## **Secondary Publication**



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Rebuilding the coalition ship at sea: how uncertainty and complexity drive the reform of portfolio design in coalition cabinets

Date of secondary publication: 19.02.2024

Version of Record (Published Version), Article

Persistent identifier: urn:nbn:de:bvb:473-irb-935357

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Meyer, Thomas M.; Sieberer, Ulrich; Schmuck, David (2024): "Rebuilding the coalition ship at sea: how uncertainty and complexity drive the reform of portfolio design in coalition cabinets". In: West European Politics, Vol. 47, Nr. 1, pp. 142-163, Basingstoke [u.a.]: Routledge, Taylor & Francis, doi: 10.1080/01402382.2023.2169512.

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# Rebuilding the coalition ship at sea: how uncertainty and complexity drive the reform of portfolio design in coalition cabinets

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#### **ABSTRACT**

In the government formation process, coalition partners make decisions about the inner workings of their future government. However, whether the initial allocation of competencies has the desired effects is uncertain, and deals may therefore be subject to change when the government is in office. This study analyses the frequency of changes in portfolio design (i.e. the distribution of competencies among government ministries and office holders) for 112 coalition governments in eight West European democracies (1970–2015). Its central argument is that in uncertain and complex bargaining situations, coalition partners have greater difficulty finding mutually beneficial deals, and changes to the initial allocation of payoffs are therefore more likely. The results indicate that preference divergence and strenuous coalition negotiations make portfolio design reforms more likely, but show no consistent effect of the familiarity among government parties. These findings show how the bargaining context during government formation foreshadows coalition governance over the cabinet's life-cycle.

**KEYWORDS** Multiparty governments; coalition governance; portfolio design; government formation; Western Europe

During the government formation process, coalition partners need to agree on the modus operandi of their future collaboration.<sup>1</sup> As outcome, successful coalition formation constitutes a grand bargain distributing payoffs along multiple dimensions (Bassi 2013; Martin and Vanberg 2020). The prospective partners agree on the allocation of cabinet positions (e.g. Bäck *et al.* 2011; Ecker *et al.* 2015; Falcó-Gimeno and Indridason 2013; Greene and Jensen 2018), the joint policy programme (e.g.

Supplemental data for this article can be accessed online at https://doi.org/10.1080/01402382. 2023.2169512.

Indridason and Kristinsson 2013; Klüver and Bäck 2019; Krauss 2018; Müller and Strøm 2008; Strøm and Müller 1999), and procedural rules on how the future government should conduct its business. The latter includes decisions on the use of mechanisms for conflict resolution (Bowler et al. 2016), 'watchdog' junior ministers (Falcó-Gimeno 2014; Thies 2001) and the allocation of committee chairs and other leadership offices beyond the cabinet (Carroll and Cox 2012; Kim and Loewenberg 2005).

An additional but often ignored aspect of the coalition deal is the design of government portfolios, which is defined as 'the distribution of competencies among government ministries and office holders' (Sieberer et al. 2021: 778). Reforms of portfolio design are empirically frequent. Entire ministries are regularly created, split, terminated, or fused with others (Indridason and Bowler 2014; Verzichelli 2008). Even more frequent are shifts of jurisdictions between existing ministries (for comparative studies Davis et al. 1999; Klüser 2020; Sieberer et al. 2021; for country studies e.g. Kuipers et al. 2021; Mortensen and Green-Pedersen 2015; Sieberer 2015). Across nine European democracies since 1970, reforms of portfolio design occur on average about once a year (Sieberer et al. 2021). Extant research indicates that these reforms are primarily driven by political concerns and often - but as we show in this study by far not only - occur at the beginning of a new cabinet. This research suggests that portfolio design is an integral part of government formation (see also Dewan and Hortala-Vallve 2011).2

In this article, we study whether the stability of portfolio design as one core aspect of the overall coalition bargain depends on the bargaining environment during the government formation process. Decisions about the distribution of policy competencies are made in coalition negotiations and thus before the government enters office. In complex bargaining situations with high uncertainty, it is less likely that coalition partners find mutually beneficial deals that work as intended. Therefore, coalition parties should adapt the portfolio design more often while the government is in office.

One illustrative example for this logic comes from the German coalition government of SPD and FDP that took office in October 1969 (cabinet Brandt I). The cabinet was characterised by high uncertainty among the partners as this was the first coalition of the two parties on the federal level and the FDP had severe intra-party disagreements about policy positions and the coalition in general. When taking office, the cabinet restructured portfolios substantially according to the needs of their government program and, among other shifts, reduced the number of ministries from 19 to 15. However, important questions regarding the allocation of competences remained open during the government formation process and were discussed explicitly in a cabinet meeting a few weeks after the cabinet took office.<sup>3</sup> For example, the responsibility for disciplinary and military courts was disputed between the Ministry of the Interior controlled by the FDP and the SPD-led Ministry of Justice and Ministry of Defence. These questions were only resolved in another major reform of the departmental structure in July 1970.

