

Uncertainty, Complexity, and Gamson's Law

Albert Falcó-Gimeno

University of Barcelona*

Indridi H. Indridason

University of California, Riverside[†]

This is an Accepted Manuscript of an article published by Taylor & Francis in *West European Politics* 36(1): 221-247 in 2013, available online:

<http://www.tandfonline.com/doi/10.1080/01402382.2013.742758>

Abstract

According to Gamson's Law, the allocation of cabinet portfolios in parliamentary democracies is proportional to the government parties' legislative seat shares. However, portfolio allocation departs systematically away from perfect proportionality. In this paper we propose a theory of portfolio allocation that seeks to explain the variance in proportionality across different bargaining situations. We argue that the degree to which the coalition formation process is characterized by uncertainty and complexity influences portfolio allocation. In uncertain and complex bargaining situations, parties that otherwise would be in an advantageous bargaining position will have difficult time exploiting their bargaining advantage. As a result, portfolio allocation in such circumstances will be closer to proportionality. We observe these patterns in data on coalition formation in 14 West European parliamentary systems in the period 1945-1999.

*Department of Constitutional Law and Political Science, Av. Diagonal 684, 08034 Barcelona, Spain.

[†]Department of Political Science, 900 University Avenue, University of California, Riverside, CA 92521.

1 Introduction

Coalition formation in parliamentary systems is often described as consisting of two stages. First, the prospective coalition parties must come to terms about how to approach the major political issues of the day and, perhaps, some other issues that are salient to the parties involved. At the second stage the parties need to come to an agreement about how to divide up the cabinet portfolios. While there is little consensus about the degree to which cabinet ministers are autonomous with respect to the issues that fall under their portfolios, few dispute the fact that heading a portfolio allows a certain degree of discretion within that policy domain. Thus, there are good reasons to believe that the allocation of cabinet portfolios does also have important policy consequences. Understanding the factors that shape that outcome of the bargaining process is, therefore, crucial to our understanding of the functioning of parliamentary democracies as the large literature on coalition formation evinces.

The idea that portfolios are simply distributed among the coalition partners in proportion to their legislative representation has not been seriously contested until very recently. This is perhaps not surprising as there is indeed a very strong empirical relationship between party size and the number of portfolios allocated to coalition parties, which led to the formulation of Gamson's Law (Gamson, 1961).¹ Challenges to Gamson's Law have taken two forms. First, scholars have bemoaned the lack of firm theoretical foundations underpinning Gamson's Law and its inconsistency with the predictions of formal coalition bargaining models. In particular, these models generally predict that the formateur party should be in a favorable bargaining position and reap a disproportionately large share of cabinet portfolios.

Second, numerous scholars, dating back to Browne and Frendreis (1980), have noted that there are systematic deviations from perfect proportionality, e.g., smaller parties tend to receive more than their 'fair' share of portfolios. Indridason (2010) demonstrates that the strict interpretation of Gamson's Law can be rejected and that, as Bäck, Meier and Person (2009) also do, the small party advantage is not the result of patterns of coalition formation in a few 'unusual' countries but, rather, the small party advantage is present in *each* of the countries in their sample.² Beyond that, Verzichelli (2008) tries to predict

¹It bears noting, though, that Gamson (1961) actually presented the proportional allocation of portfolios as a hypothesis rather than a law.

²A strict interpretation of Gamson's Law implies that the intercept should equal zero and the coefficient for seat share should equal one when regressing seat share on portfolio share. Indridason

deviations from proportionality and finds that the lower the correlation between parties' size and walk-away value, the greater the disproportionality and, similarly, [Warwick and Druckman \(2006\)](#) show that parties whose bargaining power exceeds their size are substantially more likely to receive more-than-proportional portfolio shares. In addition, [Falcó-Gimeno \(2012\)](#) finds that parties that have been out of government for longer periods of time are willing to settle for less than what they 'should' receive according to proportionality.

In perhaps the most novel approach to explaining deviations from Gamson's Law, [Carroll and Cox's \(2007\)](#) argue that under a logic of preelectoral coalition formation, potential partners have an incentive to precommit to a portfolio allocation ahead of elections. As parties' campaign investments depend on how they anticipate portfolios to be distributed, a proportional allocation of portfolios will elicit maximum campaign effort from the parties to the preelectoral pact.

Alternatively, in this paper we focus on the role of uncertainty and the complexity of the bargaining environment in shaping the outcome of the coalition formation process. Uncertainty and bargaining complexity contribute to the unpredictability of the bargaining outcome. In general, the breakdown of negotiations increases when political parties face greater uncertainty, for instance, about their bargaining partner's preference. We argue that parties respond to such circumstances by relying to greater extent on what is often seen as a focal solution to the bargaining problem: proportionality.

2 Coalition Bargaining & Gamson's Law

The major shortcoming of one of the strongest empirical relationships in the political science literature, Gamson's Law, is its lack of solid theoretical foundations. [Gamson \(1961, 376\)](#) himself simply claimed that "[a]ny participant will expect others to demand from a coalition a share of the payoff proportional to the amount of resources which they contribute to a coalition". That is, those expectations were not deduced from any theory of coalition formation; they were simply an intuitive hypothesis. Some years later, [Browne and Franklin \(1973, 457\)](#) reformulated Gamson's proposition into operational terms, equating 'resources' with parliamentary seat shares: "The percentage share of

(2010) further shows that the small party advantage cannot be only explained by the discreteness (or 'lumpiness') inherent in the allocation of portfolios or by a minimum number of portfolios a party would be willing to accept.

ministries received by a party participating in a governing coalition and the percentage share of that party's coalition seats will be proportional on a one-to-one basis".

Gamson's proposition stands in stark contrast with the formal literature on coalition bargaining. [Baron and Ferejohn's \(1989\)](#) application of Rubinstein's alternating offers model to coalition bargaining, as well as subsequent modifications, predict bargaining outcomes that diverge sharply from the proportional allocation of portfolios. Formal bargaining models typically show that the formateur is advantaged in the bargaining process, which results in the formateur's party reaping a disproportionately large share of the cabinet portfolios. The formateur advantage stems from two factors. First, in order to successfully form a coalition, the formateur only needs to offer her potential coalition partners their continuation value, i.e., their expected value of rejecting the formateur's offer and moving on to the next bargaining round. The fact that parties are uncertain about whether they will be appointed formateurs and whether they will be included in the coalitions that are proposed in subsequent bargaining rounds drives down their continuation values. Second, the formateur derives an advantage from the parties discounting future payoffs. In effect, as the pie (or its value) shrinks over time, the formateur can safely appropriate for herself what would be lost by moving on to another round of bargaining.

Much of the attention in the empirical literature has been directed at the formateur advantage. In short, the evidence for a formateur advantage is at best mixed. The majority of the earlier studies found no formateur advantage ([Browne and Franklin, 1973](#); [Browne and Frendreis, 1980](#); [Gamson, 1961](#); [Laver and Schofield, 1990](#)). [Ansolabehere et al. \(2005\)](#), arguing that voting weights are better indicator of the parties' resources than their seat share, find evidence of a formateur effect. [Laver, Marchi and Mutlu \(2011\)](#), however, take issue with both the derivation of the formal results and the empirical analysis in [Ansolabehere et al. \(2005\)](#), and find no evidence of a formateur advantage. While the debate over the formateur advantage remains alive, there can be little doubt that its magnitude is nowhere near that predicted by formal models of coalition bargaining. Thus, it appears likely that there are other factors that drive the allocation of ministerial portfolios towards a more proportional allocation.³

After several decades of research some authors have been led to conclude that "[a]lthough it has been observed that coalition research is exemplary in its merging of theory and data

³This doesn't imply that the formal models aren't useful. Formal theories, much like other theories, may provide valuable comparative statics.

(e.g., Laver 1998), we have found that the evidence sustains neither the most popular theory of legislative bargaining nor widely applied measures of bargaining power. What remains is an empirical relationship still deserving of its law-like status — but in acute need of a firm theoretical foundation” (Warwick and Druckman, 2006, 360).

Conventions, norms, or focal points may play a role in explaining why would-be partners agree to distribute cabinet posts proportionally. Gamson himself, simply asserted that coalition partners would expect to receive portfolios in proportion to the resources they bring to the coalition. That is, while it is possible to imagine that such expectations emerge for other reason, Gamson’s language easily lends itself to being interpreted as implying the presence of a norm about what the outcome of the coalition formation process ought to look like. Browne and Frendreis (1980), for instance, interpret Gamson in this way and refer to Gamson’s proposition as a conventional norm or conventional rule.

