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"An Empirical Investigation of Coalitional Bargaining Procedures"

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# An Empirical Investigation of Coalitional Bargaining Procedures*

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## ABSTRACT

Models of government formation processes in multi-party democracies are usually highly sensitive to the rules that govern the selection of *formateurs* (i.e., the parties selected to propose a potential government). The theoretical literature has focused on two selection rules: selection proportional to seat share, and selection in order of seat share. In this paper we use a new data set on government formations in 11 parliamentary democracies to empirically assess which selection rule most closely approximates the data. We find that while there is little empirical support for selection in order of seat share, proportional selection fits the data well.

*Keywords*: government formation, proposer selection, bargaining procedures.

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# 1  Introduction

An important question in political economy concerns the effects of political institutions on economic policy-making (see, e.g., Besley and Coate 1997, 1998, Grossman and Helpman 1994, Persson, Roland, and Tabellini 1997, 2000).[1] Persson, Roland, and Tabellini (2000), for example, illustrate how different legislative institutions may lead to significant differences in the size of government and the levels of taxation and public goods provision.

Institutional characteristics are particularly important in multi-party parliamentary democracies, where the executive is not directly determined in elections, but is the result of a government formation process among the parties represented in parliament. Countries differ in the procedures that are used to select a government.[2] But does this matter? After all, no matter how a government is formed, once it assumes office it needs to maintain the confidence of the parliament. However, if many parties are represented in parliament (each lacking an absolute majority), then parties need to form coalitions, and there are usually many potential coalitions that could win a confidence vote in the parliament. This makes the designation of a *proposer* (of a potential  government) a decision with substantial political and economic consequences.

Recent advances in legislative bargaining theory (see, e.g., Baron and Ferejohn 1989 and Romer and Rosenthal 1978, 1979) have captured this insight formally through *proposer models.* In these models, the legislature has the choice between a proposal and the *status quo.*[3] But since all proposals contained in the *status quo*'s majority win-set would be accepted, the person who actually makes the proposal can exploit her proposal power to achieve her

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[1]For an extensive survey of the literature see Persson and Tabellini (1999).

[2]In some parliamentary democracies, for example Italy, governments have to pass a vote of investiture. In others, such as Norway, an incumbent government may stay in office without further procedures until it loses a vote of censure. For a more comprehensive discussion of constitutional differences in parliamentary democracies and their effects on the formation and dissolution of coalition governments, see Diermeier, Eraslan, and Merlo (2000, 2001).

[3]In the classic Romer-Rosenthal model the *status quo* is exogenously given. In bargaining models *à la* Baron-Ferejohn, it is replaced by endogenously generated continuation values (i.e., the players' expected equilibrium payoffs if a proposal is rejected and the game continues).

highest payoff among the alternatives in the win-set. Applied to the case of government formation (Baron 1991), this means that the party that successfully assembles a governing coalition will receive additional gains from proposing. That is, not only will the proposer or her party be included in the government for sure, but she will also receive a higher payoff than had she been included in the government without being the proposer.[4]

This raises the question of who has the right to propose a potential government to the legislature. The literature uses the term *formateur* to denote the person who proposes a potential government for parliamentary approval (see, e.g., Laver and Schofield 1990 and Laver and Shepsle 1996). The process of government formation in parliamentary democracies begins with the appointment of the formateur. The formateur is typically a member of parliament (or another public figure), who is given the mandate to try to put together a potential governing coalition. Most of the times, the formateur is also the prime minister designate, and a government proposal includes the allocation of cabinet portfolios among the parties included in the coalition. If the selected individual is unsuccessful in her attempt, then a new selection is made (possibly from the same party or even the same person), and so on until a government is inaugurated. Hence, understanding the process according to which parties (or, more precisely, individual members of parties) are selected to make government proposals is an important step in the analysis of government formation in parliamentary democracies. We refer to this process as a *coalitional bargaining procedure*.