We test our arguments about the effect of the bargaining environment on subsequent readjustments of portfolio design using a sample of 112 coalition governments in eight Western European countries. Based on data from the Party Government in Europe Database (PAGED; Bergman et al. 2021; Hellström et al. 2021) and information on portfolio design changes (Sieberer et al. 2021), we indeed find evidence that uncertain and complex bargaining situations increase the frequency of portfolio design changes. Specifically, higher levels of preference divergence between government parties and more strenuous (i.e. longer) coalition negotiations lead to more frequent reforms in portfolio design. In contrast, we do not find consistent evidence suggesting that the familiarity among coalition partners affects reform frequency. We discuss the implications and limitations of these findings in the concluding section.

## Uncertainty, complexity and changes in portfolio design

Portfolio design is an important aspect of government organisation because it affects agenda setter advantages within the cabinet. Given the strong role of ministers in the policy-making process (e.g. Andeweg 2000; Laver and Shepsle 1994), it can be highly consequential for government output which ministers and thus which parties control which jurisdictions. Accordingly, parties usually try to gain control over their core issues in the process of portfolio allocation (Bäck et al. 2011). However, ministries may combine jurisdictions that are not of equal importance for the party of the prospective minister. In such circumstances, shifting jurisdictions between ministries may be an efficient strategy to create mutual benefits during coalition formation (Bassi 2013; de Marchi and Laver 2020; Ecker and Meyer 2019). Parties may also have incentives to spread jurisdictions in the same or related policy areas across ministries held by different parties as a means of mutual control (Fernandes et al. 2016; Klüser 2020; Saalfeld and Schamburek 2014; Sieberer et al. 2021). Finally, parties may strengthen ministries by adding jurisdictions in order to balance deviations from the proportionality norm in quantitative portfolio allocation, i.e. compensate parties that hold fewer ministerial positions than their seat share in parliament would imply (Sieberer 2015). Overall, reallocating ministerial jurisdictions is a useful strategy for parties in pursuit of their policy and office goals. As many of these reforms gain little public attention, they are also a more subtle way in which large or ideologically central coalition partners can capitalise on their bargaining advantages behind closed doors (Martin and Vanberg 2020).

When negotiating coalition arrangements, political parties aim to anticipate potential problems and strike the best possible deal. While they clearly seek to increase their own share of benefits, cabinet parties also try to organise the government in a way that allows effective policy-making. Thus, coalition partners have to balance private and collective goals in the process of government formation. When bargaining over a coalition deal, political parties act in a context of uncertainty and complexity. For one, parties never perfectly know their partners' policy preferences and other objectives (Diermeier and Van Roozendaal 1998). Second, the bargaining situation may be more or less complex depending on the number of parties involved and the diversity of their respective policy positions (Martin and Vanberg 2003). In general, the higher the level of uncertainty and complexity in the bargaining situation, the more difficult it is for parties to foresee how their agreed coalition deal will work out in practice, both with regard to their private goals and to the performance of the overall government. Parties are uncertain about their partners' true preferences and subsequent behaviour, the span of negotiations may not be sufficiently long to address all problems, and coalition partners may postpone some divisive issues to the future. Thus, a coalition deal negotiated under high uncertainty and complexity is more likely to bring about the core agency problems of adverse selection and moral hazard and to fail installing effective safeguards against these problems.

Accordingly, coalition deals can be conceptualised as incomplete contracts (Strøm and Müller 1999), parts of which may turn out to be suboptimal, giving parties incentives to revisit the original deal. Ministers may prove to be less competent or loyal than expected leading to their replacement during the tenure of the cabinet (e.g. Huber and Martinez-Gallardo 2008). Promises made in election programs may fall victim to an economic crisis or other budgetary constraints (Praprotnik 2016). Unexpected events may trigger new policy initiatives not envisioned during government formation, as for example in the case of the world economic crisis of 2007/08, the Euro crisis, or most recently the Covid-19 pandemic. A distribution of competencies between ministries can be inefficient for policy-making because it makes policy coordination more costly. Finally, internal conflicts within the coalition can lead to ministers pursuing policies out of sync with the coalition's overall agenda. This ministerial drift can be partly addressed by various control mechanisms such as watchdog junior ministers (Falcó-Gimeno 2014; Lipsmeyer and Pierce 2011; Thies 2001), legislative review (Martin and Vanberg 2011), parliamentary questions (Höhmann and Sieberer 2020), or shadow committee chairs (Carroll and Cox 2012; Kim and Loewenberg 2005). However, these control mechanisms should also be less effective if they were negotiated under high uncertainty and complexity because parties lack information on which ministers need to be monitored most closely and because a substantive coalition agreement that serves as yardstick for detecting ministerial drift may be more ambivalent.

