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The Impact of Cabinet Reshuffles on Government Survival: Evidence from Five West European Countries (1960-2014)

Abstract

This paper investigates the unexplored link between cabinet reshuffles – understood as changes in the composition or the departmental structure of a government within a cabinet’s lifetime – and government survival. While scholars agree that cabinet reshuffles matter in many respects, their impact on cabinet survival is under-researched. Two competing expectations can be derived from the existing literature on delegation. The first suggests that reshuffles might increase governments’ longevity as they are effective tools to mitigate intra-cabinet agency problems. Focusing on the relationship between ministers and bureaucrats, the second hypothesis contends that reshuffles might negatively affect government duration as they hinder governments’ policy-making capacity. We test these hypotheses by using an original dataset on portfolio allocation and cabinet duration in five Western European countries (Belgium, France, Germany, Italy and the Netherlands) over a relatively long period of time (1960-2014). Our results show that cabinets experiencing a higher rate of reshuffles within their lifetime tend to last less than those experiencing fewer personnel-related changes.

First draft

To be presented at the conference “Multidimensional measurements of government (in) stability”, Akko, Israel, May 14-16 2023.

Introduction

Governments' duration is undoubtedly one of the most researched topics in political science. Early empirical studies predicted government duration based on some structural attributes of cabinets or their political environment, such as size, ideological compactness or party system fragmentation. Later on, a different approach was developed, interpreting government survival as dependent on the flow of exogenous shocks perturbing the equilibrium reached at the time of government formation. The two approaches were then reconciled into a "unified perspective" (Laver 2003; Saalfeld 2008), generating vast empirical literature.

Scholars agree that "who gets what", i.e. portfolio allocation at the government formation stage, impacts cabinet governance and lifetime. This is especially true for coalition governments, which are the norm in Western European systems. However, coalition deals may be subject to changes once a government has taken office. Ministries can be created, split or fused with others (Indridason and Bowler 2014), or jurisdictions may shift among different ministries (Sieberer 2021). Some parties may increase their share of cabinet posts, perhaps at the expense of other government coalition members; cabinet members can be rotated among different departments, and some ministers or junior ministers can be replaced. These changes in the government's composition, or its departmental structure, occurring within the lifetime of a cabinet, are widely referred to as "reshuffles" (Helms and Vercesi 2022:3). Since the seminal works by Huber (1998), Kam and Indridason (2005) and Huber and Martinez-Gallardo (2008), a growing body of literature emphasized the importance of reshuffles, by focusing on the issue of selection and deselection of ministers in parliamentary governments (Bäck, Debus and Müller 2016; Dowding and Dumont 2009; Indridason and Kam 2008).

To date, however, there is no connection between the large body of literature on cabinet duration and the growing body of work on ministerial turnover. In this paper, we attempt to bridge the gap between these two strands of research by exploring the impact of reshuffles on cabinet survival. Reshuffles have been mostly analyzed within the framework of principal-agent (P.A.) theory, which allows us to describe the relations among key political actors in parliamentary democracies in terms of a “chain of delegation” (Strøm 2000). The P.A. framework suggests two competing expectations. Looking at the delegation relationships *within* the cabinet, changes to ministerial appointments are interpreted as ways to mitigate adverse selection and moral hazard problems. This implies that modifying the composition of a cabinet should enhance the capacity of the government coalition’s parties to pursue successful common policies, which, in turn, should decrease the risk of government termination. In contrast, focusing on the delegation relationship *between* ministers and bureaucrats, ministerial turnover should undermine government capacity and accountability. This would lead us to expect a negative effect of reshuffles on governments’ duration. Our paper empirically evaluates these contrasting expectations, using original data on portfolio allocation and cabinet duration in five West European countries (Belgium, France, Germany, Italy and the Netherlands) over a relatively long period of time (1960-2014).

This study is organized as follows. The next section discusses the theoretical framework, focusing on the relationship between reshuffles and government survival. The second section introduces original data and describes the variables included in the analysis. The empirical analysis of government survival in five countries is developed in the third section. The implications of our findings are discussed in the concluding section.

Theory and Hypotheses

Government duration is a well-researched topic. Early empirical accounts predicted cabinets' duration using the same set of variables accounting for government formation (i.e., when focusing on coalition governments, size and ideological compactness). This "deterministic" approach typically focused on government attributes whose values are fixed or set when a government takes office (Sanders and Herman, 1977; Strøm, 1985; Taylor and Herman, 1971; Warwick, 1979). Later on, a different approach focusing on "critical events" such as the death of legislators, scandals, dramatic downturns in the economy, and sudden shifts in public opinion demonstrated that such random "shocks" entail a certain probability of leading to government termination (Browne, Frensdreis, and Gleiber, 1984, 1986, 1988). Subsequently, the "attribute approach" and the "critical event approach" were reconciled into a "unified" perspective (King, Alt, Burns, and Laver, 1990; Warwick, 1994).

Game-theoretical models of government termination contributed to the study of coalition governments' stability by focusing on the way unanticipated events may alter the equilibrium reached at the stage of government formation (Lupia and Strøm, 1995; Laver and Shepsle, 1998; Diermeier and Stevenson, 1999, 2000). Unanticipated events occurring within a cabinet's life, such as policy shocks or the emergence of new issues, may induce coalition partners to renegotiate the coalition deal or to terminate the government (Baron, 1998; Diermeier and Merlo, 2000; Lupia and Strøm, 1995). Within this perspective, reshuffles – i.e. changes in the cabinet's structure or composition – can be understood as rational responses to changes in the political environment.

