

All the President's Men and Women: Coalition Management Strategies and Governing Costs in a Multiparty Presidency

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This project examines the effects of a president's coalition management decisions on associated governing costs in a multiparty system. A strategic president who is concerned about policy outcomes and about her various management functions will consider these costs in working toward an optimal strategy. The results of our empirical analyses support the argument that large and ideologically diverse coalitions and disproportional cabinets tend to be more expensive over time. Further, the results indicate that presidential choices about how to manage coalitions influence governing costs even after controlling for a variety of other factors that matter to the bargaining game.

Keywords: multiparty presidency, coalition management, governing costs, executive-legislative relations, Brazil

Over the course of a few decades, political scientists and economists developed a rich collection of formal models of political coalition formation and survival in parliamentary regimes (see summaries in Laver 1998, 2003; Martin and Stevenson 2001). This first wave of work in coalitional politics tended to think in general terms about the coalition characteristics that facilitated survival. Yet, as Druckman noted more recently, “Extant work offers scant insight into the processes of governance” (2008, 482). A newer branch of literature has begun exploring the idea of ongoing administration or “coalition

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management,” particularly in the context of multiparty presidential regimes (e.g., Chaisty, Cheeseman, and Power 2014; Hiroi and Renno 2014; Pereira and Melo 2012; Pereira, Power, and Raile 2011; Pereira, Power, and Rennó 2005; Praça, Freitas, and Hoepers 2011; Raile, Pereira, and Power 2011). The current project builds on such work by considering the various decisions and tools involved in coalition management and by considering the ways a multiparty president can minimize governing costs with coalition parties.

Multiparty presidential regimes provide fertile ground for examining coalition management. Importantly, only a president in a multiparty system must simultaneously manage: (1) the entire executive branch, (2) his own political party, (3) relations between constitutionally separate branches, and (4) a true potential multiparty cabinet. The president is clearly the head of any coalition even prior to formation and is more difficult to replace than a prime minister due to the lack of confidence votes and the constitutional separation of origin and survival from the legislature. The president can often construct new cabinets in the middle of a term in a fairly unilateral manner, as well. A multiparty president is required to make a range of important management decisions due to these diverse, interrelated responsibilities of a political and administrative nature.

Multiparty presidents often operate in difficult environments but are also often given considerable institutional tools and resources to overcome this fragmentation and to facilitate governance (Shugart and Carey 1992). Some presidents fall into the trap of treating resource distribution as the end itself, which is a situation that lends itself to political corruption (Power and Taylor 2011). Other executives use their tools as a means to the end of achieving policy goals. Such executives may be concerned about politics and the spoils of office, but they also have sought the highest office in the land in order to implement certain policies. For these presidents, coalition management is an ongoing and complicated process.

This project asks how a president in a multiparty system might optimize outcomes in a complex and fragmented management environment. The use of resources in managing the coalition not only constitutes a cost in itself but also often means bearing the cost of policies drifting away from the president’s preferences. The argument developed here is an important step in understanding governance and policymaking in multiparty presidential regimes and in being able to evaluate the performance of presidents in such regimes. This theoretical development and the derivation of testable implications are crucial for advancing the literature on coalition management.

This project examines these complex issues using Brazil as a case study. Although the last few Brazilian presidents have governed practically under the same institutional setting, they have faced different constraints and have made different decisions about managing their coalitions.¹ Once elected, the president faces at least three interconnected constraints: (1) the level of party fragmentation in the legislature, (2) the size of the

1. It is worth noting that there are two constitutional changes during the period under examination. Constitutional Amendment No. 16 of 1997 permitted one consecutive reelection to executive posts. Constitutional Amendment No. 32 of 2001 limited the president to one reissuance of a lapsed decree. The former is not directly relevant to our questions, and inclusion of a dummy variable for the latter does not change any of the substantive conclusions in the later analysis.

president's party relative to the sizes of other parties, and (3) the ideological distances between the president's party and the other political parties in the legislature. Working within such constraints, the executive makes decisions about the size and ideological heterogeneity of his coalition and about proportionality in rewarding cabinet seats. The latter refers to the proportionality with which a coalition party's number of legislative members translates to seats in the cabinet. We argue that these coalition management decisions then affect the need for other expenditures. In particular, we propose that the number of cabinet posts, the allocation of funds to the ministries, and pork for legislators are among the costs affected by these initial decisions.

The section that follows discusses presidential decisions about coalition management and governing costs, states our primary hypotheses, and considers other external and internal influences. The section after describes our data and methods. The two subsequent sections provide a more case-based analysis of data and then the results of seemingly unrelated regression (SUR) analyses. These analyses examine the effects of coalition management strategies on governing costs, finding that choices about the size and ideological spread of the coalition and cabinet proportionality do indeed influence governing costs even when controlling for other constraints and factors. A final section discusses these results and their implications.

Strategic Coalition Management

Presidents elected in multiparty, hyperrepresentative systems with significant party fragmentation in the legislature, as in Brazil, often face a minority condition. Therefore, presidents must build postelectoral coalitions if they wish to enjoy majority status. In so doing, presidents must make decisions about: (1) the number of parties that will take part in the coalition, (2) the degree of ideological difference between coalition partners and the president's party, and (3) and how power will be shared within the cabinet among coalition allies. Though their focus is ultimately on the generation of legislative support, Raile, Pereira, and Power (2011) argue that such managerial choices engender different trade-offs and costs for the executive.