Verzichelli (2008) suggests a fairly different reason for why parties might adopt a proportionality norm. Parties in favorable bargaining positions may want to avoid being seen as too greedy when negotiating over portfolios and may, therefore, accept a ‘fair’ division, while those in a disadvantageous position may prefer remaining out of government to accepting a “grossly unfair offer”. Verzichelli (2008), however, argues that it is unlikely that party leaders are primarily motivated by concerns of fairness and that there are many reasons to expect real-world deviations from proportionality.

Others have suggested that the proportional allocation of government portfolios has less to do with the presence of a norm of fairness than proportionality serving as a focal point during the government formation negotiations. Bäck, Meier and Person (2009, 28) argue that proportional allocation serves as a focal point, or a convention, in the coalition formation bargaining as conventions help with establishing expectations about behavior in uncertain contexts where multiple equilibria exist, and thus reduces bargaining costs. Carroll, Cox and Pachón (2004, 3), similarly, interpret Gamson’s silence on theory as “implicitly arguing that allocating coalitional payoffs in proportion to each party’s contribution of seats is an easily implemented and uniquely obvious way to divide the spoils.” The ‘obvious solution’ to which parties appear to be naturally drawn to seems to perfectly match Schelling’s (1960) idea of a ‘focal point’.⁴

⁴Even in laboratory environments, the predications of bargaining models, such as Baron and Ferejohn (1989), are not corroborated and a simple equal sharing rules proves to be much more accurate in its predictive capacity (Diermeier and Morton, 2005). Fréchette, Kagel and Morelli (2005) similarly find that the observed bargaining outcomes differ significantly from both the prediction of alternating

Keeping parties' size constant, [Carroll, Cox and Pachón \(2004\)](#) examine the influence of pivotalness (in other words, bargaining weights or walk-away values) on portfolio shares. One of their most interesting findings is that the effect pivotalness declines as the number of possible minimal winning coalitions increases. This suggests that in such situations it becomes more difficult for parties to convincingly claim that they are pivotal actors. That is, in 'complex' bargaining scenarios, bargaining power adds nothing to the predictive ability of the proportional norm. [Verzichelli's \(2008\)](#) alludes to this possibility of parties limiting their quest to exploit their bargaining positions because of their desire to contain transaction costs. Resorting to the proportionality norm helps minimize these costs — especially in a complex bargaining situation.

While studies of portfolio allocation have not explicitly considered the effect of uncertainty and/or bargaining complexity, the importance of these factors in the coalition formation process has not gone unnoted. Focusing on the time that it takes to form a government coalition, [Diermeier and van Roozendaal \(1998\)](#) find that greater uncertainty increases formation duration. [Martin and Vanberg \(2003\)](#) stress the importance of other variables related to bargaining complexity in predicting the length of the formation negotiations and their findings are consistent with Diermeier and van Roozendaal's main hypothesis. [De Winter and Dumont \(2008\)](#) show that information uncertainty and bargaining complexity also predicts the number of bargaining rounds. Finally, [Golder \(2010\)](#) shows that uncertainty about which coalitions are feasible leads to delays in government formation, but greater bargaining complexity only has that effect when the parties face sufficient uncertainty about which coalitions are feasible.

In sum, the degree of uncertainty and bargaining complexity has been shown to be important predictors of bargaining delays. If bargaining delays are costly, as [Martin and Vanberg \(2003\)](#) and [Golder \(2010\)](#) argue, it is natural to assume that uncertainty and bargaining complexity not only influence how long it takes to form a coalition but also the outcome of the negotiation. In particular, we argue that parties will be more likely to rely on focal solutions to the bargaining problem — guided by norms or conventions of proportional allocation of ministerial portfolios — in the presence of uncertainty and/or bargaining complexity.

offer and demand bargaining models although the findings are consistent with the comparative statics of both models.

3 Portfolio Allocation under Complexity and Uncertainty

Bargaining environments characterized by uncertainty and complexity demand an additional effort from the parties involved in the government formation process. Any offer on the table invites speculations about whether the bargaining partner might be willing to concede more. Bargaining rounds may reveal information about the true preferences of potential partners (Muthoo, 1999), yet this process of learning is likely to provide limited information about the actors' true preferences. Each round of bargaining may of course last for a while with the partners haggling over the division of the spoils of office, but such negotiations are likely to be relatively ineffective at revealing the actors' true willingness to accept compromises for the simple reason that making a particular demand in the midst of the bargaining round is hardly costly. In contrast, rejecting an offer at the end of a bargaining round carries a considerable risk — the party may not be at the bargaining table in the next round. Thus, the rejection of an offer in those circumstances will reveal information about the parties' resolve. Yet in complex bargaining situations where the parties face substantial uncertainty about the preferences of the other parties, relying on learning about them in this manner is likely to lead to long and protracted bargaining. Attempting to extract information by making only small concessions would also appear to be fraught with danger as each such attempt exposes the party to the risk of sitting out the next bargaining round.

Alternatively, parties can resort to devices that help reduce transaction costs. A focal point, like the proportional allocation of portfolios, is one such device. A proportional allocation of portfolios is an especially attractive solution when transaction costs are high, i.e., when parties face a high degree of uncertainty and/or find themselves in particularly complex bargaining situations. Consider in contrast a bargaining situation where the parties involved in the negotiation are perfectly informed about each other preferences and, consequently, what coalitions are feasible. In those circumstances, parties will be able to exploit their bargaining advantage with relative ease. As a result, the distribution of cabinet posts will be more directly related to the bargaining strengths of each party, which is likely to deviate from a purely proportional portfolio allocation.

Note that attempts to learn about the bargaining partner's preferences through repeated bargaining rounds and the use of proportionality as a focal point are not necessarily incompatible. First, a proportionality norm can only be easily applied to dividing things that are quantifiable, such as ministerial portfolios. Figuring out how to divide up policy payoffs proportionally is clearly a more complicated problem. Second, multiple

bargaining rounds and lengthy negotiations may help parties resolve some of the current uncertainty about major policy issues, at which point resorting to the focal solution or the proportionality norm for the allocation of portfolios may help facilitate a successful conclusion to the negotiations.

But why is proportionality the ‘chosen’ focal point? One explanation focuses on the normative properties of the solution. According to, e.g., Verzichelli (2008, 239) “[i]t is easy to see its *normative* foundation: fairness. Proportionality means that each coalition party is rewarded in proportion to its contribution to the parliamentary strength of the government, which corresponds to many people’s ideas of fairness”. In other words, it allows the parties to view each other as being treated equally. That is, it allows a party to construct hypothetical scenarios in which a different parliamentary representation would lead to a portfolio allocation mirroring the current allocation to the other coalition partners.⁵

There are other reasons why proportional allocation may be focal. The information desk at Grand Central Station at noon is only one of very many options that a New Yorker might settle on if trying to meet someone without having settled on a place and time of meeting (Schelling, 1960). There is, of course, nothing special about the information desk at Grand Central Station (or noon) that makes it a better place to meet than many other places in New York (except for the fact that many people seem to think that this is the solution to the problem). While there may have been some logic to choosing Grand Central Station at the time Schelling asked the question (rail travel more common, easy access, central location?), it is not clear that Grand Central Station is seen as the landmark that it once was. Yet, because of Schelling’s writing, Grand Central Station at noon probably remains the focal solution — at least if one has an inkling that the stranger may have heard of Schelling. In other words, once a particular solution becomes focal it reinforces itself. In this sense, focal solutions rather resemble conventions.

There is, of course, an important difference between Schelling’s problem and portfolio allocation. The former is a pure coordination problem while the latter is essentially a zero-sum game. However, Schelling’s focal point idea offers some insight once we admit the possibility that the bargaining partners care more about settling the coalition negotiations quickly and successfully (implying their inclusion in the coalition) than undertaking the risky process of prolonging the negotiations in order to extract as big a

⁵The discreteness of ministerial portfolios, of course, rarely allows perfectly proportional allocation but close approximations are likely to be seen as fairer than poor approximations.

share of the portfolios as possible. If that is the case, there may be a number of different portfolio allocations that bargaining parties view as acceptable, and relying on a focal solution, or a convention, may allow them to conclude the negotiations quickly. It appears reasonable to suppose that proportionality represents a convention for parties when it comes the time to allocate portfolios. If during the negotiations, they were to look back and ask how things had been done in the past, they would likely conclude that normally portfolios were allocated in proportion to the parties' parliamentary representation. And to the extent that conventions carry any real force, it would be reasonable to assume that departures from proportionality would have to be accompanied with a clear demonstration of the parties' bargaining strength (e.g., that the party could credibly claim to form a coalition with other parties and that it was likely to be successful in doing so).