If reshuffles are interpreted as attempts to settle intra-cabinet problems, it remains to be seen whether or not they are effective in prolonging cabinet duration. Extant empirical studies on government duration have not yet explored this topic. A reason for this clear gap in the literature might be related to the fact that reshuffles can be explained as an outcome of the same factors shaping the bargaining process at the government formation stage. Meyer et al. (2023)

highlight how the bargaining context of government formation drives portfolios' re-design, bringing evidence to the hypothesis that complexity and uncertainty of the bargaining environment lead to most frequent changes in cabinets' structure and composition.

Conversely, a growing body of literature on ministerial turnover discussed the implications of reshuffles for parliamentary governance. This work highlights a potential for analyzing their effects on government termination. By stressing the importance of inter-party as well as the intra-party distribution of cabinet posts, the "portfolio allocation model" of government formation proposed by Laver and Shepsle (1996) set the stage for subsequent research on ministerial turnover. This is because the model assumes that cabinet ministers have considerable influence over policy outputs in the areas under their jurisdiction. Subsequently, most scholars have examined ministerial turnover within the principal-agent (P.A.) framework. The awareness of ministerial discretion influences parties' policy expectations which, in turn, determine a particular allocation of key portfolios among the actors involved in coalition bargaining. However, once a government is formed, ministers may "abuse" their discretion in their day-to-day policy-making activity to advance their parties' goals or fulfil their personal ambition. This may cause policy outputs to diverge from the original coalition deal, undermining the overall government accountability and the expected electoral gains for coalition parties. This risk is common to delegation relations and has been widely described in the literature (Martin and Vanberg, 2011; 2014; 2020).

To face this threat, parties use different mechanisms to monitor and correct "hostile" ministers. Among these tools, a number of recent works focusing on delegation relationships *within* the cabinet maintain that modifying the initial structure and composition of cabinets can help contain agency losses deriving from ministerial autonomy. In particular, some scholars have emphasized how ministerial turnover can reduce the opportunistic behavior of cabinet ministers resulting from moral hazard (Indridason and Kam, 2008). According to other authors,

reshuffles can be a useful tool to solve adverse selection problems by substituting “wrong” agents with more reliable ones (Dewan and Dowding, 2005; Huber and Martinez-Gallardo, 2004, 2008). For several reasons, ministers are often far from being perfect agents of the cabinet as a whole: they can “go native” in their department and get “captured” by the preferences of their department (Andeweg, 2000), they can have divergent preferences (especially in coalition governments; see Martin and Vanberg, 2011; Thies, 2001), or they can be simply unable to perform certain jobs.

Focusing on moral hazard problems within the cabinet, Indridason and Kam (2008) suggest that ministers’ personal ambition and civil servants’ requests are the main sources of ministers’ opportunistic behavior: self-interested ministers would like to spend as much as possible in their department, which can distort cabinet’s overall policy agenda. The authors develop a game-theoretic model of cabinet reshuffles showing that the possibility to rotate ministers across portfolios keeps individual ministers from over-spending in their departments, thus enabling the cabinet as a whole to implement its official policy programs and increase its accountability. Indeed, ministerial turnover not only prevents ministers from enjoying the future benefits of their first-period spending, but also ensures that the ministers bear the future policy costs of their predecessors’ spending.

Other studies analyze reshuffles as mechanisms to deal with adverse selection problems. As Huber and Martinez-Gallardo (2004, 2008) point out, at the time of government formation the Prime Minister (PM) has to select “good” agents, i.e. cabinet members who are competent, loyal and willing to implement the government’s policy goals. Initially, however, ministers’ competence, loyalty and preferences are only imperfectly observed by the PM. The PM gains more precise information about the ministers over time and reshuffles the cabinet to select good ministers and discharge the “bad” ones (i.e. incompetent, disloyal or ideologically incompatible). Similarly, Dewan and Dowding’s (2005) model of ministerial scandals and

resignations shows that ministerial turnover can be used to weeding out bad ministers hence improving the public confidence in the government's performance. According to this literature, changes in cabinets' structure and composition are viewed as beneficial for governments' capacity to implement genuine policy compromises among parties with different preferences, as they signal either PM's and/or party leaders' reactions to opportunistic behavior, or their responses to new information about current ministers' capacity and willingness to perform their job. In this way, changing cabinet members can help governments to pursue successful common policies, enhancing the performance and the general accountability of the cabinet.

The literature summarized above deals with delegation relationships *within* the cabinet, where the PM is often seen as the principal delegating power, as in the UK, or where party leaders play this role as in other institutional settings. However, agency problems may arise when examining the relationship between ministers and bureaucrats (Huber and Shipan, 2002). The scope and complexity of the policy areas on which ministers have jurisdiction make it necessary to work closely with civil servants, endowed with the technical skills required to implement the policy initiatives promoted within the ministries. According to this view, a fundamental consequence of frequent changes in cabinet personnel is that ministers can find it difficult to develop expertise in a particular jurisdiction and assume the leadership of the department to which they have been assigned (Headey, 1974; Rose, 1971, 1987). This is in line with a strand of research focusing on delegation relationships *between* ministers and bureaucrats, according to which ministerial turnover weakens politicians' control over civil servants, thus undermining ministers' capacity to develop policy initiatives within their jurisdiction. This perspective draws on a number of studies about French politics showing that turnover in controlling portfolios hinders the ministerial ability to control senior civil servants (Suleiman, 1974; Williams, 1964). Given civil servants' monopoly of information, the information asymmetry between ministers and bureaucrats in their departments can be

mitigated only if ministers stay in office for a sufficiently long period of time. Frequent reshuffles are seen as obstacles to competent and accountable governments.