Coalition Management Choices and Governing Costs

Government formation theories have long focused on the relative sizes and ideologies of political parties that serve as potential partners in a coalition. The concept of the "minimal winning coalition" and its equilibrium status in cooperative games emerged in early models of government formation (e.g., see von Neumann and Morgenstern 1953). Each member in a minimal winning coalition was essential to the winning status. Amendments to this concept incorporated the minimal winning coalition with the smallest weight (Riker 1962) or the minimal winning coalition with the smallest number of members (i.e., the "bargaining proposition" of Leiserson 1968). The addition of ideology and policy-oriented parties resulted in the "minimal connected winning coalition" (Axelrod 1970). Parties in such a coalition were adjacent to one another on the left-right

dimension. An amendment here suggested that a minimal winning coalition would include the smallest possible ideological range (de Swaan 1973). Martin and Stevenson (2001) have also introduced more recent theories in which the largest party is the centripetal actor in coalition negotiations or the party containing the median legislator enters the government and becomes a policy dictator.

Other scholars have argued that the value of the pie being divided among coalition partners also matters (see Diermeier, Eraslan, and Merlo 2003). This observation is key for Strøm (1990) and Müller and Strøm (1999) in understanding that government membership has costs that affect the occurrence of minority governments. In other words, a government has to be valuable in order to attract the participation of coalition members. The value of taking part in a coalition directly relates to the richness of the spoils of office, the policy-making opportunities that holding office entails, and the expected electoral gains (Strøm 1990). The influence of Strøm's work has gone beyond the recognition of minority government by also investigating government stability and duration.

Yet other authors have argued that parties that form the government do not have complete information about the true preferences of their rivals in the real world. This lack of complete information reduces the ability of parties to make credible commitments and increases incentives for opportunistic behavior and blackmail. Accordingly, we should expect an increase in information asymmetries between players to result in an increased coalition size (Dodd 1976). Carrubba and Volden (2000) predict that a "minimal necessary coalition" results as parties attempt to create a more stable trading environment less subject to the high costs of defection; however, they also predict that oversized coalitions make the budget more difficult to approve. The occasional disconnect between the legislative seat share of a party and the ability of that party to influence behavior at the polls (Ansolabehere et al. 2005) is yet another reason a *formateur* may choose to construct something other than a minimal winning coalition.

Researchers who argue that supermajorities can be cheaper also detract from arguments in favor of minimal winning coalitions. Supermajorities may occur so frequently in empirical terms because they prevent small parties from acting as pivots, thus decreasing overall costs (see Groseclose and Snyder 1996). In some presidential systems, lack of party loyalty and lack of discipline mean that a minimal winning coalition may not be enough to win consistently over time. Larger coalitions can also occur when two buyers (e.g., interest groups, political parties) with opposite preferences have significant resources and bargaining power (Groseclose and Snyder 1996; Wiseman 2004). On the other hand, empirical research has shown that minority (i.e., smaller than "necessary") governments are fairly common in both presidential and parliamentary democracies (see Cheibub, Przeworski, and Saiegh 2004).

Another coalition management decision for the president concerns the ideological distances among coalition partners. A starting point for this literature is the earlier-mentioned argument that a *formateur* would prefer a "minimal connected winning coalition" of parties adjacent to one another along a single ideological dimension (Axelrod 1970). Closed minimal range theory (de Swaan 1973) adjusted this argument by asserting that a coalition might instead involve the lowest possible dispersion of political preferences even when parties were not adjacent to one another. A behavioral assumption

underlying such models was that ideologically close coalitions would have fewer conflicts and would consequently distribute larger payoffs to members over time. Based on more recent results of comparative statics in formal modeling, presidents in multiparty systems should also take into account ideological heterogeneity when deciding how to use the respective tools of political transfers (e.g., cabinet posts) and monetary transfers (e.g., pork) in managing coalitions (Araujo, Pereira, and Raile 2008).

Lastly, a president must decide how to share power among coalition partners. Non-cooperative models of bargaining propose that the executive distribute cabinet posts to coalition parties in either a proportional manner (Gamson 1961; Merlo 1997; Morelli and Montero 2003) or in a basically proportional manner with a (small) bonus for the *formateur* (Baron and Ferejohn 1987) to solidify support from coalition partners. Empirical analysis of parliamentary regimes provides evidence for both the former (Carroll and Cox 2007) and the latter (Ansolabehere et al. 2005). More proportional cabinets simply emerge as better practice in this literature and in the literature concerning multiparty presidentialism (see Amorim Neto 2002, 2006; Negretto 2006).

The discussion surrounding strategic coalition management converges on the idea that presidents in multiparty settings have under their control and discretion a pool of political and monetary resources. Expenditures of these resources constitute governing costs. Presidents strategically distribute such resources to parties and legislators (Cheibub, Przeworski, and Saiegh 2004; Raile, Pereira, Power 2011; Zucco 2013) in order to build and sustain legislative support. The current analyses focus on three different types of governing costs.

