Do Coalitions Matter? Legislative success in the Brazilian Congress*

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Abstract

The aim of our study is to investigate what leads Brazilian political parties to join the government coalition in Congress. We analyze the probability of success and the duration of all bills sponsored by legislators in the Brazilian Congress since 1989. The goal of our analyses is to capture the effect of joining in the government coalition on the legislative performance of representatives. Today it is well documented that the legislative behavior of Congressmen is explained by party principles in Brazil. The President, whose legislative powers were enhanced by the 1988 Constitution, is in practice the agenda settler of the Congress. Yet we know little about what leads political parties to join the government coalition and support the President in Congress. Our study sheds light on a fundamental question regarding the governability under multiparty presidential systems: do participants of the coalition have greater success in approving bills? Depending on the answer, the advantage of being a member of the ruling coalition would not be just access to public jobs and government resources, it would rather be motivated by the benefit in producing public policies. We analyze the probability of success and the duration of all, – over 30,000 – bills sponsored by legislators in the Brazilian Congress since re-democratization to capture the effect of joining in the government coalition on the legislative performance. Our results indicate that the effect of integrating the government coalition in the chances of bill approval is conditional to the share os seats controlled by the party.

Introduction

What leads political parties to join the government coalition in presidential systems? Are they merely interested in gains – such as public jobs and resources – they would earn by occupying the positions of power or are they also seeking to maximize their chances to implement public policies? With these questions in mind the aim of our work is to investigate whether legislators from parties who take part in the government coalition are more prone to approve bills in Congress.

The academic debate surrounding the motivations and benefits of political parties to join a coalition government is relatively concentrated on parliamentary systems. Presidential systems have not yet received the same attention. Studies about the formation of coalitions under multiparty presidential systems tend to favor the strategic dimensions of ministerial post distributions. The distribution of positions in the Ministry is seen in these studies as an instrument at the disposition of the President to maximize necessary legislative support and to ensure the approval of the of the Executive's political agenda. Very little is said about the benefits earned by the political parties (and their legislators) that make up the coalition in terms of legislative output and policy making.

One exception in this respect is the recent work of Magar and Moraes (2012) about the formation of government coalitions in Uruguay. Their work proposes an innovative approach to the topic of coalition governments in multiparty presidential systems. It seeks to understand whether there are additional benefits gained by members of coalition parties, beyond the direct gain of positions held in the government.

Magar and Moraes seek to understand if, besides the obvious motive behind the formation of a coalition – the approval of the Executive agenda – the party members of the government coalition also have better chances of having their own bills approved in Congress. That is, the authors seek to identify exactly what benefits are received by the other members of the coalition parties, besides the President's own party.

The authors conclude that, in the case of Uruguay, the members of the government coalition are more successful at approving the bills they have proposed. Hence, an advantage of being a member of a coalition is not merely to gain access to posts and resources controlled by the government. The decision to become part of a coalition, therefore, is also motivated by the advantage of policy making, especially via the legislative process. The authors highlight the need for research on other multiparty political systems so that it is possible to compare the results and generalize the conclusions that surround the legislative advantages in dynamic government coalitions.

That is precisely the main contribution of our work: to enhance our understanding about the formation and the sustainability of coalition governments in multiparty presidential systems in Latin America. Thus, we analyze the Brazilian legislative production since the enactment of the 1988 Federal Constitution, seeking to uncover the effect of coalition membership on parties' success (in terms of passing their bills). It is well known that under the current Constitution, the Brazilian political system is able to yield stable coalition governments Figueiredo and Limongi (1999); Figueiredo (2007). The multiparty system does not present itself as a problem Figueiredo and Limongi (2000), as was predicted at the beginning of the current democratic period Mainwaring (1993); Ames (2001). But we still know little about what advantages were gained by the political parties that decided to support the government in Congress. That is, that decide to join in the coalition government, especially in terms of policy making. New evidence on this issue permits us to reflect on the following question: why do parties decide to enter a coalition in multiparty presidential systems?

Literature Review

In the comparative analysis of the political systems, the most radical rupture in the literature happens in respect to motivation of politicians and candidates, and the consequence thereof, in both presidential and parliamentary systems. The starting point of this discussion, in both systems, is the seminal study by Downs (1957), who claims that parties seek to maximize the acquisition of votes in order to gain posts. Downs synthesized argument is that *"Parties formulate the policies in order to win the elections, instead of winning the elections in order to formulate the policies"* (1957, 28). According to the author, policies are merely instruments to further the parties' real goals, which are to win the elections and to control the government.

In parliamentary systems, analyses begin with Downs' formulation set forth above, but the search for a general theory about the formation of coalitions resulted in the questioning of this initial motive, which led the research to a more in-depth understanding of what is at stake during the bargaining process that leads to the formation of the coalition. Coalition theories exclusively based on office-seeking have not produced convincing results, because they have been unable to explain minority or super-majority coalitions. As shown by Strøm (1990), it is only possible to understand why minority coalitions are formed-which, despite their status, still manage to get their agendas approved-, if we believe that politicians are also motivated by policy-seeking.

This fact led to the re-assessment of behavioral assumptions established by Downs. The sole office-seeking orientation of political agents is replaced by the policy-seeking behavior, which ultimately is not convincing when seen as the exclusive motivation of politicians and candidates. This is because, for the most part, the bargaining process in the formation of coalitions actually revolves around concessions on policies, be it the negotiation of a minimal agenda, or a negotiation around which party will occupy which ministry. On the other hand, if policy has an intrinsic value, the position is no longer absolutely imperative. Although the legislative process is centered on the Executive, parties solely motivated by policy-seeking will prefer to remain with the opposition rather than enter a coalition and compromise themselves with policies that greatly differ from their ideals (Laver and Schofield, 1998).

As affirmed by Strøm and Müller (1999), the capacity to influence policies is directly related to the acquisition of the Executive position or posts thereunder. On the other hand, the maintenance of posts is directly associated to the evaluation of policies developed by the Executive. Thus, the acquisition of posts and influence on policies are deeply associated, in such a way that it is not possible to separate the instrumental motivation from the intrinsic motivation of politicians.