Huber (1998) reframes this argument using a signaling model of information transmission. Signaling games analyze the circumstances under which a “speaker” with private information (in this case, a civil servant) will reveal this information to a “receiver” (a cabinet minister) whose actions will then affect the utility of both the speaker and the receiver. This model implies that the receiver can obtain more reliable information from the speaker when the receiver knows she shares common preferences with the speaker, when the speaker expects to be in a long-run relationship with the receiver, and when the costs of ex-post monitoring are low for the receiver (Crawford and Sobel, 1982; Sobel, 1985; Austen-Smith, 1995; Banks, 1989). Therefore, the longer a minister remains in office, the more reliable is her knowledge about bureaucrats’ preferences in her department, the greater are bureaucrats’ incentives to convey reliable information to the minister in order to build trust for the future, and the lower are monitoring costs.¹ Moreover, applying the speaker-receiver framework to inter-ministerial relationships, we can expect that ministers will be able to convey persuasive information to their colleagues in the cabinet if they all know one another’s preferences, if they expect to interact with one another repeatedly over time, and if they know that a minister making a proposal has been able to obtain reliable information from civil servants. According to this perspective, changes in the cabinets’ structure and composition pose serious informational costs to ministers in their relationships with bureaucrats.² Consequently, frenetic turnover in cabinet posts should decrease ministers’ capacity to control the civil service personnel in their

¹ Huber (1998, p. 579) argues that it takes time to check bureaucratic behavior and that external interest groups acting as “fire alarms” have greater incentives to provide reliable information when ministers’ tenure is longer.

² It should be noted that this approach differs from influential theories of portfolio allocation like those of Austen-Smith and Banks (1990) and Laver and Shepsle (1990, 1996). These theories assume that cabinet ministers can implement their most preferred policies at virtually no “bureaucratic costs”.

department and pursue policy goals, hindering the government's ability to implement its publicly stated policy programs.³

To summarize, the literature based on agency theory suggests two different views about cabinet reshuffles, depending on the focus on the relations *within* the cabinet, i.e. among ministers, on the one hand, or *between* ministers and bureaucrats, on the other hand. The first stresses the potential advantages of cabinet reshuffles, while the second highlights the negative consequences of reshuffles on government capacity and accountability. Turning to the link between reshuffles and government duration, the first perspective would lead us to expect that reshuffles, as an instrument to manage conflicts, will tend to increase the longevity of a cabinet as a whole since key government actors can gain staying in office rather than forcing its termination. This should improve a cabinet's capacity to achieve its goals, making cabinet termination unlikely. This line of reasoning implies the following hypothesis:

H.1 Frequency of reshuffles should decrease the risk of government termination.

The second perspective implies that frequent changes in cabinet ministers may make governments less competent and accountable, diminishing the payoffs of coalition partners from participating in it. This should lower the costs of bringing an incumbent government down, increasing the risk of its termination. This line of reasoning implies the following hypothesis:

H.2 Frequency of reshuffles should increase the risk of government termination.

³ Huber (1998) comparative analysis found that portfolio volatility did not affect governments success in health care cost containment in the long run. However, his analysis also shows that an increase of portfolio volatility limits government effectiveness in the short run. Later, Huber and Lupia (2001) introduced a theoretical model to better understand if and to what extent ministerial turnover can reduce ministers' control over bureaucrats. One of their findings is that uncertainty about ministerial continuity may not necessarily reduce the extent to which ministers benefit from delegation to bureaucrats.

Data and Operationalization

To test the hypotheses outlined above, we collected data on government duration in five West European countries: Belgium, France, Germany, Italy and the Netherlands. Our dataset covers more than five decades, spanning from 1960 to 2014. The unit of analysis is the single cabinet, for which we gathered information about its duration and several theoretically relevant properties. Collecting cross-country data on executives is time-consuming and resource intensive, forcing us to restrict our sample to a limited number of countries. We selected the above-mentioned countries based on the availability of data and the variability in the dependent and key explanatory variables. The five Western European countries included in our sample are characterized by different regimes (i.e. semi-presidential France vs parliamentary democracies), institutional settings and party systems. They also vary in terms of constitutional prerogatives of the head of government in appointing ministers, ranging from more extensive prime ministerial powers in France or Germany to limited ones in Italy. The five countries feature multiparty coalition cabinets where ministerial and junior ministerial offices are allocated. Remarkably, our dataset tracks all types of changes in the structure and composition of the cabinets included in our sample, including junior ministerial posts.

For our dependent variable, we use a widely accepted definition of cabinet duration (Müller and Strøm, 2000; Strøm, Müller, and Bergman, 2003, 2008).⁴ More precisely, we maintain that a cabinet begins when it is appointed by the head of state and terminates when any of the following events occurs: a change in the set of parties holding cabinet portfolios, considering as cabinet members only those parties that have designated representatives with voting rights in the council of ministers; the substitution of the head of government; the occurrence of a general election, either because the legislative term comes to its end and regular

⁴ For a discussion of alternative ways of defining government duration see Shomer et al. (2022).

elections take place, or because the parliament is prematurely dissolved and snap elections are called.

As reported in Table 1, the median duration for the 143 cabinets included in our sample is 401 days – that is, about one year and one month. This value hides huge variations both across and within countries. German governments stand out as the most long-lived ones as their median duration is three years and nine months, which is less than the maximum duration of the constitutional inter-election period in Germany (five years). Unsurprisingly, cabinets in Italy and Belgium are the shortest as their median duration is eight and nine months, respectively. Cabinet duration displays great variability also within countries. In France and Belgium, government duration ranges from roughly one month to the maximum length of the legislative term (five and four years, respectively). The shortest Italian government terminated just nine days after its appointment, while the longest lasted three years and ten months.

