely to focus on a change in informal rules. This logic leads to the third hypothesis.

> *H3*: *Relative costs of reform*: Legislators should be relatively likely to establish informal rules at odds with formal ones when a change occurs that brings a subset of them to perceive both that extant formal institutions will likely yield them relatively few future net benefits and that the costs of altering formal institutions will likely be relatively high. A coalition of the most powerful within the legislature should share such perceptions and should muster sufficient legislative support to coordinate on a new informal rule.

The third hypothesis makes transparent the twofold assumption underpinning all hypotheses we advance. We assume that the collective action problem among legislators can be

surmounted in particular circumstances. We assume, moreover, that inequalities in power are central to coordinating on a new informal rule.

We also consider as a rival hypothesis one focused on the rhythms of the electoral cycle. A distinguished research tradition, extending the highly influential work of Mayhew (1974) on "electoral connection," has assumed that legislators are "single-minded seekers of reelection" and has argued that in varied ways electoral imperatives structure legislator behavior. It stands to reason, then, that when elections draw near, legislators should be relatively likely to engage in activities they think will appeal to voters, whatever those activities might be. As elections approach, moreover, legislative party leaders should be relatively highly attuned to the need to present their teams of incumbent and non-incumbent candidates in ways that will earn voters' approval and will assure a positive electoral showing for their party. Hence, the electoral calendar should leave an imprint on legislators' behavior. Moreover, this logic should apply in distinct contexts. For the legislatures we examine, then, it should matter little, e.g., whether the legislature operates in a presidential (Brazil) or parliamentary (Italy) system or whether party organizations on the ground and in the legislature are relatively weak (Brazil) or strong (Sweden). The electoral calendar logic should even apply where, as in Brazil, national-level legislators relatively often seek subnational office rather than running for reelection to the *Congresso Nacional*. Thus, legislators' propensity to turn to the creation of informal rules that advantage them, and to conform to informal rules that contravene formal rules, should reflect their drive for electoral advantage, and should reflect the temporal rhythms of the electoral cycle.

> *H4*: Legislators' choices on devising and adhering to informal rules should in some way reveal their responsiveness to the imperatives of the approach of elections.

It deserves emphasis that we deliberately avoid the "kitchen sink" approach to alternative rival hypotheses. The rival we isolate for analysis is grounded in one of the most venerable research traditions in legislative studies. Hypotheses in hand, we evaluate them above all using evidence on two informal rules in the Brazilian legislature, and then briefly take up informal rules in Italy and Sweden.

4. Informal rule on party switching: empirical analysis

We first treat operationalization of hypotheses, and then turn to the analysis itself. Our data for Brazil are provided by the CEBRAP Brazilian Legislative Database (Figueiredo and Limongi 1999, 2000).[3] This dataset tracks party switching, roll call votes, size of parties within the legislature, membership in executive coalitions, and other features of Brazilian politics. We work with information between 1987 (date of the inaugural democratic legislature) and 2015.

Along with Heller and Mershon (2009a, 8) and a range of other analysts (e.g., Desposato 2006; Heller and Mershon 2009b; Mershon and Shvetsova 2013a, 2013b; Nokken 2009) we define a "switch" as "any recorded change in party affiliation on the part of politicians holding or competing for elective office." Our unit of analysis is the quarter in the legislative term, from 1987 to 2015. For each quarter, we observe the number of legislators who switch out of parties; if a sitting legislator switches multiple times, we include each of her switches in our count, as we focus on the switch, not the individual legislator. Therefore, our ***dependent variable*** is the count of party switches per quarter. As displayed in the first row of Table 1, the mean over the entire period of study is almost 16 switches per quarter, whereas, with the informal rule in effect, the mean is 8.4. Even these descriptive data suggest that two countervailing forces might be operating: the informal rule might make it possible for some level of party switching to continue, whereas the electoral court's ruling on party loyalty might to some degree reduce switches.

[Table 1 about here.]

Figure 2 offers a closer, albeit still descriptive, look, and depicts the distribution of the quarterly count of party switches before and after the informal rule arose. As illustrated, many quarters – precisely 18 – have zero switches. We interpret these results as demonstrating the effects of two countervailing forces, in place due to two rules: the TSE's 2007 decision did reduce party switching.[4] Yet the informal rule invented in 2009 has permitted party leaders to accept legislators exiting their original parties.

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[3] The Brazilian Legislative Dataset was organized by Professors Figueiredo and Limongi's research team at CEBRAP. Their team continuously updates the dataset.

[4] As Freitas (2009, 2012) demonstrates, the 1997 electoral law established that free airtime should be allocated according to the share of seats on the first day of the legislature. Hence, legislative party switching only affects the distribution of free airtime if it happens between the election and the day the newly elected legislature opens. Moreover, since 2007, party switching does not affect the distribution of legislative resources such as committee assignments and positions in the *Mesa Diretora* (the directing board of the Chamber of Deputies). The allocation of such resources hinges on parties' shares of seats won at the last election.

Together, Table 1 and Figure 2 preview our rationale for model specification. As detailed below, we use Poisson models because our dependent variable, again, is the count of switches per quarter. A zero-inflated Poisson model is the appropriate specification for a count dependent variable with many zeros.

[Figure 2 about here.]

A focus on timing underpins much of our operationalization of the first hypothesis on the legislative arena. As summarized in the first row of Table 2, for *H1a*, on the *balance of power*, we isolate the first two quarters after an election is held, creating a dummy coded 1 to denote those two quarters (0 otherwise), on the quite reasonable assumption that an election redefines party seat shares and thus shifts the partisan balance away from the pre-electoral status quo. Soon after the election, on the logic of *H1a*, legislators should be likely to create informal rules or abide by new informal rules on switching, if they already exist.

[Table 2 about here.]

To operationalize *H1b*, on *preferences* in the legislative arena, we home in on those quarters in which party medians evince a change. We create a dummy variable, coded with the value of 1 in those quarters in which party medians – measures after estimating dynamic ideal points for all federal deputies – change considerably in comparison to their position in the previous quarter; the dummy is coded 0 otherwise. On the logic of *H1b*, legislators should be relatively likely to create or comply with new informal rules when preferences in the legislature shift.

For *H1c*, on the *rise of new actors* in the legislature, we isolate the first two quarters after a new party enters the lower chamber, creating a dummy coded 1 to denote those quarters (0 otherwise). Informal rules should be devised or followed close to the emergence of new parties.

