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Determinants of cabinet size

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Abstract. A large literature examines the composition of cabinets in parliamentary systems, but very little attention has been paid to the size of those cabinets. Yet not only is the size of the cabinet related to the division of portfolios that may take place, cabinet size is also related to policy outcomes. In this article, a theory of party size is considered which examines how coalition bargaining considerations, intra-party politics and efficiency concerns affect the size of cabinets. Hypotheses derived from the theory are examined using an extensive cross-national dataset on coalition governments which allows us to track changes in cabinet size and membership both across and within cabinets.

Keywords: cabinet size; ministers; portfolios; coalitions; bargaining

Introduction

Much of the literature on coalition formation assumes that the size of the cabinet is fixed but, as several recent examples show, cabinets do change in size. In September 2012, for example, the British government came under criticism for having too many members following a cabinet reshuffle. The increase in the size of the cabinet was attributed in part to the demands of coalition politics and the need to assuage coalition partners.¹ Countries with greater experience of coalition cabinets also see alterations in the size of the cabinet. The German cabinet, for example, increased in size in 1990 (between Kohl II and Kohl III). While unification provided the occasion for increasing the size of the cabinet, at least part of the increase was due to the demands of the Free Democratic Party (Conradt 2009: 198). In Iceland, the expansion of the government coalition to include a fourth party in 1989 resulted in an increase in the size of the cabinet from nine to 11 ministers and led to the establishment of the Ministry of the Environment. But not all changes in cabinet size are attributable to inter-party bargaining (or even exogenous shocks) in coalition governments. Single-party governments, too, may change cabinet size. In 2011, following the party's landslide election victory, the single-party Scottish Nationalist Party government in Scotland reversed previous course and enlarged the cabinet from six to nine members.² Canada's single-party government similarly enlarged its cabinet (from 32 to 38) in 2008. When asked in 2010 why the size of the cabinet had not been reduced, Prime Minister Harper noted that this was 'no time to bring in demotions'.³ Not all changes to the cabinet serve to increase its size. After the 2013 Israeli elections, for example, one of the disagreements between the two largest parties was the size of the cabinet, with Likud favouring a larger cabinet to accommodate senior members of the party.⁴

All these examples show that the size of the cabinet is not fixed. Yet theories of coalition bargaining and formation tend to assume the size of the cabinet – the pie to be divided – to

be exogenously given (Laver & Schofield 1990; Warwick & Druckman 2001). For most intents and purposes this is a reasonable assumption to make. Yet the overall size of the cabinet is in the hands of governing parties themselves. Governing parties can – and do – change the number of ministers in a government,⁵ but little effort has been devoted to studying the size of cabinets except as a potential determinant of various fiscal outcomes.

We argue that decisions about the size of the cabinet are driven by consideration of both inter- and intra-party politics. Inter-party politics shape the size of the cabinet as the formation of government coalitions is, in substantial part, concerned with the division of cabinet portfolios, which affects the governing parties' office payoffs, their control over particular portfolios and their policy influence at the cabinet level. Increasing (and sometimes reducing) the size of the cabinet can help solve the parties' bargaining problem. For example, adjusting the size of the cabinet may help attain the proportional allocation of portfolios known as 'Gamson's law' (Gamson 1961; Indridason 2013; Falcó-Gimeno & Indridason 2013). Cabinet size may also play a role in managing intra-party bargaining problems. Altering the size of the cabinet may help bring otherwise dissatisfied party members and/or party factions on board. Cabinet posts are, after all, typically seen as one of the big prizes in politics among politicians – most politicians aspire to become cabinet ministers either because they value the prestige the posts carry with them or because of the greater ability to influence policy that membership in the cabinet and heading a government department offers. Control over membership in the cabinet is, therefore, an important tool in maintaining party discipline (Kam 2009) but we will argue that the effectiveness of that tool is influenced by the size of the cabinet.

Although there may be reasons to change the size of the cabinet in response to the political situation it is worth noting that there are also reasons for not changing the size of the cabinet too frequently. To begin with, it is costly and disruptive to form and re-form government organisations at will – for example, one year having a Ministry of Defence, the next having separate ministries for each branch of the armed forces, and the following year a different organisation still. Furthermore, there may be no real need to change the number of cabinet ministers. To the extent that the bureaucratic division of the business of government tends to persist then so, too, will the organisation of political control.

There are other reasons, too, for expecting limits on cabinet size, especially upper limits. While institutional devices such as cabinet committees, or the use of junior ministers, may help monitor and manage the work of the cabinet (Thies 2001; Aucoin & Bakvis 1993: 409–410), there is still a need to coordinate action – a task that can become harder as group size becomes larger (Klimek et al. 2009). Moreover, in parliamentary systems, policy coordination at the cabinet level is important in terms of preventing policy drift. The task of controlling and coordinating the cabinet as a decision-making body would thus seem to suggest an upper limit to cabinet size (Indridason & Kam 2008). If ministers are given considerable control over the policy output of ministries (Laver & Shepsle 1996), then problems of coordination mount as the number of ministers increases. More broadly still, parliamentary systems typically require collective responsibility – a doctrine that requires some coordination across ministries. In a practical sense, then, the size of the cabinet may not be completely variable, but variations do occur and sometimes, albeit rarely, they may be large scale. Aucoin and Bakvis (1993), for example, document cases from both Australia and Canada.

The size of the cabinet is not only of interest because it offers insight into the strategic considerations governments face. The size of the cabinet is also politically and economically consequential. Work by Schaltegger and Feld (2009) and Wehner (2010) shows that the size of the cabinet can affect the size of government. In particular, more ministers may increase both levels of spending and deficits as ‘spending ministries’ essentially bid up the budget: more cabinet ministers equals more government spending (see, e.g., Wehner 2010, Table 2). Woo (2003: 389) finds larger deficits for bigger governments and suggests using cabinet size to control government deficits: ‘Given the difficulty of improving the income distribution in the short term, deficit reduction may be achieved relatively easily by reducing cabinet size.’ Ricciuti (2004) finds that the number of spending ministers is positively correlated with greater government expenditures and Perotti and Kontopoulos (2002) find that the number of spending ministers increases a variety of government fiscal outcomes including expenditures, revenues and government transfers. Volkerink and De Haan (2001) come to the same conclusion, again considering a variety of government fiscal outcomes, while adopting a slightly different rule of counting the number of spending ministers. Examining fiscal outcomes and tax receipts, Annett (2002) finds that cabinet size increases total expenditure, government wage consumption and consumption tax share, but decreases labour tax share. Finally, Elgie and McMenamin (2008), focusing on budget deficits, come to a similar conclusion although they find the effect is contingent on years of democratic experience.