In the previous section, we argued that all else being equal, those governments experiencing a higher number of changes in their structure and composition are expected to last more (*H1*) or less (*H2*) depending on the logic of delegation applied to intra-cabinet or ministers-bureaucrats relationships, respectively. Testing such contrasting expectations requires some measure of changes in the structure and composition of a cabinet within its lifetime.

Before describing the operationalization of this key explanatory variable, three important comments are in order. First, counting the number of portfolios' changes within a cabinet's lifetime is problematic because long-lasting governments are more likely to experience more changes than short-lived ones. Therefore, we computed a measure of the *rate* at which changes occur within the lifetime of a cabinet. Second, to measure changes in cabinets' composition, we considered not only ministerial portfolios, as most of the existing

Table 1 – Cabinet duration in five West European countries (1960-2014): Descriptive statistics.

	N.	Minimum	Median	Maximum	Mean	St. Dev.
Belgium	30	42	283	1,451	523	508
France	34	31	467	1,799	548	415
Germany	14	156	1,365	1,455	1,141	392
Italy	44	9	249	1,409	361	314
Netherlands	21	85	584	1,638	762	566
Total	143	9	401	1,799	575	483

literature on government reshuffles does, but also changes in junior ministerial posts. Several studies have pointed out that Junior Ministers (JMs) – typically allocated to members of different parties than the minister’s – play a crucial role in coalition governments. While some scholars emphasize their monitoring role in the principal-agent problem of enforcing coalition policy in each departmental jurisdiction (Thies, 2001; Manow, 2004), others have interpreted the allocation of JMs’ posts as an integral part of the coalition deal which has the effect of moving policy outputs closer to the Pareto surface of the coalition (Giannetti and Laver, 2005). Recent empirical studies examining the impact of reshuffles on government’s policy-making capacity show the importance of changes at junior ministerial level, as JMs are closer to the policy implementation process (Belchior and Silveira, 2023). Third, we constructed not only a measure of the overall changes a cabinet underwent, but also a measure of intraparty and inter-party changes to cabinet posts. This allows us to evaluate separately the impact of changes related to intra-party politics factors and changes in portfolio allocation between governing parties. Previous studies have underlined the importance of intra-party politics in coalition governments (Giannetti and Benoit, 2009; Strøm, 2003; Laver, 1999). Specifically, Bäck, Debus and Müller (2016) show that intra-party diversity matters in ministerial appointments, as ministers whose policy positions are closer to the dominant principal’s one are likely to be selected. Cox’s (2021) bargaining model of government formation is based on how intraparty politics affect the allocation of cabinet portfolios in multiparty coalitions.

Table 2 shows the average number of changes in cabinet posts for the governments included in our sample. This quantity was calculated for each country, distinguishing intra-party changes from inter-party changes and changes in ministerial portfolios from changes in JM posts. With the only exception of Belgium, where JMs changes are fewer than in the other four countries, reshuffling JMs' posts is more frequent than altering ministerial portfolios' allocation. Ministries are powerful offices and are often controlled by well-known politicians. Removing and substituting ministers can be much more costly than replacing their often-unheard-of junior counterparts. The table also shows that JMs are more easily "traded" among coalition partners than ministers. If we look at ministerial portfolios, we may observe that intra-party changes are more frequent than inter-party changes. Conversely, when looking at JMs, inter-party changes occur more often than intra-party changes. This result suggests that changes at the ministerial level should be mostly the outcome of intra-party tensions rather than being related to alterations of the original coalition deal between governing parties.

We measured our key explanatory variable – changes occurring in a cabinet's ministerial composition – as follows. For each cabinet in our sample, we calculated the sum of (1) the number of changes in the individuals controlling portfolios (2) the number of ministerial portfolios added and (3) the number of ministerial portfolios eliminated within the cabinet's term. Then we divided this result by the duration of the cabinet (in months), thus obtaining the monthly rate of portfolio changes, which we called *total portfolio volatility* (for an analogous measure, see Huber, 1998, p. 581). For each cabinet, this variable indicates the average number of portfolios changes occurring in a month.

This measure takes into account a wide range of possible changes in the structure and composition of cabinets, including those affecting cabinets size. We assume that the

Table 2 - Cabinet's average number of changes in in five West European countries (1960-2014).

	N.	Ministerial posts			Junior ministerial posts		
		Total	Intra-party	Inter-party	Total	Intra-party	Inter-party
Belgium	30	3.200	2.400	0.800	1.500	0.567	0.933
France	34	3.824	2.412	1.412	5.088	1.676	3.412
Germany	14	5.286	4.500	0.786	5.571	3.786	1.785
Italy	44	2.659	1.795	0.864	3.706	1.069	2.637
Netherlands	21	2.333	1.857	0.476	3.667	1.143	2.524
Total	143	3.259	2.343	0.916	3.748	1.384	2.364

deselection of ministers, the addition of new portfolios or the elimination of others may impact government duration as ministers' jurisdictional prerogatives can change, new relationships with bureaucrats can emerge, and the existing relationships with civil servants can be altered.

We broke down the total portfolio volatility into its inter-party and intra-party components, obtaining *inter-party* and *intra-party portfolio volatility*, respectively. *Inter-party portfolio volatility* has the same definition as *total portfolio volatility* but only measures changes occurring across parties. In other words, the shift of a ministry from Minister A to Minister B adds to *inter-party portfolio volatility* only if A and B are affiliated to different political parties. *Intra-party portfolio volatility* indicates a cabinet's monthly average number of portfolios' changes involving politicians belonging to the same party. This variable considers those cases when a ministerial post shifts from Minister A to Minister B, whereas A and B belong to the same party.

