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Policy Monitoring and Ministerial Survival: Evidence from a Multiparty Presidentialism

Studies on policy monitoring and ministerial survival within coalition governments are usually conducted separately. In this study, we bring these topics together and argue that the strategy of coalition partners to oversee the implementation of one another's policies has surprising consequences on the duration of office-holding ministers. Our main theoretical insight suggests that the degree to which ministers behave as faithful agents of the government depends on their expectations about their partners' monitoring behavior, such that when they expect to be under high scrutiny, they moderate their drifting behavior. Using evidence from legislative information requests on the activities of individual ministers over all multiparty cabinets formed in Brazil between 1995 and 2014, we demonstrate that: (1) greater policy monitoring by coalition partners is observed under more ideologically heterogeneous cabinets, and (2) more frequent policy-monitoring efforts by coalition partners lead to a lower ministerial replacement within the government term.

Introduction

The delegation of ministerial authority to different political parties in coalition governments presents a challenge for government officials. Joint governance and a policymaking process marked by separated electoral accountability highlight the fact that cabinet ministers in coalition governments must act under two counteracting pressures—the executive government and their

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respective party leaders (and constituency) (Fortunato 2019; Laver and Schofield 1990; Martin and Vanberg 2011, 2014). Ministers may be tempted to take advantage of their position's access to the levers of policy and act opportunistically to enact policies more in line with their party's preferences rather than the government's. While this behavior may in some circumstances violate a coalition compromise, such ministerial policy drift might also favor their own party's electoral fortunes.

The literature on parliamentary systems has been prolific in demonstrating the use of several institutional mechanisms carried out by coalition members to reduce ministerial drift from their partners.[1] Although underdeveloped, the literature on the use of monitoring strategies between coalition partners to mitigate ministerial drift in presidential multiparty systems also suggests that coalition parties, holding leadership positions in legislative commissions, can bring policy proposals closer to the coalition compromise when they are not in line with the executive's agenda (Inácio and Rezende 2015). In addition, there is evidence that presidents appoint nonpartisan ministers when party-affiliated ministers are not reliable (Martinez-Gallardo and Schleiter 2015) and appoint junior ministers (Pereira et al. 2017) to preclude intra-coalition conflicts in presidential governments.

Empirical evidence suggests that as coalition partners become more ideologically distant from each other, ministers face stronger incentives to deviate from coalition compromises and pursue their own (and their party's) interests, thus creating incentives for partners to keep tabs on one another, both in parliamentary (Laver 2008; Martin and Vanberg 2004, 2011; Thies 2001) and presidential democracies (Araújo 2017; Inácio and Rezende 2015; Pereira et al. 2017). The correlation between heterogeneous cabinets—that is, cabinets formed by ideologically distant parties—and greater policy monitoring between coalition partners is one intuitive finding supported in this study.

Yet, scholars have largely overlooked how the use of scrutiny and policy-monitoring mechanisms by coalition partners affects government and ministerial duration. As a novel insight, in this study we draw attention to the consequences of coalition members overseeing the implementation of policies by their partners, particularly on the survival of ministers being monitored in a presidential-coalition government. We theorize that if potential drifters are aware of the monitoring activities of coalition partners, they will reduce the frequency of policy drift to reduce the

likelihood of getting caught and replaced. Therefore, coalition partners have an incentive to increase their monitoring activities, in order to preclude greater ministerial drift from their partners. As a direct empirical implication, we should observe an increase in the survival of individual ministers (i.e., fewer ministerial replacements within the government term), when policy monitoring between coalition partners increases. We derive this implication theoretically, through the development of a straightforward model, and demonstrate it empirically by conducting a survival analysis.

We test our main empirical implication using evidence from Brazil, by means of a mechanism called "Request for Access to Information" (RIC) which allows Brazilian legislators to request information on matters pertaining to the implementation of policies from any minister of the executive cabinet.[2] We analyze all RICs initiated by coalition partners over 15 multiparty cabinets formed in Brazil between 1995 and 2014 (comprising about 20,000 requests). The results support our expectation of a lower ministerial replacement within coalition governments (greater ministerial survival) as a consequence of policy monitoring from coalition members on the activities of their partners. This finding is consistent with several robustness checks and alternative specifications of our main empirical model.

Delegation and Coalition Governance

The formation of coalition governments, expressed by the distribution of portfolios by the formateur, is a delegation of authority over policies to parties with potential divergent policy preferences and with separated electoral accountability. One interpretation of the coalition-bargaining process is that the resulting agreement (oftentimes an implicit one) consists of a common set of policies to be implemented by individual government ministers (i.e., the coalition compromise). However, in practice, the minister with jurisdiction in a specific ministerial post enjoys considerable autonomy over her portfolio compared to her cabinet partners and takes the lead in implementing policy proposals within her ministry (Laver and Schofield 1990; Strøm and Müller 1999).

Ministers, as agents of their parties (and constituencies), may use their discretion to further their party's goals and move policies closer to their ideal positions. Once the minister is assigned to a particular portfolio, coalition partners are limited by time and resources to detect policy departures from the coalition compromise.

Hence, ministers should be shadowed if governing parties seek to minimize discretion loss they suffer due to ministers pursuing their own parties' interests rather than the coalition's interests.

Due to the separate electoral origin of the executive and legislative powers, scholars suggest that presidential democracies are more prone to principal-agent issues than parliamentary democracies, including ministerial policy drift (Carey 2007; Martinez-Gallardo and Schleiter 2015; Samuels and Shugart 2010). Recent literature on presidential systems has demonstrated the use of mechanisms by which presidents can contain or reduce policy drift when delegating authority to ministers. Martinez-Gallardo and Schleiter (2015) argue that the appointment of nonpartisan ministers is a means exercised by the president to limit her agency loss, particularly when party-affiliated ministers are not reliable options. The greater the goal divergence between the president and her party, and the fewer the president's resources to control her party, the greater the likelihood that the president will select a nonpartisan minister (Martinez-Gallardo and Schleiter 2015). Through the legislative process, coalition members can also influence the content of the policies initiated by the executive, blocking or amending the policy proposals from other members of the cabinet that are not in line with their policy agenda (Freitas 2016; Inácio and Rezende 2015).

With Brazil as a case study, Araújo (2017) demonstrates that, to overcome the information asymmetry inherent to delegation of power in multiparty governments, coalition parties use mechanisms to monitor and control the policies being implemented by their peers in the legislature. Pereira et al. (2017) also reveal that junior ministers (*secretários executivos*) are selected by Brazilian presidents to solve intracoalition conflicts in presidential-coalition governments. The primary purpose of *secretários executivos* is to assist the minister in supervising and coordinating the activities within the ministry. Pereira et al. (2017) found that the greater the ideological distance between the preferences of the coalition partners and the president (increasing the risks of ministerial policy drift), the greater the likelihood of a president appointing a nonpartisan *secretário executivo* or a *secretário executivo* affiliated with a political party different from that of the minister.