Students of the political sources of fiscal outcomes have tended to focus on the number of parties in government rather than the size of the cabinet (see, e.g., Roubini & Sachs 1989; De Haan et al. 1999; Bawn & Rosenbluth 2006). Often this literature assumes that parties are unitary actors but, as we argue, coalition cabinets must be concerned with coordination both across and within parties. Focusing on the empirical evidence, Volkerink and De Haan (2001: 237) conclude that the latter is an important factor: ‘The impact of the number of ministers is stronger and more robust than the effective number of parties in government.’ This suggests either that the emphasis on the number of government parties is misplaced or, as we argue below, that the number of parties in the cabinet influences the size of the cabinet. Other scholars have argued that cabinet size may be important in other ways. Vatter (2000) finds evidence that optional referenda and initiatives are used more in the Swiss cantons where the cabinet has more seats. Torgler and Frey (2012) find that large cabinets – a proxy of the inclusiveness of the government – reduce the likelihood of an assassination attempt on major political figures.

The question of what determines the size of cabinets is thus both theoretically and substantively important – in particular with regard to economic outcomes where the effects of cabinet size have been demonstrated to be quite robust. Yet the question of what determines cabinet size is one that, to date, has received very little attention among scholars of parliamentary systems. In this article we begin to examine that question, focusing on the role that intra- and inter-party politics have on the incentives to increase, or decrease, the size of the cabinet.

The size of cabinets

The context in which a coalition is formed is likely to influence a variety of characteristics of the coalition cabinet not just in terms of the ideological makeup of the coalition, but also

in terms of the size of its cabinet. The formation of a government coalition requires the bargaining partners to come to an agreement about how to divide up the spoils of office. The parties, thus, negotiate over the government's policy programme as well as over the division of ministerships and government portfolios. Of course, the assignment of portfolios to parties is not independent of the parties' agreement on policy (Bäck et al. 2011) – if ministers have a degree of autonomy, they will be able to put their mark on policy making within their portfolio and may even be able to depart from the policy negotiated during the formation of the coalition (Laver & Shepsle 1996).

Regardless of the precise mechanism by which portfolios are allocated, we can posit that there is a certain division (or a range of divisions) of office benefits that potential coalition partners consider fair – or simply acceptable.⁶ However, obtaining that division of ministerial posts may not always be possible – that is, the parties may be in agreement about how office and policy-making benefits should be divided, but that does not imply that there exists an allocation of posts that corresponds to that allocation of office and policy-making benefits because ministerial posts are not divisible. Suppose, for example, that two parties have come to an agreement that they should be equally well represented in the cabinet. That division is easily attainable as long as the number of seats in the cabinets is even. Unlike ministers, portfolios are divisible and the problem can be easily solved by simply adding a seat at the cabinet table. As the number of parties in the government coalition increases, the potential of the indivisibility of ministerships causing problems increases.

The number of coalition parties affects coalition formation by introducing a greater degree of bargaining complexity.⁷ At the very least, with more parties involved in the formation of a coalition, there will be more voices demanding a share of portfolios. Further complexity is introduced when the parties involved in the negotiations can potentially form a number of different coalitions. Since bargaining breakdown is potentially costly to the bargaining partners – they are at risk of being left out of the government coalition – parties may be more likely to resort to enlarging the cabinet in order to smooth out difficulties in the formation of a government coalition. Cabinets do, of course, have control over other positions like junior ministerships (Thies 2001) that can be used for the same purpose. However, although such appointments may facilitate the formation of a coalition it is doubtful that they are perfect substitutes for a cabinet post. Junior minister posts are generally occupied by minor figures within the party who are unlikely to have a deciding voice in the coalition formation process. Thus, less substantial political appointments may play some role in coalition negotiations and may reduce the need to expand the size of the cabinet but they are unlikely to replace it.⁸ In sum, we would anticipate that those government coalitions that include more parties will have larger cabinets.

HI: As the number of parties in government increases, so does the size of the cabinet.

Cabinet size may also reflect concerns over policy drift. Policy drift has become an increasingly important topic in the study of cabinet government (see, e.g., Thies 2001; Vanberg & Martin 2004; Martin & Vanberg 2005; Indridason & Kam 2008). The literature examines a range of ways in which parties and governments manage drift. Thies (2001) examines the way in which appointing junior ministers from a different party than the cabinet minister may check drift. Martin and Vanberg (2004, 2005) explore the way in which

parliamentary scrutiny may help check wayward coalition partners. In some settings, appointing non-partisan cabinet members may be helpful (Amorim Neto 2006; Amorim Neto & Strøm 2006; Amorim Neto & Samuels 2011).

Here we suggest that another mechanism that helps rein in drift is to reduce the size of the cabinet. Increasing the size of the cabinet may ease the formation of a coalition, but doing so may also affect the degree of policy drift.⁹ As we know, problems of moral hazard are greater when there are large ideological differences (see, e.g., Laver & Shepsle 1996; Strøm 2000; Thies 2001; Martin & Vanberg 2004, 2011; Huber & Martinez-Gallardo 2008; Dewan & Myatt 2010). In a cabinet setting the moral hazard problem manifests itself in ministerial drift – that is, each minister faces an incentive to adopt policies that may not be in line with the wishes of other members of the coalition (see, e.g., Huber & Martinez-Gallardo 2008; Indridason & Kam 2008; Bäck et al. 2009; Berlinski et al. 2007). Different opinions about the government’s policy agenda increase the potential for significant policy drift that threatens to unravel the coalition bargain (Indridason & Kam 2008). Policy drift is therefore more likely to occur, and to be more consequential, in ideologically heterogeneous coalitions, everything else being equal. Anticipating this problem of policy drift, ideologically heterogeneous coalitions will seek to minimize drift by increasing the degree of coordination and oversight within the cabinet – that is, members of an ideologically diverse coalition will recognise that such diversity may cause problems of drift later on, making coordination among cabinet members desirable.

Putting these points together it follows that the moral hazard problem is more serious in large ideologically divided cabinets. Because coordination and oversight are more difficult to achieve in larger cabinets, one way of limiting policy drift in ideologically heterogeneous cabinets is to limit the size of the cabinet. Reducing the number of ministers is a possible solution to the problem of drift for, at least, two reasons. First, it should be easier to keep a close eye on a small set of ministers. Second, with fewer positions to fill, party leaders are more likely to be able to fill them with ministers who can be trusted or whose interests are more closely aligned with the party leadership.¹⁰

H2: The broader the ideological range of the cabinet, the smaller the size of the cabinet.