To consider changes in the allocation of junior ministerial posts within a cabinet's life, we calculated two other specifications of the three above-mentioned variables. First, we computed the monthly portfolio volatility (total, inter-party and intra-party) by considering changes in ministerial and junior ministerial posts as equally important. Second, we computed weighted versions of the three types of portfolio volatility by considering changes in ministerial portfolios as more important than changes in junior ministerial posts. We did this by

multiplying changes in minister's posts by one and changes in junior ministers by 0.5. For ease of illustration, we display only the analyses conducted using the original versions of the three portfolio volatility variables (only ministries) and their weighted versions (ministries and junior ministries, weighted). Our results do not change when using weighted or unweighted portfolio volatility variables.

As for the other variables included in our analyses, we controlled for a number of factors that may affect government duration and are usually included in empirical analyses of cabinet survival: cabinets' initial portfolios' disproportionality, ideological diversity in the cabinet and the parliament, the effective number of parties in the cabinet and the parliament, government type, whether or not the government is a caretaker government, cabinet size and the maximum possible cabinet duration.

Portfolio disproportionality measures how much the ministerial portfolio allocation in a given cabinet is disproportional to parties' seat shares within the governing coalition. Following Verzichelli (2008, p. 245), we calculated the absolute difference between each cabinet party's share of ministerial posts and seats, taking the sum of the absolute differences for all cabinet parties. Multiplying this variable by 100, we then obtained an index ranging from 0 (perfect proportionality between cabinet parties' portfolio shares and seat shares) to a maximum of 100 (maximum disproportionality). It is expected that a more disproportional allocation of ministerial posts among coalition parties compared to parties' parliamentary strength will be associated with shorter cabinets' duration (see Laver and Schofield, 1990, pp. 177-181 for a detailed discussion). For the models including weighed portfolio volatility, we used a weighted version of the portfolio disproportionality measure calculated in a similar way: prime ministerial positions were multiplied by two, ministerial positions by one, and junior ministerial posts by 0.5.

We measured ideological diversity in the cabinet and the parliament by calculating ideological ranges. *Cabinet range* is the absolute difference between the position of the most left-wing and the position of the most right-wing parties in government. Likewise, *parliament range* is the absolute difference between the left-right scores of the two most extreme parties in parliament. We took parties' left-right positions from expert surveys estimates (Bakker et al., 2012; Benoit and Laver, 2006). Both variables are expected to decrease cabinet duration. Intra-cabinet divisions hinder governments' ability to make joint policies (Warwick, 1994). Similarly, heterogeneity in the legislative arena increases the complexity of the bargaining environment surrounding the executive, thus making it harder for the incumbent government to stay in office (Laver and Schofield, 1990, pp. 156-158).

The *effective number of government and parliamentary parties* were computed using Laakso and Taagepera's (1979) formula. We expect that the shorter the cabinet duration, the higher the effective number of parties in the cabinet, as cabinet fragmentation should increase transaction costs. We also expect shorter cabinet duration when the effective number of legislative parties is higher, as legislative fragmentation indicates a greater complexity of the bargaining environment (Warwick, 1994).

We operationalized the *type of government* by distinguishing among single-party minority governments, minority coalitions, minimal winning coalitions and surplus coalitions. Minimal winning coalitions are expected to stay in office longer than the other types of government (Laver and Schofield, 1990; Saalfeld, 2009). In the analyses, we included dummies for single-party minority governments, minority coalitions and surplus coalitions, with minimal winning coalition as the reference category.

Finally, we included a dummy variable if the cabinet is a caretaker government (*Caretaker = 1*). This variable controls for the fact that some cabinets are formed to lead a country to the next election and should therefore have a relatively short life span. *Cabinet size*

is the total number of ministerial posts in the cabinet. In the analyses including weighted portfolio volatility, this variable was calculated accordingly. The *maximum possible duration* of cabinets is the number of days between a cabinet's formation and the "regular" end of the legislative term. This variable is included to control for the fact that, within the same legislative term, post-electoral cabinets, i.e. cabinets formed immediately after elections, potentially have a longer duration than inter-election cabinets (cabinets formed at later points) and that the later a cabinet is sworn in during the legislative term, the shorter its potential duration. Moreover, this variable allows us to control for the different lengths of constitutional inter-election terms in different countries. Descriptive statistics for the independent and control variables are reported in Table 3.

Empirical Analysis

The literature based on agency theory suggests two different expectations regarding the impact of portfolio volatility on government duration. We test our hypotheses using Cox's partial likelihood survival model. The central concept in survival analysis is the hazard rate $h(t)$, which is the probability that an event occurs at a particular point in time, conditional to the fact that it has not occurred yet. The hazard rate has two components. The first is the set of covariates that are hypothesized to systematically affect an event's timing. The second is the baseline hazard rate $h_0(t)$, which indicates the underlying probability of the event to occur over time when the vector of all covariates is zero (Box-Steffensmeier and Jones, 2004). Cox regression has the advantage of making no assumptions about the shape of the baseline hazard (see Warwick, 1994). This means that the baseline hazard could increase and decrease with time without being constrained to a specific distribution function like in parametric duration models (Box-Steffensmeier and Jones, 2004, p. 21).

Table 3 – Independent and control variables. Descriptive statistics.