In presidential systems, legislative posts are certainly not instrumental from the point of view of Executive control. The share of seats that political parties have in the Legislative has no direct correlation with the control of the Executive. The separation of powers led to the interpretation that there are two competitive agendas, one local and the other, national. But why would such separation in powers lead to the constitution of two agendas?

As in parliamentary countries, in presidential systems, the decisions of the Congress are made based on majority rule. Whereas the presidential occupation may not have a direct relationship with the control of the Legislative branch, to get his legislative agenda passed by Congress, the president certainly needs the vote of a majority, in the same way as approval of bills originating in the legislature. The meeting majority requires coordination inside the legislature and between powers. The fact that presidents form coalitions is an empirical evidence that the actors understand the necessity of coordination. But why cooperate?

In presidential systems, it is assumed that politicians want positions, but this premise is never a problem. What must be highlighted here is that the formation of coalitions indicates that the actors notice the necessity to coordinate their actions in order to meet their aims. On the other hand, the formation of coalitions has a very concrete meaning. When coalitions are formed, they increase the number of seats that the Executive controls in the Legislative branch. In other words, coalitions are constituted to diminish the numerical barrier imposed by the majority rule. Coalitions are formed for pragmatic and obvious reasons: to increase the chances for project or agenda approval in the Legislative branch. They are, thus, in and of themselves a strong indication that there is some concern for the approval of bills, that is, for policy-making.

As highlighted, it does not matter what the primary motivation is that leads an individual to run for a political position or what leads him or her to run several times for re-election. To achieve their goals, politicians must change the status quo. Even if they just want to take home specific benefits for their constituents and campaign donators, members of congress will only be able to achieve this objective through policy-making.

The formation of coalitions is a new fact, a new evidence. In and of itself, the formation of a coalition makes the idea of two competing agendas problematic, as well as undermines the argument that politicians are solely motivated by their search for public jobs and resources. As stated by Cheibub and Limongi (2011), for the Brazilian case, there is no evidence, theoretically or empirically, that politicians in presidential systems do not worry about policy-making.

On the contrary, when the topic was explored empirically, as in the works of Freitas (2010) and Moreira (2011), for Brazil, and Magar and Moraes (2012), for Uruguay, what was observed is that the Legislative branch has great influence in the policy-making process. Freitas and Moreira observed that the

Legislative branch intensely modifies the projects originating from the Executive, and a coalition has higher chances of success of modifying Executive proposals.

Magar and Moraes, on the other hand, observed that part of the benefit of integrating a governmental coalition is the significant increase in the capacity to win project approval. The authors demonstrated that projects authored by legislators who are part of the coalition, even if they do not belong to the president's party, have up to two times as many chances of being approved than projects by legislators that are not part of the government coalition. When the coalition is controlled by the majority, their chances of approval increase threefold as opposed to the opposition parties.

We would like to stress this point: what the works of Freitas, Moreira and Magar and Moraes show is that we cannot in principle rule out the active participation of the Congress in the policy-making process, even where the President has very strong legislative powers, as the cases of Brazil or Uruguay. More importantly, as affirmed by Freitas, the observed participation of the Legislative branch clearly demonstrates that there "exists an effective deliberation process around the legislation that is to be approved" (2010, 96). Now, why, if this power is not interested about policies, would the Congress concern itself by taking an active role in the process of policy-making?

We believe that it is reasonable to assume that politicians have many objectives, but whatever these objectives, they require a change in the status quo and this is only possible in presidential systems if the Executive and the majority of the Legislative can reach agreement. We must remember that as the legislative process ends, the Executive Branch can veto if it does not agree. Politicians obviously want votes, but votes do not have an end in and of themselves. Politicians want votes because their ambition is to acquire positions. Once they acquire the desired positions, they will need to remain therein, magnifying their power and climbing to higher positions. In order to do this, they will have to differentiate themselves in front of their constituents, and they will have to produce results. They will necessarily have to engage in policy bargaining, whether to pass new policies or to bar them from passing. Even if we do not believe that the intrinsic objective of politicians is policy-making, nevertheless, we must consider that it is only through policies that they can gain the votes they need to maintain their positions and, therefore, escalate within the political hierarchy. In other words: even in presidential systems, position maintenance depends on the approval of an agenda. In this respect, presidential and parliamentary systems are identical.

The problem is that if parliamentarians are concerned with policy-making, it only follows that they will not have the same preferences. Thus, in order for certain policies to be approved to the detriment of others, politicians will need to coordinate their actions. The form used for this coordination is well known: forming political parties (Aldrich, 1995). It isn't for naught, as mentioned above, that in parliamentary systems party is the analysis unit. When the position itself ceases to be the parliamentarian's sole motivation, the presence of a collective actor becomes necessary in order to coordinate the decision-making. This is the role of political parties, but can we attribute the same role to political parties in presidential systems? In this respect, it is important to investigate whether there are indications that the parties control the policy-making process and if the coalition members have a different role in this process.

Data and Methods

The data used in this study encompasses all of the bills initiated by federal deputies between January 1, 1989 and December 21, 2010. There are, in total, 30,982 observations distributed throughout six legislatures, under the governance of five different presidents, with the formation of 20 coalitions. In Table 1 we present the distribution of projects per coalition. On average, 1,475 projects were presented. However, the distribution varies considerably depending on the coalition[1]. The smallest number of projects presented was during the second coalition of Itamar Franco's government (231 projects) and the greatest during the first coalition of the second mandate of President Fernando Henrique (4,752 projects).

The number of approved projects, however, is low. Of the 30,982 projects, only 606 were transformed into a legal norm (1.95%). In all of the formed coalitions, the number of approved projects did not exceed 4%. To get a better idea, in the case of Uruguay, for example, of the 5,669 projects presented between 1985 and 2005, 38% were approved (Magar and Moraes, 2012, 438).

There also does not seem to be any link between the number of approved

[1]The standard deviation is 1260.67 projects.