Since the designation of a formateur is precariously located between elections and government selection, many parliamentary democracies have chosen to treat the formateur selection process as ostensibly non-partisan. In some countries, the head of state (usually a monarch or an elected president), designates the formateur. In other countries, this task is delegated to an *informateur* (usually a senior, experienced, "elder statesman"). Coalitional bargaining procedures, however, are typically not embodied in the constitution or in other official documents.[5] Instead, they are reflected in unwritten conventions or norms. We are not aware of

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[4]The use of proposer models in the literature on political economy is pervasive (see, e.g., Persson and Tabellini 1999).

[5]The only exeption is represented by Greece, where the constitution prescribes that a member of the largest party must be chosen as the formateur.

any detailed study of the motives or the behavior of the political actors responsible for the selection of formateurs. Rather, following Laver and Shepsle (1996) and Baron (1991, 1993), it is typically assumed that the choice of a formateur can be summarized by a *selection rule*: That is, a deterministic or probabilistic rule which, given the composition of parliament, assigns the right to propose a potential government.

Virtually all existing (noncooperative) models of government formation build on either one of two coalitional bargaining procedures that have been proposed in the literature.[6] One procedure (originally suggested by Baron and Ferejohn 1989), assumes that formateurs are selected randomly proportional to the distribution of seat shares in the parliament. According to the other procedure (originally proposed by Austen-Smith and Banks 1988), on the other hand, formateurs are selected in a deterministic fashion based on their order statistics: That is, first the party with the largest seat share is selected, then the second largest, and so on. We call the first rule *proportional selection*, and the second *selection-in-order*.

The choice of a coalitional bargaining procedure is not without consequences. In general, bargaining models are sensitive to the specification of the protocol that governs the right of players to make offers and counteroffers.[7] In the context of a bargaining model of government formation, Baron (1991) shows that the equilibrium predictions of the model crucially depend on whether parties are randomly recognized to make proposals or the order of proposals is fixed. The details of proposer selection institutions may also have profound consequences for the electoral process. Baron (1991) presents a model of electoral competition with sincere voting where parties are located centrally under proportional selection, but are dispersed under selection-in-order. Models of strategic voting under proportional representation generate different classes of equilibria depending on the coalitional bargaining procedure that is assumed (see, e.g., Austen-Smith and Banks 1988 and Baron and Diermeier 2001).

Typically, the choice of a particular coalitional bargaining procedure in models of govern-

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[6]See, e.g., Austen-Smith (2000), Austen-Smith and Banks (1988), Baron (1991, 1993), Baron and Diermeier (2001), Baron and Ferejohn (1989), Diermeier and Merlo (2000), and Merlo (1997).

[7]For an exception, see Merlo (1997). In his model of government formation, the main results are independent of the coalitional bargaining procedure.

ment formation is justified on grounds of tractability or other theoretical considerations. Two natural questions thus arise: First, can either procedure be justified on empirical grounds? And second, which one of these two coalitional bargaining procedures most closely approximates what we observe in the data? In spite of the importance of these questions, to date there has been no empirical analysis of the process with which parties are selected to make government proposals.[8] The goal of this paper is to take a first step toward filling this gap and provide answers to the two questions we posed above. To achieve this goal we use a new data set we collected that contains detailed information on the process of government formation in 11 West European parliamentary democracies in the postwar period.

The main results of our analysis can be summarized as follows. First, there is little support in the data for the coalitional bargaining procedure based on selection-in-order. In particular, the deterministic version of the procedure, which prescribes that the largest party is always selected to make the first government proposal, is rejected outright for all the countries in our data set. However, probabilistic versions of this procedure which allow for occasional deviations from the rule cannot be rejected for up to 5 of the 11 countries we consider (namely, Denmark, Germany, Ireland, Italy, and Sweden), depending on the extent of the deviations. Second, the coalitional bargaining procedure based on proportional selection has stronger support in the data. In particular, for 8 out of the 11 countries in our sample (namely, Belgium, Finland, France, Germany, Iceland, Ireland, Netherlands, and Norway) we cannot reject the null hypothesis that proportional selection correctly approximates the data generating process. These findings are based on the results of standard non-parametric tests.