Our aim here is not to provide a conclusive answer to the question whether portfolio allocation is driven by norms of fairness, conventions, or focal points. Indeed, we think that explanations that rely on these ideas are at best incomplete. For example, why would a norm of fairness deprive all opposition parties of representation in the cabinet? While these explanations are not entirely satisfying in terms of their theoretical underpinnings, the fact remains that in terms of the predictive ability they outperform by far any possible contender. Our argument takes as given that there are forces at work that drive parties towards allocating portfolios proportionally among the coalition partners, but we claim that the importance of those forces should vary according the bargaining situation that the parties find themselves in.

Parties in a strong bargaining position will have little incentive to settle on a proportional allocation in simple bargaining situations — or where there is little uncertainty — as it makes it easy to exploit one's bargaining advantage (i.e., the parties know more easily what types of concessions are required to form a coalition). Thus, portfolio allocation is expected to deviate more from proportionality in those circumstances. As the parties find themselves in more complex bargaining situations characterized by greater uncertainty, which carry greater risks for the parties, resorting to allocating portfolios proportionally becomes a more attractive option. The relationship between uncertainty, bargaining complexity, and the allocation of ministerial portfolios is summarized by the following two hypotheses.

Hypothesis 1.1 The greater the uncertainty facing the parties, the more proportional the portfolio allocation.

Hypothesis 1.2 The greater the complexity of the bargaining situation, the more proportional the portfolio allocation.

Focusing on how individual government parties are represented within the cabinet, rather than simply the proportionality within the cabinet as a whole, has the advantage of providing a direct test of Gamson's claim that each party's share of the portfolios is proportional to its contribution to the cabinet's resources. That is, under high uncertainty and great bargaining complexity, the marginal effect of seat share contribution on portfolio share should equal 1.

Hypothesis 2.1 The greater the uncertainty facing the parties, the closer the relationship between seat share contribution and portfolio share is to parity.

Hypothesis 2.2 The greater the complexity of the bargaining situation, the closer the relationship between seat share contribution and portfolio share is to parity.

As, for instance, [Ansolabehere et al. \(2005\)](#) point out, there is not a direct relationship between the number of seats a party holds in the legislature and its bargaining power. Parties can have more bargaining power than their seat share might suggest.⁶ The difference in bargaining power among coalition parties, the bargaining power differential, has been shown to explain some of the deviations from the proportional allocation of portfolios based on the coalition parties' seat shares ([Warwick and Druckman, 2006](#)). In much the same way that the effect of party seat shares varies with the degree of uncertainty and complexity, we expect the influence of the bargaining power differential to decline as uncertainty and complexity increase. In difficult bargaining situations, the presence of a bargaining differential will be more difficult to detect and exploit, leaving the parties to focus on a proportional allocation of ministerial portfolios.

Hypothesis 3.1 The greater the uncertainty facing the parties, the smaller the effect of parties' bargaining power differential on their share of the portfolios.

Hypothesis 3.2 The greater the complexity of the bargaining situation, the weaker the impact of parties' bargaining power differential on their share of the portfolios.

⁶Take a hypothetical parliament with three parties with seat shares .45, .45, and .10. Those parties would have the same bargaining power since they are pivotal in the same number of coalitions and have the same voting weight. However, if the small party forms a coalition with one of the other two, it contributes less than 20% of the coalition's total seat share, while having the same bargaining power (1/2) as its partner.

To briefly summarize, we expect uncertainty and bargaining complexity to affect the proportionality of the coalition outcome in predictable ways, reducing the effects of factors that determine the parties' bargaining position as it becomes more difficult for parties to recognize or to exploit their bargaining advantage. Before turning to examining our hypotheses empirically it is worthwhile considering how our argument ties in with [Carroll and Cox's \(2007\)](#) argument about preelectoral agreements and proportional allocation. At first sight, that would seem to work counter to our expectations. At the time of formation, the existence of a preelectoral agreement should decrease the uncertainty parties face and thus, following our argument, proportionality should be lower, not higher. However, if the parties arrive at the distribution of portfolios before the election (and, hence, before seat shares are known) then the uncertainty under those circumstances should be even higher and, according to our argument, the allocation of portfolios should be more proportional.

Similarly, our argument speaks to the existing literature that has consistently identified a small party bias in the allocation of government portfolios. Some have attributed this to the inherent indivisibility of portfolios while others have pointed out that the bargaining power of small parties usually exceeds their size. However, accounting for bargaining power has failed to fully account for the aforementioned bias. We argue that the impact of bargaining power will be greater when there is less contextual uncertainty and complexity and we should, thus, find greater small party bias in those circumstances.

4 Empirical Analysis

We use data from the Comparative Parliamentary Democracy Archive ([Bergman et al., 2008](#)) for our explanatory variables and from the Portfolio Allocations Data Set for our dependent variables ([Warwick and Druckman, 2006](#)).⁷ The former covers democratic cabinets in 17 West European countries from 1944 to 1999 and the latter provides party level information on the allocation of portfolios for a slightly smaller sample of countries (14) from 1945 to 2000 as well as data on the salience of each portfolio as estimated by the Parties and Portfolios Survey. Altogether, our final data base comprises information from 14 West European parliamentary systems in the period 1945-1999.⁸

⁷The data sets are available at www.erdda.se/ccpddata_archive.php and www.sfu.ca/~warwick, respectively.

⁸Austria, Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, and Sweden.

4.1 Dependent Variables

PROPORTIONALITY OF PORTFOLIO ALLOCATION: Our first dependent variable relates to the distribution of cabinet portfolios at the cabinet level. Portfolio allocation can be more or less proportional depending on a number of factors. We have argued that the uncertainty and complexity surrounding the bargaining are crucial to understand the use of a proportionality norm to minimize the transaction costs involved. To determine how proportional the portfolio allocation is, we consider two measures. First, we use Warwick and Druckman's (2006) data to calculate proportionality as one minus the sum of the difference between each government party's portfolio share and its seat share contribution. Formally, $PROP = 1 - \sum |p_i - s_i|$, where p_i denotes party i 's portfolio share and s_i denotes its share of the cabinet's legislative support.⁹ Second, we consider a modified version of the measure where we divide the index by the number of parties in government to correct for artificial differences between cabinets in the degree of proportionality.¹⁰ For each measure, we consider an unweighted version where each portfolio carries the same weight, and a weighted one where Warwick and Druckman's (2006) expert-based portfolio salience weights are used.

PORTFOLIO SHARE: While our theory suggests that uncertainty and bargaining complexity should result in greater proportionality at the cabinet level, it also implies that the parties' seat shares should correlate more closely with their share of portfolios as the degree of uncertainty and complexity increases and, similarly, the effect of bargaining power is expected to decrease. Accordingly, this dependent variable measures disproportionality at the party level as the share of (weighted and unweighted) portfolios held by the coalition party.

PORTFOLIO DIFFERENTIAL: The portfolio differential is the difference between the portfolio share received by a coalition party and the seat share it brings to the cabinet table (Warwick and Druckman, 2006, 657). That is, it captures the

⁹We have also replicated the analysis using Bergman et al.'s (2008) measure of disproportionality, which yields largely the same results.

¹⁰Note that there is also a conceptual difference between these two measures. The first treats a two party cabinet in which each party is over/underrepresented by four percentage points the same as a four party cabinet in which each party is over/underrepresented by two percentage points. It is reasonable, however, to argue that these two situations are different as in the former situation one party has to accept a fairly large deviation whereas the underrepresented parties only have to accept a fairly small deviation from proportional allocation in the latter case.

degree to which the actual portfolio allocation deviates from the allocation predicted by the proportionality norm (i.e., Gamson’s Law). Again, we calculate both the weighted and unweighted portfolio differential. A negative value indicates that the party is under-represented in the cabinet relative to the proportionality norm, while a positive value implies over-representation.

4.2 Independent Variables

HIGHER UNCERTAINTY: We follow previous studies that argue that “a central factor determining the degree of uncertainty in the government formation process has to do with whether this process takes place after an election (more uncertainty) or in an interelection period (less uncertainty)” (Golder, 2010, 13). Changes in party leadership typically take place as parties prepare themselves for an electoral campaign and parties are likely to reevaluate their policy platforms in order to strategically position themselves for upcoming elections. Elections also generally result in a renewal in the parties’ legislative ranks. These factors are likely to contribute to greater uncertainty about the parties’ policy preferences.