In this article, we focus on changes in portfolio design as one element of revisiting the coalition deal. As indicated above, existing research shows that coalition cabinets frequently change ministerial jurisdictions at the beginning of the cabinet (Sieberer et al. 2021). Such initial reforms are part of the overall distribution of benefits between coalition partners and thus follow the characteristic mixture of cooperative and competitive interactions in coalitions. On the one hand, coalition partners seek to organise the coalition in ways that allow effective and efficient policy-making and the realisation of common goals. This can imply adapting the ministerial structure to the specific policy agenda of the incoming cabinet (Mortensen and Green-Pedersen 2015), realising gains from trade by reallocating jurisdictions to parties that value them the most, and organising ministries in ways that facilitate the use of bureaucratic expertise and smoothens the policy-making process. On the other hand, such reforms can also be tied to more competitive concerns such as gaining additional offices and administrative resources for one's own party (Sieberer 2015) or creating means to control coalition partners via cross-cutting jurisdictions (Klüser 2020).

This raises the question whether changes in the portfolio design should be understood primarily as distributive reforms that reallocate benefits between coalition partners or as Pareto-efficient reforms that are in the interest of all coalition parties (for the distinction, see Tsebelis 1990, chapter 4). From a theoretical perspective, it is useful to distinguish between the initial deal, i.e. reforms agreed on in the context of coalition formation, and subsequent reforms later during the tenure of a cabinet. The initial deal is most likely a mix between both elements, as parties organise the new cabinet to reflect the overall agenda of the new government (e.g. Mortensen and Green-Pedersen 2015) but also play out their bargaining power to extract concessions for their own ministries, possibly in exchange for other offices or policy goals (e.g. Sieberer 2015). By contrast, changes later in the cabinet should primarily be efficient reforms because each coalition partner is usually able to block changes they disagree with.<sup>4</sup>

This study focuses on the latter kind of reform and thus conceptualises changes in portfolios design as Pareto-efficient reforms that yield benefits for all or some coalition partners without hurting others. Given the data currently available, we cannot empirically substantiate this claim because

the data only captures instances of portfolio design changes but entails no information on their content. Thus, we have to assume on theoretical grounds that (at least most) reforms during the tenure of a cabinet are Pareto-efficient in nature. We discuss this limitation in more detail in the conclusion.

Portfolio design reforms during a cabinet's tenure may arise due to external events that suggest changes to the structure of government to deal with sudden challenges (think e.g. of reorganisations to deal with Brexit or the Covid-19 pandemic), but they may also be the result of an inefficient initial coalition deal. Thus, the question is whether such reforms are predictable based on characteristics of the coalition and the coalition formation process or are solely the reaction to intervening exogeneous events.

Our core claim states that the frequency of portfolio design reforms depends systematically on structural features of the coalition and its formation process and not only on unforeseeable external shocks. More specifically, we argue that reforms are more frequent if the government formation process is characterised by higher uncertainty and complexity. Under these circumstances, parties are more likely to settle on a suboptimal initial coalition deal that is renegotiated at later stages.<sup>5</sup> Thus, core features of the formation process should be relevant for organisational stability over the cabinet's entire life cycle.

Our focus on uncertainty and bargaining complexity as explanatory factors extends previous work on coalition formation processes. That research shows that uncertainty and complexity prolong the government formation process (Diermeier and Van Roozendaal 1998; Golder 2010; Martin and Vanberg 2003) and increase the likelihood of failed formation attempts (De Winter and Dumont 2008). However, there is less established knowledge on whether these factors have enduring consequences once a coalition is in office.

In work on coalition formation, uncertainty and complexity are often treated as theoretically distinct. However, they are difficult to distinguish conceptually and empirically due to obvious theoretical links: As soon as some degree of uncertainty exists, growing bargaining complexity is bound to increase this uncertainty. Moreover, it is hard to identify measures that indicate uncertainty but not complexity (or vice versa), forcing scholars to rely on remote proxies that are often relevant for both concepts.6

For our purpose in this study, uncertainty and complexity yield the same theoretical expectation: Both make it harder to identify a Pareto-efficient deal during government formation and should thus increase the likelihood that parties revisit the initial portfolio design during the tenure of the cabinet. Given the close links between the concepts and the equivalent prediction for portfolio design reforms, we do not seek to distinguish between uncertainty and complexity.

Instead, we rely on a combined concept of uncertainty and complexity that theoretically captures the difficulty of coalition partners to identify the mutually most beneficial distribution of competencies between ministries and coalition parties, i.e. the optimal portfolio design for the coalition. Based on this conceptual definition, we theoretically expect that the number of portfolio design reforms in a cabinet increases the more complex and uncertain the bargaining situation is during coalition formation.