For the two countries where both procedures are supported by the data (i.e, Germany and Ireland), we then specify a simple conditional logit model to assess the relative importance of seat shares and order statistics in predicting the probability that parties are selected as formateur. The results of our analysis indicate that for both countries, once we control for the relative seat shares of parties in parliament, being the largest party does not increase

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[8]Warwick (1996) uses a simple logit model to address the issue of membership in the government coalition including the identity of the formateur. His analysis is primarily concerned with testing the implications of spatial theories on the composition of coalition governments.

the probability of making the first government proposal. Overall, we conclude that the coalitional bargaining procedure originally proposed by Baron and Ferejohn (1989), which postulates that the probability a party is selected as formateur is proportional to its seat share, can be justified on empirical grounds and captures important features of the data.

# 2 Data

Our empirical analysis is based on a newly collected data set, which contains information on 313 government formations in 11 multi-party democracies over the period 1945–1997. The countries we consider are Belgium (33 governments), Denmark (29 governments), Finland (36 governments), France Fourth Republic (28 governments), Germany (21 governments), Iceland (22 governments), Ireland (20 governments), Italy First Republic (54 governments), Netherlands (21 governments), Norway (24 governments), and Sweden (25 governments). All these countries have been parliamentary democracies since World War II and elect their parliament according to proportional representation.

For each observation in the sample, we observe the set of parties represented in the parliament, the share of parliamentary seats each party controls, and the number of attempts it takes to form a new government. Also, and most importantly, for each attempt we observe the identity (and party affiliation) of the person recognized to try to form the government and whether the attempt was successful. Keesings Record of World Events (1944–present) was used to identify the number of attempts for each government formation and the identity of the proposer on each attempt.[9] The list of parties represented in the parliament for each country and their shares of parliamentary seats at the time of each negotiation over the formation of a new government was taken from Mackie and Rose (1990) and, for later years in the sample, from Keesings, the *European Journal of Political Research*, and the *Lijphart Elections Archive*.[10]

Figures 1-4 contain an overview of the main features of our data. Figure 1 depicts the empirical distribution of the number of attempts to form a new government. As we can

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[9]Several other country-specific sources (such as local newspapers and databases) were used to confirm dubious entries in Keesings.

[10]The archive is available on the World Wide Web at http://dodgson.ucsd.edu/lij.

Figure 1: Distribution of the number of formation attempts
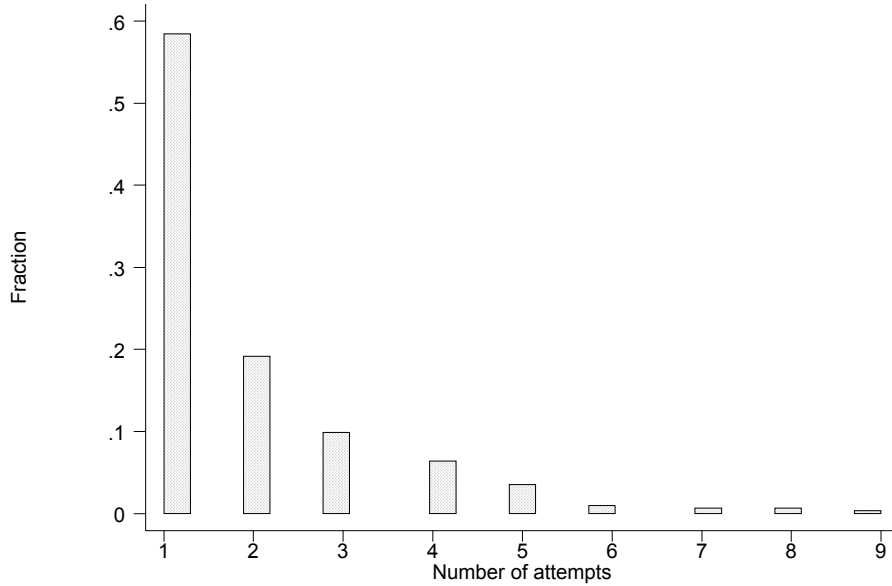