These studies provide evidence of the use of policy-monitoring mechanisms within coalition governments and have focused on the effectiveness of these mechanisms to solve intracoalition conflicts and how coalition members can reduce the agenda power of

office-holding ministers in presidential democracies. In this study, we draw the attention to ministerial survival as a consequence of policy monitoring between coalition members.

From Monitoring to Survival

There is plenty of evidence in the literature on cabinet and ministerial survival that cabinet reshuffles are corrective effects to critical events such as government popularity (Dewan and Dowding 2005), protests and scandals (Camerlo and Pérez-Liñán 2015; Dewan and Myatt 2007), and economic crises (Martinez-Gallardo 2014). The fixed nature of the electoral calendar and the reelection rules in presidential systems have also been suggested as important factors for cabinet termination and ministerial re-shuffles in these systems (Alemán and Tsebelis 2011; Altman 2000; Camerlo and Pérez-Liñán 2015; Chasquetti 1999).[3] In this study, we expand the scope of this literature by bringing together intra-coalition policy monitoring and ministerial survival.

We argue that the use of mechanisms by coalition members to oversee the implementation of policies of their peers has consequences for the duration of individual ministers in government. More specifically, when a minister anticipates a high incidence of policy monitoring, she will limit her policy-drifting behavior in order to compensate for the increased likelihood of being found out and replaced. The combined effect of an increase in monitoring and reduction in policy drift—under some reasonable assumptions which will be examined shortly—leads to a decrease in the overall probability of ministerial replacement. To depict this argument, we develop a model with two coalition partners, highlighting the relationship between policy monitoring and ministerial policy drift and its consequences to the survival of individual ministers.

The Model

Consider a government coalition consisting of the party controlling a particular ministry (M) and a coalition partner (P). With P and M having potentially different policy preferences along a single policy dimension, this creates some friction on joint policymaking within the coalition as each party strives to advance its own policy preferences to fulfill electoral pledges during the government term.

TABLE 1
Policy Monitoring and Ministerial Drift

		M	
		D	*ND*
P	*I*	-n-c, -r	-x-c, -(d-x)
	NI	-d, 0	-x, -(d-x)

Upon taking office, the actions available to *M* are to *drift* policy (and implement their ideal policy, away from the coalition's compromise) or *not drift* (*D, ND*) and implement some coalition agreement policy. The actions available to *P* are whether to *investigate* (or monitor) the actions of the minister or to *not investigate* (*I, NI*).[4] Table 1 depicts the interaction between *M* and *P* to determine the policy implemented by the coalition in a simultaneous one-shot game.[5]

We treat *x* as the agreed-upon coalition policy[6] and normalize the coalition partner's ideal policy to equal *0*. The term *d* represents the ideal policy of the ministerial party, which, because *P*'s position is *0*, also represents the distance between *P* and *M*. We will focus on the case where the coalition policy *x* is never greater than *d*. We do this because if *x > d*, both *P* and *M* would have aligned interest in implementing *d*, and the game would be uninteresting.

The disutility associated with the sacking of a drifting minister and replacement with an alternative actor is represented by *n*. This presumably occurs when information about the minister's drifting is revealed to the president, for example, and the minister is replaced by either an independent technocrat or a member of some other party. On the flip side, *M*'s disutility associated with being found out drifting and replaced is captured by *r*. Finally, *c > 0* is the cost of monitoring.

We impose four conditions to the model:[7]

1. *M* does not always drift policy: *(r > d − x)*.
2. The coalition compromise *x* is no more extreme than *M*'s ideal policy: *(d > x)*.
3. The costs of monitoring are not so large that *P* never chooses to monitor: *(d − n > c)*.
4. *P* prefers a cooperative minister over an alternative agent who perfectly implements policy: *(x < n)*.

We denote this last condition as the "coalition imperative," as it is pivotal for our results.

Solution and Comparative Statics. The setup of the game highlights a straightforward matching-pennies game. The minister M would like to drift policy, but only when the partner P does not investigate, while P would want to investigate only when she believes M is drifting the policy. Given the absence of a pure-strategy Nash Equilibrium, we proceed to using a mixed-strategy Nash Equilibrium (MSNE) as our solution concept. This means that in equilibrium both players are choosing each of their actions with some probability.[8]

$$pr(D) = \frac{c}{d-n} \tag{1}$$

$$pr(I) = \frac{d-x}{r} \tag{2}$$

Based on Equations (1) and (2), the replacement of a minister happens when P plays I and M plays D. Given our MSNE, this happens with probability,

$$pr(Replacement) = pr(I)\,pr(D) = \frac{c(d-x)}{r(d-n)}. \tag{3}$$

As coalition partners become more ideologically distant from each other, ministers then face strong incentives to deviate from coalition compromises and pursue their own (and their party's) interests, thus increasing the incentives for coalition partners to investigate. As a consequence, the greater the ideological heterogeneity of the executive cabinet (i.e., the ideological distance between coalition partners), the greater the probability of coalition members monitoring the activities of their partners. Hence, the first hypothesis to be tested in this study is that *the greater the ideological distance among coalition parties, the greater the likelihood of policy monitoring between coalition partners*. This empirical implication follows from Equation (2).[9]

The capacity of coalition members to oversee their partners contributes to reducing the partner's incentives to drift by increasing the frequency with which they get caught drifting and replaced.

As a consequence, the continuous policy-monitoring efforts carried out by coalition members should help them to keep tabs on their partners and preclude greater ministerial drift. We, then, put forward our main prediction: continuous policy monitoring between coalition partners should increase the survival of individual ministers within the government term. This empirical implication derives directly from the first derivative of the probability of replacement, from Equation (3), with respect to probability of investigation by the partner:

$$\frac{\partial}{\partial pr\,(I)} pr\,(Replacement) \;=\; \frac{c\,(x-n)}{(d-n)^2}. \qquad (4)$$

Note here that our coalition imperative tells us that $x - n < 0$, which means that Equation (4) is always negative, and therefore an increment in the probability of investigation results in a lower rate of replacement. Intuitively, this occurs because in equilibrium an increase in investigation by the partner is compensated with a decrease in drifting by the minister.[10] Thus the reduction in drifting dominates the increase in monitoring. We can see this result more clearly depicted in Figure 1 below.

The black solid curve in Figure 1 represents the probability of replacement, the red dotted line represents the probability of monitoring, and the green dashed line represents the probability of ministerial drift. The horizontal axis shows d, the distance between minister M and partner P ideal positions, and the vertical axis ranges from zero to one, to represent probabilities. The green and red areas represent spaces where there exist pure-strategy Nash Equilibria, and they fall outside our model conditions. More specifically, these are regions with no monitoring (green area) and full monitoring (red area).