In addition to the cabinet’s ideological heterogeneity, the overall ideological orientation of the government may influence cabinet size. Left-wing cabinets are generally considered to favour greater government spending while right-wing coalitions prefer a smaller state. The ideological preference for government spending induces preferences over the size of the cabinet as it has been shown to influence government expenditures. In their study of 26 Swiss cantons, Schaltegger and Feld (2009) show that the number of cabinet ministers is positively associated with government spending. Or, as they put it: ‘[C]abinet size matters for the size of government. Larger cabinets favor larger governments’ (Schaltegger & Feld 2009: 36). They argue that there are several possible causes for this. Each minister is likely to face pressures to increase expenditures from her department (Niskanen 1971) and from interest groups with a stake in the minister’s portfolio. Moreover, each minister may have her own constituency that she seeks to serve. Thus, the government can be seen as facing a fiscal commons problems in which the benefits of increased spending within a particular

department disproportionately benefits its minister while she only bears a fraction of the cost (which shrinks the bigger the cabinet becomes).¹¹

To Schaltegger and Feld's (2009) argument one might add two factors. First, ministers' policy preferences may affect which portfolios they are given – with ministers being paired up with portfolios which they consider salient – resulting in departments being headed by policy outliers.¹² Second, ministers' ambitions create a demand for spending. In order to further their ambitions ministers are likely to support spending within their portfolios in order to implement policy programmes successfully, gain recognition and avoid policy failures. In sum, as empirical and theoretical findings suggest that cabinet size positively affects government spending, right-wing cabinets are expected to be more reluctant to expand the cabinet's size.

H3: Left-wing governments are expected to have larger cabinets.

In addition to inter-party bargaining and coalition management concerns, coalition parties face intra-party conflicts and cabinet portfolios are also an important mechanism for maintaining party discipline in parliamentary systems (Kam 2009). Governments in parliamentary systems rely on the confidence of the legislature to stay in power. Loyal party members are, thus, rewarded with government portfolios while habitual dissenters can typically give up any hope of holding a cabinet-level position. If cabinet posts are to be used to maintain a disciplined party, they must be seen as both valuable *and* attainable. In other words, the expected value of toeing the party line must outweigh the perceived benefits of dissent. The value and attainability of cabinet posts depends on their number. While cabinet posts are one of the big prizes in politics their value is, at least in part, determined by their scarcity and the portfolios attached to the post – the Minister of Silly Walks may be a cabinet-level position, but it would hardly be seen as a highly desirable one (except maybe in certain circles). In addition, threats to withhold a cabinet-level post become less credible as the cabinet expands. On the other hand, a small cabinet means that cabinet posts are considered highly valuable but also that attaining these posts will be a distant dream for most parliamentarians. Thus, there is an optimal number of cabinet posts that maximises party discipline.

The role of ministerial posts in maintaining party discipline suggests two hypotheses. The probability of being offered a cabinet-level post should be a function of the size of the legislature. Holding the size of the cabinet fixed, the probability of being appointed a minister will be larger in a smaller legislature. As the size of the legislature increases, the probability will fall and the promise of promotion becomes a less effective tool for keeping MPs in line. To counter that, the coalition parties have an incentive to increase the size of the cabinet. The argument about the optimal cabinet size for maintaining party discipline can be refined further. The coalition parties can only discipline their own legislators and, therefore, one might expect the size of the cabinet to be a function of the coalition parties' legislative majority rather than the size of the legislature. Thus, the number of cabinet posts should be an increasing function of the size of the legislative majority in addition to the size of the legislature.¹³ An alternative argument for why legislature size might influence cabinet size is that the legislature size (or the size of the government majority) affects the pool of ministerial talent (Dewan & Myatt 2010). Government leaders have a large talent pool in

a large legislature, whereas in a smaller legislature a small talent pool may limit the incentive to enlarge the cabinet.

H4: As the size of the legislature increases so should the size of the cabinet.

H5: As the number of seats held by government parties increases so should the size of the cabinet.

Empirical analysis

We test the hypotheses using data on cabinets in 17 Western European countries between 1944 and 2005.¹⁴ Our dependent variable, *CABINET SIZE*, is the number of cabinet ministers – that is, ministers that are formally members of the cabinet.¹⁵ *CABINET SIZE* is constructed from a comprehensive dataset containing all ministerial appointments in each of the countries. We should note that the titles of ministerial positions vary across countries and are not a perfect indicator of cabinet-level positions.¹⁶ Ministers of State in Ireland, for instance, are not members of the cabinet while their namesakes in France are. Our emphasis on cabinet ministers, rather than, say, junior ministers, is because, in line with the literature on coalitions, we see cabinet ministries as the main prizes to be divided among coalition partners. In addition to only rarely appearing in the coalition literature, junior ministers have a different status in government, either being seen as a stepping stone to the real prize of the position of a cabinet minister or, as in Thies (2001), being seen in terms of a monitoring rather than a policy-making role.¹⁷

One further definitional issue is that in some cases it takes some time to assemble a new cabinet (or to finalize a cabinet reshuffle) – that is, the appointment of an initial cabinet is sometimes followed by additional appointments, usually for lesser ministries. To account for delays in fully assembling a cabinet, we consider any changes in the cabinet within 14 days of one another to be a part of the same cabinet reorganisation.

The number of cabinet ministers varies considerably across countries. The smallest cabinet in our sample includes only five ministers and the largest one 38 ministers.¹⁸ But it is not so much the cross-national variation that is of interest to us as the variation over time. Figure 1 plots the size of the cabinets by country over time. The figure makes clear that the size of cabinets in a given country tends to be fairly stable in that we do not observe sudden big changes in the size of the cabinet. However, the size of the cabinets is far from being constant; each of the countries in our sample exhibits some variation in the size of the cabinet. The figure also highlights a particular trend – cabinets have tended to become bigger as time goes by. Only in Germany and Spain has the number of cabinet ministers decreased. In some instances these changes have been substantial: the size of the cabinet in Iceland, Luxembourg and Norway, for example, has doubled in the time period.