Empirically, we measure this concept using three different proxy variables. Thus, we formulate three empirical implications, i.e. hypotheses, derived from our theoretical claim. Our first measure for uncertainty and complexity is the familiarity of the coalition formula. Having governed together in the past should give parties a better understanding of each others' goals and can possibly increase trust among the partners (see Franklin and Mackie 1983; Martin and Stevenson 2010). Both of these factors should facilitate finding a viable coalition deal and thus decrease the need for revising this deal during the government's term in office. By contrast, partners with no previous interaction in a coalition are less likely to make an efficient initial deal. This leads to the first hypothesis:

H1: The frequency of portfolio design reforms is higher the less familiar the coalition partners are with each other.

Our second indicator is *policy preference divergence* between the coalition partners (Martin and Vanberg 2003). In the government formation process, (potential) coalition partners seek to settle policy conflicts and agree on procedural rules defining how to implement this agenda and how to deal with potential conflicts (e.g. Strøm and Müller 1999). The higher the preference divergence between parties, the more time and energy parties spend on hammering out policy deals, leaving fewer resources to reflect on an efficient governance structure, which includes a mutually beneficial portfolio design. More divergent preferences between the partners hence increases the likelihood that coalition governments initially agree on an inefficient distribution of policy competencies that require to revisit the coalition deal more often to solve emerging problems or reign in individual partners:

H2: The frequency of portfolio design changes increases with the level of policy preference divergence between the coalition partners.

Our third indicator is the *length of the government formation process*. Previous research shows that delays in government formation result from both uncertainty and complexity (e.g. Diermeier and Van Roozendaal

1998; Ecker and Meyer 2015, 2020; Golder 2010; Martin and Vanberg 2003). More uncertain and more complex bargaining situations - indicated by a longer government formation process - increase the likelihood of a suboptimal bargaining outcome and subsequently the need for readjustments over the life cycle of the cabinet, also in form of portfolio design reforms. This argument assumes that in uncertain and complex bargaining situations even long negotiations leave essential questions unresolved. We think this assumption is plausible given the sheer amount of issues dealt with in coalition formation and the difficulty of resolving them permanently. However, one could also assume that a long government formation period indicates that parties took their time to resolve all issues, which should in turn decrease the need for future readjustment of the initial deal. Ultimately, we think this is an empirical question and hypothesise:

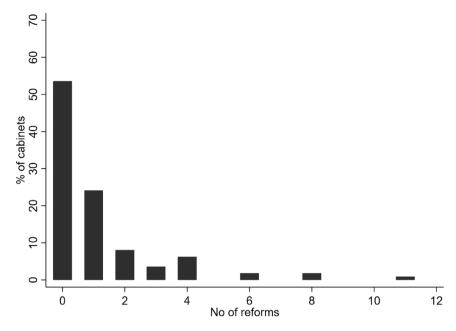
H3: The frequency of portfolio design reforms increases with the duration of the government formation process.

#### Data and methods

Our analysis covers coalition governments in eight European countries (1970-2015).7 Due to limited data availability, the time frame is substantially shorter in Sweden (1982-) and the Netherlands (1995-). The full sample is summarised in the online appendix (Table A.1).

The dependent variable, frequency of portfolio design reforms, is based on data collected by Sieberer et al. (2021). The data were coded and collected in a decentralised way by country experts to take cross-country differences in the process of portfolio design reform and pertinent sources of information into account (Sieberer et al. 2021). Each reform is an instance where the distribution of competencies among ministries changes or the distribution of competencies among office holders (ministers and junior ministers) is modified. Cabinet reshuffles (i.e. Minister A replacing Minister B) without changes in policy competencies are not included in the data. In some instances, the government structure changes one or two days before a new government officially enters office. We attribute such changes to the incoming (rather than to the previous) administration. Moreover, we exclude minor reforms that the country experts classified as purely technical.

Most cabinets change the distribution of competencies when they enter office (Sieberer et al. 2021). The resulting portfolio design constitutes the initial coalition deal. As we are interested in adaptions of this initial deal, the dependent variable for our analysis is the number of subsequent changes in the distribution of policy competencies (see Figure 1).



**Figure 1.** Frequency of changing the initial portfolio design in eight European democracies.

Note: Share (in percent) of coalition governments (N = 112) with changes to the initial portfolio design. Each reform indicates an instance where the distribution of (one or more) competencies among ministries or office holders is modified. Changes that happened within a few days and that were clearly part of a single process are treated as one reform.

We see that about half of the governments stick to the portfolio designs they agreed on during cabinet formation. However, many cabinets undergo multiple reforms during their term in office. Thus, the data can be used to test our theoretical expectation that reform frequency over a cabinet's tenure is driven by high uncertainty and complexity during government formation.

Data on our independent variables comes from the Party Government in Europe Database (PAGED; Bergman *et al.* 2021; Hellström *et al.* 2021) and the ParlGov Database (Döring and Manow 2020). These data bases include information on cabinet characteristics such as the party composition, majority status, start and end dates. The identification of cabinets differs slightly across the two databases. In particular, PAGED (Bergman *et al.* 2021; Hellström *et al.* 2021) tends to distinguish more cabinets. We follow the ParlGov definition to avoid inflating the number of observations.<sup>8</sup> For the eight countries listed above, our dataset contains 112 coalition governments.