Parties may also suffer unexpected electoral losses (or gains) and find themselves in a bargaining situation that they may not have anticipated. Parties will, therefore, find it more difficult to quickly form a coalition following an election than *during* the legislative term, when most of parties’ cards have already been on the table for an extended period of legislative interactions (Diermeier and van Roozendaal, 1998, 620). In the former situations, party leaders will be less certain about which potential cabinets and policies are feasible and acceptable by others. Similarly, De Winter (1995) argues that the adjustment party members to these new circumstances can be difficult to understand, contributing to the overall uncertainty of the situation.¹¹

There are certainly sources of uncertainty that are not related to the timing of a coalition’s formation but the expectation is that the degree of uncertainty is higher on average for coalitions formed immediately after elections

¹¹“Elections can render certain well-preferred coalition formulae mathematically impossible, thereby only leaving second choice or previously rejected formulae available to parties” (De Winter, 1993, 121).

for the reasons discussed above. While this is not a perfect measure of uncertainty finding a better alternative is not trivial.¹² Previous research suggests that the post-electoral dummy does capture variation in uncertainty. The measure produces results consistent with the hypotheses about uncertainty in Golder (2010) and it is ultimately an empirical question whether or not it will do in our case. Finally, it also bears repeating that our claim is not that the measure captures all the uncertainty the parties face in the coalition bargaining process but simply that other things equal the parties face greater uncertainty following elections. That is, we expect uncertainty to be higher on average in post-election bargaining situations than in inter-electoral periods.

BARGAINING COMPLEXITY: We focus on the bargaining power fragmentation in the legislature as a proxy for the complexity of the negotiation process. Previous studies have used factors such as the number of parties in parliament and the ideological distance of the parties as measures of bargaining complexity. The rationale for using bargaining power fragmentation is similar to focusing on the number of legislative parties but has the advantage of discounting the importance of parties unlikely to influence the coalition formation negotiations.¹³

While bargaining complexity tends to increase with the number of parties, the correlation between the measures is considerably lower than one might expect (0.48; $p < 0.00$). A party that is only pivotal to a single potential coalition has a smaller effect on bargaining complexity than a party that has two credible alternatives. While we control for ideological divisions, it is not clear to us what the relationship between ideological divisions and bargaining complexity is. The presences of more extreme parties may make coalition formation harder, but it may also rule out certain coalition pos-

¹²Theoretically, surveying politicians or voters about the parties' policy positions and considering the variance in the responses could be used as a measure of uncertainty but such data only exists for a subset of our cases and only for voters. Analyzing parties' campaign manifestos for how comprehensive and detailed they are is another possibility. The length of the manifesto might be used as a proxy but one might ask if short, specific manifestos might not be more informative than long, vague manifestos. A limitation of both these measures is that, where they exist, they are only applicable to post-electoral government formation situations.

¹³That is, they can only be present in an oversized or surplus coalition and never in minimum winning one. In such a case, a dummy party adds to the overall demand for office payoffs while contributing nothing (Laver and Schofield, 1990, 99). However, we add a variable for these oversized cabinets in the empirical analysis as a control.

sibilities. Indridason (2011) argues, for example, that increased legislative polarization can simplify the coalition formation process. We calculate bargaining power fragmentation in parliament in a manner analogous to how the effective number of parties is calculated but use parties’ bargaining weights — normalized Banzhaf indexes — rather than their seat shares (see Strøm, Müller and Bergman (2003) and Bergman et al. (2008)).¹⁴

BARGAINING DIFFERENTIAL: The bargaining differential measures the difference between a party’s bargaining power as a share of the cabinet parties’s aggregate bargaining power and its legislative seat share contribution. The bargaining differential is usually the strongest predictor of the extent to which a party is over- or under-represented in the cabinet (Warwick and Druckman, 2006, 657).¹⁵ We expect the impact of the parties’ bargaining differential to decrease as uncertainty and complexity increase. To capture this relationship we consider interaction between the bargaining differential and our measures of uncertainty and complexity.

We also control for variables that have been shown to be important predictors in extant work exploring the influence of uncertainty and complexity on coalition formation processes (e.g., Golder, 2010).¹⁶ Although we believe that bargaining complexity is best captured by the degree of power fragmentation in the legislature, we also control for the *Number of Parties in Parliament* and the *Ideological Polarization in Parliament*. The former refers to the absolute number of legislative parties while the latter is calculated as the variance of the parties’ left-right policy positions weighted by their bargaining power.¹⁷ The presence of a *Majority Party* (a party holding more than half the seats in parliament) should in principle affect both the formation duration and the way portfolios are allocated among parties. The presence of a party that does not need the legislative support of any other will certainly influence the government formation process.

¹⁴Formally, $1/\sum_{i=1}^n b_i^2$, where b stands for bargaining power of party i .

¹⁵Warwick and Druckman (2006) calculate parties’ bargaining power via their legislative voting weight.

¹⁶We exclude, though, the variable ‘continuation rule’. Its use has led to controversy recently, since it seems there is no evidence that it really exists as a rule. Nevertheless, we have run the analysis at the cabinet level including Golder’s (2010) *Continuation Rule* (as coded by Bergman et al. (2008)) and results are highly similar.

¹⁷The policy positions are obtained from the data collected by the Manifesto Research Group/Comparative Manifestos Project (MRG/CMP). Formally, the measure of ideological polarization is based on the following equation: $\sum_{i=1}^n b_i (x_i - \bar{x})^2$, where b is for bargaining power of party i , x is the left-right position of party i , and \bar{x} is the weighted average of left-right positions of all parties.

We control for *Preelectoral Agreements* in the analysis at the cabinet level as [Carroll and Cox \(2007\)](#) argue that preelectoral agreements affect portfolio allocation although, as we point out above, our argument about uncertainty is also consistent with their evidence if the degree of uncertainty is greater when coalitions are formed ahead of elections (in effect they are coalitions formed in an interelection period). Our *Preelectoral Agreements* variable comes from [Bergman et al.'s \(2008\)](#) dataset and takes the value '1' when successful coalition government formation was preceded by a preelectoral agreement, and '0' otherwise.¹⁸

We control for formateur status when analyzing portfolio allocation at the party level. *Formateur* takes the value '1' when the party was entrusted with the task of forming the government and '0' otherwise. That is, we use [Druckman and Warwick's \(2005\)](#) coding of the variable, which has been widely used in testing the effect of formateur status on portfolio allocation. We control for two additional variables at the party level. *Dummy Party* refers to legislative parties that play no role in the coalition bargaining as arithmetically they are not pivotal to any majority coalition. These parties' votes are never *needed* for a legislative majority and, thus, their presence adds nothing to the bargaining complexity of the formation process. *Majority Party* indicates a party's majority status.

4.3 Results

Table 1 shows the results of the analysis at the cabinet level. Models 1-4 address our first two hypotheses, i.e., whether the proportionality of the portfolio allocation at the cabinet level is influenced by uncertainty and bargaining complexity. The findings are in line with our expectations. Portfolios tend to be allocated more proportionally at higher levels of uncertainty and bargaining complexity. Regarding the controls, an increase in the number of parliamentary parties in general tends to decrease the degree of proportionality in the cabinet, while the other control variables have more minor or statistically insignificant effects. The latter is particularly surprising given [Carroll and Cox's \(2007\)](#) claim that preelectoral coalitions tend to distribute portfolios more proportionally. The findings in Table 1 are the first suggestion that the uncertainty and the bargaining complexity surrounding the formation of a coalition do have implications

¹⁸Specifically, the '1' category collapses the values 'Pre' and 'Pre & Post' of the variable *Coalition Agreement* (v169y2) in [Bergman et al.'s \(2008\)](#) dataset.

beyond influencing the difficulty of forming a government coalition.¹⁹

TABLE 1: PORTFOLIO ALLOCATION IN COALITION GOVERNMENTS; CABINET-LEVEL

	DV: Unweighted		DV: Weighted	
	Raw Prop. (1)	Prop./N (2)	Raw Prop. (3)	Prop./N (4)
<i>Higher Uncertainty</i>	0.0356** [0.0163]	0.0070 [0.0063]	0.0400*** [0.0142]	0.0107* [0.0055]
<i>Bargaining Complexity</i>	0.0212*** [0.0081]	0.0111*** [0.0029]	0.0159** [0.0065]	0.0091*** [0.0025]
<i>Number of Parties in Parl.</i>	-0.0122*** [0.0035]	-0.0002 [0.0013]	-0.0098*** [0.0030]	-0.0003 [0.0012]
<i>Ideological Polarization in Parl.</i>	-0.0017 [0.0010]	-0.0006 [0.0004]	-0.0017* [0.0010]	-0.0006 [0.0004]
<i>Majority Party</i>	0.0110 [0.0439]	0.0231 [0.0153]	0.0220 [0.0308]	0.0235** [0.0110]
<i>Preelectoral Agreement</i>	-0.0103 [0.0290]	0.0048 [0.0099]	0.0047 [0.0290]	0.0079 [0.0110]
<i>Constant</i>	0.8191*** [0.0345]	0.8930*** [0.0139]	0.8425*** [0.0307]	0.9056*** [0.0123]
Observations	260	260	260	260
R^2	0.076	0.077	0.087	0.081

Robust standard errors in brackets

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

While the results at the cabinet level do support our hypotheses, it is important to consider how the effect of seat share on the allocation of portfolios to individual coalition parties is conditioned on uncertainty and bargaining complexity. Taking the parties as our unit of analysis allows a more direct test of our hypotheses and it also allows to directly address party specific characteristics (e.g., whether a party is a ‘dummy party’), which could bias results at the cabinet level if they are correlated with our key variables of interest.