Most of the data about our independent variables (Table 1) comes from Müller and Strøm (2001). Most of these variables require little explanation. The *#CABINET PARTIES* refers to the number of cabinet parties. The *SIZE OF LEGISLATURE* is the number of seats in the lower house of the legislature in hundreds of seats. We focus on the lower house as governments, with the exception of Japan, only need to maintain the confidence of the

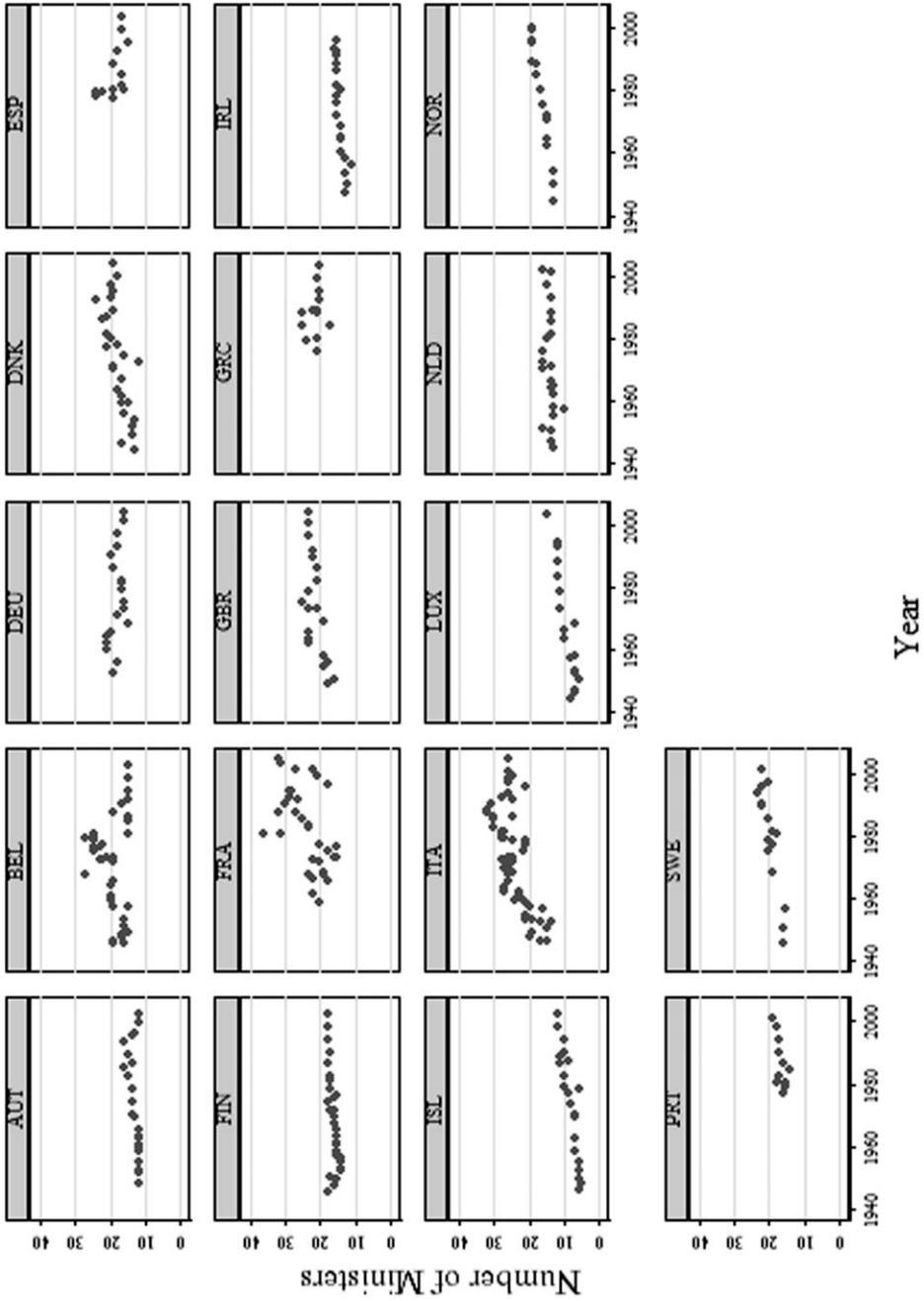


Figure 1. Size of cabinets by country and year.

Table 1. Summary statistics

Variable	Mean	Standard deviation	Minimum	Maximum
Number of Ministers	17.95	5.41	5	36
#Cabinet Parties	2.39	1.37	1	7
#Government MPs	1.72	1.15	0.14	4.73
Minority Cabinet	0.33	0.47	0	1
Surplus Coalition	0.21	0.41	0	1
Size of Legislature	3.13	1.99	0.51	6.72
Ideological Distance	19.68	22.37	0	121.2
Socialist Cabinet	0.35	0.48	0	1
Conservative Cabinet	0.18	0.38	0	1
Population	23.61	24.53	0.14	82.43
EU Member	0.55	0.5	0	1
Federal State	0.2	0.4	0	1

lower house (Thies & Yanai 2012). We also include the squared value of the size of the legislature in our analysis as it seems plausible that the relationship between legislature size and cabinet size is not linear. Our measure of ideological heterogeneity within the cabinet is the *IDEOLOGICAL RANGE* of the coalition, which refers to the distance between the government parties that are the furthest apart ideologically. The parties' ideological positions are obtained from the Comparative Manifesto Project's data using Laver and Budge's (1992) method. The ideological orientation of the government was also hypothesised to influence its size, and to capture these effects we include two dummy variables: *SOCIALIST CABINET* and *CONSERVATIVE CABINET*.¹⁹ Finally, we include the year in which the cabinet formed to account for the tendency for cabinets to grow over time. Our variable for *YEAR* is coded as the year of formation minus 1944 – that is, the variable ranges from 0 to 61.

We also include a set of control variables. Cabinets can be classified in terms of whether they enjoy majority support in the legislature and whether they include parties not necessary for maintaining a legislative majority. We treat minimal winning cabinets as the baseline category and include dummy variables for minority cabinets and surplus cabinets. How populous a country is may affect the number of issue areas that are considered sufficiently important to warrant appointing a minister that only deals with that portfolio (or fewer portfolios). Another reason population size may matter is that organised interest groups may wield greater power in more populous countries, as compared with consumers or more dispersed interest groups. Strong interest groups want to have ministries dedicated to their sector and are strong enough to lobby effectively for their establishment.²⁰ To account for these possibilities, we control for the population of the country (in millions of inhabitants). Membership in the European Union may affect the workload of the cabinet as membership requires coordination with the EU and, accordingly we control for EU membership. In federal states certain functions are handled by the federal units. With fewer tasks to be handled by the cabinet, it is likely to be smaller and we therefore control for whether a state is federal.

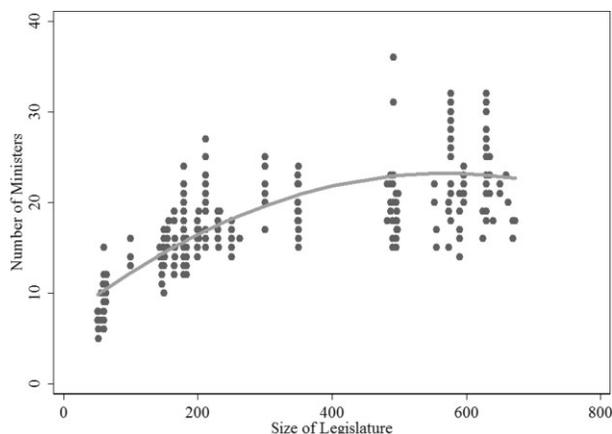


Figure 2. Legislature size versus cabinet size.