Variable	Minimum	Median	Maximum	Mean	St. Dev.
Total portfolio volatility (only ministries)	0	0.094	10.909	0.277	0.971
Intra-party portfolio volatility (only ministries)	0	0.059	5.455	0.185	0.552
Inter-party portfolio volatility (only ministries)	0	0	5.455	0.093	0.466
Weighted total portfolio volatility	0	0.165	13.636	0.398	1.196
Weighted intra-party portfolio volatility	0	0.094	5.455	0.218	0.554
Weighted inter-party portfolio volatility	0	0.042	8.182	0.180	0.707
Portfolio disproportionality	0	18.240	70.981	19.149	13.908
Weighted portfolio disproportionality	0	14.783	56.752	16.295	12.032
Cabinet range	0	1.890	4.510	2.153	1.225
Parliamentary range	3.640	7.210	8.680	6.968	1.172
Eff. no. of cabinet parties	1	1.976	5.481	2.231	1.005
Eff. no. of parliamentary parties	2.154	4.020	9.051	4.535	1.674
Type of government: single party minority	0	0	1	0.056	0.230
Type of government: minority coalition	0	0	1	0.146	0.354
Type of government: minimum winning coalition	0	0	1	0.354	0.480
Type of government: surplus coalition	0	0	1	0.444	0.499
Caretaker	0	0	1	0.147	0.355
Cabinet size	14	20	33	21.580	4.597
Weighted cabinet size	16	30	68.5	35.164	13.053
Maximum cabinet duration	18	1,353	1,821	1,177	478

As previously noted, our dependent variable measures the days elapsed between a cabinet's appointment and its termination. Following Diermeier and Stevenson (1999), governments whose termination occurred due to technical reasons (regular elections or prime minister's death) were right-censored. The logic underlying this censoring regime is that such failures differ from discretionary terminations provoked by a government collapse or other political crises.⁵ Such censored records remain in the analysis and are essentially treated as cases for which the actual failure time is unknown.

Table 4 reports the results of six models estimated according to different operationalizations of our key independent variable. The first three models in the table include portfolio volatility variables considering only ministerial portfolios' changes, while the last

⁵ Early elections are prompted by a premature dissolution of the cabinet and therefore are not censored.

three models consider also changes in JMs' posts (weighted as illustrated above). In both sets of models, we included the total portfolio volatility and the two specifications considering either inter-party volatility or intra-party volatility. In Models 3 and 6, which aim to assess inter-party portfolio volatility's impact on cabinet duration, single-party governments are excluded (this lowers the total number of observations from 143 to 134).

In all models, the coefficients are expressed as proportional hazard estimates, with positive and negative values indicating an increased or a decreased risk of government termination, respectively. In other words, positive coefficients reduce cabinet survival, while negative ones delay government termination. Once exponentiated, coefficients can be interpreted as hazard ratios. We employ stratification to control for unobserved country characteristics, allowing the baseline hazard to vary by different risk pools for each country included in our study (Box-Steffensmeier and Zorn, 2002). Cox regression conventionally presupposes the Proportional Hazards Assumption (PHA), whose violation can lead to false inferences about variables' substantive and statistical significance. In our case, a covariate-specific test of scaled Schoenfeld residuals does not show any evidence (i.e. $p < 0.05$) that PHA is violated for any of our models (Box-Steffensmeier, Reiter and Zorn, 2003; Box-Steffensmeier and Zorn, 2001; Cleves, Gould and Gutierrez, 2004; Licht, 2011).

The models presented in Table 4 clearly show that portfolio volatility – regardless of its operationalization – increases the risk of cabinet termination. Therefore, our results provide evidence for our second hypothesis: cabinets experiencing more frequent changes tend to last less than cabinets facing fewer changes in their structure and composition.⁶ The rationale is that portfolio volatility impose high information costs on ministers in their relations with

⁶ Our results are robust to the exclusion of any of the five countries included in the sample.

Table 4 – Portfolio volatility and government survival in five West European countries (1960-2014).

Independent variables	Only ministerships			Ministerships and Junior ministerships (weighted)		
	(1)	(2)	(3)	(4)	(5)	(6)
Total portfolio volatility	0.233*** (0.077)			0.153*** (0.059)		
Intra-party portfolio volatility		0.500*** (0.167)			0.465*** (0.179)	
Inter-party portfolio volatility			0.771* (0.460)			0.469** (0.227)
Portfolio disproportionality	0.008 (0.009)	0.008 (0.009)	0.009 (0.009)	0.017* (0.009)	0.017* (0.009)	0.018** (0.009)
Government range	-0.107 (0.152)	-0.106 (0.152)	-0.113 (0.149)	-0.146 (0.137)	-0.150 (0.137)	-0.135 (0.134)
Parliamentary range	-0.195 (0.145)	-0.209 (0.146)	-0.126 (0.146)	-0.162 (0.144)	-0.185 (0.146)	-0.073 (0.149)
Eff. no. of cabinet parties	0.182 (0.346)	0.197 (0.346)	0.216 (0.342)	0.261 (0.365)	0.278 (0.365)	0.282 (0.359)
Eff. no. of parliamentary parties	-0.077 (0.172)	-0.075 (0.170)	-0.154 (0.176)	-0.179 (0.182)	-0.167 (0.181)	-0.253 (0.182)
Type of government: single party minority	2.005*** (0.549)	1.993*** (0.546)	–	2.023*** (0.562)	2.043*** (0.561)	–
Type of government: minority coalition	0.594 (0.436)	0.593 (0.435)	0.630 (0.412)	0.566 (0.448)	0.556 (0.446)	0.642 (0.422)
Type of government: surplus coalition	0.118 (0.317)	0.123 (0.316)	0.121 (0.315)	0.155 (0.313)	0.156 (0.315)	0.127 (0.314)
Caretaker	1.822*** (0.375)	1.832*** (0.376)	1.745*** (0.453)	1.658*** (0.377)	1.660*** (0.377)	1.437*** (0.458)
Cabinet size	0.110*** (0.032)	0.109*** (0.032)	0.100*** (0.033)	0.038* (0.021)	0.039* (0.022)	0.036 (0.022)
Maximum cabinet duration	-0.001*** (0.000)	-0.001*** (0.000)	-0.001** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)
<i>N</i>	143	143	134	143	143	134
pseudo <i>R</i> ²	0.099	0.101	0.076	0.092	0.094	0.073
<i>AIC</i>	537.512	536.677	494.503	541.651	540.313	496.227
<i>BIC</i>	573.066	572.231	526.379	577.205	575.867	528.103