The first type of governing cost is the number of cabinet positions a president decides to include in the administration on a monthly basis. The Brazilian president has the exclusive constitutional prerogative to create or terminate administrative positions in the public bureaucracy, including cabinet positions. This variable is not a direct cost like the ones that follow. Instead, the total number of ministries represents an indirect means by which certain other factors influence ministry expenditures. Perhaps most importantly, the number of ministries influences the total amount of budgetary resources allocated across cabinets on a monthly basis ($r = 0.80$ in our data), which is our second type of governing cost. The third type of governing cost is the amount of legislators' individual amendments to the annual budget (i.e., pork) appropriated by the government on a monthly basis. The pork component attempts to capture legislators' intent to allocate resources to their main electoral constituency. Although legislators have the prerogative to amend the budget bill, the executive has the power of pursuing the budget under his discretion. Ample evidence in the literature (Alston et al. 2012; Pereira and Mueller 2004; Raile, Pereira, and Power 2011) demonstrates that the president makes strategic use of the appropriation of legislators' amendments in the budget as a governing tool to achieve legislative success.

Primary Hypotheses

Our main argument is that presidential choices about the management of certain kinds of coalition goods and characteristics have consequences for governing costs that are

also at least mostly under executive control. Based on the foregoing literature review, we specifically propose three main independent variables as influences on governing costs: the number of coalition partners, the ideological spread of the coalition, and the proportionality of cabinet rewards. The logic for these hypotheses is embedded in parliamentary models of government formation and survival. These strategic choices, though subject to constraints and shocks, are macromanagement decisions that generate direct consequences for the quality, level of conflict, sustainability, cost, and capacity of a president's government. They also have implications for the president's utility.

As just discussed, the literature does not offer a unanimous prediction about the costs of adding parties to the coalition. Certainly, transaction costs increase with the number of parties in a coalition. Interacting with partners on a regular basis requires time and effort. More importantly, every partner needs compensation in one form or another. Assuming an average cost per partner, perhaps weighted by size, the addition of each partner means that resource expenditures must also increase. Other factors being constant, holding a coalition intertemporally should require a greater exchange of goods in coalitions with more members. This also fits with the idea from the parliamentary literature that *formateurs* will limit the size of the coalition in order to increase the per-member net benefits. However, arguments in the literature about avoiding pivotal parties and about using supermajorities to reduce costs push the prediction in another direction. On the balance, we feel confident in asserting that a higher number of partners increases at least certain types of governing costs.

H₁: Including a higher number of parties in the formal coalition increases governing costs.

The literature is more consistent in arguing that ideological spread and disagreement produce costs over time. Ideological heterogeneity allows for both "policy drift" (Béland 2007) and "bureaucratic drift" (McCubbins, Noll, and Weingast 1989; Shepsle 1992) as ideologically divergent partners push policies in undesirable directions. Presidents must tolerate such drift or must expend other resources to rein it in. Ideologically heterogeneous or diverse coalitions should be more difficult to coordinate and manage. If a president is optimizing correctly, ideologically heterogeneous coalitions should also necessitate greater use of pork (see Araujo, Pereira, and Raile 2008) as presidents try to avoid giving ideological opponents access to cabinet seats. Given the thrust of the literature, we offer the following directional hypothesis.

H₂: More ideologically diverse coalitions increase governing costs.

Finally, the literature also seems relatively settled in terms of the effects of cabinet proportionality on governing costs. In sum, less proportional cabinets will leave certain coalition partners dissatisfied and will increase the costs of purchasing their loyalty (see Amorim Neto 2006). A cabinet constituted disproportionately of an executive's own partisans might create external animosity, but the larger effect would be to disrupt relationships within the governing coalition. Such situations imply a higher cost of governing, more coordination problems, and a greater necessity of side payments to discipline the

coalition. Ignoring such expectations can undermine support for the executive from within the governing coalition.

H₃: More disproportional cabinets increase the costs of governing.

Other Factors

Our analysis also needs to control for certain starting conditions, constraints, assets, and shocks. Few of these factors are purely exogenous (i.e., external) to the system of presidential coalition management choices, but some are more external than others. A central set of starting conditions results from elections. The degree of vulnerability of the president's party in the legislature is an important consideration. For example, the Index of Coalition Necessity (Chaisty, Cheeseman, and Power 2014) multiplies the effective number of parliamentary parties by the percentage of seats not occupied by the president's party in order to capture the vulnerability of the president's party in a fragmented party environment. In other words, this index attempts to capture the political bargaining environment at the beginning of the government as generated by the election results. We can reasonably infer that a greater size for the president's party in the legislature and lower party fragmentation in the legislature both decrease the need for the president to build interparty coalitions. Such a variable captures two of the earlier-mentioned constraints: the level of party fragmentation in the legislature and the size of the president's party relative to the sizes of the other parties. The other constraint mentioned earlier was the ideological distance between the president's party and other parties in the legislature. Consequently, we include a control variable in our later analysis that measures the distance between the president's party and the mean floor ideology in the Chamber of Deputies.

A president's support among voters can also be a key asset in the analysis of governing costs. Presidential popularity tends to constrain the policy options of legislators (see Kernell 2006), thus making their compliance cheaper. However, popular support is also a form of political capital that can erode as the president tries to implement a political agenda. This is particularly true if a president uses "going public" (Cameron and Park 2011) as a negotiation strategy. Presidential popularity also correlates rather strongly with a number of macroeconomic conditions (see Spanakos and Renno 2006). Sustained economic problems or significant macroeconomic changes can serve as shocks to or influences on the political game. Economic crises or significant changes to unemployment or inflation rates are examples of relevant factors. Such shocks can promote repositioning of forces on the political spectrum, thereby changing coalition parameters and utilities.