We rely on the following three variables to test our hypotheses: First, following previous research (Bäck *et al.* 2021; Martin and Stevenson 2010) we measure the *familiarity among coalition partners* based on the coalition partners' joint time in office provided by Bäck *et al.* (2021). To build this

measure, we start from a dyadic data set of all government parties. We then weigh observations by the portfolio share of the two parties, assuming that (in coalitions with three or more parties) familiarity is more important among larger government parties. The familiarity between any pair of parties is then measured as the time-weighted stock of joint government experience. Following Bäck et al. (2021), the depreciation rate is set to 5% (per month) so that familiarity slowly grows (declines) when two parties enter (leave) office. 10 To build a measure for the coalition as a whole, we take the average of all party dyads to measure the familiarity among coalition parties in any given month and use the familiarity in the month before the government enters office as our independent variable.

Second, we measure preference divergence within the coalition as the ideological range between the two most extreme cabinet parties on a general 0-10 left-right scale using expert surveys. The data on party positions is taken from the ParlGov database (Döring and Manow 2020). Third, formation duration measures the time span between the end of the previous and the start date of the next government in days. The variable is taken directly from PAGED (Bergman et al. 2021; Hellström et al. 2021).11

We include several control variables in our analysis. First, we account for the government's time in office (measured in days). Government duration is related to several of our key explanatory variables,12 and more stable governments have more opportunities to change the portfolio design. We include the log of this variable as an offset to measure exposure time for each cabinet. Second, the ideological heterogeneity within the cabinet might also capture other aspects of the coalition government, in particular the fragmentation within the government. To distinguish ideological heterogeneity as one of our measures of uncertainty and complexity from fragmentation, we include the effective number of government parties in the regression models. Moreover, we include country fixed effects to account for unmeasured cross-national variation in the dependent variable.<sup>13</sup>

As our outcome variable indicates count data, we use a negative binomial regression model for the multivariate analysis. Standard errors are clustered by country to account for within-country dependence of observations.

#### **Results**

Table 1 lists the results of four negative binomial regression models. In Models 1 to 3, we include the variables to test Hypotheses 1 to 3 one-byone; in Model 4 we include all variables in a single model. As it is difficult to interpret the magnitude of effects in non-linear models, we plot average marginal effects (based on Model 4) in Figure 2. The effect sizes in the full model are very similar to the ones in Models 1 to 3.

				Model 1	Ν	lodel 2	Model	3 I
Familiarity				-0.29				
				(0.50)				
Cabinet pref	erence	range			(	0.14**		

Table 1. Explaining the frequency of portfolio design changes.

	Model 1	Model 2	Model 3	Model 4
Familiarity	-0.29			-0.10
	(0.50)			(0.54)
Cabinet preference range		0.14**		0.15**
		(0.06)		(0.06)
Formation duration (in days)			0.0098***	0.0098***
			(0.00)	(0.00)
Effective no of government parties	0.019	-0.065	0.12	-0.019
	(0.13)	(0.17)	(0.11)	(0.13)
Constant	-7.60***	-8.00***	-8.64***	-8.73***
	(0.32)	(0.28)	(0.24)	(0.42)
ln(α)	-13.6***	-11.5	-20.9	-16.0***
	(5.05)	(25.28)	(.)	(0.91)
N	112	112	112	112
Log likelihood	-117.3	-116.7	-112.3	-111.3
AIC	250.6	249.4	228.6	234.5
BIC	272.3	271.2	234.0	250.8

Note: Country FEs included in the models but not displayed. Standard errors clustered by countries in parentheses. All models include the logarithm of time in office (in days) as an offset variable to account for each government's exposure time. \* *p* < 0.1, \*\* *p* < 0.05, \*\*\* *p* < 0.01.

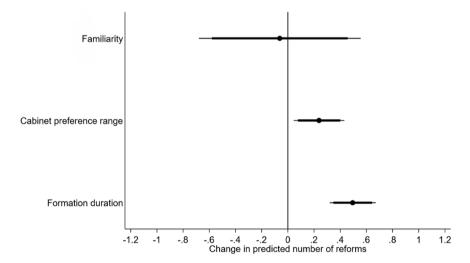


Figure 2. Average marginal effects.

Note: Figure shows average change in predicted number of reforms when the covariate increases from first to third quartile (inter-quartile range). The lines represent 90% (thick) and 95% (thin) confidence intervals. Estimates based on Model 4 in Table 1.