Notes: All models are estimated using Cox proportional hazard survival model. Entries are proportional hazard estimates, with robust standard errors in parentheses. Strata on countries. In Model 3 and 6 single-party cabinets are excluded. Baseline type of government is *minimum winning*. Significance: *** p<0.01, ** p<0.05, * p<0.1.

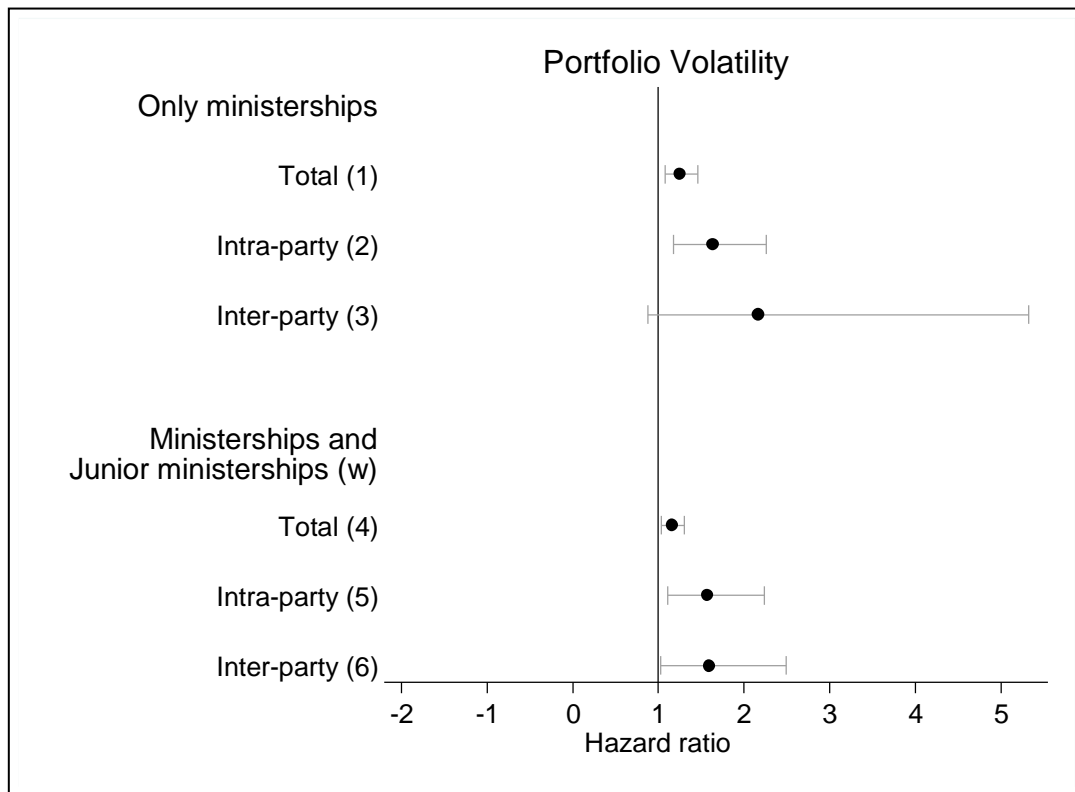
bureaucrats, undermining ministers' capacity to control civil service personnel in their departments and pursue policy goals. This reduces the cabinet's capacity as a whole to implement its publicly stated policy programs and lowers the cost of bringing down the incumbent government.

Figure 1 plots the hazard ratios for the main variables of interest. Hazard ratios can be interpreted as the ratio of the hazards for a one-unit change in the corresponding covariate. For instance, a hazard ratio of 1.50 indicates a 50% increased risk of cabinet termination. When the 95% confidence intervals (CIs) are both on the right of the solid vertical line, this suggests that our covariates positively impact the risk of government termination. According to the figure, we can infer from Model 1 that a one-unit increase in the total number of monthly changes in ministerial posts increases the risk of government termination by 26%. In other words, adding, eliminating or substituting one more minister per month increases a government's risk of terminating by more than one-fourth.

Remarkably, the negative effect of portfolio volatility on cabinet duration does not depend on the party a minister is affiliated with. As Model 2 and Model 3 show, whether ministerial changes occur among members of the same party or among politicians from different parties, frequent changes in the structure and composition of the cabinet impact negatively on government survival (see Figure 1). This is consistent with the causal mechanism underlying *H2*, which – all else equal – is based on information asymmetries between ministers and bureaucrats and not on their policy preferences. The impact of inter-party portfolio volatility is higher, as a one-unit increase in the number of changes per month across ministers of different parties increases the risk of government termination by a 116%, although with 90% CIs. Put differently, one more replacement of a minister with a politician from another party per month more than doubles the risk of cabinet dissolution. The impact of intra-party changes is however not negligible, as the same increase in intra-party portfolio volatility raises the risk of cabinet termination by 65%.