In the middle of Figure 1, we see indeed the expected relationship between monitoring, drifting, and replacement. As expected, there is a negative relationship between monitoring and replacement. As the ideological distance (d) between P and M increases, so does the probability of monitoring (red dotted line). As a consequence, the probability that the minister gets replaced decreases (black solid curve), leading to our second hypothesis and main expectation of *a lower ministerial replacement when the policy monitoring between coalition partners increases.*

FIGURE 1
Equilibrium Range: Monitoring, Drifting, and Replacement
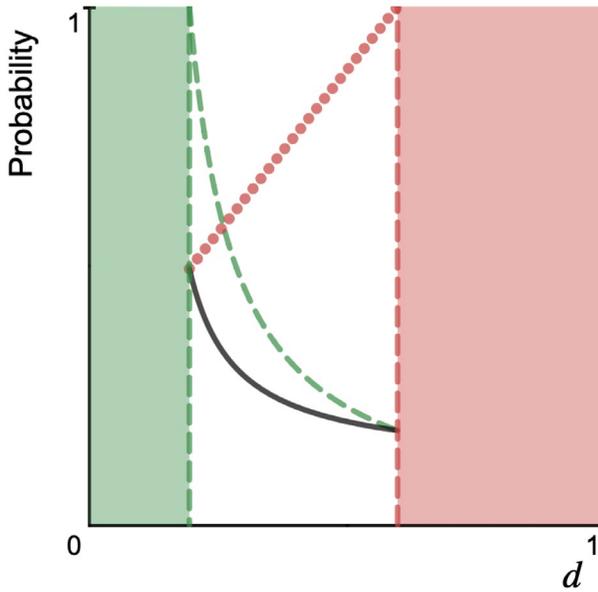
Policy Monitoring in a Multiparty Presidentialism: Evidence from Brazil

Due to Brazil's high electoral and party fragmentation, it is hardly possible for the president-elected party to form a legislative majority by itself. Consequently, the formation of coalition governments has been a constant in Brazil's democracy (Chaisty, Cheeseman, and Power 2018; Figueiredo and Limongi 2007; Melo and Pereira 2013). In addition to a large number of parties, the cabinets formed in Brazil have been also marked by a considerable ideological heterogeneity, comprising parties with multiple and divergent policy preferences (Gaylord and Rennó 2015; Power and Zucco 2009, 2012), making Brazilian multiparty presidentialism an appropriate case to test our model.

A further justification for the use of evidence from Brazil considers the institutionalization of the Brazilian party system after 1994. In the decade that followed the redemocratization of the country (1985–94), scholars consistently pointed out Brazil's

party-system-institutionalization failure, highlighting the high volatility of the popular vote, the unstable rules and structures of party organizations, the low discipline of governing parties in the legislature, and the absence of party roots in society (Ames 2002; Levitsky 2001; Mainwaring 1999; Mainwaring and Pérez-Liñán 1997; Mainwaring and Scully 1995). Recent studies, however, identified Brazil as the only example among multiparty presidential systems in Latin America experiencing an increase in party-system institutionalization over the years, particularly after 1994 (Levitsky et al. 2016; Mainwaring 2018).[11] On closer inspection, between 1994 and 2016 the Brazilian party system has enjoyed stability in presidential and lower-chamber elections with two main contenders, the center-left Workers' Party (PT) and the center-right Brazilian Social Democracy Party (PSDB), dominating the six presidential elections in this period. Besides the stability in electoral competition, Brazilian parties have shown greater consistency in terms of their programmatic differentiation and their ordinal left–right ideological position (Power and Zucco, 2009, 2012; Saiegh 2015; Samuels and Zucco 2014; Zucco and Lauderdale 2011). Over this time, changes in electoral rules, party funding, and public political advertising resources (e.g., free TV and radio time) have also helped improve party discipline (Figueiredo and Limongi 1999), strengthen political parties' roots in society, and extend their territorial penetration (Samuels and Zucco 2015), fostering more solid party structures and organizations in the country (Mainwaring, Power, and Bizzarro 2018).[12]

Our empirical analysis covers all Brazilian coalition cabinets formed during this period of greater institutionalization and stabilization of Brazil's party system (between 1995 and 2014), including the center-right leaning governments of FHC (1995–2002) from the PSDB, and the center-left leaning governments of Lula (2003–10) and the first administration of Dilma (2011–14), both from the PT.

Request for Access to Information: The Policy-Monitoring Mechanism

To conduct the empirical analysis of this study, we use evidence from a legislative mechanism available to Brazilian legislators called "Request for Access to Information" (RIC). A key tool in the list of accountability resources for the legislative branch, the

RIC is a formal and low-cost mechanism for monitoring policies implemented by the executive branch. By requesting access to information through RIC, Brazilian legislators can oversee any act, action, or program related to the implementation of public policies from any ministerial portfolio of the executive cabinet.[13] The requested ministers are required to share the information on any policy being implemented under the portfolio they control.[14] To illustrate the kind of information requested by coalition partners, two facsimilia of RICs are presented in Appendix D of the online supporting information.[15]

In this study, RIC is used as a measure for policy monitoring for at least three reasons: First, the cost of filing the application to request access to information on policies is very low (Lemos and Power 2013), so differences in the initiation of RICs by legislators should then reflect a deliberate strategy by the legislator rather than inherent limitations or difficulties to access this resource. To initiate an RIC, a legislator needs only to present the request in the legislative plenary. The RIC is then presented to the Board of Directors of the Chamber of Deputies, and then it goes directly to the requested ministry responsible for the policy. Second, the access to this mechanism is open for all legislators, and they do not need to negotiate their use in formal instances—e.g., leadership positions, commissions, and blocs—to monitor policies of their interest (Lemos 2005). Finally, RICs allow us to objectively measure coalition partners' activity to raise information on the policies being implemented by their peers—activity that usually occurs behind the scenes and through internal political dynamics.[16]

All Brazilian legislators can initiate an RIC (question a minister) on a policy being implemented in a specific cabinet portfolio.[17] These legislators can be either from the president's party, from a junior coalition partner (a member of the coalition government that is not from the president's party), or from a party in the opposition. In our analysis, we consider all policy-monitoring activities that occur between coalition partners, that is, RICs initiated by presidential parties to junior partners or initiated by junior partners to either a presidential party or another junior partner.[18] Only ministers can be requested and release information on the policies being monitored. Ministers can be either from the president's party, junior partners, or independents (those not affiliated with a political party).[19]

The literature on policymaking processes in presidential multiparty systems presents evidence that, in coalition governments

TABLE 2

The Effect of Ideologically Heterogeneous Cabinets on Policy
Monitoring (Dependent Variable: RIC Coalition)

	Coefficient	exp(coeff.)
Ideological Dispersion	0.256*** (0.037)	1.292

Note Logistic regression. The dependent variable, RIC Coalition, is a binary variable in-
dicating whether a coalition partner initiated an RIC in a particular month-minister (*RIC
Coalition = 1*) or an absence of RIC in a particular month-minister (*RIC Coalition = 0*).
Control variables hidden from the table. $N = 5248$. Two-tailed test. The full table of results
is presented in Appendix F in the online supporting information.