¹⁹We also ran the same analysis for a dependent variable capturing the duration of government formation negotiations which, as such, only speak to our hypotheses indirectly. However, they are of some interest as they address the question whether uncertainty and bargaining complexity do influence government formation processes. More importantly, our argument is that the proportional allocation of portfolios becomes more attractive as the difficulties of forming a coalition increase. The results indicate clearly that uncertainty and higher bargaining complexity contribute to longer government negotiations whether measured in the number of days it takes to form a new government or in the number of bargaining rounds required. These results, available from the authors upon request, closely mirror existing results in the literature, e.g., Golder (2010).

Before examining the effect of uncertainty and bargaining complexity, consider briefly the results of ordinary least squares regressions for, respectively, the unweighted and weighted measures of portfolio shares in the full sample, shown in the first column of Tables 2 and 3. Gamson’s Law (i.e., the perfect proportionality of payoffs) implies that the coefficient for seat share should equal one while the intercept should be zero. The results show that portfolios are not allocated in a perfectly proportional fashion (i.e., the hypothesis that the coefficient for seat share equals one and the hypothesis that the intercept is zero can be safely be rejected (see also Indridason, 2010). While it is true that *Seat Share* has a significant effect, both substantively and statistically, on the number of portfolios a party receives, it clearly falls short of the 1:1 relationship implied by Gamson’s Law. More specifically, the coefficient of seat share is about .83 and the intercept around .07 in Table 2. This suggest that Gamson’s Law fails to fully account for the variation in the allocation of portfolios. Formateurs appear to be disadvantaged in the allocation of portfolios when they are not weighted but they have a slight advantage when we use the weighted measure. The difference between the two results is not surprising given that the prime minister’s portfolio is consistently considered more important than other cabinet portfolios.

To highlight how uncertainty and bargaining complexity influence portfolio allocation we begin by splitting our sample into four subsamples based on whether the bargaining situation was characterized by uncertainty and/or bargaining complexity.²⁰ Our hypotheses imply that the coefficient for seat share should vary in a systematic fashion, i.e., the allocation of portfolios should correspond better with parties’ seat shares, as we move from low uncertainty to high uncertainty and from simple bargaining scenarios to complex bargaining scenarios. Columns 2-5 in Tables 2 and 3 explore this interactive pattern between seat share and the two contextual variables examining how the effect of the former varies across scenarios characterized by different degrees of complexity and uncertainty.

The estimated coefficients for seat share vary in the predicted fashion across the split samples. First, comparing the results for low uncertainty and low bargaining complexity scenarios (column 2) with high uncertainty and high bargaining complexity scenarios (column 5), we can see that the results conform with expectations — the effect of seat

²⁰High uncertainty corresponds to post-election formations, while low uncertainty refers to inter-election ones. The subsample of “simple bargaining scenarios” is composed of cabinets whose parliamentary bargaining power fragmentation is below the median and “complex bargaining scenarios” are the ones above the median. The cut-off value is 3.453.

TABLE 2: PORTFOLIO ALLOCATION IN COALITION GOVERNMENTS (UNWEIGHTED);
PARTY-LEVEL

	All Scenarios	Simple Bargaining Scenarios		Complex Bargaining Scenarios	
	All Uncert. (All form.)	Low Uncert. (Inter-Elect.)	High Uncert. (Post-Elect.)	Low Uncert. (Inter-Elect.)	High Uncert. (Post-Elect.)
	(1)	(2)	(3)	(4)	(5)
<i>Seat Share</i>	0.833*** [0.017]	0.764*** [0.057]	0.806*** [0.037]	0.834*** [0.033]	0.864*** [0.027]
<i>Formateur</i>	-0.031*** [0.009]	-0.032 [0.035]	-0.032 [0.020]	-0.023 [0.014]	-0.029* [0.015]
<i>Dummy Party</i>	0.000 [0.008]	-0.007 [0.015]	-0.040*** [0.014]	0.003 [0.012]	-0.040*** [0.005]
<i>Majority Party</i>	0.015 [0.021]	0.010 [0.027]	0.034 [0.032]	–	–
<i>Constant</i>	0.065*** [0.005]	0.100*** [0.014]	0.096*** [0.014]	0.052*** [0.007]	0.048*** [0.006]
Observations	782	138	188	214	242
R ²	0.890	0.854	0.894	0.904	0.892
Gamson's Av. Res.	0.044	0.073	0.052	0.036	0.031

Standard errors clustered by cabinet in brackets.

*** p<0.01, ** p<0.05, * p<0.1

share on portfolio allocation is considerably closer to unity in the latter scenario than in the former.

Uncertainty and bargaining complexity condition the effect of seat share in the same way. A comparison of models 2 and 3, on the one hand, and models 4 and 5, on the other, show that greater uncertainty (formations occurring in the inter-election period) leads to a more proportional allocation regardless of whether we focus on simple or complex bargaining situations.

Similarly, the coefficients of *Seat Share* are larger in complex than in simple bargaining scenarios in both high and low uncertainty scenarios. That is, higher bargaining complexity makes the allocation of portfolios more proportional (comparing columns 2 and 4 and columns 3 and 5).²¹ It is also worth noting that the estimated constant decreases

²¹Similar results are obtained when we control for bargaining power –see Tables 6 and 7 in the appendix. Bargaining power only exerts a minor, and statistically insignificant, influence on the allocation of portfolios in more complex bargaining situations, while seat share captures a greater variation of the dependent variable.

TABLE 3: PORTFOLIO ALLOCATION IN COALITION GOVERNMENTS (WEIGHTED);
PARTY-LEVEL

	All Scenarios	Simple Bargaining Scenarios		Complex Bargaining Scenarios	
	All Uncert. (All form.)	Low Uncert. (Inter-Elect.)	High Uncert. (Post-Elect.)	Low Uncert. (Inter-Elect.)	High Uncert. (Post-Elect.)
	(1)	(2)	(3)	(4)	(5)
<i>Seat Share</i>	0.816*** [0.016]	0.752*** [0.058]	0.781*** [0.032]	0.822*** [0.027]	0.859*** [0.028]
<i>Formateur</i>	0.018** [0.008]	0.011 [0.036]	0.014 [0.017]	0.027** [0.013]	0.023 [0.015]
<i>Dummy Party</i>	-0.005 [0.008]	-0.007 [0.010]	-0.052*** [0.010]	0.004 [0.013]	-0.065*** [0.005]
<i>Majority Party</i>	0.019 [0.017]	0.004 [0.021]	0.057*** [0.020]	–	–
<i>Constant</i>	0.055*** [0.004]	0.090*** [0.014]	0.087*** [0.012]	0.042*** [0.006]	0.034*** [0.006]
Observations	782	138	188	214	242
R ²	0.912	0.883	0.926	0.926	0.905
Gamson's Av. Res.	0.032	0.060	0.039	0.025	0.019

Standard errors clustered by cabinet in brackets.