Figure 2 shows the average change in the predicted number of reforms when an independent variable increases from the first to the third quartile of its distribution. The analyses show no support that higher familiarity between government parties decreases the frequency of portfolio design changes (Hypothesis 1). The effect of familiarity is substantially small and not statistically significant at conventional levels. We therefore reject Hypothesis 1.

By contrast, the results are in line with Hypotheses 2 and 3. Higher preference divergence in coalition governments increases the frequency of portfolio design changes (Hypothesis 2). As expected, coalitions with higher policy conflict change their portfolio design more often. Increasing the measure of preference divergence from the first to the third quartile of the variable's distribution (i.e. from 1.3 to 2.7 points on the left-right scale) raises the predicted number of portfolio design changes by 0.2. Similarly, longer formation periods are correlated with more portfolio changes once the government is in office (Hypothesis 3). Increasing the formation duration from the 2 to 51 days (the first and third quartile of the variable's distribution, respectively) increases the predicted number of portfolio design changes by 0.5. This finding suggests that long, protracted coalition negotiations indeed lead to more frequent changes of the portfolio design in the initial coalition deal. Both effects are statistically significant but relatively modest compared to the variation in the dependent variable (SD: 1.9).

Our theoretical argument is based on a single concept - uncertainty and complexity of the bargaining situation - that is operationalised via three variables. The empirical findings suggest that among these variables, formation duration has the strongest effect on subsequent changes in portfolio design. This variable has the strongest average marginal effect in the full model (see Figure 2). Furthermore, among the models with only one of the explanatory factors, model (3) including formation duration clearly provides the best fit to the data as shown by the information criteria AIC and BIC. This model even outperforms the full model (4) according to the information criteria. Substantively, the strong performance of formation duration makes sense because this variable serves as a proxy for a broad understanding of the actual difficulty of the coalition formation process. At the same time, the variable provides little guidance on the specific characteristics that drive subsequent portfolio design changes. The positive effect of cabinet preference range suggests that the difficulty of coalition partners to agree on a common policy agenda is one important element whereas information problems due to a lack of familiarity seem to be less relevant. However, digging deeper into the mechanisms that lead from an uncertain and complex bargaining situation to a suboptimal coalition deal and subsequently changes in portfolio design provides an interesting subject for future research.

## Sensitivity analyses

We use various alternative modelling strategies to test the robustness of our results. Negative binomial regression models account for potential overdispersion in count data. In our current sample, however, we find no strong indication for such overdispersion. We therefore also use a Poisson regression model, and the results are almost identical to the ones presented here (see online appendix Table A.2 and Figure A.1).

Moreover, we accounted for cross-national variation in our data by including fixed effects for countries. While theoretically appropriate to capture country-specific differences, the fixed effects approach requires estimating multiple additional coefficients, which is problematic given the low number of observations. As an alternative model strategy, we run models with random intercepts (for countries). The results are similar to the ones presented above (see online appendix Table A.3 and Figure A.2).

We also test whether the results are sensitive to different measurement approaches. First, our analysis ignores the first change in portfolio design for each cabinet as this is interpreted as the initial coalition deal. Yet, this approach conflates governments without changes in portfolio design with those that pursue a single reform at the beginning of their term. Using all changes instead of discounting the first reform leads to similar conclusions (see online appendix Table A.4 and Figure A.3). Similarly, our measure of the dependent variable assumes that the initial change in portfolio design results from the government formation process. While this is true in general, some governments make the first reform only after a considerable time in office. Counting initial reforms that occur no more than 180 days after the cabinet took office as portfolio redesign leads to similar very conclusions (see online appendix Table A.5 and Figure A.4).

Second, we follow Bäck *et al.* (2021) and apply a 5% discount on the familiarity between parties that are no longer in office. However, setting the discount rate is somewhat arbitrary (see also Bäck *et al.* 2021; Martin and Stevenson 2010) as it is difficult to assess a priori after what time (and to what extent) parties lose familiarity after their joint time in office. In the online appendix (see Table A.6 and Figure A.5), we re-run the analysis using a 1% discount rate. The results are similar to the ones presented above.

In our main analysis, we use three variables as proxy measures for the uncertainty and complexity of the bargaining situation. An alternative modelling approach is to combine these variables in a compound measure of the uncertainty and complexity of the bargaining situation. We hence run a principal components analysis based on the familiarity among cabinet members, cabinet preference range, and formation duration. Results (narrowly) suggest a one-dimensional solution (see online appendix Table A.7). We then use the factor score on this dimension as a compound measure for the uncertainty and complexity in the bargaining situation to explain the number of changes in portfolio design. In line with our theoretical expectation and the empirical results based on the

three separate variables, the analysis finds a positive and statistically significant effect of the compound measure (see online appendix Table A.8).

We also use an entirely different modelling strategy to test our hypotheses. For each coalition government, changes in portfolio design mark (repeated) events during a government's time in office. Rather than counting the number of reforms per government, we can also model the time it takes until a change in portfolio design occurs using Cox proportional hazard models. We cluster standard errors by cabinets to account for the clustered data structure of repeated events (Andersen and Gill 1982).<sup>15</sup> For 112 coalition governments, there are 225 portfolio design changes in our data.