Table 1: Projects Approved by Coalition

Coalition	Beginning	Ending	Projects	Approved
Sarney 2	10/06/88	03/14/90	2,923	41 (1.40%)
Collor 1	03/15/90	10/12/90	1,071	8 (0.75%)
Collor 2	10/13/90	01/31/91	290	2 (0.69%)
Collor 3	02/01/91	04/14/92	2,463	68 (2.76%)
Collor 4	04/15/92	09/30/92	450	15 (3.33%)
Itamar 1	10/01/92	08/30/93	601	14 (2.33%)
Itamar 2	08/31/93	01/24/94	231	4 (1.73%)
Itamar 3	01/25/94	12/31/94	369	8 (2.17%)
FHC I 1	01/01/95	04/25/96	1,487	48 (3.23%)
FHC I 2	04/26/96	12/31/98	2,439	41 (1.68%)
FHC II 1	01/01/99	03/05/02	4,752	86 (1.81%)
FHC II 2	03/06/02	12/31/02	909	6 (0.66%)
Lula I 1	01/01/03	01/22/04	2,171	43 (1.98%)
Lula I 2	01/23/04	01/31/05	1,321	20 (1.51%)
Lula I 3	02/01/05	05/19/05	381	2 (0.52%)
Lula I 4	05/20/05	07/22/05	251	3 (1.20%)
Lula I 5	07/23/05	12/31/06	1,295	15 (1.16%)
Lula II 1	01/01/07	04/01/07	386	8 (2.07%)
Lula II 2	04/02/07	09/27/09	2,962	43 (1.45%)
Lula II 3	09/28/09	12/31/10	866	1 (0.12%)
No information	-	-	3,364	130 (3.86%)

Source: Legislative Database(Cebrap)

projects and whether the formed coalition was in the majority or not. When the government was in the majority, 1.65% of the projects were approved, against 1.96% approved during minority coalitions.

But is it possible that being part of government coalitions increases the chances for a bill to be approved? Do legislators who are in the government coalition approve more bills than opposition members? Before addressing this question, however, we must decide how to define whether a project is from the government or from the opposition. This choice is important, because due to party switching, a parliamentarian can be in one party at the moment of the project presentation and in another party when it receives final approval. The same happens when there are coalition changes. Even if a legislator has not switched parties, it is possible that he or she was in the coalition when the project was presented, but in the opposition at the end of the process, that is when the bill was enacted. In this study, a bill is considered as introduced by a coalition member if it was initiated by a legislator who was part of the coalition on the introduction date. Less than 5% of the bills exhibit party changes between the bill introduction and conclusion (approval, rejection or the last legislative action involving that bill) .

On average, the legislators that belong to parties of the government coalition approve 1.96% (315/16,025) of the projects presented, while legislators from opposition parties approve 1.94% (291/14,957)[2]. In Figure 1 we present the percentage of the projects that were approved by year, differentiating between the government and the opposition. It is noteworthy that there is not a clear pattern over time. At times, the proportion of projects approved by the government is greater, while at other times, approvals by the opposition are greater, as shown in the inferior panel. Moreover, it is important to highlight that the percentage is low for both government and opposition, as displayed in the superior panel of Figure 1.

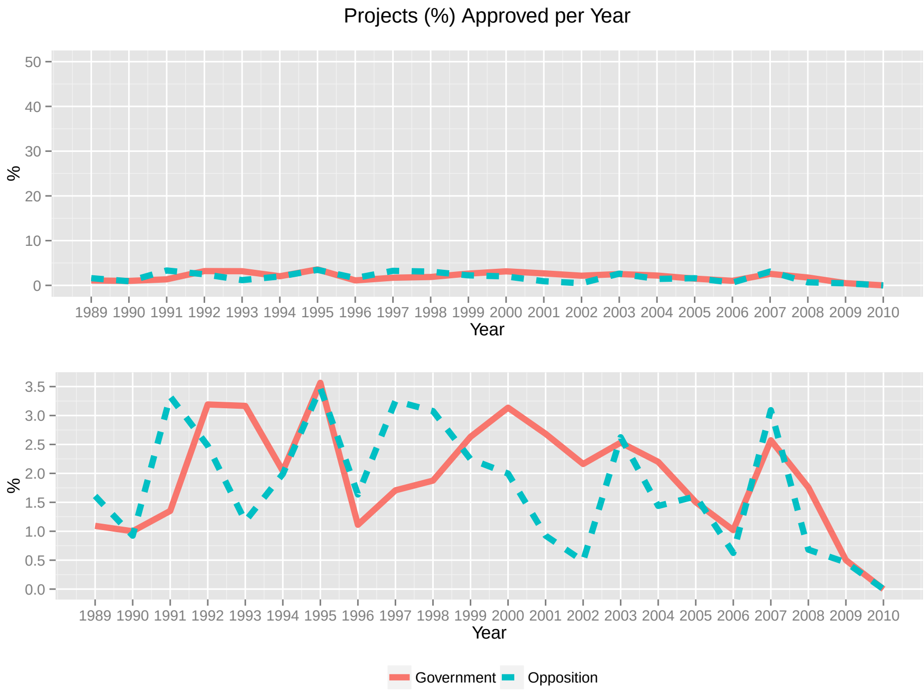
We can also examine the duration of bills. That is, we can investigate the average time – in the number of days – of processing a bill. In other words, the number of days it has taken starting from its presentation to the final action. On average, government projects take 1,275 days, while the opposition's projects take 1,258 days. Looking only at the approved projects, we see an average of 1,260 days for the government projects and 1,396 days for the opposition projects. That is, the projects originating from the government are on average approved about four months faster.