***$p < 0.01$.

comprised of ideologically distant parties, coalition members in-
crease their attempt to monitor or control the policy proposals of
their partners not in line with their policy agenda (Alemán and
Saiegh 2007; Freitas 2016; Inácio and Rezende 2015; Lemos 2005;
Lemos and Power 2013), including an increase in policy monitor-
ing through the use of RICs (Araújo 2017). Building on this lit-
erature, our first expectation to be tested is that coalition partners
should increase their policy monitoring (through the use of RICs)
to seek information on policies that are being implemented in coa-
lition governments comprised of ideologically distant parties.

Table 2 below depicts the effect of a coalition's ideological
dispersion on the likelihood of an RIC being initiated by a coa-
lition partner, conducting a logistic regression model and having
month-minister as our unit of analysis.[20] RIC Coalition is used
as the dependent variable and is our proxy for policy monitoring.
As a binary variable, when RIC is initiated by a coalition partner,
the variable assumes a value of one; when RIC is not initiated the
variable assumes a value of zero. Ideological dispersion measures
the degree of ideological heterogeneity within Brazilian executive
cabinets based on the parties' ideological scores provided by Power
and Zucco (2009, 2012) and Samuels and Zucco (2014).[21]

In support of our first hypothesis, controlling for all other fac-
tors included in the model,[22] the effect of ideological dispersion on
the likelihood of an RIC being initiated by a coalition partner is posi-
tive and significant at level 0.01. In accordance with previous evidence
(Araújo 2017), this result supports our expectation that a greater
policy monitoring between coalition partners should be observed
under more ideologically heterogeneous cabinets. In substantive

terms, presenting the results in odds ratio, the exponential coefficient of ideological dispersion indicates an increase of about 29% in the odds of a coalition partner initiating an RIC for a one-unit increase in ideological dispersion, holding all other variables constant.

This result corroborates our expectation of greater policy monitoring by coalition partners under more ideologically heterogeneous cabinets. In the next section, we test our novel prediction evaluating the consequences of a greater policy monitoring between coalition partners on the survival of individual ministers within the government's term.

Survival Analysis: Data and Empirical Strategy

The main empirical implication of this study focuses on the relationship between the individual minister survival and independent variables that vary over time. Thus, in order to estimate the model of ministerial survival, we use the Cox proportional hazards model with time-varying covariates (Box-Steffensmeier and Jones 2004; Cox and Oakes 1984; Fisher and Lin 1999; Thomas and Reyes 2014). The advantage of this approach is that we can leave the particular distribution form for the duration dependency unspecified, which has been shown to be preferable on both substantive and statistical grounds over parametric models (Box-Steffensmeier and Jones 2004).

Our data set includes 228 ministers,[23] among 25 unique portfolios,[24] over 15 multiparty cabinets formed in Brazil between 1995 and 2014. Each observation (the unit of analysis) is a month-minister, in a total of 5248 observations. With the exception of the president's approval rate (quarterly measured), all variables used in the analysis, as described below, are monthly data.[25]

Variables

Ministerial Survival. The dependent variable is the duration of individual ministers in office, monthly measured to identify the presence of the event (when the minister leaves the office) or nonpresence of the event (when the minister remains in the office). The variable assumes a value of 0 when the individual minister survived in the month (*exit = 0*) and assumes a value of 2 when the individual minister fell in the month within the government's term (*exit = 2*). Because we are interested in ministerial replacement

during the administration's life cycle, we treat all ministers leaving office at the end of an administration as censored observations (*exit = 1*). Our sample includes 130 exits between government terms and 98 censored cases.

The average duration of ministers in the sample is 17 months, with a standard deviation of 13 months. The less durable ministers were Clovis de Barros Carvalho (PSDB), in FHC's second administration, and Nelson Machado (independent minister) in Lula's second administration, with two months in the Ministry of Development, Industry, and Foreign Trade and the Ministry of Social Security, respectively. The most enduring minister in office was Marina Silva (then affiliated to the presidential-party PT) who lasted the entire term of Lula's second administration (48 months).

RIC Coalition. The main independent variable is the use of the "Request for Access to Information" (RIC) mechanism between coalition partners as a proxy for policy monitoring. This is a dummy variable indicating whether a coalition partner initiated an RIC in a particular month-minister (*RIC Coalition = 1*) or an absence of RIC in a particular month-minister (*RIC Coalition = 0*). Among the 5248 month-minister observations in the sample, RICs are initiated in 2282 observations and not initiated in 2966 observations.[26] The information was gathered from the Brazilian Chamber of Deputies (2015). The analysis covers all RICs initiated between coalition partners from 1995 to 2014. According to our model, we expect a greater survival of individual ministers when the use of RICs between coalition partners increases. To better isolate the effect of RICs initiated by coalition partners on ministerial survival, we also control for RICs initiated by opposition parties (*RIC Opposition*).

Other Control Variables

Two economic indicators were included in the model as control variables: *GDP growth* and *inflation rate*. The information was gathered from the Brazilian Institute of Applied Economic Research (IPEA 2019). To avoid potential treatment bias, all economic indicators were lag-transformed in one month.

GDP Growth. This variable is the monthly difference in the growth rate of gross domestic product (GDP) at market prices. The mean

value of this variable in the sample is 1.01%, with a standard deviation of 3.82. It is expected that under good economic conditions, the president has less incentives to remove members of his executive team. As a consequence, we should observe a greater survival of ministers the greater the GDP growth.

Inflation Rate. This variable is a monthly measurement of the consumer price index (CPI), reflecting the percentage change in the cost to the average consumer of acquiring a basket of goods and services. Because ministerial reshuffles can be used by the president as a corrective mechanism to critical events (including economic crises), it is expected that the greater the inflation, the lower the survival of ministers (i.e., the greater the chance of a ministerial replacement). In the sample, this variable has a mean value of 0.58%, with a standard deviation of 0.48%.

President's Job-approval Rate. This is an indicator of the president's popularity among voters, quarterly measured. This measurement is sourced from the Executive Approval Database (EAD) (Carlin et al. 2019) and built on the proportion of survey respondents to the question, "Do you approve or disapprove of the way that [name of the chief executive] is handling his/her job as [title of executive position]?" The mean value of this variable is an approval of 47.48%, with a standard deviation of 13.31. As the president's approval rate increases, a lower ministerial replacement is expected (i.e., a greater durability of ministers). Similar to the economic indicators, this variable also works as a control for events exogenous to the executive cabinet.