Before moving on to the statistical analysis it is instructive to examine the data graphically. In Figure 2 the size of the cabinet is plotted against the size of the legislature. There is a clear relationship between the size of the legislature and the size of the cabinet. However, as we posited above, the relationship is not linear. Rather, it appears that the size of the cabinet increases with legislature size up to a certain point, but from that point on it remains fairly constant even as the legislature becomes bigger.

There is, of course, a limit to comparisons such as those made in Figure 2. The size of the legislature is mostly constant within each country so we rely on comparisons across countries, which can be problematic as a variety of other country-specific factors may influence cabinet size. While it is not the strongest test of our hypothesis, it is consistent with it. However, the size of the legislature has changed in nine of the countries in our sample. Figure 3 plots cabinet size against the size of the legislature for these countries. In Germany and the Netherlands there is little evidence that the change had an effect on the size of the cabinet. However, in the other seven countries there are indications that, on average, cabinet size changed with legislature size.

For our statistical analysis we rely on ordinary least squares regression (Table 2). Given the difficulty of forming a coalition in the first place, however, we expect an unwillingness to change cabinet allocations once agreed. Moreover, even when a new government, composed of a different set of parties, forms, it is unlikely to not build on the existing department organisation in modeling the new cabinet. To account for autocorrelation in the data we also consider a model that includes the lagged value of the number of cabinet ministers among our regressors. We estimate a model that includes country fixed effects to account for unobserved differences across countries.²¹ We calculate robust standard errors allowing for clustering at the country level. The size of the cabinet often changes during a government's term in office. We focus our analysis on a model in which the dependent variable is the size of the cabinet at its formation. We also estimate the models using the average size of the cabinet over the government's term as our dependent variable. The results are substantively similar and can be found in the online appendix.

The first thing to note about the results is that the inclusion of lagged values of cabinet size is, as expected, highly statistically significant. While it generally depresses the

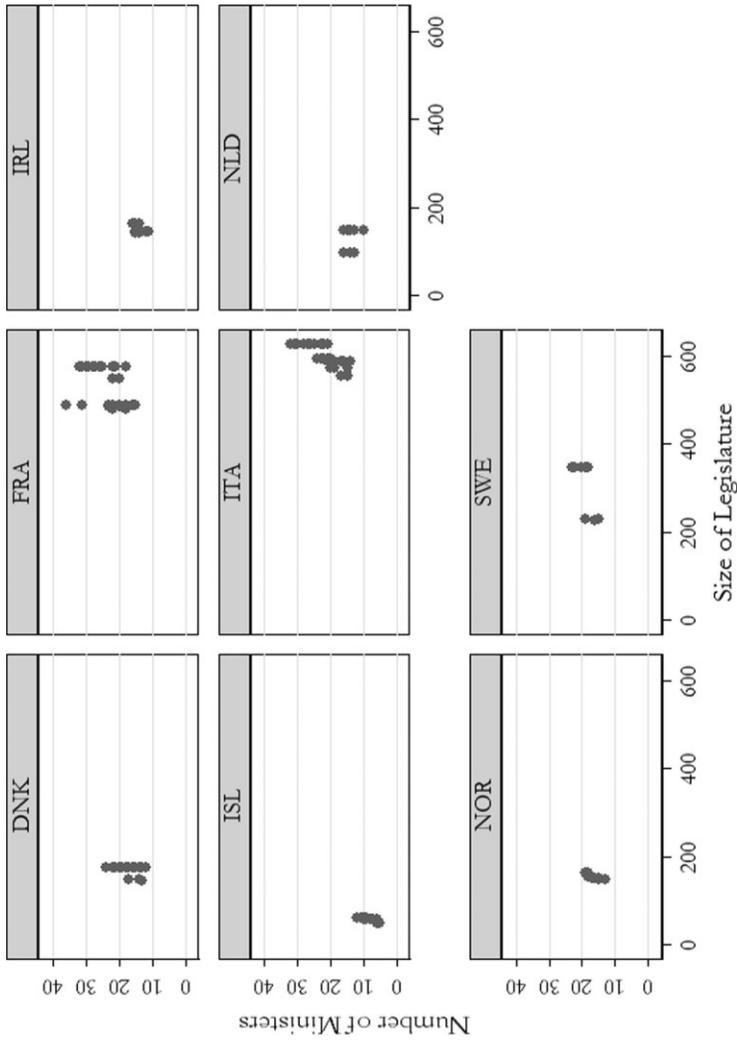


Figure 3. Size of cabinets by country and legislature size.

Table 2. Determinants of cabinet size

	OLS	OLS w/lagged DV	OLS w/fixed effects
#Cabinet Parties	0.77*** (0.20)	0.39*** (0.10)	0.35** (0.15)
#Government MPs	0.69 (0.54)	0.16 (0.38)	0.06 (0.36)
Size of Legislature	5.61*** (0.83)	1.97*** (0.40)	2.30 (2.01)
Size of Legislature ²	-0.40*** (0.08)	-0.14*** (0.04)	-0.19 (0.22)
Surplus Coalition	1.07 (0.73)	0.36 (0.34)	0.86** (0.38)
Minority Cabinet	1.40** (0.59)	0.37 (0.28)	0.27 (0.35)
Ideological Distance	-0.02** (0.01)	-0.01* (0.01)	-0.01 (0.01)
Socialist Cabinet	-0.05 (0.55)	0.12 (0.29)	-0.53 (0.37)
Conservative Cabinet	-0.92 (0.57)	-0.40* (0.24)	-1.20** (0.51)
Population	-0.12*** (0.03)	-0.04*** (0.01)	0.16** (0.08)
EU Member	1.52*** (0.58)	0.47* (0.26)	0.05 (0.44)
Federal State	0.29 (1.06)	-0.12 (0.39)	
Year	0.05* (0.02)	0.01 (0.009)	0.02 (0.02)
Cabinet Size _{t-1}		0.64*** (0.02)	0.52*** (0.03)
Constant	3.17*** (0.73)	1.24*** (0.24)	-0.97 (4.72)
Observations	415	408	408
R ²	0.73	0.85	0.54

Notes: OLS = Ordinary least squares. Dependent variable: Size of initial cabinet. Standard errors clustered by country in parentheses. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

magnitude of the effect of the other independent variables on cabinet size, it does not affect the direction of the effect. Unless otherwise noted, we focus our discussion on the full specification of the model without fixed effects.²²

Our hypothesis that bargaining considerations influence the size of the cabinet is clearly supported by the data. An additional party in government results in an instantaneous increase in the number of cabinet ministers by about 0.4 on average, whereas the long-run effect amounts to an increase of 1.1 ministerial posts.²³ The tendency of governments to appoint more ministers may reflect the fact that compromises are more difficult in multi-party negotiations and that adding ministerial positions can be used to compensate parties for policy concessions. An alternative explanation consistent with this finding depends on an argument that is often invoked to explain Gamson's law – that is, fairness dictates that each party's share of the portfolios is proportional to their contribution to the cabinet's majority (or legislative support in the case of minority coalitions). Proportionality is, usually, more difficult to achieve in smaller cabinets and increasing the size of the cabinet may help in generating a more proportional outcome.