Other potential shocks to the coalition management system relate more closely to politics or policy making. Such shocks include political scandals and institutional reforms. Brazil has undergone a rather consistent stream of political scandals during the period of analysis. The *mensalão* scandal, which involved payments for legislative support, is one prominent example (see Pereira, Power, and Raile 2011). Such scandals can affect

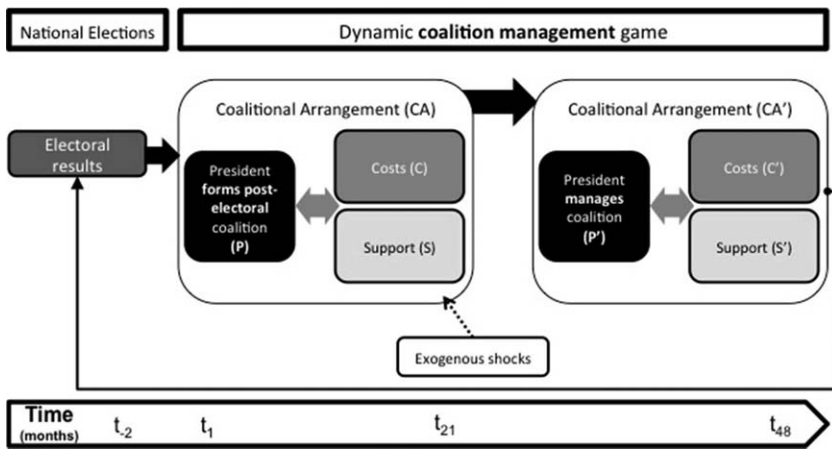


FIGURE 1. Dynamics of the Coalition Management Game

presidential popularity and can reconfigure the costs and benefits for the political players, particularly by influencing mass views of particular politicians or political parties.

Finally, public expenditures may have a natural tendency to grow over time, an idea often associated with “Wagner’s law.” Public expenditures may grow in conjunction with a country’s economic growth and/or may constitute an increasing proportion of a country’s economic activity (for discussion, see Peacock and Scott 2000). We control for such growth, though it is difficult to disentangle from presidential strategies given our limited number of presidents in a single country.

Figure 1 shows certain dynamics of the game between the president and his coalition, taking into account starting conditions, shocks, and feedback mechanisms. The election establishes a distribution of party sizes (i.e., seats held in the legislature) and ideological preferences. The president (*formateur*) makes an offer of a mixture of political and monetary assets to potential coalition members in exchange for continued political support. Based on the *formateur*’s choices with regard to coalition size, ideological diversity of the coalition, and degree of cabinet proportionality, the coalition achieves a particular degree of satisfaction that facilitates governance (CA). However, the balance is dynamic and can vary in the face of external or internal shocks, such as coalition members updating their utilities by deciding on new rewards or leaving the coalition. The achievement of a new equilibrium engenders a new cost matrix (CA’).

Data and Method

In order to test our hypotheses, we have built a unique data set with monthly data points, thereby making a month the unit of analysis. The data set as a whole covers all months from 1995 to 2013, but missing data restrict the regression analyses to the period of 1997 to 2013. In the full data set, Fernando Henrique Cardoso served as president for

96 months (limited to 72 months in the regression analyses), Luiz Inácio da Silva for 96 months, and Dilma Rousseff for 36 months.

We employ seemingly unrelated regression (see Zellner 1962) as the primary method of data analysis. Doing so approximately follows the use of three-stage least squares regression elsewhere for estimation with similar variables in similar configurations (see Raile, Pereira, and Power 2011). In this case, three-stage least squares is inappropriate because we have been able to avoid reciprocal causation issues within the individual equations. However, a system of equations still seems most appropriate given the different forms of governing costs and the relationships among them. Seemingly unrelated regression assumes correlation of error terms across equations. Diagnostics here confirm this correlation.²

Our equations include three different dependent variables. The first is *Total number of ministries*, which is a measure of the total number of secretariats, ministries, and other bodies with ministry status. The second is *Logged ministry expenditures*, which is the natural log of the total of all executed expenditures across the bodies included in the *Total number of ministries*. The third is *Logged amendment expenditures*, which is the natural log of all individual budget amendments (i.e., pork) executed for legislators. Taking logs of the expenditure variables, which involve very large values, helps deal with both heteroscedasticity and potential diminishing returns of expenditures (i.e., nonlinear relationships).

The first of the three main independent variables (used in addressing the primary hypotheses) is *Number of coalition parties*, or the total number of parties holding a ministry post in the governing coalition (H_1). The second is *Coalition heterogeneity*, or the ideological distribution of the parties that are members of the governing coalition (H_2). This variable measures ideological distances between the president's political party and ministers' political parties according to Power and Zucco's (2012) index.³ The third is *Cabinet coalescence*, or the proportionality in mapping coalition legislative seats to cabinet seats among political parties in the governing coalition, following Amorim Neto's (2006) method (H_3).