Ideological Dispersion. This variable measures the degree of ideological heterogeneity of the parties that comprise the executive cabinet and was calculated based on the scores from Brazilian legislative surveys conducted by Power and Zucco (2009, 2012) and Samuels and Zucco (2014). These studies estimate the ideological position of the parties represented in the Brazilian Congress on a left-right spectrum. The level of coalition ideological dispersion can be expressed as $\left| P_{fl} - P_{fr} \right|$, where P_{fl} is the ideological position on the left-right continuum of the furthest-left party represented in the cabinet, and P_{fr} is the ideological position on the left-right continuum of the furthest-right party represented in the cabinet.

In the sample, the variable ranges from 2.71—the minimum value for ideological heterogeneity—to 5.80—the most ideologically heterogeneous cabinet in the sample. Since more distant partners have more incentives for ministerial drift, a lower ministerial survival is expected as the ideological dispersion among coalition members increases.

Independent Minister. A binary variable for independent ministers is included in the model, where the value of one indicates ministers not affiliated to political parties and a value of zero indicates partisan ministers. Following Martinez-Gallardo and Schleiter (2015), presidents appoint independent ministers to contain or reduce her agency loss. As these nonpartisan ministers have only the president as their main principal, a lower ministerial drift is assumed from them. As a consequence, a greater survival of independent ministers is expected.

Government's Size. This variable refers to the number of parties represented in the cabinet (i.e., parties holding at least one portfolio). In the sample, this variable has a mean of 6.55 parties, with a standard deviation of 1.86 parties. Models and evidence suggest that larger governments have a significant and negative impact on cabinet durability as a whole (Axelrod 1970; Martinez-Gallardo 2012; Sanders and Herman 1977; Taylor and Herman 1971; Warwick 1992). It is expected that the greater the number of parties in the government, the greater the complexity of the bargaining environment between the president and the governing parties. A more complex bargain context can increase the likelihood of external shocks affecting coalition termination (King et al. 1990).

Following Camerlo and Pérez-Liñán (2015), three other control variables were included to the model. A variable identifying the *first cabinet* of the government, as first selected ministers, not exposed to any kind of shocks and critical events of the government's administration yet, may receive differential treatment than ministers that enter later in government. *Reeligible* indicates whether the president can run for immediate reelection and control for the effect of term limits on the dynamics and timing of ministerial replacement (Camerlo and Pérez-Liñán 2015). In our sample, we have three reeligible presidents in their first terms: FHC I, Lula I, and Dilma I. *Cumulative Replacements* captures the possible serial effect of past ministerial replacements on the

present ministerial reshuffle (Indridason and Kam 2008). This variable is the sum of ministerial exits observed until the prior month, and it is reset in each new government's administration. To capture the possible serial effect of past initiated RICs, we also include a control—*Cumulative RICs*—summing the RICs received by the same minister until the prior month.

Recess. Due to summer recess in Brazil, legislative sessions are reduced in the month of December and do not occur in the month of January. Thus, the number of RICs equal to zero in these two months do not represent a deliberate decision from legislators to decrease oversight, but rather an absence of activities in the Lower House of Brazilian Congress. In order to control for the lower or absence of activities in December and January, a dummy variable for these months was included in the model (in which 1 represents the months of December and January, and 0 otherwise). The logical expectation is an increase in ministerial survival when recess assumes a value of one.

A dummy for *electoral year* is included in the model, based on the empirical expectation that as the next election approaches, parties have fewer incentives to join or remain in the government, and therefore cabinet termination should be more likely (Alemán and Tsebelis 2011; Altman 2000; Chasquetti 1999). Although there are reasons to believe that defection from the government will be less likely when the executive's popularity might benefit governing parties at the approaching elections (Martinez-Gallardo 2012), impending elections might also increase the incentives for incumbent presidents to renegotiate the distribution of portfolios in order to form preelectoral coalitions (Carroll and Cox 2012).

The statistical model to be estimated is:

$$h_{it} = h_{ot}\exp\left(\beta RIC_{Coalition_{it}} + \phi X'\right),\qquad(5)$$

where h_{it} is the hazard function for ministers' survival—our dependent variable—and h_{ot} is the baseline hazard function, a term that depends on time but where the independent variables are kept constant. *RIC Coalition* is our main independent variable of interest, with parameter estimate vector β. X' is a vector of observations on our control variables with parameter estimates vector ϕ. There is no error term in the equation, because the randomness is implicit to the survival process. Also, because the baseline hazard

rate is left unspecified, the result from the Cox regression model contains no constant term. This term is "absorbed" into the base-line hazard function h_{ot}.[27]
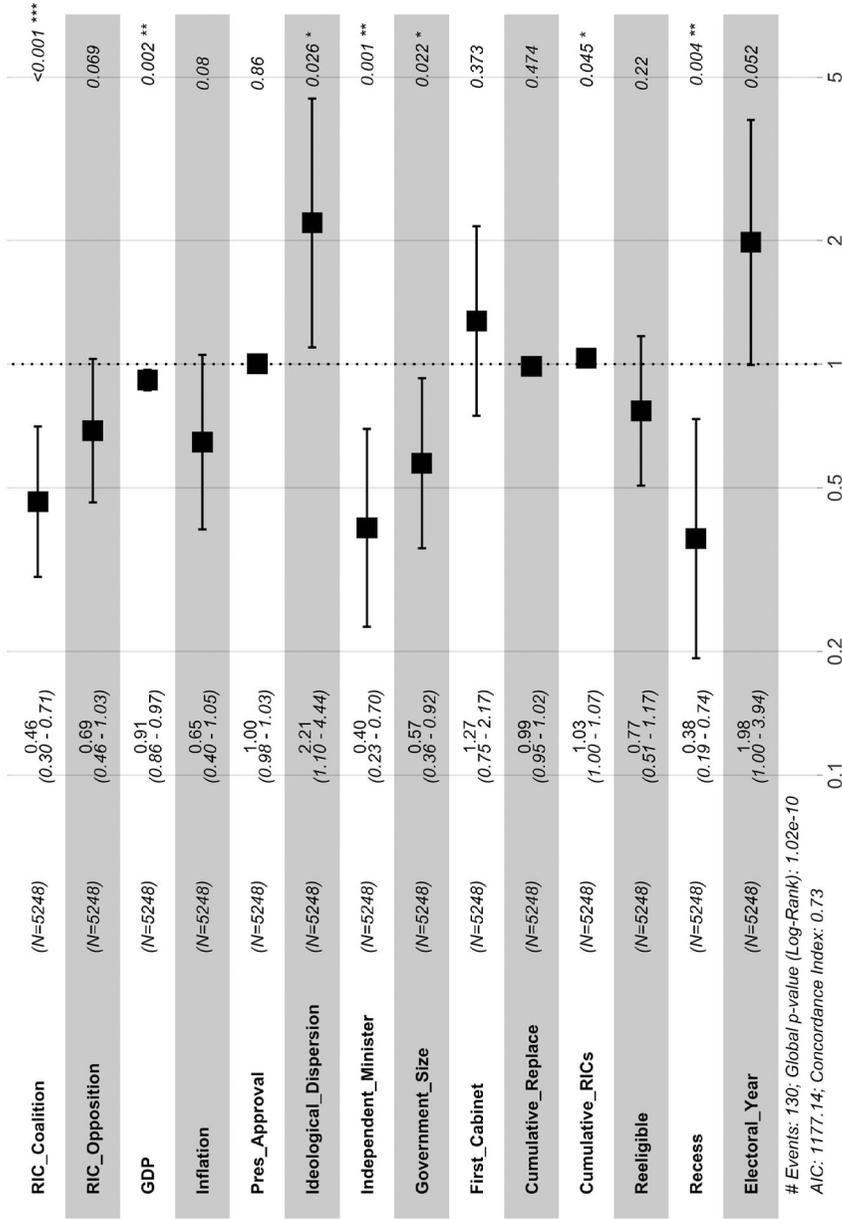
Results and Discussion