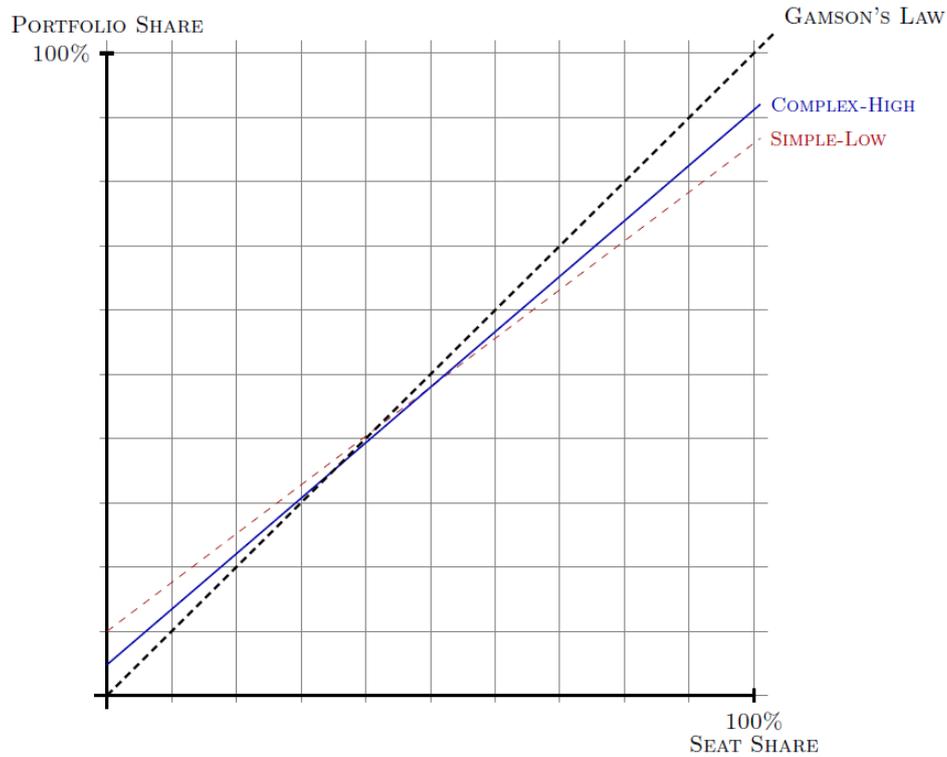
*** p<0.01, ** p<0.05, * p<0.1

towards zero as uncertainty and, in particular, bargaining complexity increases. Hence, in line with our theoretical expectation, we find that the small party bias is bigger in less complex and less uncertain situations. This is probably because small parties are better able to exploit their bargaining power (which is most often higher than their size) in such circumstances. Nonetheless, it is the case that the small party bias remains even when the bargaining strength of the parties is controlled for (see appendix) but it is still true that this remaining small party bias decreases as complexity and uncertainty increase.²²

²²Although an extension of our argument might be that the bargaining advantage of the formateur should be stronger in less complex and 'less uncertain' contexts, we find little evidence that this is the case. The first thing to note is that the direction of the formateur effect depends on whether ministerial portfolios are weighted by their importance or not (comparing Tables 2 and 3). This suggests to us that the formateur advantage is not very robust, i.e., if it does exist it is not very strong (in line with the empirical literature that has identified effects that, if any, are at best far weaker than the formal models suggest). Second, the difference across the different subsamples are fairly minimal and the formateur variable is usually not statistically significant. In Table 3, we do observe, for example, that the formateur status has a bigger positive effect (and a 'less negative' one in Table 2) in low than in high uncertainty situations that are already complex, which would be consistent with our argument. However, these differences fail to reach conventional levels of statistical

For each model, we also calculated the average residual of the predicted values with respect to the Gamson (45°) line. Again, the statistic indicates that the models better conform with Gamson’s expectations as we move rightward across columns, i.e., increasing contextual uncertainty and complexity, both in Tables 2 and 3. To illustrate the results, Figure 1 graphs the estimated regression lines for low uncertainty, simple bargaining scenarios and high uncertainty, complex bargaining scenarios as well as the relationship described by Gamson. Both regression lines are flatter than the line predicted by Gamson’s Law but in accordance with our theory, the departure is larger for coalitions formed under simple bargaining situations characterized by low uncertainty. Where there is more uncertainty and the bargaining situation is more complex, the outcome of the coalition bargaining comes closer to Gamson’s prediction.

FIGURE 1: GAMSON’S LAW BY COMPLEXITY & BARGAINING UNCERTAINTY



In sum, the result of the split sample estimation shows clearly how the effect of seat share on portfolio share is conditional on the uncertainty and bargaining complexity of

significance.

the coalition formation situation. However, a quick glance at the standard errors of the estimates suggests that the difference in the estimated coefficients generally fail to reach conventional levels of statistical significance. This is not altogether surprising as the split sample design reduces the variation in one of our key independent variable, bargaining complexity. Thus, while the split sample approach is a convenient way to show how the importance of seat share varies in different bargaining situations, the proper way of testing our hypotheses requires considering a model in which seat share is interacted with our key independent variables.

As said, we are interested in demonstrating how the cabinet-level variables (uncertainty and complexity) affect how parties do in the negotiation over the division of cabinet portfolios. These cabinet-level variables shape the effect of the parties' seat share on their portfolio share. In Tables 2 and 3 the coefficients of *Seat Share* come closer to the prediction of Gamson's Law in uncertain and complex scenarios. To explore the interactions between uncertainty and bargaining complexity in a more rigorous fashion, we turn to multi-level models simultaneously including party-level and cabinet-level variables.²³

The results are presented in Tables 4 and 5. The dependent variable in the first two models is *Portfolio Share*. The first model includes only party level variables while the second model includes our cabinet-level variables of interest. As expected *Seat Share* has a strong effect on *Portfolio Share*. In line with our hypotheses, the coefficients for the interactions between *Seat Share* and *Uncertainty* and *Complexity* are positive, indicating that parties that find themselves in 'difficult' bargaining situations are more likely to settle on a more proportional allocation of the cabinet portfolios.

The cabinet-level constituent terms are also included in the model. These variables are obviously constant within a given cabinet and, as such, it might seem like including them in the model is redundant. However, the inclusion of these variables essentially allows the intercept to vary with degree of uncertainty or bargaining complexity. The estimated coefficients for these variables are consistent with our hypotheses: As uncertainty and bargaining complexity increase we expect the proportionality of the outcome to improve, which, in addition to influencing the coefficient of *Seat Share*, implies that the constant should move towards to zero. Thus, negative coefficients for the cabinet-level variables

²³We estimate random intercept models where level 2 refers to cabinets with cross-level interactions. In a first step, we also ran a model with both a random intercept and coefficient (not shown) to assess the extent to which the coefficient of *Seat Share* varied across cabinets. Given that the model indicated a significant variance across cabinets, we incorporated cross-level interactions to try to explain this variation in accordance to our hypotheses.

TABLE 4: PORTFOLIO ALLOCATION IN COALITION GOVERNMENTS (UNWEIGHTED);
MULTI-LEVEL

	DV: Portfolio Share		DV: Portfolio Differential	
	(1)	(2)	(3)	(4)
Party Level				
<i>Seat Share</i>	0.833***	0.728***		
	[0.014]	[0.039]		
<i>Bargaining Differential</i>			0.280***	0.412***
			[0.020]	[0.060]
<i>Formateur</i>	-0.031***	-0.030***	-0.030***	-0.032***
	[0.007]	[0.007]	[0.007]	[0.007]
<i>Dummy Party</i>	0.000	-0.037**	0.030**	0.008
	[0.014]	[0.015]	[0.013]	[0.014]
<i>Majority Party</i>	0.015	0.017	-0.158***	-0.207***
	[0.019]	[0.023]	[0.021]	[0.024]
Cabinet Level				
<i>Complexity</i>		-0.016***		-0.011***
		[0.003]		[0.003]
<i>Uncertainty</i>		-0.004		-0.000
		[0.008]		[0.006]
<i>Constant</i>	0.065***	0.133***	0.048***	0.094***
	[0.004]	[0.015]	[0.003]	[0.011]
Cross-Level Interactions				
<i>Seat Share * Complexity</i>		0.020*		
		[0.010]		
<i>Seat Share * Uncertainty</i>		0.038*		
		[0.020]		
<i>Barg. Diff. * Complexity</i>				-0.030*
				[0.016]
<i>Barg. Diff. * Uncertainty</i>				-0.043
				[0.030]
Observations	782	782	782	782
Number of Groups	261	261	261	261
Log-Likelihood	992.132	1010.329	1014.276	1025.795

Standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1

TABLE 5: PORTFOLIO ALLOCATION IN COALITION GOVERNMENTS (WEIGHTED);
MULTI-LEVEL

	DV: Portfolio Share		DV: Portfolio Differential	
	(1)	(2)	(3)	(4)
Party Level				
<i>Seat Share</i>	0.816*** [0.014]	0.706*** [0.037]		
<i>Bargaining Differential</i>			0.297*** [0.019]	0.415*** [0.057]
<i>Formateur</i>	0.018*** [0.007]	0.019*** [0.007]	0.016** [0.006]	0.015** [0.006]
<i>Dummy Party</i>	-0.005 [0.013]	-0.040*** [0.014]	0.027** [0.012]	0.009 [0.013]
<i>Majority Party</i>	0.019 [0.018]	0.026 [0.022]	-0.167*** [0.020]	-0.208*** [0.023]
Cabinet Level				
<i>Complexity</i>		-0.015*** [0.003]		-0.009*** [0.003]
<i>Uncertainty</i>		-0.008 [0.008]		-0.002 [0.006]
<i>Constant</i>	0.055*** [0.004]	0.121*** [0.014]	0.036*** [0.003]	0.074*** [0.011]
Cross-Level Interactions				
<i>Seat Share * Complexity</i>		0.021** [0.010]		
<i>Seat Share * Uncertainty</i>		0.041** [0.018]		
<i>Barg. Diff. * Complexity</i>				-0.028* [0.016]
<i>Barg. Diff. * Uncertainty</i>				-0.035 [0.028]
Observations	782	782	782	782
Number of Groups	261	261	261	261
Log-Likelihood	1040.016	1057.293	1060.754	1069.214

Standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1

are in line with our predictions as the constant itself is estimated to be positive although only the coefficient for *Complexity* reaches conventional levels of statistical significance.²⁴

Columns 3 and 4, where *Portfolio Differential* is the dependent variable, offer further support for our hypotheses. In these model specifications *Seat Share* is not included as an independent variable as the portfolio differential is itself a function of seat share. Instead we include the *Bargaining Differential* as an independent variable. We expect this variable to have a positive effect on the *Portfolio Differential*, as parties whose bargaining power exceeds their seat share should be advantaged in the allocation of portfolios. Our theory, however, implies that parties will find it more difficult to take advantage of their bargaining power in difficult bargaining scenarios. Thus, the effect of the bargaining differential should decline as uncertainty and/or bargaining complexity increase, since in those situations the proportional allocation of portfolios would become a more attractive solution to the bargaining problem. This is, in part, confirmed by our results. The cross-level interactions *Bargaining Differential* * *Complexity* and *Bargaining Differential* * *Uncertainty* have a negative coefficient, although only the latter is significantly different from zero.

Finally, it is worth noting that the results are substantively the same regardless of whether we focus on the unweighted or the weighted measures of portfolio shares although our hypotheses, perhaps not surprisingly, receive slightly more support when we weigh portfolios by their importance. Comparing the effects of uncertainty and bargaining complexity, we do find that bargaining complexity has a more significant effect, in both statistical and substantive terms, on how *Seat Share* and *Bargaining Differential* are translated into portfolios. Again, this does not come as a big surprise. Our proxy of *Uncertainty* is probably at best a rough indicator of the uncertainty inherent in the bargaining process as it simply asks whether an election preceded the formation of the coalition. Despite the simplicity of the measure, it is consistently estimated to influence portfolio allocation in the manner our theory predicts even though it sometimes fails to reach levels of statistical significance. We, therefore, take the findings with regard to uncertainty to be suggestive of the role it may play, but our future research on coalition formation processes should seek to develop better measures of uncertainty.

²⁴This is true across the range of values *Uncertainty* and *Complexity* in our data.

5 Concluding Remarks

This paper contributes to a growing body of literature that asks which factors influence the allocation of cabinet portfolios among coalition parties. While Gamson's observation that portfolios tend to be allocated in a proportional fashion has been coined a law, the recognition that there are systematic departures from proportionality in the allocation of portfolios is not a new discovery (see, e.g., [Browne and Frendreis, 1980](#)). Although the departures from proportional allocation of portfolios are not large they can be considered substantively important. First, control of government portfolios is generally seen as important because they enhance the ability of the party that holds the portfolio to direct policy that falls under its purview. Second, giving up a single portfolio can reflect badly on the party leaders engaged in the bargaining process. Regular party members, and party activists in particular, are likely to view concessions with suspicion, i.e., that party leaders are willing to sacrifice the party's policy goals for their own seats in the cabinet. Finally, journalists frequently pay close attention to the allocation of portfolios and scrutinize them with an eye on identifying the winners and the losers in the coalition bargaining. Again, these may affect the reputations of the leaders of the government parties and, thus, future bargaining between the government parties and the standing of the party leaders vis-à-vis their party.

Explaining deviations from proportionality has proven to be a fairly difficult task — not least because it is not clear what the theoretical foundations of Gamson's Law are. The formal literature on coalition bargaining predicts patterns of portfolio allocation that depart rather dramatically from proportionality and, as it stands, the theoretical arguments that are most consistent with the apparent tendency for relatively proportional allocation of portfolios tend to focus on norms of proportionality or proportionality as a focal solution to the bargaining problem.²⁵ While norms and/or focal points can be used to construct arguments that produce the patterns of portfolio allocation enshrined in Gamson's Law, it is not clear that these arguments build on firmer theoretical foundations. The claim that norms and/or focal point solutions to the bargaining problem generate proportional allocation may be true but it also appear a little ad hoc. To assess the veracity of the claim we would need to be able to derive some additional observable implications from the theory, but they have not been forthcoming.

²⁵This statement requires a couple of qualifiers. First, we do think the formal literature provides valuable insights in terms of generating comparative statics. Second, a few recent papers, e.g., [Carroll and Cox \(2007\)](#), [Golder, Golder and Siegel \(2009\)](#), and [Indridason \(2010\)](#), provide important theoretical insights into the status of Gamson's Law.

Our findings offer an important insight into the role that the competing approaches to explaining coalition bargaining outcomes play. If the allocation of portfolios is driven by norms or guided by focal points, no variation should be observed in the number of portfolios allocated to a party once the effects of seat share have been accounted for. In other words, the effect of seat share ought to be invariant to the context in which the coalition is formed.²⁶ Our findings show that this is not true and, therefore, portfolio allocation cannot be driven solely by norms or focal solutions. While the fact that factors other than norms and/or focal solutions influence the allocation of portfolios may not come as a surprise, the mechanism determining whether coalitions adhere to a proportionality norm is of considerable interest.

Taking our cue from the literature on formation duration, (e.g., Diermeier and van Roozendaal, 1998; Martin and Vanberg, 2003; De Winter and Dumont, 2008; Golder, 2010), we argue that two factors, uncertainty and complexity, that have been shown to influence how long it takes to form a government coalition are also likely to influence the composition of the cabinet. In particular, we argue that in simple bargaining situations, characterized by little uncertainty and low complexity, parties in an advantageous bargaining position will be better able to exploit their bargaining strengths and, therefore, bargaining power will have a bigger impact on the number of portfolios received by the party. In contrast, in difficult bargaining situations, characterized by higher uncertainty and complexity, forming a government coalition will be a more challenging task, as shown by the literature, and the negotiating partners will resort to a more proportional allocation in order to solve the bargaining problem. In difficult bargaining situations the risk of breakdown of the coalition formation negotiations is higher and the bargaining partners, therefore, opt to rely to a greater extent on norms of proportionality, which may be seen as focal solutions in the bargaining.

Our empirical analysis is supportive of our theory. We find that the effects of seat share and bargaining power are conditioned on the degree of uncertainty and bargaining complexity that the parties face. In difficult bargaining situations the estimated effects of the key variable of interest, seat share, resemble the predictions of Gamson's Law more, (i.e., the estimated constant is closer to zero and the marginal effect of seat share is closer to one) while bargaining power matters more in simpler bargaining situations.

In sum, our theory offers an important insight into the process of government formation.

²⁶The observation that bargaining power influences portfolio allocation beyond seat share is, of course, not new so we allow for the possibility that bargaining power replaces the 'resources' that the parties bring to the coalition, but argue that its importance will vary depending on the context.

It suggests that while norms of proportionality may play a role in determining the allocation of government portfolios, the importance of norms is conditional.²⁷ That is, when parties find themselves in situations in which their bargaining advantage is clear, they will exploit that advantage in order to obtain a greater number of portfolios. As it becomes more difficult to observe the parties' bargaining power (e.g., because of uncertainty about their preferences or the high number of potential coalitions), it becomes increasingly difficult for them to exploit their bargaining power to obtain more seats in the cabinet and a more proportional allocation of portfolios results.