Empirically, therefore, we search to answer two basic questions. First, we examine the approval rate of bills presented by legislators of the government coalition and the opposition. That is, does the fact that a particular legislator is a coalition member affects the likelihood of passing her bills? Secondly, we also investigate the duration – measured in days – for bill approval. Namely, being sponsored by a member of the government coalition does affect the time for a bill to be approved? In both analyses we also sought to examine the characteristics of the legislator who sponsored the bills, such as: political party or the number of seats controlled by her party; and other characteristics of the process required for a bill to approved, such as the regime procedure, whether the government coalition benefited from having a majority in Congress, etc. in order to better understand how these characteristics could affect the approval rate of the bills as well as the time required for a bill to be approved.

A bill approval can, in short, be understood as a phenomenon that expresses itself dichotomously: in success, in the case of approval, or, to the contrary, in failure. Thus, to analyze the success rate of legislator's initiatives in the

[2]For a government project, using the date of last action, the government would approve 2.25% (364/16.144) bills and opposition, 1.63% (242/14.838).

Figure 1: Projects (%) Approved per Year



Source: Legislative Database (Cebrap)

Brazilian Congress, we adjusted a logistic regression model for the probability of a bill passage, given by equation 1, to our data. This simple model seeks to capture the statistical association between observable attributes of the bill presented by the Congressmen, such as the political party, coalition, number of seats of the proposal formulator's political party in Congress, etc. and the chances of whether or not this project will be approved. In other words, we sought to capture the conditional probability of approval for a particular bill when, observable covariates that can influence the chances that this project will be transformed into a legal norm are present.

$$
\begin{aligned}
\Pr\{Bill^t_{ij} = 1\} &= \beta_1 \text{Government}^t_{ij} + \beta_2 \text{Urgency}^t_{ij} \\
&+ \beta_3 \text{Majority Coal.}^t_{ij} + \beta_4 \text{Partty}^t_{ij} \\
&+ \beta_5 \text{Seats}^t_{ij} + \alpha_0 + \epsilon^t_{ij} \qquad (1)
\end{aligned}
$$

In equation 1, we are interested in estimating the effect of certain attributes of a particular bill – $Bill^t_{ij}$ – presented by the legislator i, of the political party j, on time t, and its chances of being approved. More specifically, we are interested in estimating the effects of the following variables: **Government** indicates whether the author of the project belongs to the government coalition; **Urgency** indicates whether the project was approved in a regime of urgency; **Majority Coalition** indicates whether the government coalition controlled the majority of seats in the Parliament; **Party** is a vector of variables to identify whether the author of the project belonged to one of the four biggest parties of Congress, namely: PT, PSDB, PMDB and PFL/DEM; **Seats** is the share of seats of the bill author's political party in the Parliament; α_j is a constant and ϵ_{ij}^t denotes the term of random error.

In the second part of our analysis, we proposed an analysis of the approved bills' duration, in which we sought to capture the effect of these same covariates on the time to approval. In other words, we examined how the variables listed above could affect the time elapsed until the bills' approval. In this second part, therefore, we focused exclusively on the 1,781 bills that were effectively approved in the Parliament and transformed into legal norms between 1988 and 2010.

$$\begin{aligned} \rho \text{Bill}_{ij}^t &= \exp\{\beta_1 \text{Government}_{ij}^t + \beta_2 \text{Urgency}_{ij}^t \\ &+ \beta_3 \text{Majority Coal.}_{ij}^t + \beta_4 \text{Party}_{ij}^t \\ &+ \beta_5 \text{Seats}_{ij}^t\} + \rho_0^t + \epsilon_{ij}^t \end{aligned} \tag{2}$$

we made use of a statistical model for duration analysis[3]. More specifically, we adjusted the Cox proportional hazards model, described in equation 2, in which, basically, we are interested in capturing the effect of covariates on the time elapsed for bill approvals. In other words, the Cox model allowed us to analyze the "duration of approval", where the response of interest is the time until the occurrence of an event of interest, which, in our specific case, is the bill approval, controlled by covariates.

Results

Table 2 shows the coefficient estimates (obtained through a logit regression model) of equation 1, in which we are interested in analyzing the effect of

[3]These models of statistical analysis are also known by the name of survival analysis.

covariates on the probability of a bill approval. Contrary to our expectations – and to the results reported by (Magar and Moraes, 2012) – the probability estimates of the "Government" variable are, for all tested models, negative and statistically significant. This indicates that the probability of bill approval when sponsored by legislator that is part of the government coalition in Congress is lower than the probability of approval for a bill sponsored by a legislator from a political party that is part of the opposition (omitted category). Models 1, 2, 3 and 4 indicate that, on average, the probability for bill approval when sponsored by a Congressman that is part of the government collation is approximately 3.75% lower than the chances of approval of a bill sponsored by a legislator from the opposition.

Table 2: Analysis of Bill Approval Rates

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Government	-0.15^{**}	-0.16^{**}	-0.16^{**}	-0.19^{***}	-0.19^{**}	-0.26^{**}	-0.27^{***}	-0.48^{***}
	(0.05)	(0.05)	(0.05)	(0.06)	(0.06)	(0.09)	(0.06)	(0.11)
Urgency		0.62^{***}	1.45^{***}	1.41^{***}	1.41^{***}	1.43^{***}	1.44^{***}	1.46^{***}
		(0.10)	(0.11)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)
Floor			-1.12^{***}	-1.03^{***}	-1.03^{***}	-1.04^{***}	-1.06^{***}	-1.08^{***}
			(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
Majority Coalition				-0.16^{**}	-0.17^{**}	-0.15^{*}	-0.14^{*}	-0.19^{**}
				(0.06)	(0.06)	(0.07)	(0.06)	(0.06)
PT					0.44^{***}	0.38^{***}		
					(0.08)	(0.10)		
PSDB					0.45^{***}	0.46^{***}		
					(0.08)	(0.10)		
PMDB					0.33^{***}	0.39^{**}		
					(0.08)	(0.13)		
PFL/DEM					-0.28^{**}	-0.59^{***}		
					(0.10)	(0.16)		
Government * PT						0.16		
						(0.17)		
Government * PSDB						-0.04		
						(0.17)		
Government * PMDB						-0.06		
						(0.17)		
Government* PFL/DEM						0.56^{**}		
						(0.21)		
Seats (%)							1.30^{***}	0.24
							(0.39)	(0.63)
Government * Seats (%)								1.85^{*}
								(0.84)
(Intercept)	-2.72^{***}	-2.75^{***}	-2.45^{***}	-2.42^{***}	-2.57^{***}	-2.55^{***}	-2.54^{***}	-2.41^{***}
	(0.03)	(0.03)	(0.04)	(0.05)	(0.06)	(0.07)	(0.06)	(0.09)
AIC	13625.67	13591.71	12942.89	11036.75	10963.27	10961.56	11029.18	11025.77
Log Likelihood	-6810.84	-6792.86	-6467.45	-5513.38	-5472.63	-5467.78	-5508.59	-5505.89
Deviation	13621.67	13585.71	12934.89	11026.75	10945.27	10935.56	11017.18	11011.77
Num. obs.	30982	30982	30112	27053	27053	27053	27053	27053