To operationalize *H2a*, on the *balance of power* between the legislature and external actors, we measure the dominance of the executive on the legislative agenda. This variable captures the percentage of laws enacted during a given quarter that were initiated by the President. We assume that, the greater the President's capacity to initiate bills that then win approval, the more she genuinely dominates the legislative agenda. On the logic of *H2a*, legislators should be relatively less likely to create or adhere to new informal rules when the

balance of power shifts in favor of the executive.[5] To capture such a shift, we take the difference between the percentage laws initiated by President in q-1 (where q-1 denotes the prior quarter) and that percentage in q (the current quarter). Thus, the measure we use is:

$$(\text{percent initiated President}_{q} - \text{percent initiated President}_{q-1}).$$

For *H2b*, on the external actor's shift in *preferences*, we create two dummies. One variable indicates the first two quarters after a change in the president's party (due to an election), assuming that presidents from different parties are very likely to exhibit pronounced differences on preferences. The alternative specification is a dummy variable denoting the first two quarters after a change in the party composition of the cabinet (due to the president's choice). Soon after a modification in the president's party or in the party composition of cabinet, on the logic of *H2b*, legislators should be likely to devise or follow informal rules.

The operationalization of *H2c*, on the entrance of *new actors* in the external body, focuses on changes in the composition of the TSE. We create a dummy variable coded 1 to indicate the first two quarters after a new justice is assigned, and 0 otherwise. Informal rules should be less likely to arise or be followed after modifications in TSE's composition due to legislators' uncertainty on the impact of new justices in the court's decisions.

Institutional constraints established by the 1995 electoral law, altered in turn by the 2015 electoral reform, pose challenges for operationalizing H4, on the *electoral cycle*. The 1995 electoral law stipulated that, one year before votes would be cast, a candidate had to be registered as an official member of the party on whose banner she intended to run for (re)election. Thus, under the 1995 provision, which we call *rule E* (for electoral), legislators planning to run for re-election could not switch parties starting one year before election day. We created two dummies to deal with the constraints imposed by rule E. The first variable is coded 1 to denote the four quarters when the *ban on pre-electoral switching* is imposed for those seeking (re)election (0 otherwise). The second variable, reflecting the *electoral cycle*, is coded 1 to indicate the one quarter immediately before the ban on pre-electoral switching comes into effect. On the logic of *H4* and *rule E*, legislators should be likely to devise and abide by informal rules on switching in the quarter leading right up to the ban on pre-electoral switching and less likely during the ban.

In the rightmost column of Table 2, we indicate the expected sign of the coefficient for

[5] On this logic, legislative actors should have no motivation to introduce new rules when the shift in the balance of power favors them.

each variable. A positive coefficient indicates that we anticipate relatively great legislative switching even after the TSE issued its ruling on switching, once the informal rule had come into play.

We have reason to believe that two different data generating processes are at work, one for the group of zeros (quarters without party switches) and another for the group of non-zeros (quarters with at least one switch). To account for the difference in the two data-generating processes posited with and without the TSE constraint in place, we use a "with zeros" Poisson model, which permits distinct expectations for the overall magnitude of switching in the two types of settings (e.g., Long 1997; Mullahy 1986). We include a zero-inflation step (with a logit link) to address the idea that switching should be relatively rare after the electoral court ruling on party loyalty. We use the TSE dummy variable - coded 1 for quarters when the TSE ruling is in effect (i.e., after Resolution 22,610 was published on October 25, 2007), and 0 otherwise - as the inflation factor. Whenever the TSE ruling was in force, it should have inflated the presence of zeros in the quarterly counts, i.e., decreased switching.

Table 3 displays six models of zero-inflated Poisson regressions on the count of quarterly party switches. They all include a *post-TSE resolution* inflation factor. The first three columns of Table 3, reporting on models 1 through 3, include the dummy on shifts in the president's party, whereas the last three columns include the dummy on shifts in the composition of the cabinet, a different operationalization of *H2b*. Models 1 and 4 include only the dummy denoting quarters before the ban on pre-electoral switches, while models 2 and 5 only have the dummy for the one-year ban period; finally, models 3 and 6 include both (cf. Mershon and Shvetsova 2013a, 117–23).

[Table 3 about here.]

As indicated by the sign and significance of the coefficient, we find clear support in all models for *H1a* (on change in the balance of power within the legislative arena), *H1c* (on the entrance of new actors in the legislative arena), *H2a* (on change on the balance of power between legislative and non-legislative actors), and *H4* (on the period before the ban on pre-electoral party switches). To judge from this evidence, legislators devise or abide by informal rules in response to shifts in the balance of power, both inside and outside the legislature. Moreover, the electoral cycle matters: in particular, legislators tend to switch as the start of the ban on pre-electoral party switching approaches. We interpret such switching as pre-emptive moves on the

part of those legislators seeking reelection, a finding consistent with Freitas's (2012, 951) study of the first electoral cycle after the TSE ruling.

The data disappoint some of the expectations here. We find no support for *H1b*, on the change of preferences within the legislature, or for *H2c*, on the assignment of new justices to the electoral court. The signs of the coefficients on the variables tapping *H2b* (change of preferences outside the legislature) run counter to expectations; and when the variable is specified as a dummy capturing changes in cabinet composition – models 3 through 6 – the coefficients attain statistical significance at the 5% level. This last piece of evidence indicates that legislators are *less* likely to devise or adhere to informal rules when they face changes in cabinet composition. Does uncertainty about a new executive induce risk aversion on the part of legislators? This intriguing question arises in view of the evidence, but is by no means resolved.

No support emerges for one element of the rival alternative to our argument, the idea that the ban on pre-electoral switches significantly reduces party switching. The fact that no more than 60% of federal deputies seek reelection – and that the ban on pre-electoral party switching applies only to those running – might help account for this pattern. On the other hand, once more, we discover that legislators tend to switch parties preemptively, just before the ban enters into effect in each election season. This evidence aligns with other work highlighting the importance of the electoral cycle of party switching in Brazil. Freitas (2012), for instance, argues that party switching tends to increase before the period when rule E is in effect and close to the deadline date defining the free airtime available to each party on radio and television during electoral campaigns. Freitas shows that, until a reform of the rules on the use of this resource, some parties strategically managed the entry of switchers in numbers sufficient to boost their free airtime minutes, whereas other parties strategically adjusted to exits of deputies without losing any free airtime minutes because they managed to maintain a seat total at a precisely targeted threshold.