In interpreting the coefficients of a Cox proportional hazards model, the dependent variable is the hazard rate of the duration (by months) of ministers. In other words, the hazard rate refers to the likelihood that a minister will fall at a particular point in time, given that it has not yet fallen. Therefore, higher hazard rates—positive estimate coefficients—represent a higher likelihood of ministerial replacement and, consequently, a shorter duration of the minister in office. Negative estimate coefficients, in turn, represent a reduction in the likelihood of ministerial replacement, and, consequently, a longer duration of the minister in office. By exponentiating hazard rates, the coefficients turn into the metric of hazard ratios, and with this we can make substantive inferences.

In Figure 2, we present the results in terms of the hazard ratio. As such, hazard ratios greater than 1 imply that the likelihood (or hazard) of ministerial replacement increases as the values of the independent variables increase, thus resulting in a greater likelihood of failure (shorter ministerial survival). Hazard ratios smaller than 1, in turn, imply that the likelihood (or hazard) of ministerial replacement decreases as the values of the independent variables increase, thus resulting in a smaller likelihood of failure (longer ministerial survival). In contrast, hazard ratios at the value of 1 or not significant (at level 0.05) imply that the hazard rate is essentially invariant to changes in the independent variables, that is, the predictors have no effect on increasing (or decreasing) the hazard of ministerial survival.

The results depicted in Figure 2 indicate that, holding all control variables constant, a lower ministerial replacement within coalition governments (greater ministerial survival) is observed when coalition members oversee their partners, supporting our main expectation. The hazard ratio for the use of RIC between coalition partners is negative and significant (not crossing the dashed line at the value of 1). In a more substantive interpretation, on average, ministers that receive RICs have about 45% higher chance of survival compared to ministers that don't receive RICs.[28] According to our theory, this higher survival of ministers that have their

FIGURE 2

Hazard Ratios: Policy Monitoring Between Coalition Partners (RIC Coalition) and the Survival of Ministers

Variable	N	Hazard Ratio (95% CI)	p-value
RIC_Coalition	(N=5248)	0.46 (0.30 - 0.71)	<0.001 ***
RIC_Opposition	(N=5248)	0.69 (0.46 - 1.03)	0.069
GDP	(N=5248)	0.91 (0.86 - 0.97)	0.002 **
Inflation	(N=5248)	0.65 (0.40 - 1.05)	0.08
Pres_Approval	(N=5248)	1.00 (0.98 - 1.03)	0.86
Ideological_Dispersion	(N=5248)	2.21 (1.10 - 4.44)	0.026 *
Independent_Minister	(N=5248)	0.40 (0.23 - 0.70)	0.001 **
Government_Size	(N=5248)	0.57 (0.36 - 0.92)	0.022 *
First_Cabinet	(N=5248)	1.27 (0.75 - 2.17)	0.373
Cumulative_Replace	(N=5248)	0.99 (0.95 - 1.02)	0.474
Cumulative_RICs	(N=5248)	1.03 (1.00 - 1.07)	0.045 *
Reeligible	(N=5248)	0.77 (0.51 - 1.17)	0.22
Recess	(N=5248)	0.38 (0.19 - 0.74)	0.004 **
Electoral_Year	(N=5248)	1.98 (1.00 - 3.94)	0.052

Events: 130; Global p-value (Log-Rank): 1.02e-10
AIC: 1177.14; Concordance Index: 0.73

Note: Dependent Variable: Survival of individual ministers, monthly measured indicating the presence of the event (exit = 2) or nonpresence of the event (exit = 0). Exits due to the end of the government term are considered censored observations. The table in this figure includes five columns, in the order: 1. Variables' names; 2. Number of observations (N); 3. Exponentiated Cox coefficients (with the lower and upper bounds of the confidence intervals); 4. Hazard Ratios; and 5. *p* < 0.05; **p* < 0.01; ***p* < 0.001. These results are based on the hazard rates from the full table of results presented in Appendix "I Survival Analysis" of the online supporting information.

policy-implementation process monitored is a consequence of a correction on their potential or actual ministerial drift behavior over time. Aware as they are that their partners have a mechanism to track and monitor their activities, they have less incentives to implement policies too far away from the coalition's compromise. The consequence of a strong drift would be the minister's removal from the government, undermining both her intrinsic benefits from holding a portfolio (e.g., access to office perks and patronage) and her opportunity to shape and influence the government's policy agenda.

Besides policy monitoring, two other important factors included in our model seem to increase the survival of individual ministers: *GDP growth* and *independent ministers*. As expected, when the government is managing the country's economic situation favorably,[29] we observe less changes in the ministerial composition, increasing the survival of individual ministers. Ministers not affiliated with political parties can be interpreted as loyal agents to the president, leading to a lower incentive for ministerial drift and, therefore, a higher survival in government. The main predictor for ministerial replacement among the controls is *ideological dispersion*. As expected, factors that increase the incentives for ministerial drift such as a greater ideological distance between coalition partners also increase the likelihood of ministerial replacement. The estimates for other control variables don't achieve significance, suggesting no direct effect on the hazard of ministerial survival.[30] In sum, the analysis supports our main expectation of a lower ministerial replacement as a consequence of policy monitoring (proxied by the use of RICs) between coalition partners.

Robustness Checks and Model Extensions

In order to evaluate the consistency of our main findings, we conduct several robustness checks, including the extension of our main model by adding controls for the characteristics of specific portfolios (e.g., ministers of finance) and indicators for mass protests and media scandals. In Appendix K in the online supporting information, we conduct our original model without controls (benchmark model) and with fixed effects (FE) for months, portfolios, coalitions, and administrations. The results (Table K.1 and Table K.2) indicate a consistent finding, with a negative and significant hazard rate (at level 0.01) for *RIC Coalition* in all our

models, increasing the confidence in our results. Since the phenomenon we are explaining, individual minister survival, is nested within different cabinet portfolios, as a robustness check we also fit a shared gamma frailty model using a penalized likelihood on the hazard function, clustering our data by portfolios. Our results remain consistent to this test and are presented in Appendix L in the online supporting information.