Per the earlier discussion, yet other independent variables function mostly as controls in the equations. We effectively disaggregate the pieces of the *Index of Coalition Necessity* (ICN) in the *Effective number of parliamentary parties* and the *Percentage of noncoalition seats* in order to control for negotiation starting conditions. The latter is the percentage of seats in the Chamber of Deputies held by parties not included in the governing coalition. We also control for ideological constraint with *Ideology gap*, which is the ideological distance between the president's party and the mean ideology in the Chamber of Deputies. *Presidential popularity* is the percentage of positive evaluations of the president minus the percentage of negative evaluations. *Unemployment* is the country's unemployment rate. We have calculated three variables to account for political scandals. *Scandal* is

2. A Breusch-Pagan test of independence across equations allows rejection of the hypothesis that the residuals are uncorrelated. The correlation of residuals is particularly evident between the *Logged ministry expenditures* and *Logged amendment expenditures* equations.

3. The measure of ideological heterogeneity is a coefficient of variation (i.e., a ratio between the standard deviation and the mean) of the ideological positions of all political parties that belong to the president's coalition.

TABLE 1
Governing Choices, Costs, and Constraints in Brazil (Monthly Average by Term), 1995–2013

<i>Presidential Term</i>	<i>Total Number of Ministries</i>	<i>Ministry Expenditures</i>	<i>Amendment Expenditures</i>	<i>Index of Coalition Necessity</i>
Cardoso (First)	24.125	25.843 billion	159.842 million	57.892
Cardoso (Second)	27.229	35.354 billion	493.667 million	56.539
Lula (First)	33.688	43.410 billion	2,600.730 million	71.251
Lula (Second)	36.813	61.060 billion	635.512 million	79.782
Rousseff (First)	38.194	71.283 billion	559.089 million	85.771

Notes: Amendment data are not available for the first two years of Cardoso's first term. Ministry expenditures and amendment expenditures (i.e., pork) are in Brazilian *reals*. *Source:* IPEA/FGV (2015).

a simple dummy variable that indicates months in which political scandals broke. *Scandal intensity* allows for a measure of intensity (ranging from 1 to 5 in the data) in the months in which scandals broke. *Mensalão* is a dichotomous variable that assumes the value of 1 during the time period of February 2004 to June 2005. *Time* is a monthly count variable from the beginning of the analyzed time period to the end. Finally, a set of three polychotomous dummy variables captures the three different presidents being evaluated: *Cardoso*, *Lula*, and *Rousseff*.

Recent Brazilian Presidents

Recent Brazilian presidents have incurred governing costs that have varied widely (see Table 1). Again, we view *Total number of ministries* as a more indirect cost than the other two cost variables. External constraints are certainly part of the story, as costs move in conjunction with the ICN. Executives seem to be responding, at least in part, to the need for greater cooperative behavior. However, as the later, more sophisticated, analysis demonstrates, these constraints are not deterministic; presidential strategy matters. The average ICN value for the 1995–2013 period in Brazil was 69.4 points, which is considerably higher than in other countries assessed by Chaisty, Cheeseman, and Power (2012): Ecuador, 50.33 in 2002; Chile, 46.73 in 2002; Armenia, 39.52 in 2003; Russia, 37.88 in 1999; Ukraine, 19.80 in 2010; Kenya, 25.42 in 2002; Benin, 22.56 in 2006; and Malawi, 18.35 in 2004. The Workers' Party (PT) presidents, Lula and Rousseff, were also clearly more vulnerable in that their party was smaller in relation to the fragmented remainder of Congress. The significant increase in coalition necessity during the first term of Rousseff's government was mainly due to the increase in party fragmentation in the legislature.

In his first term, Cardoso incurred relatively low governing costs. He operated a leaner bureaucracy (in terms of the number of ministries), and he spent relatively little through the ministries and out of the pork barrel. All these values increased in Cardoso's second term but remained light compared to the other presidents in the table. Though not shown in this table, Cardoso also tended to spend fewer resources on his own political party than with the coalition partners as compared to the two PT presidents.

TABLE 2
Coalition Management Strategies in Brazil (Monthly Average by Term), 1995–2013

<i>Presidential Term</i>	<i>Number of Coalition Parties</i>	<i>Coalition Heterogeneity</i>	<i>Cabinet Coalescence</i>
Cardoso (First)	5.604	30.953	55.536
Cardoso (Second)	4.833	30.486	61.391
Lula (First)	7.688	48.086	49.019
Lula (Second)	9.125	42.178	49.801
Rousseff (First)	7.778	45.831	43.053

Source: IPEA/FGV (2015).

Governing costs increased dramatically during Lula's first term, and he spent a much larger proportion of those resources on his own party (see Pereira, Power, and Raile 2011). Costs related to pork (i.e., amendments) especially jumped. While these pork values settled down to more normal levels in the second term of Lula's presidency, other governing costs increased as Lula provided additional rewards to coalition partners. The data for Rousseff show a continued expansion in the number of ministries and monies spent by those ministries, with pork expenditures remaining relatively high. However, Rousseff's first term marked the first PT presidential term in the data set in which coalition partners received a greater share of resources than PT itself.