We would expect a higher risk of portfolio design changes when government formation processes are characterised by higher uncertainty and complexity. This is indeed what we find (see online appendix Table A.9 and Figure A.6) Higher ideological diversity and longer formation processes increase the risk of portfolio design changes while the government is in office. As in the analysis above, we find no statistically significant effect of the familiarity among coalition partners.

Finally, our theoretical argument and empirical analysis focus on coalition governments for two reasons. First, we are interested in the effects of the bargaining environment during government formation. While the formation of single-party governments certainly involves bargaining between intra-party factions, these negotiations are qualitatively different from inter-party negotiations during coalition formation because party factions share a common electoral fate and thus have few incentives to highlight their differences and bargaining in public, whereas coalition parties have some electoral incentives to appear tough (Fortunato 2019; Sagarzazu and Klüver 2017). Second, intra-party conflicts are much harder to study empirically than inter-party bargaining because we lack valid and comparable indicators on the number and preferences of factions.

Yet, theoretical work suggests that portfolio design reforms are also used in Westminster democracies with single-party governments as a means for the prime minister to reduce ministerial drift within the party (Dewan and Hortala-Vallve 2011). This argument may well be valid for coalition governments as well and provides a supplementary explanation in addition to the inter-party factors we focus on. Unfortunately, we cannot test this argument directly because we lack suitable indicators for intra-party conflict. However, we can indirectly test whether portfolio design reforms follow different logics for coalitions and single-party governments by rerunning our analyses on a sample that also includes single-party cabinets. Theoretically, the variables on the complexity and uncertainty of the bargaining context should not matter for single-party cabinets and thus should show weaker effects in the pooled sample. Our analysis (online appendix Table A.10) shows relatively small differences but indicates that the variable preference divergence (which is by definition zero for single-party cabinets) becomes weaker and statistically insignificant when single-party cabinets are included. By contrast, formation duration, which may to some extent capture (intra-party) bargaining complexity in the formation of single-party cabinets as well, retains the same effect. Thus, the robustness test suggests that portfolio design reforms during a cabinet's term in office generally depend on bargaining complexity but follow different patterns in coalitions and single-party cabinets.

#### Conclusion

In this article, we argued that the uncertainty and complexity of the bargaining situation during government formation affects how coalition governments (re-)distribute policy competencies over the electoral cycle. We indeed find strong evidence that higher ideological heterogeneity among the parties in government and long formation processes increase the number of portfolio design changes after the government entered office. In contrast, we find no evidence that low familiarity among coalition partners makes subsequent portfolio design reforms more likely.

This study adds to current research on coalition politics in several ways. First, it sheds light on portfolio design as an important element in coalition negotiations. While many studies on coalition formation rely on the simplifying assumption of 'fixed' ministerial responsibilities, we show that coalition partners re-distribute policy competencies quite frequently (see also Sieberer et al. 2021). Such reforms are a means to correct suboptimal decisions made during coalition formation, to adapt the structure of the government to changing circumstances, and possibly also to re-allocate power within the coalition in response to critical events (Lupia and Strøm 1995). Second, this study adds to the growing literature analysing the interdependence of different phases of a coalition's life cycle (Müller et al. 2008). While other studies show how decisions made during the government formation process affects government termination (e.g. Druckman and Thies 2002; Krauss 2018) and parties' electoral performance in the next election (e.g. Klüver and Spoon 2020), our analysis shows that the government formation process also influences the actions of coalition parties while in office.

Maybe the most important limitation of this study it its inability to distinguish empirically between efficient and distributive reforms. We

argued theoretically that most reforms during the tenure of a cabinet should be Pareto-efficient. Our finding that complexity and uncertainty during government formation - i.e. conditions that make it difficult to reach a Pareto-efficient deal in the first try - increase the likelihood of subsequent reforms is in line with this claim. However, ultimately the efficient or distributive character of a reform is an empirical question to be evaluated based on the content and beneficiaries of reforms.

Currently, information on the content of portfolio design reforms is limited to individual countries (e.g. Kuipers et al. 2021; Mortensen and Green-Pedersen 2015; Sieberer 2015) or issues (e.g. Hernes 2021; Tosun 2018). While collecting such data for a larger set of countries is a demanding task, it would allow future research to address several points left open in this article. First, knowing the content of reforms would allow us to assess whether changes are primarily efficient (e.g. by pooling jurisdictions on a policy area in a single ministry) or distributive (e.g. by strengthening ministries held by one coalition party at the expense of another partner). Second, we could investigate whether changes in portfolio design occur in the context of cabinet reshuffles, e.g. by reallocating jurisdictions based on the experience of particular ministers. Third, one could analyse the role of external events (e.g. public opinion shocks) as triggers of portfolio design reforms in line with the logic of renegotiating the coalition deal after changes in the relative bargaining power of coalition partners (Lupia and Strøm 1995). Fourth, reform content would allow inferences on whether portfolio design choices are reactions to previous ministerial drift (Dewan and Hortala-Vallve 2011). In a broader perspective, studying the content of portfolio design reforms over the lifetime of cabinets could help assess the relative importance of decisions made during cabinet formation and of intervening events for coalition governance and thus provide additional insights into coalition dynamics across the cabinet life-cycle (Strøm et al. 2008).