The results do not change substantially if we estimate the models using weighted portfolio volatility, which accounts for the different importance of ministerial and junior

Figure 1 – The impact of portfolio volatility on government termination.



ministerial cabinets posts. Based on Model 4, we can observe from Figure 1 that increasing the total portfolio monthly volatility by one unit makes government termination 16% times more likely. Models 5 and 6 show that when we consider changes in JMs’ positions, the impact of the intra-party and the inter-party components of portfolio volatility are quite similar. If in a month, one more minister is replaced with a politician from a coalition partner – or, equivalently, if two more politicians substitute two JMs from a different party – the risk of government termination rises by 59%. Similarly, if such replacements concern politicians belonging to the same party, the risk of government termination increases by 60%.

Let us now examine the impact of the other variables included in the analysis. As reported in Table 4, the initial disproportionality in the allocation of cabinet posts accelerates government dissolution. The effect of the variable *portfolio disproportionality* is positive in all model specifications, although statistically significant only in Models 4, 5 and 6, where the disproportionality index considers not only ministers but also JMs and incorporates different

weights for different types of cabinet offices. As expected, the more the distribution of cabinet posts among coalition parties is disproportional compared to parties' parliamentary strength, the shorter the cabinet duration. The magnitude of such an effect is not negligible, as increasing disproportionality by 10% raises the risk of cabinet termination by 19%.

Unsurprisingly, *caretaker* governments are found to terminate sooner than “ordinary” cabinets, and the risk of termination is about six times higher for the former ones. The initial *size of the cabinet* has some impact on government duration: the greater the number of cabinet posts at the stage of government formation, the higher the risk of cabinet dissolution. A plausible explanation for this finding is that a large cabinet often indicates an attempt to satisfy coalition partners' contrasting demands at the government formation stage. Within a government's life, the same underlying tensions can make policy-making difficult and lead to cabinet termination. Moreover, consistent with our expectations, the negative coefficient on *maximum cabinet duration* indicates that the risk of termination is higher for the cabinets appointed later during the legislative term.

Regarding control variables, we found that only the negative relationship between *single-party minority governments* and government duration is statistically significant. The positive signs for the coefficients on *minority coalition cabinet* and *surplus coalition* indicate that these two types of government tend to have a shorter life than minimal winning coalitions. However, the variables related to the type of government do not reach standard levels of statistical significance. The other “structural” attributes of governments (*government range* and *effective number of cabinet parties*) and party systems (*parliamentary range* and *effective number of parliamentary parties*) were found to have no impact on cabinet duration. Only the effective number of parties in the cabinet has the expected positive effect on the risk of cabinets' termination. As these results are not entirely consistent with previous findings, we

suggest that they might be sensitive to the sample at hand, which includes far less observations of those normally used test hypotheses about government termination.⁷

Conclusions

To our knowledge, no systematic research addresses the issue of whether or not cabinet reshuffles - i.e., replacing ministers and junior ministers and the creation and/or extinction of portfolios during the cabinet lifetime - may affect government survival. A reason for this might hinge upon the idea that government termination cannot be properly understood except in the context of government formation. Following this line of reasoning, reshuffles should have no independent effect on government termination, as they are likely to be an outcome of the same factors shaping the bargaining process at the government formation stage, which impacts government survival. However, if reshuffles can be interpreted as ways to settle intra-cabinet problems, sometimes reacting to unanticipated critical events, analyzing their potential effects not only on coalition governance but also on government termination should contribute understanding governments' stability.

In this paper, we attempted to fill a gap in the literature by examining the effects of reshuffles on government survival in five countries between 1960 and 2014. We tested two hypotheses derived from agency theory, a framework of analysis upon which the literature about ministerial selection and deselection is mostly based. The first suggests that changes in cabinet structure and personnel should lengthen governments' life as they help solving intra-cabinet agency problems. The second implies that reshuffles should decrease government duration as changing ministers and junior ministers loosens control over bureaucrats, undermining governments' policy-making capacity. Our results show that cabinets

⁷ Most recent studies also find mixed evidence of the impact of variables traditionally included in the analysis of government termination (see Bergmann, Bäck and Saalfeld, 2022).

experiencing a higher rate of portfolio volatility within their lifetime tend to have a shorter duration. These results support the view that reshuffles inhibit government survival by undercutting ministerial expertise accumulation. This raises the question of why reshuffles should be undertaken in the first place. A possible answer is that, even though, in the aggregate, a high number of cabinet changes increases the risk of government dissolution, this does not mean that individual cabinet changes do not help party leaders to mitigate problems of adverse selection or moral hazard in the cabinet in the ways suggested by the literature on ministerial turnover. These reshuffles may help a cabinet in trouble to hang on longer anyway than it would in the absence of them.

The analysis carried out in this paper leaves room for future research. An obvious way of expanding our study would be to include more countries in the data set. For example, including data from Westminster systems would help addressing the connection between ministerial volatility and cabinet duration. A further research strategy would be to introduce a temporal dimension into the analysis as a potential way to reconcile the hypotheses derived from agency theory into a broader framework. We may conjecture that altering a cabinet's composition in its early or later days should have different effects. At earlier stages, it should decrease the risk of cabinet termination as it allows replacement of opportunistic and unskilled ministers and JMs. However, at later stages, the benefits brought about by reshuffles could be thwarted by the information costs that reshuffles pose on ministers and JMs in their relations with bureaucrats. In other words, reshuffles' positive or negative impact on government survival might be time dependent. Finally, our research could be extended by examining in detail the causes of ministerial or junior ministerial turnover, distinguishing between personal reasons (scandals, health problems) and inter-party or intra-party tensions. Focusing in particular on those changes induced by intra-party politics-related features would help to single out a genuinely independent variable whose importance has been recognized by extensive

literature on coalition formation. Deepening the present study in the afore-mentioned directions might contribute to a better understanding of the link between reshuffles and government termination.

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