We also hypothesised that the size of the cabinet depended on the size of the legislature. A successful government relies on the support of government party MPs in the legislature. Maintaining party discipline is thus important for advancing the cabinet's legislative agenda. Cabinet membership is one of the primary tools of the cabinet for maintaining party discipline (Kam 2009). For the promise of cabinet membership to be effective in inducing legislators to support government bills two conditions need to be satisfied. The legislator

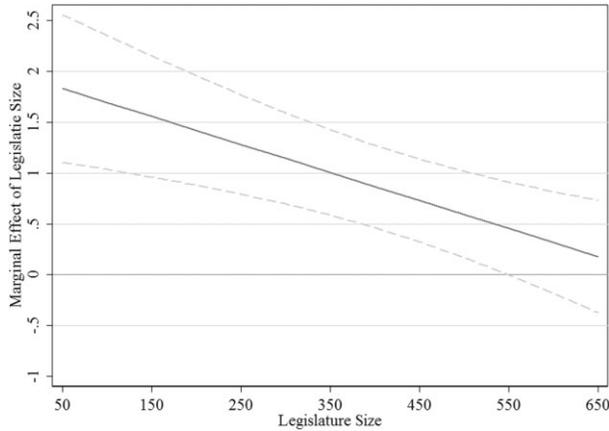


Figure 4. Marginal effect of legislature size.

must see membership in the cabinet as a realistic possibility. Holding the size of the cabinet fixed as the size of the legislature increases, this possibility becomes increasingly remote. Cabinets should, therefore, become larger as the size of the legislature increases. There are, however, limits to this strategy. Increasing the size of the cabinet devalues the ministerial posts. While the top portfolios will remain important, the lesser portfolios will become increasingly diluted and lose some of their appeal to the MP. The relationship between legislature size and cabinet size should become increasingly weak in larger legislatures.

This is precisely what our results indicate. We model cabinet size as a quadratic function of legislative size and in small legislatures the size of the legislature has a large effect. This effect declines as the legislature grows larger. An increase of ten seats in a 100-person legislature is estimated to increase the size of the cabinet by 0.44 ministerial posts in the long run, which is a substantial increase as the size of the legislatures in our sample ranges from 51 seats to 672 seats. In a 200-person legislature this effect has declined to 0.37 ministerial posts in the long run and legislature size ceases to have a positive effect on cabinet size if the legislature size were to reach 723 seats.²⁴

Figure 4 plots the marginal effect of the size of the legislature at different levels of the variable. The figure demonstrates that the marginal effect is positive and statistically significant at the 95 per cent level up to the point at which the legislature size reaches approximately 550 seats. As we discuss above, these effects are in large part driven by cross-national variation in the size of legislatures as changes in the size of legislatures are relatively uncommon events. However, as we pointed out earlier, where changes in legislature size have occurred they tend to be consistent with our estimates here. The estimated effect of the number of MPs is consistent in line with our hypothesis, but is not statistically significant at the conventional levels.

The results with respect to whether the cabinet is a minimal winning, a minority or a surplus coalition are intriguing. Both minority and surplus government cabinets appear to be larger than minimal winning cabinets although the effects are rarely statistically significant and never when the lagged size of the cabinet is included in the model. While one might expect surplus cabinets to be larger (in part because they tend to include more

parties), it is more difficult to explain why minimal winning cabinets tend to be smaller than minority cabinets. Whether the minority cabinet is single-party cabinet or a coalition cabinet does not appear to have an effect on its size.²⁵

Turning to ideological factors, the results indicate that less ideologically cohesive cabinets are smaller. A one standard deviation change (21.8) increase in the ideological range of the coalition decreased the number of cabinet ministers by about 0.61 in the long run. Moving from the most to the least ideologically cohesive cabinet, this amounts to an additional 3.4 cabinet posts in the long run.

The second ideological factor we consider focuses on the ideological orientation of the government rather than the ideological divisions within it. As larger cabinets have been associated with higher government expenditures, right parties may be more reluctant to increase the size of the cabinet. Coordination and oversight is likely to be more difficult in larger cabinets, leading to higher expenditures, which right parties are likely to be more sensitive to. Left parties, on the other hand, may still dislike the loss of effective coordination and oversight but the effects may be less at odds with their policy goals. Our findings are generally consistent with this argument. Conservative cabinets are significantly smaller than socialist cabinets (and centrist cabinets) and have 1.4 fewer ministers in the long run.²⁶

The results show evidence of a time trend – cabinets have been growing in size as we showed in Figure 1. The effect is not negligible: the growth rate amounts to only about one cabinet position every 26 years, suggesting that party leaders have been quite successful in keeping inflationary pressures in check and have resisted the temptation to award prizes to everyone.

Population has a negative and a statistically significant effect on the number of ministers, which is somewhat unexpected. One reason for this finding is that population is at best an imperfect proxy for the number of issue areas or the structure of interest group competition. A possible avenue for future research would focus on better measures of these variables. Another reason for this counterintuitive finding is that population and legislature size are correlated. Taagepera and Shugart (1989) describe the relationship as a cube root law – that is, the number of legislators equals the cube root of the population. Thus, the fact that legislature size is one of our dependent variables explains this finding; if we drop the variables related to legislature size the sign of the coefficient for population reverses, indicating that more populous countries tend to have more legislators.

Finally, being a federal state does not appear to influence the size of the cabinet while the evidence concerning EU membership is mixed. EU membership is statistically significant in the models without fixed effect, but when fixed effects are included the estimated effect is small and statistically insignificant. This is not altogether surprising as there is limited variation within countries and the countries in our sample that have stayed outside the EU tend to be smaller.

Conclusion

The size of parliamentary executives varies quite widely – both across and within countries. As we noted at the outset, the size of the cabinet does have policy consequences. In particular, cabinet size has been shown to affect government budgets. Furthermore, while

many theories of coalition government take the size of the cabinet as fixed, we show here that the size of cabinet is variable and develop explanations for how the size of cabinet varies.