$^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$
Standard errors in parenthesis
Source: Legislative Database (Cebrap)

Whenever a request of "emergency" is called for a determined bill, it increases its chances of approval considerably. As we can see in the results of the more complete models – models 5 to 8 – the emergency request increases bill approval probabilities, on average, by up to 37%. Just the fact of a bill going to floor – in other words, not to gain terminative approval by the Congress committees –

diminishes by approximately 28%, on average, the probability that this project will be approved.

When the government coalition enjoys a majority of the seats in Congress, bills initiatives sponsored by the legislators face less chances of approval. The probability of a bill authored by a Congressman being approved in the House is approximately 5% lower when the government coalition has control over the majority of seats.

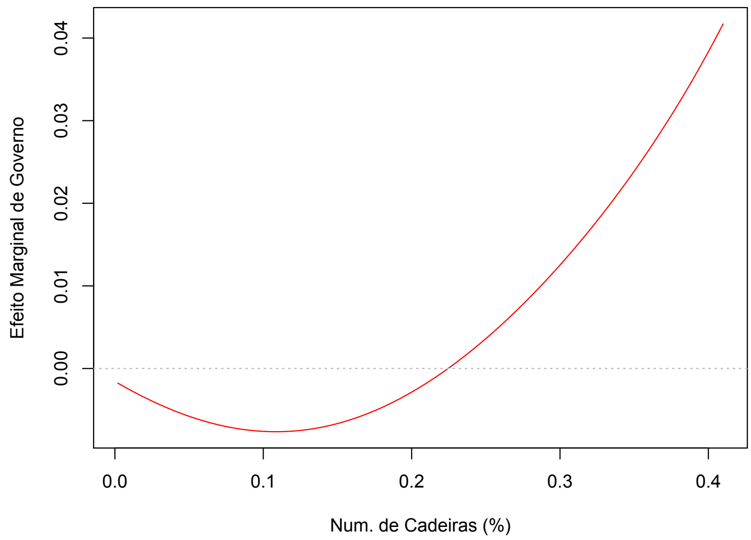
Model 5 indicates that the projects presented by the legislators of the four most important political parties of the Congress since redemocratization have more chances of being approved than the projects of Congressmen from other parties. Model 6, on the other hand, shows that when we add a multiplicative interaction term for government coalition with the four big parties, the effects dissipate and cease to be statistically significant. In other words, we cannot affirm with certainty that the effects are not null, again with the exception of the Democrats, who, when they are in the government coalition, have more chances of approving projects that were presented by their party members. This poses the following problem: could it be that the positive effect of the four most important parties is solely due to the number of seats that they control in the Lower Chamber?

To test this hypothesis, in model 7, we added the variable Seats, which represents the number of seats (in percentage) controlled by the parties in Congress. The estimates for Seats point that, in fact, the number of seats controlled by the parties in the Lower Chamber positively affects the chances that bills presented by legislators are approved. In other words, the higher the number of seats controlled by parties, the higher the chances that their legislators' bills pass.

Model 8, on the other hand, indicates that the positive effect of party size is conditioned by whether they belong to the government coalition or not. In other words, for smaller parties the effect of being in the government coalition does not seem to affect the chances that their legislators' bills are approved. For big parties, however, being part of the government coalition positively affects the chances that bills presented by their legislators are approved. As shown by the positive and statistically significant coefficient of the interaction term of Government with Seats for model 8.

Figure 2 display the marginal effect of party size (i.e. Seats) on the probability

Figure 2: Marginal Effect of Party Size on the Probability of Bill Approval Under the Coalition



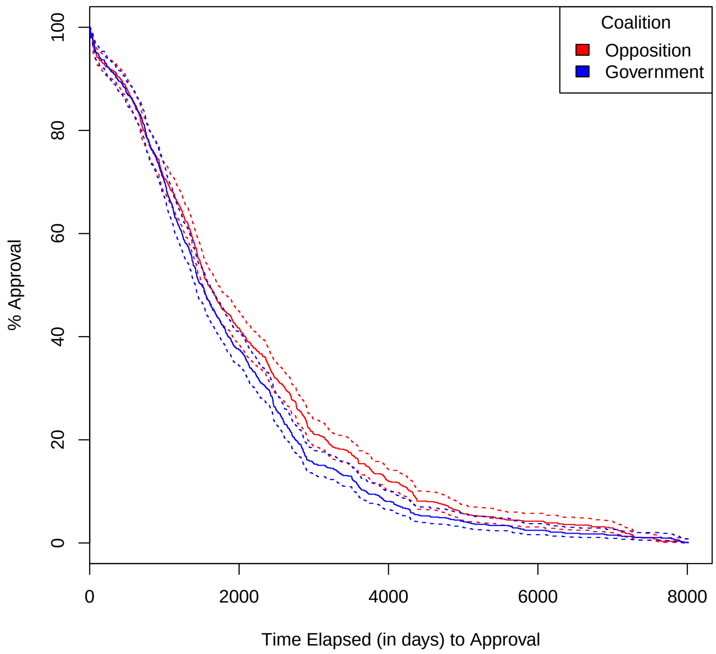
Source: Legislative Database (Cebrap)

of bill approval if (and only if) the political party is part of the government coalition. Figure 2 (and figure 6 available in the appendix) synthesize this relevant (and original) finding of our work. Namely, the effect of the party size on the probability of bills approval is conditional to being part of the government coalition. In sum, the effect of party size on the probability of bill approval is negative for political parties who control less than approximately 20% of the seats in the Lower Chamber. However, for the parties who control a greater percentage of seats, the effect of being in the government coalition becomes positive and statistically significant. In other words, it ends up positively affecting the probability that their bills are approved.