Across all models, it is clear that, as expected, the inflation factor inflates the appearance of zero switches in the quarterly observations. In other words, the TSE decision contributed to an increase in the number of quarters in which not a single federal deputy switched party.

To illustrate the importance of these findings, we estimate the average marginal effects on the predicted number of quarterly party switches in Brazil. Figure 3 depicts the estimates for model 6. The red horizontal line flags a zero average marginal effect: when the 95% confidence

intervals touch or near this line, the estimate is not statistically significant at the 5% level. Whereas Figure 3 portrays the average marginal effects exerted by each variable in our analysis, our discussion focuses on the factors tapping the hypotheses we have advanced that have found support, and encompasses as well one component of the rival hypothesis, the "rule E" quarter just before the ban on pre-electoral party switching.

[Figure 3 about here.]

We turn first, then, to consider quarters in the immediate aftermath of an election as marking a shift in the legislative balance of *power*. As shown to the left of Figure 3, compared to quarters that are not close to elections, those first two quarters just after an election have almost 11 more party switches, on average, while taking into account changes in the legislative arena, shifts in the relationships between the legislature and an actor external to it (the executive or judiciary) and features of the electoral cycle (application of "rule E"). Compared to quarters that are not close to the rise of new parties in the legislature, those first two quarters just after the emergence of *new parties* experience around 12 more party switches, on average, after controlling for all the variables included in model 6. As for changes on features of the relationship between the Chamber of Deputies and external actors, we observe that as the *executive's dominance* increases by 1 point from one quarter to the next, the number of party switches decreases almost 13 points, on average, after accounting for the variables included in model 6. Finally, what we have called "rule E" seems to boost legislators' propensity to switch, but only just before the ban on pre-electoral party switching comes into force (one year before election day). The closest quarters to the start of the ban have almost 12 more party switches than quarters not affected by "rule E," on average, after controlling for changes in the legislative arena and external to it, and also during the period of the ban.

The findings here uphold some but not all of our hypotheses. We next discuss in depth the origins of informal rule on party switching and how legislators comply with it even today.

a. Devising and maintaining the informal rule

In what follows, we offer a narrative to assess our third hypothesis. We have demonstrated in the quantitative analysis that legislative party switching resumed in May 2009, even while the 2007 TSE ruling remained in effect. Qualitative analysis is now needed to track

the emergence and operation of the informal rule that allowed party switching to proceed, despite the TSE's decision.

Relatively high rates of legislative party switching have characterized Brazil since the inception of the democracy in the late 1980s (Desposato 2006; Freitas 2012; Melo 2004). Indeed, our data indicate that between 1987 and 2015 approximately 35% of the Federal Deputies switched parties at least once and the House registers around six switches per month. Although party switching is still a phenomenon in the *Congresso Nacional*, the rates have varied considerably throughout almost 30 years of Brazilian democracy. In 2008, for instance, only one federal deputy switched parties. This seems to reflect the attention that courts gave to party infidelity one year before that. In 2007, the Superior Electoral Court (TSE), responding to an inquiry made by the Party of the Liberal Front (PFL, now Democrats), ruled that legislative mandates do not belong to the member of Congress (cf. *Resolução nº 22,526, TSE*),[6] The interpretation was that the seat was awarded to the party (or the electoral coalition) through the proportional representation system (PR). Even though Brazil uses open list PR, the TSE ruled that a party has the right to request its seat back if a legislator switches out of it. Hence, if a federal deputy loses her mandate due to party disloyalty, the seat will be redistributed to the next alternate candidate in the party's (or electoral coalition's) list. Note that special elections are not possible; alternates are ordered according to the number of votes they receive in the regular election.

The TSE handed down its decision in March 2007, but following an escalation of judicial disputes and inquiries, which also involved the Federal Supreme Court (STF), the criterion to petition party switchers' removal from office was established by Resolution 22,610 from October 25, 2007 (cf. Clève 2012). This resolution issued by the electoral court defined that parties have 30 days after a legislator switches out to request their seat back by formally petitioning the electoral justice system (cf. *Resolução 22,610, TSE*). If the party does not take action within this period, then electoral prosecutors or any interested party (e.g., alternates who would benefit from a switcher's loss of mandate) have 30 days to go to the courts. However, the resolution also established that the switcher can defend her mandate by alleging a party merger

[6] All official documents issued by the Superior Electoral Court (TSE) and its resolutions are available at http://www.tse.jus.br/arquivos/pagina-de-arquivos

(when two or more parties merge into one), the creation of a new party, significant change in the party's manifesto, and/or severe personal discrimination from party leaders or any other member.

The immediate results of this judicial interpretation were astonishing. Quarterly switching rates decreased from 18 before the TSE's decision to almost zero in the first year after the resolution. It was only in May, 2009, that legislators started switching again, although without reaching the same level as before: the quarterly mean of party switches has hovered around 8.5 since then. These simple numbers suggest that the new constitutional interpretation clarified by the TSE's resolution was able to deter legislators willing to find a new party, but after a period of uncertainty about the implications of the new rules they resumed their previous behavior, although at lower rates. Freitas (2012) already observes that the TSE ruling decreased but did not eliminate legislative party switching.

Why did the threat of removal from office not reduce party disloyalty near or down to zero? We argue that legislative party leaders devised an informal rule by which they tolerate most if not all party switching, and thus do not file petitions to request that party switchers lose their mandate. The legislative rank and file in turn trusts that party leaders not only will accept them if they switch into a new party but will also let them stay, by failing to take the step of petitioning the electoral court. Data provided by the TSE[7] show that since the resolution on party loyalty was published in October, 2007, only 75 petitions requesting switchers' removal from office were filed in the electoral court. Moreover, parties issued only 18 (24%) of these requests. The others were filed by electoral prosecutors or alternates (candidates in the party list waiting to be called after a legislator leaves office).