By considering evidence that different cabinet members are differently vulnerable to replacements (Camerlo and Pérez-Liñán 2015; Dull and Roberts 2009; Huber and Martinez-Gallardo 2008), we extended our main statistical-model specification incorporating characteristics of specific portfolios. Based on their expertise role and exposure to conflict, we distinguish between three groups of portfolios using binary variables: (1) Ministers of *finance*. These ministers are responsible for the government's economic guidelines and can be credited when the country's economic situation performs well. Moreover, these ministers are usually not affiliated to a political party and have a more technical profile. As presented in Figure 2, the country's economic situation and being an independent minister are two important predictors for individual ministers' survival; (2) Ministers in charge of main *policy* issues, that is, education, health, and labor. These ministers are commonly scrutinized by news medias, opposition, and mass demonstrations, and (3) Ministers responsible for international or *external* issues, that is, foreign affairs and defense.

As a further robustness check, we extended our main model to incorporate mass *protests* and media *scandals* as measured by Camerlo and Pérez-Liñán (2015);[31] these events are commonly considered critical for ministerial reshuffles by the president. The estimates for the new controls on policy areas, protests, and scandals[32] indicate that while specific portfolios (policy areas) and media scandals do not affect the hazard of ministerial survival (as the hazard rates for minister of *finance*, *policy* ministries, *external* ministries, and *scandals* do not achieve significance), *mass protests* has a positive and significant effect on the hazard of ministerial survival. The probability that a minister will fall increases in months of mass protests occurrence compared to months without protests. The negative and significant (at level 0.01) estimates for policy monitoring between coalition partners, proxied by RIC Coalition, in both models of Table K.3 in the online supporting information, in turn, suggest that the inclusion of the new controls does not change the main finding of this study: the continuous

policy-monitoring efforts by coalition partners lead to a lower ministerial replacement.

Conclusion

This study enhances our understanding of the interrelationship between policy monitoring and ministerial reshuffles and survival in coalition governments. We provide a theoretical model that is consistent with some existing findings—that is, a greater policy monitoring between coalition partners under ideologically heterogeneous cabinets—but also makes novel predictions. In particular, we have demonstrated that the continuous efforts of coalition partners to oversee the implementation of one another's policies lead to a lower ministerial replacement within the government term. This main finding supports the expectation we derived from our model, according to which ministers adjust the degree to which they attempt to drift and take advantage of their policy-making position vis-à-vis other government parties, based on their expectations of their partners' monitoring behavior. Ministers who expect to be under policy investigation more often will also be the most careful in how and when they choose to exploit their position. Under high scrutiny by their partners, ministers moderate their policy-drifting behavior, and, as faithful agents of the government, the less likely they are to be replaced.

The empirical analyses of this study focused on the Brazilian case and the use of the RIC mechanism. However, the theoretical model developed here is not restricted to this case. Several other countries, with different government systems, such as Argentina, Chile, Germany, and the United States of America, have similar formal legislative instruments—for example, resolutions of inquiry and *oficios de fiscalización*—that guarantee information extraction from the executive branch and on ministerial activities (Lemos 2005; Siavelis 2000). The availability of new data will eventually make it possible to test our empirical implications in a broader comparative perspective.

The main finding of this study also open doors to new, interesting questions on our understanding of coalition governance, with normative implications on related topics such as government stability and political representation. The literature on cabinet duration in presidential systems provides evidence that larger and ideologically heterogeneous coalition governments are associated with greater instability and short-lived cabinets (Amorim Neto

2006; Martinez-Gallardo 2012, 2014). Our findings suggest that presidential-coalition governments could be even more unstable if there were no institutional mechanisms to moderate the coalition partners. The presence of a mechanism such as the RIC in Brazil seems to ameliorates the expected instability arising from coalitions with a high degree of ideological conflict.

As can be derived from our model's results, but not developed in this study, mechanisms for policy monitoring also seems to increase the likelihood of coalition compromises being the outcome of coalition governments. This suggests that one actor alone is not able to impose his agenda in the government's policymaking process. A possible consequence of this is the moderation of extremist parties within coalition governments, opening new paths for the study of political representation and how close is the connection between government parties and their constituency's interests in presidential multiparty democracies. These are topics worthy of exploration in future research.

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NOTES

1. See, for instance, Thies (2001), Müller and Strøm (2003, 2008), Martin and Vanberg (2004, 2005, 2011), Andeweg and Timmermans (2008), Carroll and Cox (2012), Kim and Loewenberg (2005), Klüver and Bäck (2019).

2. We thank Victor Araújo for generously sharing these data.

3. Although correlated, Huber and Martinez-Gallardo (2008) highlight that individual minister reshuffles are only loosely related to cabinet terminations.

4. We understand this model to be a simplification of the policymaking process, where both the selection of policy and the decision to monitor ministerial behavior do not occur simultaneously. However, because the actors are making their decision in ignorance of each other's choice, we treat this situation as simultaneous.

5. While we recognize that the policymaking process involves more moving parts (e.g., ministerial expertise, information asymmetries, and principal-agent dynamics), we choose to focus on this simpler one-shot version, as it is the most straightforward way to show our intuition in action.

6. By coalition policy we mean an implicit (or explicit) understanding of which policies are to be implemented by the coalition, and which policies, if implemented, would be considered a violation of the agreement and a break with the coalition compromise.

7. These four conditions are further expanded on in Appendix A of the online supporting information.

8. The formal proofs for the solution of our theoretical model are developed in Appendix B in the online supporting information.

9. We derive this empirical implication by taking the first derivative of the probability of investigation with respect to d—i.e., the distance between the minister and the partner, $\frac{\partial}{\partial d} pr\,(I) = \frac{d}{-r}$.

10. In Appendix C of the online supporting information, we extend our model to incorporate the possibility of an actor (be it the president or a coalition partner) to choose an alternative minister, based on some exogenous propensity of the minister to be investigated and replaced. The main predictions of our model remain unchanged.

11. Mainwaring, Power, and Bizzarro (2018) suggest that Plano Real—a set of fiscal and economic measures to stabilize the Brazilian economy—established in 1994, and its consequence on solving the issues of inertial and hyperinflation in the country, was one of the main factors fostering Brazil's party-system institutionalization in the subsequent decades. Nicolau (2012, 221) also highlights electoral reforms after the redemocratization of the country in promoting party institutionalization in Brazil; particularly the reform of 1995, which regulates the activity of political parties and establishes much more demanding rules for the creation of new parties, making it more difficult for new competitors to enter the party system.