We now turn our attention to examine the duration of bills. That is, we investigate the average time elapsed – in the number of days – for passing a bill in the Brazilian Congress. In this second part of our empirical analysis we focus only on the 1,781 bills that were effectively approved in the Lower Chamber and transformed into legal norms between 1988 and 2010.

Figure 3 plots the Kaplan-Meir curves for the cumulative risk of "approval" for bills according to the coalition to which the legislator belonged: government or opposition. The graph indicates that apparently there is no difference in time elapsed to approval by coalition. This null finding is confirmed by the

Figure 3: Time to Approval by Coalition



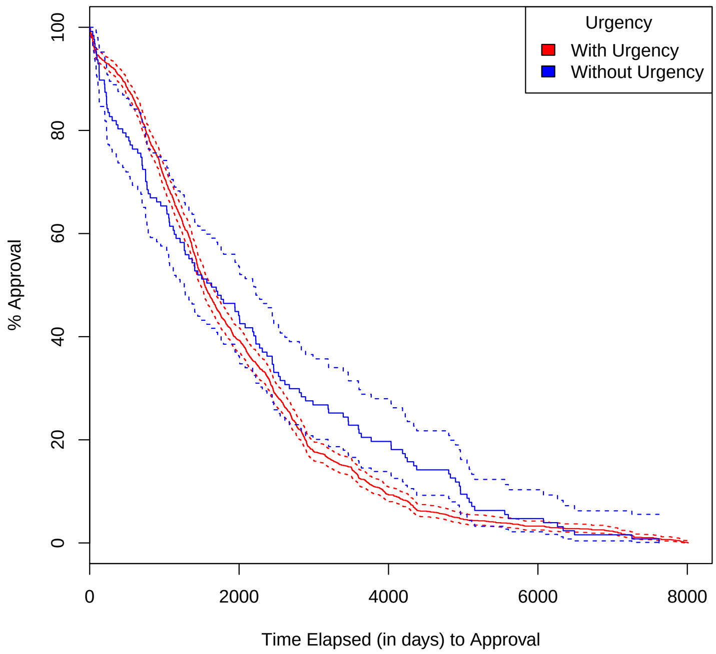
Source: Legislative Database (Cebrap)

log-rank test.[4] Figure 4 plots the Kaplan-Meir curves for the approved bills by the regime procedure. Apparently there is no difference in time to approval between the two regime procedures. This finding is also confirmed by the log-rank test. Figure 5 plots the Kaplan-Meir curves for the approved bills by floor or committee. It is worth noting that committees in the Brazilian Congress are allowed to approve legislation without the floor's explicit manifestation in some specific cases. This is the so-called "terminative power" of the committees. The difference in time to approval between floor and committees seems to be a reflex of that important prerogative power of Congressional committees in Brazil. The difference in time elapsed is confirmed by the log-rank test.

Kaplan-Meier curves are informative but only compare whether there are differences in duration (that is, the cumulative incidence of approvals) among groups. To assess the impact our covariates (the risk factors) might have simultaneously on the time to approval, we adjusted a *Cox proportional hazards model*, given by equation 2. In our model, the risk of failure (i.e., the risk or probability of suffering the event of interest) is the probability of a bill being approved, given that it has survived (has not yet been approved) up to a

[4]these results are available upon request to the authors.

Figure 4: Time to Approval by Regime Procedure

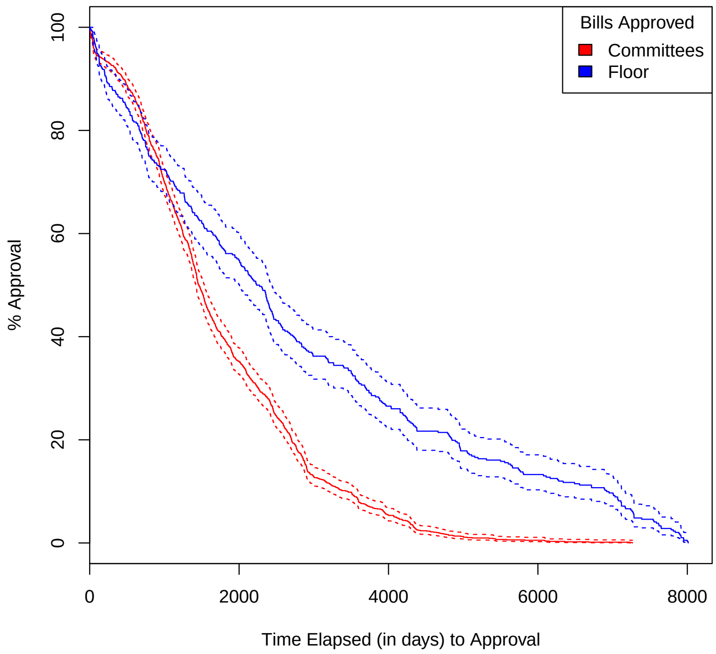


Source: Legislative Database (Cebrap)

specific time. Our question of interest in this kind of "time to event analysis" is: *How do certain characteristics affect bill' risk of being approved?* In practice, we are interested in the associations between each of the risk factors (our explanatory variables) and the event (the probability of being approved).