Parties did not exercise their right to request switchers' removal from office very often, and when they did they were not very successful: remarkably, only two federal deputies have been removed from office due to party disloyalty since TSE's resolution (cf. Congresso em Foco 2008, 2013; Folha de S. Paulo 2008; G1 2008). Moreover, electoral justices were not able to judge the petitions before the end of the legislature (leaving 14 cases without a final decision). Federal Deputy Rodovalho, for example, lost his seat due to party switching, but he was never removed from office because the TSE made its decision very close to the end of the legislative term and the deputy was able to make a final appeal, which did not gain a hearing before the

[7] This data was requested via TSE website and we checked the information on their search section: http://www.tse.jus.br/jurisprudencia/pesquisa-de-jurisprudencia/jurisprudencia

term ended (cf. Zampier 2010). And in 36 other cases party switchers were allowed to keep their seats in the lower chamber alleging coercion and/or lack of opportunities within the party, or programmatic changes.[8]

At the same time that parties have a hard time trying to get their seats back due to legislators' disloyalty, they have genuine interests in party switching – and, in turn, few incentives to go to the electoral court. As ample empirical research demonstrates, party leaders benefit from accepting in-switchers because as party size increases, they tend to have greater sway in setting the agenda, greater influence over policy, and, other things equal, a more visible legislative contingent at the next election (e.g., Heller and Mershon 2008, 2009a, 2009b; Kato and Yamamoto 2009). Members of the legislative rank-and-file, for their part, benefit from the opportunity to switch in response to changes in public opinion as manifested in, e.g., subnational elections or surveys, to changes in their own preferences or their home party's policy preferences, or to the rise of new offices, as when a new executive or a new legislative committee forms during the legislative term (e.g., Heller and Mershon 2005; McMenamin and Gwiazda 2011; Mershon and Shvetsova 2013a).

It deserves emphasis that the TSE ruling on party loyalty and also the Federal Supreme Court decision supporting the electoral court ruling were grounded in interpretations of the Constitution and the electoral laws. Thus, party leaders and the legislative rank and file could have sought to exploit the existing formal rules in efforts to continue the practice of switching. For instance, they could have introduced and approved changes in legislation. Granted, to enact new legislation permitting switching, Congress would have needed to pass electoral reform. Such attempts always entail high costs and high uncertainty. For instance, after a series of demonstrations against the quality of public services and corruption in June, 2013, the government promised to give priority to political reform; despite those promises, after several months of debates, Congress only passed a small electoral reform focused basically on constraints on private campaign funding (cf. Folha de S. Paulo 2015; Mendes, Costa, and Passarinho 2013; Nassif 2015).

Given the high costs attached to changing the electoral laws – particularly if the goal is to allow party infidelity, a highly salient issue in the media and the public – and the interests that

[8] This data was made available to us after requesting the TSE. The petitions can also be found in the TSE website: http://www.tse.jus.br/jurisprudencia/pesquisa-de-jurisprudencia/jurisprudencia

party leaders share with legislators in maintaining some level of party switching, devising an informal rule could serve as a means to the end of permitting switching while avoiding the difficulties entailed in securing official reform. The available evidence from legislative records, historical accounts, and interviews with party leaders and legislators suggests that these actors, led by the largest ruling parties, coordinated action on the May 2009 informal rule enabling party switching.

The evidence favoring this hypothesis is bolstered by the relative infrequency, noted above, of party requests filed against switchers in the electoral court. This pattern holds true especially for the larger parties. In contrast, the PRTB, a very small party, is the one that has petitioned the TSE most often. As also discussed above, parties can benefit from party switching. On the flip side, playing by the formal rules can seem costly, uncertain, and ineffective. Why should a party leader appeal to the electoral court knowing that a final decision is rarely made before the end of the legislative term? The leader will probably not be able to retrieve the seat for her party, as openly acknowledged by party leaders. For instance, Jovair Arantes (PTB leader), when asked about why he would not petition the TSE against switchers, asserted that "It is not worth the fight, since there will not be time for the electoral court to judge the case" (Congresso em Foco 2013). Moreover, by petitioning the TSE, the party leader may lose the support of a politician who could still act in the legislature as a useful ally even after migrating to another party; switchers in Brazil do not necessarily have different preferences with respect to their original party's median. On this issue, Carlos Sampaio (PSDB leader) said that "two [deputies who switched out] had talks with [the PSDB] President Aécio [Neves] and left the party on good terms" (Congresso em Foco 2013). Even if the electoral court rules in favor of removing the switcher from office, the party leader may not know how this alternate federal deputy will behave once in Congress. As a party leader is well aware, due to the formation of electoral coalitions and the open-list PR system, the alternate (*suplente*) is not necessarily affiliated with the party of the outgoing legislator he replaces.

Moreover, the legislative term initiated in 2007 was the first to use the new formal rule that stipulated that party seat shares, as defined by electoral results, determined assignments of such crucial legislative resources as committee posts. Before that term, party leaders could count on obtaining more legislative resources during the term if switching increased their parties' share of seats. Given the uncertainty introduced by the TSE's ruling, legislators might have decided to

not risk their mandates – lowering party switching to zero. However, as general elections neared, party leaders had incentives to reach out to potential candidates. For instance, in the election of October 3, 2010, candidates (including legislators aiming for reelection) had to be in the party from which they wanted to run starting October 3, 2009. This schedule created an incentive to devise the informal rule: legislators and party leaders had reason to believe that both sides might benefit from circumventing the formal rule due to the electoral cycle. Indeed, the informal rule helped legislators to resume party switching (cf. Câmara Notícias 2009). As Freitas (2012) has argued, parties could increase the constituencies they won by receiving switchers from states where they did not elect anyone in the previous election. Hence, if parties were targeting federal deputies running for reelection, as they often did before the TSE's intervention, a new strategy would have been necessary to prevent the removal of legislators from office due to party infidelity – assuming that parties did not desire to lose any incumbents.

If all parties—or a coalition of the most powerful parties—could agree not to reach out to the electoral justice system to request that switchers lose their mandates, then they could devise an informal rule. For the coordination on the rule to work, some "just right" level of uncertainty about which parties would be better off and which worse off with the informal rule in operation was necessary: if too little uncertainty held, an informal rule would serve no purpose and would not arise; if too much uncertainty reigned, party leaders could not achieve coordination on an informal rule. The timing of the creation of the new informal rule, five months before the application of the "rule E," suggests that party leaders wanted to have enough time to evaluate the costs and benefits from upholding the strategy. Once it played out for most of the parties in the legislature, agreement on maintaining certain level of party switching was possible and persisted.