#### **Notes**

- The title is borrowed from Elster et al.'s 1998 seminal volume entitled Institutional Design in Post-Communist Societies: Rebuilding the Ship at
- Other studies with a public administration background emphasize admin-2. istrative needs and efficiency concerns as reform drivers (e.g. Derlien 1996; Pollitt 1984). We do not deny that such factors are important in some reforms. However, we proceed from the assumption that most reforms are driven by political concerns.
- See Cabinet minutes of 4th cabinet meeting on 5 November 1969, agenda item 3 https://www.bundesarchiv.de/cocoon/barch/1000/k/k1969k/kap1 2/ kap2 40/para3 4.html

- 4. One possible exception is major changes in the bargaining power of coalition partners due to external developments such as public opinion shocks (Lupia and Strøm 1995). In such cases, parties with increased bargaining power may use their strength to renegotiate the coalition deal and extract additional concessions. However, as changes in portfolio design often take some time to yield substantive effects, it seems plausible that such a renegotiation would focus on concessions with more immediate effects, such as concessions on major policy projects or a cabinet reshuffle.
- 5. Note that inefficiencies in the original coalition deal can refer to the design of ministries held by different parties but also to those held by the same party. Thus, our theoretical argument also covers reforms that only involve ministries held by one coalition party. In a positive sum game, there is no reason why a coalition party should block shifts in jurisdictions between ministries held by its partner.
- 6. For example, Martin and Vanberg introduced the number of parties and the ideological heterogeneity within the coalition, i.e. typical measures of bargaining complexity, as 'two [...] factors that are likely to affect uncertainty over acceptable offers' (Martin and Vanberg 2003: 325).
- 7. Austria, Denmark, France, Germany, Italy, the Netherlands, Norway, and Sweden.
- 8. For example, Silvio Berlusconi's centre right coalition (including PdL and Lega Nord) won the 2008 Italian election. While the government remained in power until 2011, some PdL members critical of Berlusconi left the PdL to form a separate party group (Futuro e Libertà, FLI) in July 2010, although its supporters remained in cabinet until November 2010. In the PAGED (Bergman *et al.* 2021; Hellström *et al.* 2021), there are thus three Berlusconi governments between 2008 and 2010.
- 9. We thank Jan Teorell and his co-authors (Bäck *et al.* 2021) for sharing their data. Our approach differs from theirs in two important ways: First, unlike Bäck *et al.* (2021), we only take dyads with two distinct parties into account, i.e. exclude dyads of a party with itself, because parties are perfectly familiar with themselves. Moreover, in the analyses including single-party governments, we set familiarity to its maximum value (i.e. 1).
- 10. See Bäck *et al.* (2021) for a more detailed discussion on the depreciation rate. Using 1% does not change our results, see the sensitivity analysis below.
- 11. PAGED (Bergman *et al.* 2021; Hellström *et al.* 2021) defines the end date of a cabinet when one of the following events occurs: a change in the party composition of the government, a change in the identity of the prime minister, or a general election.
- 12. Most scholars would probably argue that cabinet preference range and government formation duration have a causal effect on government duration. Thus, the effect of our core variables would be partly mediated by government duration. This should depress the estimated coefficients and thus load the dice against finding support for our hypotheses.
- 13. We also test for serial correlation in the error term. Yet, after accounting for exposure time (time in office) and cross-national variation, we find no meaningful serial correlation in the error term (r = 0.09; N = 104).
- 14. In our data, 101 out of 112 coalition cabinets changed their portfolio design at least once. Ninety-three per cent of the initial changes happened within the first six months in office; 97% within the first year in office.



We treat observations for cabinets that were in office after 31 December 15 2015 (where the time series for the portfolio design data ends) as rightcensored data.

## **Acknowledgements**

We thank all participants of the 'Coalition Politics and Portfolio Design' workshop at the University of Bamberg and the 'Coalition Dynamics: Advances in the Study of the Coalition Life-Cycle' conference at the University of Vienna for comments and suggestions on earlier versions of the manuscript.

#### Disclosure statement

No potential conflict of interest was reported by the authors.

### **Funding**

This research was funded in whole, or in part, by the Austrian Science Fund (FWF) I 5876-G and the German Research Foundation (DFG) SI 1470/6-1 and SI 1470/9-1.

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