References

- Ansolabehere, Stephen, James M. Snyder, Aaron B. Strauss and Michael M. Ting. 2005. "Voting Weights and Formateur Advantages in the Formation of Coalition Governments." *American Journal of Political Science* 49(3):550–563.
- Bäck, Hanna, Henk Erik Meier and Thomas Person. 2009. "Party Size and Portfolio Payoffs: The Proportional Allocation of Ministerial Posts in Coalition Governments." *Journal of Legislative Studies* 15(1):10–34. [INGENTA](#).
- Baron, David P. and John A. Ferejohn. 1989. "Bargaining in Legislatures." *American Political Science Review* 83(4):1181–1206. [JSTOR](#).
- Bergman, Torbjorn, Elisabeth R. Gerber, Scott Kastner and Benjamin Nyblade. 2008. The Empirical Study of Cabinet Governance. in [Strøm, Müller and Bergman \(2008\)](#) pp. 85–122.
- Browne, Eric C. and John P. Frensdreis. 1980. "Allocating Coalition Payoffs by Conventional Norms: Assessment of the Evidence for Cabinet Coalition Situations." *American Journal of Political Science* 24:753–768.
- Browne, Eric C. and Mark Franklin. 1973. "Aspects of Coalition Payoffs in European Parliamentary Democracies." *American Political Science Review* 24:453–469.
- Carroll, Royce and Gary W. Cox. 2007. "The Logic of Gamson's Law: Pre-election Coalitions and Portfolio Allocations." *American Journal of Political Science* 51(2):300–313.

²⁷Strictly speaking, we have not shown that the proportional allocation is driven by norms (or that proportionality is a focal solution) but as we have argued above, these are the prevalent explanations that exist to account for the observed proportionality.

- Carroll, Royce, Gary W. Cox and Monica Pachón. 2004. “Gamson’s Law: How coalition governments allocate offices.” Manuscript.
- De Winter, Lieven. 1993. The Links between Cabinet and Partis and Cabinet Decision-Making. In *Governing Together: The Extent and Limits of Joint Decision-Making in Western European Cabinets*, ed. Jean Blondel and Ferdinand Muller-Rommel. New York, NY: St. Martin’s Press p. 55.
- De Winter, Lieven. 1995. The Role of Parliament in Government Formation and Resignation. In *Parliaments and Majority Rule in Western Europe*, ed. Herbert Döring. Frankfurt/NewYork: St. Martins Press.
- De Winter, Lieven and Patric Dumont. 2008. Uncertainty and Complexity in Cabinet Formation. in *Strøm, Müller and Bergman (2008)* pp. 123–158.
- Diermeier, Daniel and Peter van Roozendaal. 1998. “The Duration of Cabinet Formation Processes in Western Multi-Party Democracies.” *British Journal of Political Science* 28:609–626.
- Diermeier, Daniel and Rebecca Morton. 2005. Experiments in Majoritarian Bargaining. In *Social Choice and Strategic Decisions: Essays in Honor of Jeffrey S. Banks*, ed. David Austen-Smith and John Duggan. Berlin: Springer Verlag pp. 201–226.
- Druckman, James N. and Paul V. Warwick. 2005. “The missing piece: Measuring portfolio salience in Western European parliamentary democracies.” *European Journal of Political Research* 44(1):17–42. WILEY,.
- Falcó-Gimeno, Albert. 2012. “Parties Getting Impatient: Time Out of Office and Portfolio Allocation in Coalition Governments.” *British Journal of Political Science* 42(2):393–411.
- Fréchette, Guillaume R., John H. Kagel and Massimo Morelli. 2005. “Behavioral Identification in Coalitional Bargaining: An Experimental Analysis of Demand Bargaining and Alternating Offers.” *Econometrica* 73(6):1893–1937.
- Gamson, William. 1961. “A Theory of Coalition Formation.” *American Sociological Review* 26(3):373–382.
- Golder, Matt, Sona N. Golder and David A. Siegel. 2009. “A Behavioral Model of Government Formation in Parliamentary Democracies.” Manuscript.

- Golder, Sona N. 2010. "Bargaining Delays in the Government Formation Process." *Comparative Political Studies* 43(1):3–32. [SAGE](#).
- Indridason, Indridi H. 2010. "Live for Today, Hope for Tomorrow? Rethinking Gamson's Law." Working Paper.
- Indridason, Indridi H. 2011. "Coalition Formation and Polarisation." *European Journal of Political Research* 50(5):689–718.
- Laver, Michael J. and Norman Schofield. 1990. *Multiparty Government*. Ann Arbor, MI: University of Michigan Press.
- Laver, Michael, Scott Marchi and Hande Mutlu. 2011. "Negotiation in legislatures over government formation." *Public Choice* 147(3-4):285–304.
- Martin, Lanny W. and Georg Vanberg. 2003. "Wasting Time? The Impact of Ideology and Size on Delay in Coalition Formation." *British Journal of Political Science* 33:323–344.
- Muthoo, Abhinay. 1999. *Bargaining Theory with Applications*. Cambridge: Cambridge University Press.
- Schelling, Thomas. 1960. *The Strategy of Conflict*. Cambridge: Harvard University Press.
- Strøm, Kaare, Wolfgang C. Müller and Torbjörn Bergman. 2003. In *Delegation and Accountability in Parliamentary Democracies*, ed. Kaare Strøm, Wolfgang C. Müller and Torbjörn Bergman. Oxford: Oxford University Press.
- Strøm, Kaare, Wolfgang C. Müller and Torbjörn Bergman. 2008. *Cabinets and Coalition Bargaining: The Democratic Life Cycle in Western Europe*. Oxford: Oxford University Press.
- Verzichelli, Luca. 2008. Portfolio Allocation. in [Strøm, Müller and Bergman \(2008\)](#) pp. 237–268.
- Warwick, Paul V. and James N. Druckman. 2006. "The portfolio allocation paradox: An investigation into the nature of a very strong but puzzling relationship." *European Journal of Political Research* 45:635–665.

Appendix

TABLE 6: PORTFOLIO ALLOCATION IN COALITION GOVERNMENTS (UNWEIGHTED);
PARTY-LEVEL (CONTROL BARGAINING POWER)

	All Scenarios	Simple Bargaining Scenarios		Complex Bargaining Scenarios	
	All Uncert. (All form.)	Low Uncert. (Inter-Elect.)	High Uncert. (Post-Elect.)	Low Uncert. (Inter-Elect.)	High Uncert. (Post-Elect.)
	(1)	(2)	(3)	(4)	(5)
<i>Seat Share</i>	0.721*** [0.024]	0.627*** [0.064]	0.720*** [0.039]	0.793*** [0.061]	0.839*** [0.046]
<i>Bargaining Power</i>	0.276*** [0.039]	0.318*** [0.095]	0.277*** [0.058]	0.103 [0.100]	0.060 [0.097]
<i>Formateur</i>	-0.030*** [0.009]	-0.023 [0.036]	-0.031 [0.020]	-0.024 [0.014]	-0.029* [0.015]
<i>Dummy Party</i>	0.029*** [0.009]	0.031* [0.019]	0.005 [0.015]	0.010 [0.013]	-0.036*** [0.008]
<i>Majority Party</i>	-0.156*** [0.031]	-0.187*** [0.063]	-0.140*** [0.049]	–	–
<i>Constant</i>	0.049*** [0.005]	0.078*** [0.016]	0.061*** [0.015]	0.047*** [0.007]	0.046*** [0.007]
Observations	782	138	188	214	242
R^2	0.896	0.863	0.903	0.904	0.892
Gamson's Av. Res.	0.044	0.073	0.053	0.035	0.030

Standard errors clustered by cabinet in brackets

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

TABLE 7: PORTFOLIO ALLOCATION IN COALITION GOVERNMENTS (WEIGHTED);
PARTY-LEVEL (CONTROL BARGAINING POWER)

	All Scenarios	Simple Bargaining Scenarios		Complex Bargaining Scenarios	
	All Uncert. (All form.)	Low Uncert. (Inter-Elect.)	High Uncert. (Post-Elect.)	Low Uncert. (Inter-Elect.)	High Uncert. (Post-Elect.)
	(1)	(2)	(3)	(4)	(5)
<i>Seat Share</i>	0.712*** [0.022]	0.644*** [0.064]	0.702*** [0.035]	0.772*** [0.052]	0.833*** [0.047]
<i>Bargaining Power</i>	0.256*** [0.036]	0.252*** [0.086]	0.256*** [0.050]	0.127 [0.087]	0.061 [0.088]
<i>Formateur</i>	0.019** [0.009]	0.018 [0.036]	0.015 [0.016]	0.026** [0.013]	0.022 [0.015]
<i>Dummy Party</i>	0.021** [0.008]	0.024 [0.015]	-0.011 [0.011]	0.013 [0.014]	-0.061*** [0.007]
<i>Majority Party</i>	-0.139*** [0.027]	-0.152** [0.058]	-0.104*** [0.036]	–	–
<i>Constant</i>	0.040*** [0.004]	0.073*** [0.015]	0.055*** [0.011]	0.036*** [0.006]	0.032*** [0.007]
Observations	782	138	188	214	242
R^2	0.917	0.888	0.933	0.927	0.905
Gamson's Av. Res.	0.033	0.060	0.041	0.025	0.019

Standard errors clustered by cabinet in brackets

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$