Comparing the average values of the *Number of coalition parties*, *Coalition heterogeneity*, and *Cabinet coalescence* across the presidents (see Table 2) shows great disparities with regard to presidents' choices about how to manage their coalitions. Similar to Lula, Rousseff built a large, heterogeneous, and disproportional coalition (i.e., lower cabinet coalescence), though the number of parties under Rousseff was lower than in the case of Lula's second term. Rousseff's coalition of seven parties still generated a comfortable majority of 328 seats in the Chamber of Deputies, above the 60% threshold needed to approve new amendments to the Constitution. The ideological heterogeneity of presidential coalitions in Brazil also reached a new high with the arrival of PT in the presidency. From a relatively homogeneous center-right coalition during the Cardoso Administrations, Brazil moved to an ideologically diverse combination that included extreme conservative and liberal parties together in the Lula and Rousseff coalitions. The PT presidents also preferred to govern by relying on a more monopolistic profile rather than sharing power with allies. Rousseff's coalition was less monopolistic than Lula's, allocating 46% of her ministerial positions to her own political party, PT, whereas Lula concentrated 60% of cabinet positions with PT. This is true despite a lower coalescence value overall for Rousseff.

Regression Results

We start with the first equation in Specification #1 in Table 3, which treats *Total number of ministries* as a dependent variable. We have suggested that the total number of ministries is a function of presidential choice as well as starting conditions and exogenous

TABLE 3
 Seemingly Unrelated Regressions for Coalition Management and Governing Costs in Brazil,
 1997–2013

Variable	SPECIFICATION #1			SPECIFICATION #2		
	Coeff.	Std. Error	$p \leq$	Coeff.	Std. Error	$p \leq$
DV: Total number of ministries						
Number of coalition parties	0.469	0.033	0.001			
Index of Coalition Necessity	0.045	0.018	0.013	0.060	0.019	0.002
Ideology gap	0.788	0.053	0.001			
Presidential popularity	-0.010	0.002	0.001	-0.013	0.002	0.001
Time	0.060	0.003	0.001	0.056	0.003	0.001
Lula				3.454	0.207	0.001
Rousseff				2.160	0.304	0.001
Constant	17.711	0.833	0.001	19.663	0.933	0.001
DV: Logged ministry expenditures						
Logged ministry expenditures (t-1)	0.344	0.070	0.001	0.332	0.069	0.001
Total number of ministries	0.045	0.008	0.001	0.048	0.008	0.001
Cabinet coalescence	0.001	0.004	0.784	0.003	0.004	0.493
Constant	14.560	1.599	0.001	14.659	1.590	0.001
DV: Logged amendment expenditures						
Logged amendment expenditures (t-1)	0.028	0.060	0.638	0.031	0.060	0.602
Number of coalition parties	0.257	0.074	0.001	0.248	0.074	0.001
Coalition heterogeneity	-0.058	0.018	0.001	-0.061	0.018	0.001
Cabinet coalescence	-0.082	0.024	0.001	-0.081	0.024	0.001
Effective number of parliamentary parties	0.696	0.257	0.007	0.721	0.258	0.005
Percentage of noncoalition seats	0.061	0.011	0.001	0.062	0.011	0.001
Unemployment	0.240	0.059	0.001	0.251	0.059	0.001
Time	-0.006	0.006	0.297	-0.006	0.006	0.326
Constant	12.956	2.467	0.001	12.571	2.468	0.001

Notes: The unit of analysis is a month. The sample size is 200 months due to missing amendment data for the first 24 months of the series and due to disallowing lagged values to cross from one presidency to another. R^2 for the three equations in Specification #1, in order, is 0.990, 0.611, and 0.550. R^2 for the three equations in Specification #2, in order, is 0.990, 0.611, and 0.550. However, these values are not precisely equivalent to regular R^2 values. All tests are reported as two tailed.

constraints and assets. *Index of Coalition Necessity*, *Ideology gap*, and *Presidential popularity* serve as indicators for starting conditions and for constraints and assets.⁴ As expected, greater need of building coalitions leads to a higher number of ministries. A greater distance between the president's party and the mean legislative ideology also increases the number of ministries. On the other hand, presidents can trade on their popularity as an asset and do not need as many ministries when their popularity is higher. Though not shown in Table 3, *Unemployment* functions in an equivalent but opposite way. Presidents

4. ICN likely influences our main independent coalition management variables (size and heterogeneity of the coalition and cabinet proportionality). The primary concern in such a situation is that the coalition management variables are merely a conduit for the influence of ICN on governing costs. The clearest way to deal with this situation is to include ICN or its constituent parts in equations along with our primary independent variables, which we have done. If ICN were solely responsible for the governing costs, the other independent variables would not have statistically significant effects on governing costs.

must respond to bad macro conditions by showing that they are “doing something.” This typically means government expansion and increased spending. The total number of ministries also increases over *Time*, in line with the idea of natural government expansion.⁵

However, holding all these conditions constant, presidential choice about the *Number of coalition parties* also affects the total number of ministries. Indirectly (see below), this suggests that the choice regarding the number of coalition partners does increase governing costs (H_1). Not surprisingly, a president with a larger coalition in terms of parties will expand the size of the bureaucracy, ostensibly to make room for these partners. Specification #2 expands on this notion of presidential choice. In this specification, the *Lula* and *Rousseff* variables replace *Number of coalition parties*.⁶ The coefficients here represent the difference from the excluded category, which is the Cardoso administration. After controlling for the other factors in the equation like starting conditions and exogenous constraints, Rousseff chose to use a higher number of ministries than Cardoso, with Lula even further ahead. An increase in *Coalition heterogeneity* (not shown due to table space limitations) also increases the number of ministries in line with H_2 (coefficient = 0.084, standard error = 0.012, $p \leq 0.001$). Correlation patterns prevent including this variable in the same equation as *Number of coalition parties* and *Ideology gap*.