5. Informal rule on constitutional amendments: circumventing the *navette* system

Most of the legislative powers of the Brazilian president – responsible for making the executive successful and dominant in the legislative agenda – do not apply to constitutional amendments (Figueiredo and Limongi 1999, 2000). Although the president can still introduce proposals to amend the constitution (known as PECs), vetoes are not allowed and she has no chance of requesting urgency for her own proposals. The Brazilian Constitution is quite lengthy, spelling out political, social, and economic rights, and including detailed articles on such issues

as property, nationalization of natural resources, social security, and business (Arantes and Couto 2008). The constitution also treats public policy and government responsibilities on the environment, poverty alleviation, and education. Given that, presidents often need to pass constitutional reforms in order to advance their policy agenda. Although Congress has approved 92 constitutional amendments since the enactment of the Federal Constitution in October 5, 1988,[9] the formal rules define that supermajorities are necessary to pass a PEC: an amendment must garner the support of at least 60% of legislators in two roll-calls in both houses of the National Congress.

Even though multiparty legislative coalitions in support of Presidents are the norm in Brazilian politics, majorities attaining 60% of the seats in both the Chamber of Deputies and the Federal Senate are not ever-present. The need to pass an important constitutional reform in the beginning of a new presidency, combined with a government coalition falling short of the requisite 60% of seats, facilitated and, we claim, even motivated the creation of a new informal rule by which legislators circumvent the constitutional requirement that both legislative chambers must approve exactly the same reform.

President Lula (Worker's Party, PT) introduced a proposal to amend the constitution on social security issues (PEC 40/2003)[10] in the beginning of his and the PT's first year in the presidency. This reform was highly controversial and, at the same time, a priority to the government. It passed the Chamber of Deputies after four months of intense debates. The government had around 45% of the seats in the lower house, which was not enough to pass a constitutional amendment. However, negotiations secured some modifications in the original proposal and the lower house sent it to the Senate.

Once in the Senate, the proposal – now renamed as PEC 67/2003[11] – faced strong opposition and the government was in no position to pass the social security reform. Senators

[9] Under the Worker's Party administration (13 years) 52 constitutional amendments passed. Under the eight years of Cardoso's administration, 35 amendments were enacted. The other five amendments were enacted under the minority presidency of Collor (who was impeached), the vice-president Itamar (who took office after Collor's impeachment) and the current Temer's administration. Not all these amendments were introduced by the Executive. All data from the CEBRAP Brazilian Legislative Dataset.
[10] In this section we rely heavily on the law-making processes of each PEC mentioned. We follow the tracking of this process in the website of both the Chamber of Deputies and the Federal Senate. For each PEC we analyze here, the hyperlink to access the process is offered, which in the case of PEC 40/2003 is: http://www.camara.gov.br/proposicoesWeb/fichadetramitacao?idProposicao=113716
[11] http://www25.senado.leg.br/web/atividade/materias/-/materia/60903

submitted more than 300 suggestions to alter the proposal (Diários do Senado Federal, 11/12/2013, pp. 36142-187). One of the main – and most controversial – issues was the retirement rules for public servants. Pursuing negotiations with part of the opposition, the designated rapporteur of this PEC in the upper chamber, Senator Tião Viana, along with Senator Paulo Paim (a legislator with a long record of defending retirees), both of them affiliated with the Worker's Party, developed the following strategy: the leader of their party in the Senate, Senator Ideli Salvatti, would present a new proposal containing the controversial part of the original reform plus other modifications in order to pass a negotiated and moderated version of the reform proposed by the executive before a new fiscal year (cf. Folha de S. Paulo 2003; Queiroz 2005). The maneuvers of Viana, Paim, and Salvatti amounted to the invention of the new informal rule.

When introducing PEC 77/2003,[12] Senator Ideli Salvatti explained that the bargaining should focus on the need to pass the uncontroversial part of the original proposal: "the amendments [on the original piece] cannot prevent the enactment of those parts around which there is consensus…. Thus, as a result of the debates and political agreements involving all political parties regarding the Social Security Reform, considering the need for the enactment of the parts of PEC 67, of 2003, around which there is agreement in both chambers of the National Congress, we present this proposal to amend the constitution [PEC 77, of 2003]" (Diários do Senado Federal, 10/09/2013, pp. 30894-5, our translation).

This strategy was better than negotiating modifications in the original proposal. The "negotiating route" would have meant the PEC would have to go back to the lower house; if the deputies were to change the PEC again, then a new round of discussion and roll-calls, by the rules, would be required in the Senate one more time.

The informal rule was inspired by a similar strategy adopted when Cardoso's administration was able to pass the constitutional amendment 21 in 1999. The main difference is that here the legislators affiliated with parties from the government coalition managed to suppress some words and small sentences from two articles of the reform on the second house without sending it back to the house where the reform was introduced. This maneuver is described in the "*Ação Direta de Inconstitucionalide*" (Direct Unconstitutionality Action) ADI 2031, which was filed by the Worker's Party (which was in the opposition back in 1999), and its

[12] http://www25.senado.leg.br/web/atividade/materias/-/materia/62771

proceedings in Federal Supreme Court (cf. Diário da Justiça, 08/06/1999, 09/15/1999).[13] The STF, however, ruled in favor of the maneuver, and against the ADI filed by the Worker's Party, alleging that the suppressions did not modify the substance of the reform and, thus, there was no need to send the proposal back to the originating house (cf. Diário da Justiça, 06/08/2002, p. 87; Diário da Justiça, 10/17/2003, p. 13). The difference between this maneuver and the informal rule devised in 2003 is that the former consisted in changing only small parts of the proposal without drastically changing its content; the latter, however, hived off the controversial modifications in the reform, and introduced them as a new proposal, in order to pass the less controversial part of the reform that had won the agreement of both the Chamber of Deputies and the Senate. Despite the distinctions, Senator Viana mentioned the Supreme Court decision on ADI 2031 in favor of the first maneuver when defending his own strategy (Diários do Senado Federal, 10/29/2013, pp. 33993-96).

The informal rule originating in 2003 gave the government coalition time to keep bargaining on the entire reform as a package and yet also pass very quickly at least part of an important item of the new president's agenda. The informal rule helped the government to pass the uncontroversial part of the constitutional reform after negotiations (becoming the constitutional amendment number 41), while the new proposal slowly passed the Senate (PEC 77/2003). Once this new proposal reached the lower house (as PEC 227/2004),[14] the government again faced some difficulties. This PEC (227/2004) only passed the Chamber after a new round of modifications, which, in turn, forced the process to continue in the Senate yet again.

In the upper chamber the informal rule was used, however, on another occasion. The legislators were able to bargain – now with the important participation of one of the opposition leaders, Senator Rodolpho Tourinho – the approval of the uncontroversial part of the proposal that already came modified from the Chamber of Deputies. This part was enacted in 2005 as Constitutional Amendment 47.