Table 3 present the coefficient estimates for our duration model adjusted to the bills presented by government coalition legislators. The coefficient estimates can be interpreted as the change in the expected log of the risk ratio relative to a one unit change in the explanatory variable, holding all other covariates constant. In short, If the risk ratio for a covariate is close to one then that variable does not affect time to approval. If the risk ratio is less than one, then the variable is associated with increased time to approval, and if the risk ratio is greater than one, then the explanatory variable is associated with decreased time to approval. Models 3 and 4 show that while Urgency decreases the time to approval of bills sponsored by members of the government coalition, if a bill goes to the floor, we have an expected increase in time to approval. If the coalition government enjoys the majority of the seats in Congress, we expect to observe a decrease in time to approval for bills sponsored by its members as shown in model 4. Model 6 indicates that the share of seats controlled by the

Figure 5: Time to Approval by Committee



Source: Legislative Database (Cebrap)

political party of the legislator who presented the bill is positively associated with an increase in time to approval.

Table 4 present the coefficient estimates for model adjusted to the bills presented by legislators of parties from the opposition. Models 3, 4 and 5 indicates that Urgency, Floor and Majority have similar effects for both government and opposition coalition members. Interestingly, the share of seats controlled by the political party of the legislator who sponsored the bill in Congress has opposite effects for members of the government coalition and of the opposition. While it seems not to affect the time to approval of bills presented by members of the government coalition, it is associated to a increase in time to approval of bills presented by members of the oppositionist parties.

Table 3: Analysis of Duration of Bills Presented by Coalition Legislators

	Dependent Variable:					
	Duration (in days) for Bill Approval					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Urgency	0.052		0.807^{***}	0.663^{***}	0.722^{***}	0.643^{***}
	(0.127)		(0.164)	(0.179)	(0.184)	(0.181)
Floor		-0.644^{***}	-0.944^{***}	-0.859^{***}	-0.827^{***}	-0.826^{***}
		(0.096)	(0.122)	(0.127)	(0.131)	(0.135)
Majority Coalition				0.234^{**}	0.313^{***}	0.256^{**}
				(0.101)	(0.112)	(0.105)
PT					0.082	
					(0.131)	
PSDB					-0.258^{*}	
					(0.140)	
PMDB					-0.088	
					(0.109)	
PFL/DEM					-0.260^{*}	
					(0.134)	
Seats (%)						-0.423
						(0.587)
Num. Obs.	857	836	836	664	664	664
R^2	0.0002	0.059	0.085	0.083	0.094	0.084
Log Likelihood	-4,934.908	-4,767.880	-4,756.405	-3,626.085	-3,622.347	-3,625.825
Wald Test	0.170 (df = 1)	45.390^{***} (df = 1)	59.920^{***} (df = 2)	49.390^{***} (df = 3)	56.950^{***} (df = 7)	49.960^{***} (df = 4)
Score (Logrank) Test	0.170 (df = 1)	46.590^{***} (df = 1)	63.095^{***} (df = 2)	51.326^{***} (df = 3)	59.125^{***} (df = 7)	51.893^{***} (df = 4)

$^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$
Standard errors in parenthesis
Source: Legislative Database (Cebrap)

Table 4: Analysis of the Duration of Bills Presented by Opposition Legislators

	Dependent Variable:					
	Duration (in days) for Bill Approval					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Urgency	-0.284^{**}		0.300^{*}	0.237	0.280^{*}	0.257
	(0.135)		(0.154)	(0.164)	(0.165)	(0.164)
Floor		-0.751^{***}	-0.831^{***}	-0.753^{***}	-0.720^{***}	-0.747^{***}
		(0.085)	(0.096)	(0.101)	(0.102)	(0.101)
Majority Coalition				0.264^{***}	0.381^{***}	0.307^{***}
				(0.073)	(0.084)	(0.078)
PT					-0.275^{***}	
					(0.100)	
PSDB					0.066	
					(0.102)	
PMDB					0.293^{**}	
					(0.129)	
PFL/DEM					0.395^{**}	
					(0.155)	
Seats (%)						1.126^{*}
						(0.641)
Num. Obs.	924	906	906	790	790	790
R^2	0.005	0.091	0.095	0.097	0.123	0.100
Log Likelihood	-5,387.653	-5,223.863	-5,222.052	-4,444.854	-4,433.376	-4,443.331
Wald Test	4.440^{**} (df = 1)	77.830^{***} (df = 1)	80.100^{***} (df = 2)	74.090^{***} (df = 3)	96.360^{***} (df = 7)	76.820^{***} (df = 4)
Score (Logrank) Test	4.468^{**} (df = 1)	80.431^{***} (df = 1)	82.968^{***} (df = 2)	76.124^{***} (df = 3)	99.126^{***} (df = 7)	78.884^{***} (df = 4)

$^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$
Standard errors in parenthesis
Source: Legislative Database (Cebrap)

Conclusion

The results presented in this research do not corroborate what we expected to find and are not in accordance with those found by Magar and Moraes (2012) for Uruguay. The Brazilian case already differs in the descriptive analysis: the success rate of projects presented by Deputies belonging to the government coalition is actually lower than that of their colleagues in the opposition. Such a finding is counterintuitive. The results of the statistical analyses also show that projects sponsored by members of the coalition face fewer chances of being approved.

It is thus necessary to find further explanations for this phenomenon. Comparing with the Uruguayan case, it is worth to highlight some points that may influence these findings. First, the processing time for projects originating in the legislature in Brazil is higher. This can impact the possibility of a legislator changing his stance during the evolution of his bill in the lower chamber; in other words, between the bill's introduction and the final action, the author could change his status in relationship to the government many times, either because he switched parties, or because his party entered or exited the government coalition. It is not yet possible to know how this affects the results and we intend to proceed investigating this issue.

However, if the authorship of a project is important for the output – i.e., if characteristics of the legislator such as party, relationship with the coalition and individual information, can influence the processing, then the moment when the issue gains the spotlight should also matter. Imagine, for example, the case of a bill presented by opposition member who cross over to the government's aisle (regardless of the motive) at precisely the moment when the commission was ready to manifest itself and make a decision. The legislator's new position probably influences this process. Radicalizing the analysis, we can assume that the characteristics of the project's author's would therefore not matter for the bill's approval. After all, there are so many projects sent and so little approved – another difference from the Uruguayan case – that the project's origins would not influence in the final destination of the proposal.