Returning to Specification #1 in Table 3, we look now at the equation with *Logged ministry expenditures* serving as a dependent variable. This equation is relatively simple but is essential in showing the indirect influence of coalition management choices. This dependent variable is also a clear governing cost. The equation includes a one-month lag of the dependent variable to control for the fact that such expenditures have a certain inertia over time.⁷ As one would expect, month-to-month expenditures are related in a positive way. Importantly, an increase in the number of ministries corresponds to an increase in ministry expenditures. Though not shown in Table 3, using per-ministry expenditures and its one-month lag produces the same pattern of results. This finding bolsters the interpretation that costs are increasing due to the president’s strategic choices (rather than only as a natural function of having more ministries, which also matters). *Cabinet coalescence* does not affect ministry expenditures in a statistically significant way here, doing some damage to H_3 . However, results below buoy the prospects of this hypothesis. The other coalition management variables (i.e., *Number of coalition parties* and *Coalition heterogeneity*) influence ministry expenditures indirectly through the choice of the number of

5. The inclusion of the *Time* variable in these equations does pose potential problems of multicollinearity, as shown by variance inflation factor values. However, all highly correlated independent variables produce statistically significant results in the equations, suggesting that any inflation of standard errors has no bearing on the substantive results. Removal of the *Time* variables leaves the other substantive conclusions unchanged.

6. *Ideology gap* must also drop from the equation here due to multicollinearity with the two presidential administration variables.

7. Autocorrelation diagnostics suggest an AR(1) process. We include the one-month lag to deal with the autoregressive error structure. We do not include a one-month lag in the equations with *Total number of ministries* as dependent due to the lesser month-to-month variation of this variable. However, inclusion of a one-month lag for this variable does not change the substantive pattern of results. In line with Keele and Kelly’s (2006) findings, we use lagged terms rather than a time-series model. We believe that dealing with the correlated errors across equations is more important than using a time-series model here.

ministries. Specification #2 stays the same for this dependent variable and produces very similar results.

The third equation treats *Logged amendment expenditures* as the dependent variable.⁸ Including a greater number of parties in the coalition rather directly increases governing costs here, providing further evidence supportive of H₁. *Coalition heterogeneity* (H₂) actually decreases amendment expenditures here, fitting with the findings of Raile, Pereira, and Power (2011). As anticipated, greater proportionality in awarding cabinet seats to coalition partners (*Cabinet coalescence*) decreases pork expenditures (H₃), though this result is slightly sensitive to an outlying data point.⁹ The other variables all perform as expected. Greater partisan fragmentation in the legislature (*Effective number of parliamentary parties*) and having a greater percentage of legislative seats held by parties that are not part of the governing coalition (*Percentage of noncoalition seats*) both increase governing costs by enhancing presidential vulnerability.¹⁰ Higher unemployment, as an exogenous influence or shock for the political system, also increases pork expenditures.¹¹ Pork expenditures do not appear to expand naturally after accounting for all the other independent variables here (see *Time*). Again, Specification #2 stays the same for this dependent variable and produces very similar results.

The earlier discussion also mentioned political scandals as potential influences on coalition management. Neither the *Scandal* variable nor the *Scandal intensity* variable produces statistically significant results when included as an independent variable in the equations with *Logged ministry expenditures* or *Logged amendment expenditures* as dependent variables. The *Mensalão* variable has the effect of decreasing ministry expenditures ($p = 0.022$), though without affecting any of the other substantive results. Conceivably, the side payments to legislators during the period of the scandal served as replacements for ministry funding.

Discussion

We have expanded directly on relatively new work that looks at ongoing presidential management of coalitions in multiparty regimes. In particular, we have examined the

8. The one-month lag of this variable is not statistically significant despite a relatively high zero-order correlation between the dependent variable and its one-month lag. Periodicity in spending patterns may account for this result; the relatively large number of independent variables in this equation might also be responsible.

9. One data point in the amendment data (January 2001) is an outlying low value, despite January values that are typically much lower than other months. To test robustness, we impute a value for that month that is the average of the previous and subsequent January values. Using the imputed data, we find that the effect of cabinet coalescence on pork expenditures is somewhat less certain, though it still passes conventional thresholds using a directional test ($p = 0.025$). The zero-order correlation between logged pork expenditures and cabinet coalescence ($r = -0.42$) boosts our confidence in this result, as well. Additionally, removal of cabinet coalescence from the ministry expenditures equation (in which it is not statistically significant) drops the one-tailed p value for cabinet coalescence even further to 0.017 in the pork equation even with the imputed data point.

10. We are not able to disaggregate ICN into its constituent parts in the first equation due to correlation patterns.

11. Other measures of macroeconomic conditions, such as inflation or gross domestic product, do not produce statistically significant results when replacing unemployment.

ways in which certain presidential coalition management strategies can reduce or increase related costs of governing. The preceding analysis supports the interpretation that certain characteristics of coalition management—particularly the size and ideological spread of the coalition and the proportionality of the cabinet—affect related costs of governing for a multiparty president. Such costs include ministry expenditures, which are strongly influenced by the choice of the number of ministries, and pork expenditures.