The success of what became a new constitutional amendment poses a question all the same. What happened with the other part of this PEC, which was a part of the original reform? A new proposal was again introduced in the Senate containing the controversial part. This new

[13] The complete text of the ADI 2031 can be found here: http://redir.stf.jus.br/estfvisualizadorpub/jsp/consultarprocessoeletronico/ConsultarProcessoEletronico.jsf?seqobjetoincidente=1769086

[14] http://www.camara.gov.br/proposicoesWeb/fichadetramitacao?idProposicao=150399

PEC (77B/2003)[15] passed the Senate but even today languishes unapproved in the Chamber of Deputies (as PEC 441/05).[16]

There are other two famous uses of this informal rule: the constitutional reforms on the judicial system and on municipal representatives (councilmen and councilwomen). What do these two cases have in common? Besides the high level of controversy accompanying both cases, both proposals were not introduced by the executive. Moreover, legislators applied the informal rule during Lula's presidency in periods where the government coalition was facing difficulties in achieving or maintaining the threshold of 60% of the seats in both legislative chambers.

This narrative suggests that legislators should be likely to create informal rules when there are changes in the presidency and in the composition of the cabinet, which offers some support to H2. What is more, we observe in this sequence evidence consonant with the third hypothesis. The costs were high of modifying the formal constitutional provision on the 60% threshold and the *navette* system more broadly. Powerful political entrepreneurs played key roles in coordinating on a new informal rule. They not only devised the new informal rule but also ensured that the legislative rank-and-file adhered to it.

6. Conclusions

In this paper we evaluate the conditions under which legislators are likely to devise and adhere to informal rules. Comparing two Brazilian informal rules in depth, we first investigate the informal rule created to maintain party switching as an ongoing practice even after the Superior Electoral Court issued its decision against this behavior. Legislative party leaders not only invented an informal rule contravening the formal one, but the legislative rank and file abided by the informal rules, switching despite the judicial decision. Our evidence in the statistical analyses supports the hypothesis that shifts in some features of the legislative arena and in the relationships between the legislature and external actors affect the probability that both legislative party leaders and the legislative rank-and-file devise and observe new informal rules.

Moreover, we retrace the maneuvers made by legislative party leaders as they engineered an informal rule to circumvent the constitutional requirement that both houses of the legislature

[15] http://www25.senado.leg.br/web/atividade/materias/-/materia/74513
[16] http://www.camara.gov.br/proposicoesWeb/fichadetramitacao?idProposicao=293256

approve exactly the same constitutional reform. Granted, the second informal rule has not seen frequent application. Yet it deserves emphasis that the informal rule exists and has structured legislators' voting, however, even in the high-stakes realm of constitutional reform. The story of its emergence, moreover, comports with the third hypothesis here. Likewise, the origins of the informal rule on party switching march with the third hypothesis.

Our study aims to shed light on informal institutions. We recognize that probing the generalizability of our findings presents a challenge. By definition, once more, informal rules originate and operate "outside of officially sanctioned channels" and are "usually unwritten" (Helmke and Levitsky 2006b, 5). Not only are informal rules common knowledge for the players involved (cf. O'Donnell 2006, 286), but also awareness of their workings requires specialized, in-depth knowledge for the analyst. Informal rules are difficult to observe and study systematically, in other words. Not by chance, the landmark Helmke and Levitsky (2006a) volume gathered country case studies contributed by country specialists.

Nonetheless, these difficulties noted, we briefly tackle the challenge by discussing informal rules in Italy and Sweden. First, in Italy, an informal rule in effect from the early 1950s to at least the early 1980s redefined the constitutional role of the President in government formation, circumscribing presidential powers so thoroughly that the informal rule conflicted with constitutional provisions (Mershon 1994).[17] What triggered the rise of the informal rule was the unexpected electoral loss in the 1953 parliamentary election suffered by the Christian Democrats (DC), Italy's largest party, followed by the failure at investiture of a government led by Alcide de Gasperi, former DC premier who had headed fully ten cabinets from 1945 up to the 1953 election. After the 1953 election, de Gasperi met defeat at the investiture vote for his eleventh government, and without investiture, the government was "still-born," to translate the Italian political jargon. By the informal rule that arose and was faithfully applied through the early 1980s, the Italian President no longer names the *formateur*, as in the Constitution. Rather, the President consults the leadership organs of all parliamentary parties, to sound out their preferences as to prime ministerial candidates and also to learn what party leaders view as the possible and preferable new parliamentary majority and the possible, preferable new government. By this rule, the leaders of Italy's most powerful parties impose their choices on the

[17] The entire paragraph here relies heavily on Mershon (1994, along with secondary and primary sources cited therein). It deserves emphasis that the turning point of the early 1980s is the 1983 parliamentary election, when the DC again lost votes and seats though was still the largest party.

President, replacing, and conflicting with, the President's constitutional right to choose an incoming premier. The leaders of Italy's most powerful parties bargain governments into existence.

The problem with the Italian narrative just recounted is that our knowledge of these events is to some degree bound up with the argument advanced here. To be sure, our original confrontation with the Italian evidence (Mershon 1994) predated the work of Helmke and Levitsky (2006a; cf. Grzymala-Busse 2010; Krouwel and Koedam 2015). All the same, our hypotheses bear some imprint of the empirical grounding in the Italian case. The in-depth analysis of the Brazilian evidence, comparing two informal rules, is thus essential to our effort to scrub away any "tautological residue" in our hypotheses (Greif and Laitin 2004, 649).[18]

Mindful of the potential for "residue" in our argument, we take up the Swedish case as well, albeit briefly. In October 1917, cabinets in Sweden became responsible to Parliament, and no longer to the King. This new rule followed a shift in the balance of power, as the Left scored a victory in the 1917 parliamentary election. This informal rule contradicted the 1809 Constitution and was not formalized until a new Constitution was approved in 1974. In 1917 and long after, the most powerful actors believed that a change in the Constitution was unnecessary and, if attempted, would be costly and controversial (Lewin 1988 ch. 4).

What in 1974 dislodged the equilibrium upholding the status quo informal rule on executive responsibility to Parliament, which stood at odds with the Constitution? A change in the partisan balance of power again came into play: the 1970 election weakened the Social Democratic Party, and reduced what had been its bare majority of lower house seats won in 1968 to a minority of seats earned in 1970 in the unicameral Riksdag. The 1970 official institutional reform, which introduced unicameralism, brought unexpected consequences, in the form of electoral losses for the Social Democrats. When the next parliamentary election, in 1973, produced a Riksdag divided exactly in half, left and right, the incentives for revising the Constitution were clear (Lewin 1988).