We can also speculate that one factor that could highly weigh towards the approval of a bill is whether, before being sent to the floor, the project was sponsored by a central actor in the decision-making process (a party leader, a

Legislative commission, or the Executive branch, etc.). Another possible explication could emerge from the perspective of the majority's agenda. Following this line, it is possible to conclude being a member of the coalition actually diminishes the chances for approval may be because the Executive and coalition members already negotiated policies. In other words, the coalition distributes power on policies at the same time that it organizes, through leadership of member parties, the demands of its wide base, forging an agenda of minimally common interests that is sent to the legislature by the Executive branch.

These two explanations follow evidence presented by de Araújo et al. (2013), who explain the fundamental role played by agenda holders in the approval process, a role that is attributed by the authors for the most part to bill narrators. The authors also affirm that it is not uncommon for the Executive branch to appropriate projects of parliamentarian authorship. In their words: "The appropriation is verified by the fact that many of the bills or interim measures of the government are inspired in proposals that are processed in Parliament" (de Araújo et al., 2013, 286). We can thus suppose that the Executive branch is appropriating coalition members' projects; in other words, these bills end up being part of the shared agenda between the coalition parties. Soon there would be no efforts to approve the coalition member projects. On the other hand, approving the opposition's agenda may often be an effective way to circumvent disagreement and open doors for negotiation.

It still is not possible to confirm any of these explanations. The main objective of this work was to start the suggestion given by Magar and Moraes (2012) to produce more analyses on the coalition formation process in multiparty presidential systems countries. With this we could further our understanding of Latin-American politics. The effort undertaken here was focused primarily on a recently-organized database and, thus, was very exploratory. It is the most complete database in existence concerning Brazilian legislative production. In order to make more precise explanations, it will be necessary to collect new information on the Parliamentary decision-making process. Here, we only scratched the surface and already encountered surprising results. To move forward, new research must focus on the participation of the Legislative branch in projects originating from Deputies and Senators.

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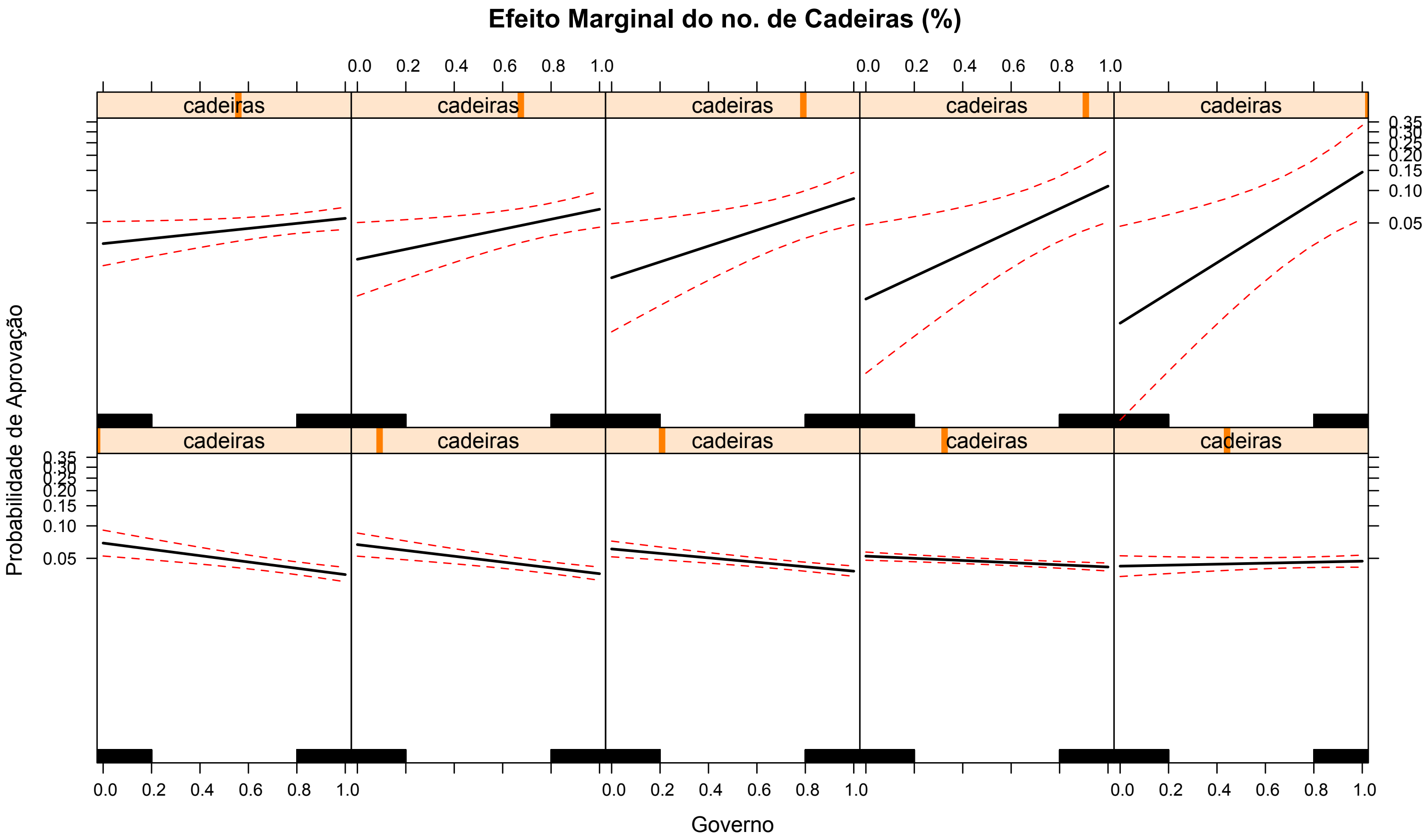
Figure 6: Marginal Effect of the number of seats (%) on the approval likelihood



Source: Legislative Database (Cebrap)