Certainly, presidents face different exogenous constraints and external and internal shocks during their times in office. However, multiparty presidents are not pure hostages of adverse political conditions generated by a fragmented environment; they have some choices as they engage in coalition management. A president's coalition management choices continue to influence governing costs even after controlling for such constraints and shocks. Not every president will successfully optimize in making these choices. Ultimately, the problems with the Brazilian multiparty presidential system (to extent they exist) may owe more to coalition management strategies than to institutional design shortcomings.

The three primary hypotheses find support in the empirical analyses. Presidential choice about the number of coalition parties affects ministry expenditures in a substantial way through its influence on the number of ministries, which is only shaped in part by the postelectoral configuration of parties in the legislature. The number of coalition parties also affects pork expenditures more directly. Presidents need not invite enough parties to form a legislative majority; many regimes operate just fine with minority governing coalitions, and many presidents have extra protection due to their constitutional separation from the legislature. Brazilian presidential choices about the number of coalition partners may sometimes go beyond necessity. Compounding this issue in the case of Lula is the fact that he then staffed the extra ministries with members of his own party.

The evidence regarding the ideological heterogeneity of the coalition is more nuanced and mixed. A more ideologically diverse coalition does tend to increase the number of ministries, but this result is sensitive to model specification due to collinearity. On the other hand, controlling for other factors, greater ideological heterogeneity appears to decrease pork expenditures. This result suggests that Brazilian presidents during this timeframe have tended to reward ideologically distant coalition partners through mechanisms other than pork. This is likely a suboptimal strategy, especially when considering the potential for drift. The other possibility is that mere inclusion in the coalition provides some satisfaction for partners that allows for a decrease in pork expenditures (or a president merely assumes that such inclusion increases satisfaction and adjusts pork accordingly). Additionally, after controlling for other factors, cabinet coalescence or proportionality does not appear to influence ministry expenditures in a direct manner. However, coalescence does influence pork expenditures. More disproportional awarding of cabinet seats leads to higher pork expenditures, presumably to compensate coalition partners in a way other than with ministry posts.

Certain limitations of the study are worth mentioning. Restriction of the analysis to one country over a couple decades with a limited number of executives is one such limitation. This limitation contributes to higher collinearity among variables. We have used

a variety of diagnostics, robustness checks, and sensitivity checks to deal with this issue. Teasing out complex relationships with more limited data is also a challenge. Though constructing a strong cross-national data set is not feasible at this point, we hope that eventually such data are available for a number of multiparty presidencies. Related to the issue of data limitations is the fact that presidents have other governing costs, and obtaining usable data for these other costs is impossible, infeasible, or outside the scope of the current project. The literature indicates that different tradable goods available to the president can serve as imperfect substitutes (Raile, Pereira, and Power 2011). The president, especially in a multiparty setting, makes use of political assets, monetary transfers, and policy concessions in order to govern. The use of these tradable goods represents disutility for the president.

We suggest a few extensions of the work. Certainly, expanding analysis to other places, times, and institutional arrangements is a logical next step. This is particularly true if we wish to determine the relative impacts of regimes and coalition management on governance outcomes. Obtaining or creating usable data to address some of the other study limitations is also a worthy longer-term goal. We would advocate for additional work to explore the relationships between corruption and coalition management. Is corruption a strategic part of coalition management, a consequence of coalition management, an influence on coalition management, or all the above? Our indicators of corruption scandals, though a step forward, are insufficient to explain these relationships in a satisfactory way at this juncture. Further, while data relevant to policy concessions are beginning to emerge (see Gaylord and Renno 2015), integrating policy concessions into this type of model is going to require additional theoretical work on the ways in which policy concessions interact with other coalitional goods and governing costs.¹² Additionally, making data from the Brazilian Development Bank useful for purposes of analyzing impacts on coalition management would require theoretical work and data analysis beyond the scope of the current project. The capacity of the national government to make intergovernmental transfers to lower levels of government constitutes yet another tradeable good that should be taken into account as this line of research expands. Finally, some work remains in terms of sorting out what a president *must* do and what a president *chooses* to do.

One of the key implications of our findings, especially for the comparative literature, is that we may need to reconsider the role of constitutional and agenda-setting powers of the executive in overcoming the centrifugal governability problems and the costs of multiparty presidential regimes. Constitutional powers are handy, but they are not a sufficient condition for success. A president must do the homework necessary to manage her coalition well. Simply increasing governing costs will not necessarily generate the desired outcomes; instead, increasing such costs might lead to intertemporal cycling of majorities and presidential defeats in the Congress. In a multiparty, fragmented game, coalition allies need an external coordinator capable of decreasing their

12. Some initial testing with a variable from Gaylord and Renno (2015) that examines the proportion of all bills authored by the president's party fails to produce statistically significant results. This particular variable does not appear to capture the types of tradeoffs we are envisioning.

coordination problems. Without this external coordinator (the president), legislative majorities become unstable and unpredictable and the problem of cycling majorities turns out to be the legislative routine. Belonging to the president's coalition is the defining constraint and determinant of legislative behavior in multiparty presidentialism when the president is both constitutionally powerful and politically strong. On the other hand, when the president becomes politically weak as a consequence of being a bad coalition manager, occasional and inconsistent majorities make the distinction between the opposition and the government opaque. In this type of institutional environment, coalition management matters.

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