The Italian and Swedish cases drive home the importance of shifts in the partisan balance of power. They illustrate the capacity of legislative party leaders and the legislative rank and file to learn from unanticipated events and adapt accordingly, coordinating on behavior that can

[18] To quote in full: "unless the observable implications of our models are statistically examined over a range of cases that were not from the set of cases from which we developed our theory, there will remain a tautological residue on those models" (Greif and Laitin 2004, 649).

bring them some benefit. In conjunction with the Brazilian evidence, we have ample—though not unqualified—support for the argument here.

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Figure 1: Party switches per quarter in the Brazilian Chamber of Deputies, 1987-2015

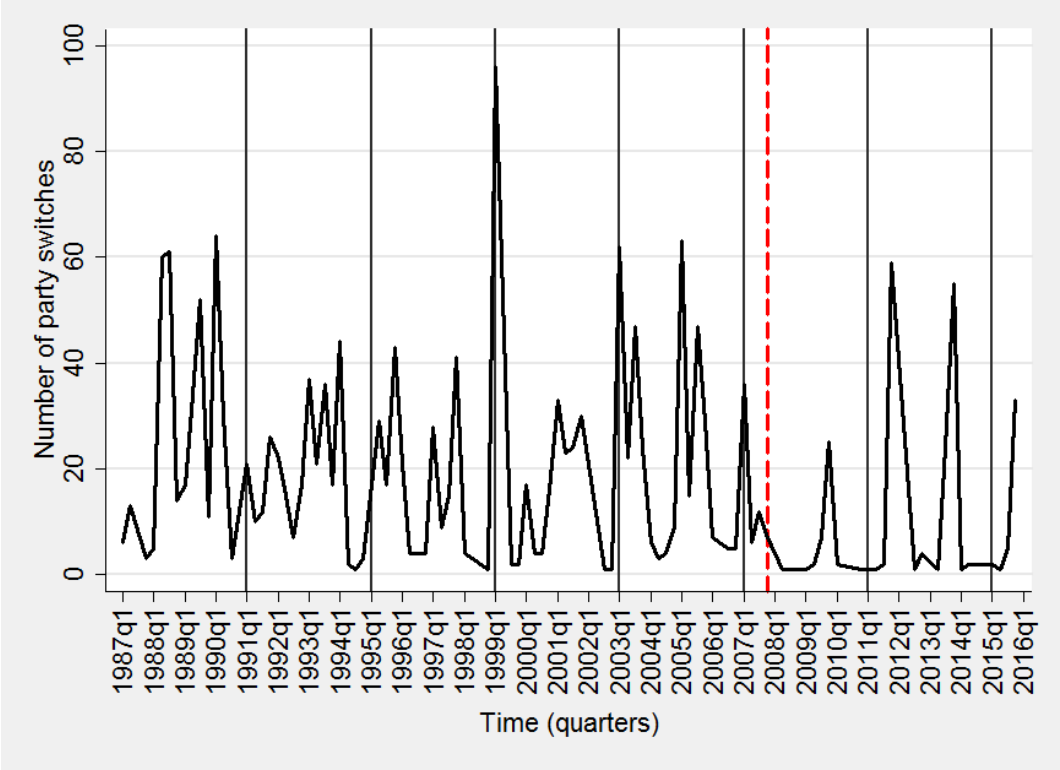

Figure 2: Histogram of party switches, quarterly values, before and after the informal rule