12. As demonstrated by Limongi and Cortez (2010), presidential coalitions in Brazil also proved to be stable and tighten up over time in two main blocs: (1) the PT and other leftist and center-left parties and (2) the PSDB and the Democrats. The Brazilian Democratic Movement (MDB, former PMDB) has been the outsider of these blocs, as a party supporting the leading party of the two main sets of coalitions. The MDB joined the first and second administrations of Fernando Henrique Cardoso (FHC) (1995–2002) and was a member of PT's governments from the second coalition formed by Luís Inácio Lula da

Silva (Lula), in his first administration in 2004, until the impeachment of Dilma Rousseff (Dilma) in 2016.

13. Although the Board of Directors of the Brazilian Chamber of Deputies (*mesa diretiva*) has the power to refuse an RIC if written in an inconvenient way or that contradicts the provisions of the constitution related to the attributions of the National Congress (Articles 115 and 116 of the Rules of Procedure of the Brazilian Chamber of Deputies 1989), this seems to be a pro forma procedure, with no evidence of RICs being refused by the Board. See, for instance, Lemos (2005) and Lemos and Power (2013).

14. As prescribed by Article 116 of the Rules of Procedure of the Brazilian Chamber of Deputies, if a minister does not send the information requested within 30 days from the day the RIC was initiated, the minister becomes subject to prosecution by the Federal Supreme Court.

15. In the first example (Figure D.1), a legislator from the PMDB (a member of FHC's government in 2001) requests information from the Ministry of Environment (then controlled by a minister from the Green Party [PV]) with regards to the deforestation of the Atlantic Forest. In the second example (Figure D.2), a legislator from the Brazilian Socialist Party (PSB) (a member of Lula's government in 2007) requests information from the Ministry of Cities (then controlled by a minister from the Progressive Party [PP]) regarding the suspension and revocation of National Driver's Licenses (CNH) and the impact of these actions on traffic violence.

16. Rather than a monitoring device, the initiation of RICs might be a way a party's members have to build an overall image of competence for themselves and their party due to their performance in their respective portfolios. Although RICs can be initiated by coalition partners from reasons different from revealing drifters, the true reasons RICs are initiated by partners should have no effect on the causal mechanism suggested in our study. According to our argument, when a politician expects to be investigated more often (regardless of the reason for the initiation of the RIC), they are less likely to drift and therefore less likely to be revealed as a drifter and replaced. In other words, we are agnostic about what exactly in the coalition agreement the partners want to monitor, but it suffices that coalition partners have incentives to drift, and that the ministers' responses to RICs initiated by their partners might reveal the drift.

17. From a procedural point of view, any legislator from the Brazilian Congress (federal deputies and senators) may initiate a Request for Access to Information. Due to data availability, in this study we are focusing only on requests initiated by legislators within the lower house.

18. Within-party monitoring falls outside our model prediction and are not included in our analysis. Illustrating a coalition cabinet formed by three political parties (i.e., the president's party, and two junior partners A and B), Figure E.1 in Appendix E of the online supporting information depicts the possible directions of policy monitoring within the coalition.

19. As described in Section "Survival Analysis: Data and Empirical Strategy", we tested our empirical implications with and without independent

ministers. As the results are robust, we decided to keep all information on political monitoring available in our data set.

20. We describe our data and variables in more detail in Section "Survival Analysis: Data and Empirical Strategy".

21. The level of ideological dispersion within the cabinet is expressed as the absolute difference between the furthest-left party and the furthest-right party represented in the cabinet. In our sample, ideological dispersion ranges from the minimum dispersion value of 2.71 to the maximum dispersion value of 5.80.

22. Hidden from Table 2, two economic indicators—i.e., GDP growth and inflation rate—are added to the model as controls. To avoid treatment bias, the economic indicators were lag-transformed in one month. Other controls are the president's approval rate and recess (i.e., a dummy for the months of December and January depicting the summer legislative recess in Brazil). With the exception of the president's approval rate, quarterly measured, all other variables are monthly data. The full table of results is presented in Appendix F of the online supporting information.

23. Because we are interested on ministerial replacements, we assign a new identification for ministers reshuffled to a new portfolio.

24. The list of portfolios and abbreviations are presented in Table G.1 of Appendix G in the online supporting information.

25. Variables and descriptive statistics are presented in Table G.2 of Appendix G in the online supporting information.

26. Descriptive statistics on the proportion of RICs initiated and the average survival of ministers in months are presented in Appendix H in the online supporting information.

27. The subscriptions i and t depict the individual and time units, respectively. For instance, our main independent variable *RIC Coalition* can vary by minister and by month; thus it receives both subscriptions.

28. Model fit and proportional hazard assumption tests are presented in Appendix J of the online supporting information. The DFBeta test suggests that our model fits the data well, and there is no presence of issues from influential observations or outliers. The results from testing the proportionality of hazard rates indicate that the assumption of proportional hazard is being satisfied in our model.

29. In evaluating the effect of the country's economic situation on ministerial survival, only *GDP growth* is significant. The estimate for inflation rate does not achieve significance.

30. Interestingly, the estimate for *RIC Opposition* does not find a significant treatment effect (at level 0.05), suggesting that the use of RICs by the opposition does not affect (at least, not directly) the hazard of ministerial survival as those initiated between coalition partners. One possible interpretation of this result is that the opposition initiates RICs in order to gather and reveal damaging information about the government (e.g., incompetency and corruption) for their constituency and has no direct effect on the president's decision to dismiss individual ministers. To increase their electoral chances, opposition parties need to persuade

voters they will be better than, or different from, the current government. In this context, there is consistent evidence that oppositions send signals to their electorate to harm the government and present themselves as a viable alternative (Helms 2008; Hix and Noury 2016; Inácio 2009; López 2005; Morgenstern, Negri, and Pérez-Liñán 2008).

 31. Camerlo and Pérez-Liñán (2015) gathered information for protests and media scandals from the Latin American Weekly Report (Lodola et al. 2007). According to the authors' own description of these variables, "a dichotomous indicator reflects whether protests affected an administration during each month of the study. Episodes of protest refer to contentious mobilization targeted at the government, and could involve looting and riots, roadblocks, invasions of land, occupations of public or private buildings, and marches and demonstrations.… [The] variable scandals measures the occurrence of a media exposé involving the president, members of the cabinet, the president's party, or the president's family or friends in any given month. Scandals may refer to administrative corruption, abuse of power, or character issues such as sex affairs" (Camerlo and Pérez-Liñán 2015, 613). Given the authors' temporal coverage until 2007, the model *Protests and Scandals* presented in Table K.3 in the online supporting information has a smaller number of observations than our original model.

 32. The results are presented in models *Policy Areas* and *Protest and Scandals* of Table K.3 in the online supporting information.

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Supporting Information

Additional supporting information may be found in the online version of this article at the publisher's web site:

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