We argue that the size of the cabinet depends on intra- and inter-party politics. Inter-party politics influence the size of the cabinet because of the need of coalition parties to come to an agreement about the division of ministerial portfolios and increasing the size of the cabinet can at times smooth that process. Intra-politics matter because seats in the cabinet are an important tool for maintaining party discipline. Empirically, we find evidence in support of both hypotheses.

In addition to these factors we consider the effect of ideology, which can matter in two ways. First, a diversity of ideological opinions within the cabinet makes coordinating its work more challenging and, in response, ideologically diverse cabinets may seek to limit the number of ministers. Second, as larger cabinets tend to lead to poorer fiscal outcomes, right-wing cabinets ought to be reluctant to increase the size of the cabinet. Again, we find empirical evidence for both hypotheses.

To summarise, we find strong indications that suggest that political context and considerations influence the size of the cabinet. The size of the cabinet is neither simply exogenously determined or the consequence of bureaucratic consideration. The literature on cabinet management has suggested that reassigning portfolios (Dewan & Hortala-Vallve 2011) and cabinet reshuffles (Indridason & Kam 2008) help the prime minister (or core executive) to obtain preferred policy outcomes. The findings here suggest that prime ministers have an even greater scope for engaging in such behaviour. Dewan and Hortala-Vallve (2011) show that prime ministers' ability to obtain preferred outcomes is reduced when ministers' expertise is correlated with their policy biases. In those circumstances, reassigning ministers may be costly: achieving the desired outcome on a particular policy may require sacrificing expertise across all of the policies that fall under the ministers' portfolios. The ability to enlarge the cabinet by splitting ministerial portfolios can then serve to reduce the loss of expertise associated with reorganisation of the cabinet. An avenue for further research would be to consider under what conditions decisions to enlarge, or shrink, the cabinet are made. The existing literature on cabinet management suggests that changes in cabinet size should be more likely to occur when the core cabinet faces opposition from its ministers with regard to specific policy goals. In contrast, our argument about the importance of bargaining considerations suggests that changes in the size of the cabinet might reflect an effort to maintain coalition cabinets – for example, in response to changes in the (relative) popular support of the government parties.

Finally, it bears emphasising that our analysis only extends to West European parliamentary (and semi-presidential) systems. Whether these findings extend to other countries, and in particular, to presidential systems remains an open question. Theoretically some of our arguments can be seen as extending to presidential regimes. Although presidents don't face the pressure to maintain the confidence of the legislature as parliamentary executives, they typically must rely on majority support in the legislature in order to advance their legislative agenda (Cox & Morgenstern 2001). Such legislative coalitions can, of course, be built *ad hoc*, but Amorim Neto (2006) shows that under at least some conditions presidents seek to build cabinets that have majority support in the legislature. Thus, we would, still expect our hypothesis about the number of coalition partners to hold sway although it

would have to take account of the fact of whether the president adopts the strategy of building a majority cabinet. Similarly, one might expect our hypothesis regarding the effects of the size of the legislature to apply – at least where majority cabinets are the norm. We hope to extend the analysis to presidential regimes in our future work. Our findings here inform such analysis but our theoretical framework will require further refinement given the wider range of strategies available to presidents in furthering their legislative agenda.

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Appendix: Cabinet Membership in the Executive

The following table lists posts in the executive office in each of the countries in our sample as well as information about whether the posts' occupants are considered members of the cabinet. Membership in the cabinet is defined by (i) the right to attend cabinet meetings and (ii) the right to cast a vote on matters before the cabinet (where applicable).

Post	Cabinet member
Austria	
Bundezkanzler	Y
Vizekanzler	Y
Bundesminister	Y
Bundesminister ohne Portefueille	Y
Staatssekretär	N
Belgium	
Eerste Minister – Premier Ministre	Y
Premier Ministre	Y
Vice-Premier Ministre	Y
Ministre	Y
Vice-Président du Conseil, . . .	Y
Vice-Président du Conseil de Cabinet	Y
Ministre Adjoint aux . . .	Y
Ministre Sans Portefueille	Y
State Secretary with autonomous responsibilities	N
. . . Adjoint au Ministre de . . .	N

Appendix: Continued.

Post	Cabinet member
Denmark	
Statsminister	Y
Minister	Y
Minister uden Portefølje	Y
Finland	
Pääministeri	Y
Pääministerin Sijainen	Y
Ministeri Valtioneuvoston Kansliassa	Y
Ministeri	Y
Ministeri Kansanhuoltoministeriössä	Y
France	
Premier Ministre	Y
Président du Conseil	Y
Ministre	Y
Ministre d'État	Y
Ministre Délégué Auprès du Ministre . . .	Y
Ministre Sans Portefeuille	Y
Secrétaire d'État	N
Secrétaire d'État Auprès du Ministre . . .	N
S. S. d'État . . .	N
Secrétaire Général au Ravitaillement ¹	N
Germany	
Bundeskanzler	Y
Vizekanzler	Y
Bundesminister	Y
Minister für Besondere Aufgaben	Y
Bundesminister ohne Geschäftsbereiche	Y
Staatssekretär im Kanzleramt	N
Staatsminister im Bundeskanzleramt	Y
Staatssekretär	N
Greece	
Prime Minister	Y
Deputy Prime Minister	Y
Minister	Y
Alternative Minister	Y
Minister without Portfolio	Y
Iceland	
Forsætisráðherra	Y
Ráðherra	Y

Appendix: Continued.

Post	Cabinet member
Ireland	
Taoiseach	Y
Minister	Y
Minister of State at . . .	N
Minister without Portfolio	Y
Parliamentary Secretary to . . . ²	N
Italy	
Presidenza del Consiglio	Y
Vicepresidente Dei Consiglio	Y
Ministro	Y
Vice Ministro	N
Ministro s.p. (without portfolio)	Y
Sottosegretari	N
Luxembourg	
Premier Ministre, Ministre d'Etat	Y
Vice-Prés. du Gouvernement	Y
Ministre	Y
Ministre délégué	Y
Secrétaire d'Etat	Y
Netherlands	
Minister-President	Y
Vice Minister-President	Y
Minister	Y
Minister zonder portefeuille	Y
State Secretary attached to Senior Minister ³	
Norway	
Prime Minister	Y
Ministrar	Y
Statsrådar	Y
Statssekretærer	N
Politiske rådgivere	N
Personlige sekretærer	N
Statsrådssekretær	N
Portugal	
Primeiro-Ministro	Y
Vice-Primeiro-Ministro	Y
Ministro	Y
Ministro Adjunto da Presidência do Conselho de Ministros	Y
Ministro Sem Pasta	Y
Ministro Adjunto do . . .	Y
Secretary of State	N

Appendix: Continued.