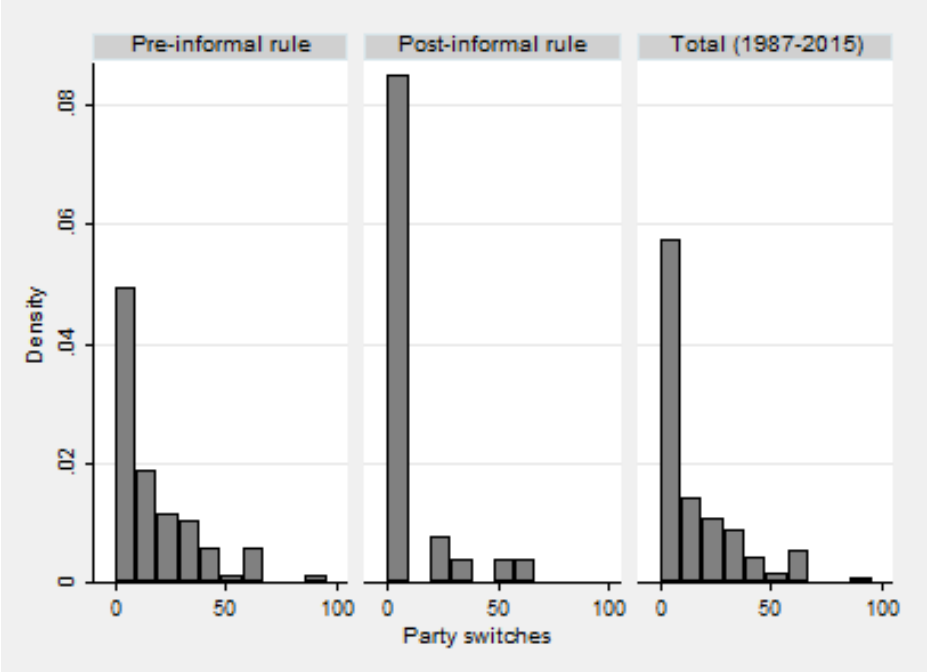

Figure 3: Average Marginal Effects on the Predicted number of party switches

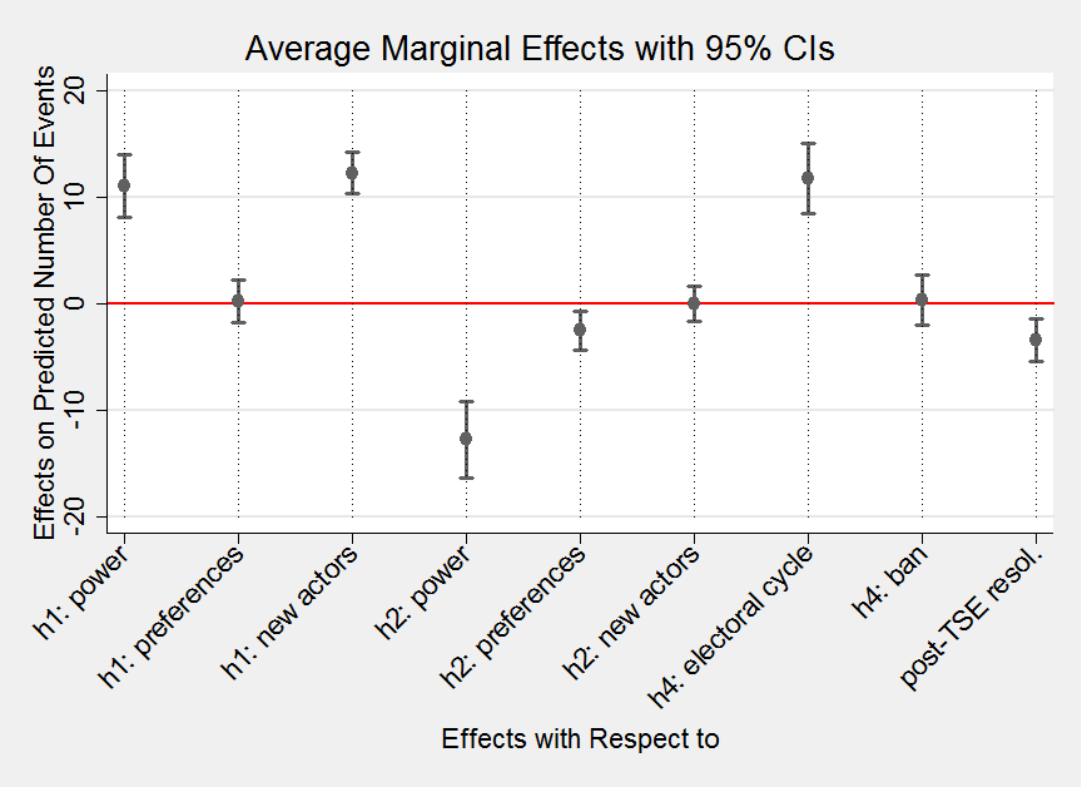

Table 1: Descriptive statistics on the dependent variable, quarterly party switches, 1987-2015 and post-informal rule

Descriptive Statistics	**Quarterly Party Switches**	
	1987-2015	Post-informal rule
Mean	15.48	8.44
SD	18.99	16.39
Minimum	0	0
Maximum	96	59

Table 2: Four groups of posited independent variables, measures, and expectations

Hypotheses and posited independent variables	***Measures / methods***	***Coefficient sign***
H1: Legislative arena		
H1a: Time of change balance of power	Dummy coded 1 for first 2 quarters after election; 0 otherwise.	+
H1b: Time of shift in preferences	Dummy coded 1 for any quarter when switching redefines party preference profiles; 0 otherwise.	+
H1c: Time of rise of new actors	Dummy coded for first quarter after a new party emerges in the legislature during the term (no relation to the election), 0 otherwise.	+
H2: Legislature-external actors		
H2a: Time of change balance of power	Change in executive's dominance, when compared the percentage of bills passed by Congress that were introduced by the President in two consecutive quarters.	-
H2b: Time of shift in external actor preferences	Dummy coded 1 for 2 quarters after change in president's party due to election; 0 otherwise.	+
	Dummy coded 1 for 2 quarters after change in party composition of cabinet; 0 otherwise.	
H2c: Time of rise of new actors external body	Dummy coded 1 for 2 quarters after the appointment of new justices; 0 otherwise	-
H4: Time in electoral cycle	Dummy coded 1 for the first quarter before the ban on pre-electoral party switching starts; 0 otherwise.	+
	Dummy coded 1 for the four quarters during the ban on pre-electoral party switching starts; 0 otherwise.	-
Inflation factor: post-TSE resolution	Dummy for TSE ruling on party loyalty, coded 1 for those quarters in which the ruling applied, 0 before the ruling was issued.	+

Note: Hypothesis 3 does not appear in the table, for assessment of it proceeds via qualitative analysis.

Table 3: Zero-inflated Poisson models on the quarterly number of switches, 1987 to 2015

	(1)	(2)	(3)	(4)	(5)	(6)
Legislative arena						
Balance of power	0.668***	0.570***	0.669***	0.708***	0.622***	0.714***
	(6.41)	(5.48)	(6.32)	(7.92)	(6.95)	(7.78)
Preferences	-0.00345	0.0223	-0.00422	0.0161	0.0411	0.0126
	(-0.05)	(0.33)	(-0.06)	(0.25)	(0.63)	(0.19)
New actors	0.796***	0.691***	0.796***	0.795***	0.694***	0.797***
	(14.33)	(13.14)	(14.26)	(14.32)	(13.20)	(14.27)
Legislature-external actors						
Balance of power	-0.808***	-0.793***	-0.807***	-0.833***	-0.826***	-0.832***
	(-7.19)	(-7.10)	(-7.18)	(-7.42)	(-7.38)	(-7.39)
Preferences (president's party)	-0.124	-0.144	-0.124	-	-	-
	(-1.02)	(-1.18)	(-1.02)			
Preferences (cabinet composit.)	-	-	-	-0.162***	-0.189***	-0.164***
				(-2.71)	(-3.16)	(-2.73)
New actors	-0.00926	0.0390	-0.00954	0.000756	0.0467	-0.000701
	(-0.17)	(0.72)	(-0.17)	(0.01)	(0.87)	(-0.01)
Electoral cycle	0.780***	-	0.781***	0.756***	-	0.761***
	(7.53)		(7.44)	(7.29)		(7.24)
Ban on pre-elec. Switch	-	-0.0673	0.00418	-	-0.0455	0.0222
		(-0.87)	(0.05)		(-0.59)	(0.28)
Constant	2.438***	2.533***	2.438***	2.479***	2.575***	2.476***
	(51.36)	(55.85)	(49.99)	(50.17)	(54.94)	(49.11)
Inflation factor						
Post-TSE resolution	1.678***	1.678***	1.678***	1.679***	1.679***	1.679***
	(3.10)	(3.10)	(3.10)	(3.10)	(3.10)	(3.10)
Constant	-2.372***	-2.372***	-2.372***	-2.372***	-2.372***	-2.372***
	(-6.00)	(-6.00)	(-6.00)	(-6.00)	(-6.00)	(-6.00)
Observations	115	115	115	115	115	115

t statistics in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$