Post	Cabinet member
Spain	
Presidente del Gobierno	Y
Vicepresidente	Y
Ministro	Y
Ministro Sin Cartera	Y
Portavoz del Gobierno ⁴	Y/N
Sweden	
Statsminister	Y
Ställföretr. Statsminister	Y
Minister	Y
Konsultativt Statsråd ⁵	Y/N
Biträdande (e.g., social) minister	Y
Statssekretare	N
United Kingdom	
Prime Minister	Y
First Secretary of State	Y
Deputy Prime Minister	Y
Secretary of State	Y
Minister	Y
Lord Chancellor	Y
Lord Privy Seal Leader of the House of Commons	Y
President of the Council, Leader of the Commons	Y
Paymaster-General	Y
Minister without Portfolio	Y
Parliamentary Secretary, Treasury and Chief Whip	Y
Minister Without Portfolio and Party Chair	Y
Minister of State	N
Parliamentary Under-Secretaries of State	N
Parliamentary Private Secretaries	N

¹ Except in the 1940s.

² Replaced by the post of Minister of State in 1978.

³ Formally State Secretaries are members of the cabinet, but they neither attend the weekly cabinet meetings as a rule nor do they have voting rights.

⁴ The spokesperson of the cabinet has sometimes, but not always, been a member of the cabinet.

⁵ Advisors to the State Council were initially only advisors but since around 1974 they have been members of the cabinet.

Supporting Information

Additional Supporting Information may be found in the online version of this article at the publisher's web-site:

Table S1 Dependent Variable: Average Size of Cabinet

Table S2 Dependent Variable: Initial Size of Cabinet Controlling for Semi-Presidentialism

Table S3 Dependent Variable: Initial Size of Cabinet Excludes Ministers w/o Portfolio**Table S4 Dependent Variable: Initial Size of Cabinet Excludes Non-partisan Ministers****Notes**

1. www.guardian.co.uk/politics/2012/oct/11/david-cameron-government-biggest-since-1900
2. www.telegraph.co.uk/news/uknews/scotland/8524051/Alex-Salmond-announces-beefed-up-Scottish-Cabinet.html
3. www.cbc.ca/news/canada/story/2008/10/30/f-cabinet-who.html; www.cbc.ca/news/politics/story/2010/01/19/politics-cabinet-shuffle.html
4. www.ynetnews.com/articles/0,7340,L-4339533,00.html
5. There are a few exceptions to this. The Irish constitution provides an upper bound by limiting the number of ministers to a maximum of 15.
6. Of course, this would only be true for coalitions that form – some parties may not be able to come to an agreement.
7. See Golder (2010) on bargaining complexity.
8. In effect, if other political appointments serve the same purpose it ought to make it harder to find evidence that the number of parties affects the size of the cabinet.
9. One might argue that ideological heterogeneity ought to increase cabinet size as ideologically distant parties are likely to face the greatest difficulty in reaching an agreement. However, in terms of policy, these are also the coalitions in which policy drift has the greatest potential for being a serious problem. In contrast, adding a portfolio in an ideologically cohesive coalition is relatively costless – it is primarily a question of dividing up the office benefits. Thus, the costs of creating an additional portfolio increase as ideological differences become larger and, consequently, we expect them to have a negative effect on cabinet size.
10. The hypothesis that diversity should see attempts to limit the size of cabinets may appear to contradict *HI* as the ideological range of the cabinet tends to increase with the number of parties in government. But, it is important to note that the expectation is that ideology range leads to smaller cabinets when the number of government parties is held constant.
11. Roubini and Sachs (1989) and Bawn and Rosenbluth (2006), e.g., have made similar arguments about the number of parties in government, while most of the literature has focused on the number of parties in the legislature.
12. Bäck et al. (2011) show, e.g., that the allocation of portfolios among parties is influenced by which policies the coalition parties consider salient. It is not unreasonable to assume that similar behavior occurs in the allocation of portfolios within parties. Of course, the importance of policy preferences may be diminished if coalitions strategically allocate portfolios in order to reduce the possibility of ministerial drift.
13. One might expect the size of the legislative majority to play a smaller role as the government parties' primary interest is in maintaining enough support to pass its legislative proposals and guarding against votes of no-confidence. However, it is also possible that parties care about presenting themselves as cohesive and unified.
14. The countries in our sample are: Austria, Belgium, Germany, Denmark, Spain, Finland, France, Great Britain, Greece, Ireland, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal and Sweden. Cabinet size data comes from Döring and Manow (2012), with additional data collected by the authors. Some of the countries are semi-presidential rather than parliamentary systems and Schleiter and Morgan-Jones (2009), e.g., have argued that there are important differences between the systems with respect to the cabinet. We examined this possibility by controlling for semi-presidentialism. The effects of the variable are statistically insignificant but are available in an online appendix.
15. A formal membership is defined in terms of someone having the right to attend cabinet meetings and the right to vote on matters before the cabinet (even though many cabinets do not employ voting to reach decisions).
16. Our classification of ministerial posts in the countries under study is detailed in the appendix at the end of the article.
17. The role of junior ministers is a topic for future work.
18. We exclude caretaker cabinets, which are often smaller than 'regular' cabinets, from our analysis.
19. A socialist cabinet is coded '1' if cabinet majority comes from the socialist bloc and '0' otherwise. A conservative cabinet was coded analogously.

20. We are grateful to one of the anonymous referee for suggesting this alternative argument to us.
21. Note that including country fixed effects rules out the possibility of estimating the effects of variables that are (largely) constant within country. That would prevent us, e.g., from estimating the effects of legislature size even though there is a compelling argument that it is one of the most important factors in determining cabinet size. Estimating models that include both lagged values of the dependent variable and fixed effects induces a correlation between the error term and the covariates, which means that our estimates would be inconsistent. However, given the number of cabinets in each country, the magnitude of the bias should not be substantial (Nickell 1981).
22. The reason we do not focus on the fixed effects model is that some of our key independent variables have very limited variation within countries – e.g., legislature size varies far more across countries than within countries.
23. The substantive effects are based on the OLS model with the lagged dependent variable but without fixed effects. Since the model includes a lagged dependent variable, a change in an independent variable at time t influences the dependent variable both at time t as well as in future time periods as the effect feeds through past values of the dependent variable. The long-run effect – i.e., the effect of a permanent change in the independent variable – equals: $\frac{\beta_t}{1-\rho}$, where ρ is the estimated coefficient of the lagged dependent variable. For the fixed effects model the corresponding effects are 0.35 and 0.73.
24. Of course, one must take appropriate caution in interpreting such out-of-sample predictions.
25. Including an interaction between minority cabinet and number of cabinet parties does not yield statistically significant coefficients.
26. Compared with cabinets that are neither socialist nor conservative, conservative cabinets have, on average, 1.1 fewer ministers. In the fixed effects model the effect is substantially larger at 3.2 ministers.

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