see from this figure, 58% of all government formations in our sample occurred at the first attempt, and approximately 90% of all government formations required no more than three attempts. Figure 2 contains the empirical distribution of the number of parties represented in the parliament at the time of a negotiation over the formation of a new government. The mean of the distribution is 7.35 parties, the median is 7 parties, and the mode (which accounts for about 20% of the observations) is 6 parties. Note that the number of parties involved in the government formation process can be as small as 3 and as large as 14.

In Figure 3, we present a histogram of the size (i.e., the seat share) of the parties recognized to make government proposals for all attempts.[11] As we can see from this figure, there is a positive relation between a party's size and its recognition probability. Larger parties are more likely to be selected to make government proposals than smaller parties. Figure 4 depicts the histogram of the relative rank of the parties recognized to make government proposals with respect to their size for all attempts. This figure clearly shows that, overall,

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[11]The last bin of the histogram includes parties whose seat share is larger than 40%. There are a few instances (20 observations) where a party controls more than 50% of the parliamentary seats. In these cases the majority party is always selected as the formateur.

Figure 2: Distribution of the number of parties
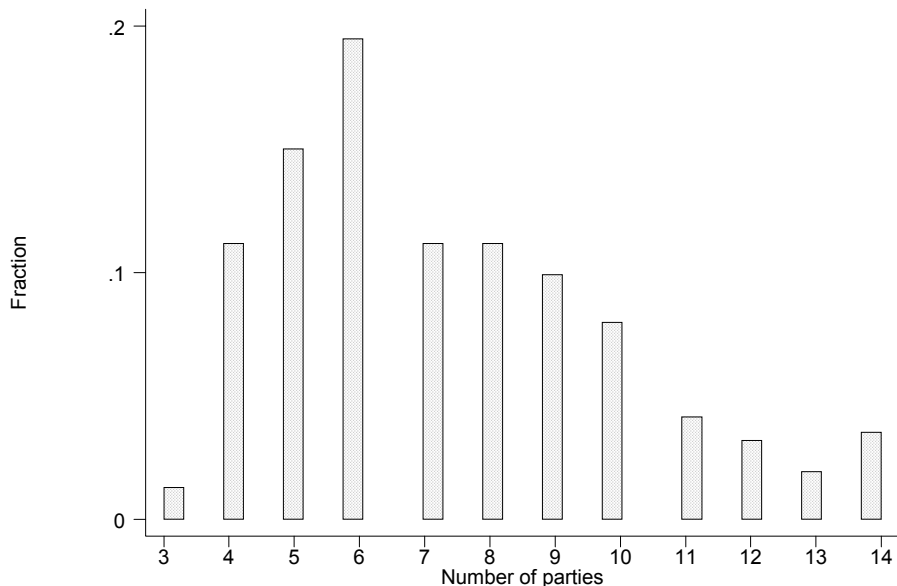


the largest party is more likely to be selected to make government proposals than all other parties. Moreover, we observe a negative relation between a party's relative rank in terms of size and its recognition probability.

# 3 Results

As stated in the Introduction, the main goal of our analysis is to assess empirically the validity of the two coalitional bargaining procedures that have been proposed in the literature, which represent the starting point of all strategic models of government formation in parliamentary democracies. To achieve this goal, we use the data described above and simple non-parametric methods to test the hypothesis that a specific coalitional bargaining procedure can serve as a representation of the data generating process. Since countries may differ with respect to the rules that govern the choice of formateurs, rather than testing our hypotheses by pooling all observations together we treat each country as an independent unit of analysis.

In this paper, we do not try to explain which coalition forms the government or how long it takes to form a government.[12] Rather, we are only interested in understanding how parties

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[12]For studies of these issues see, for example, Merlo (1997), Eraslan, Diermeier, and Merlo (2000), and

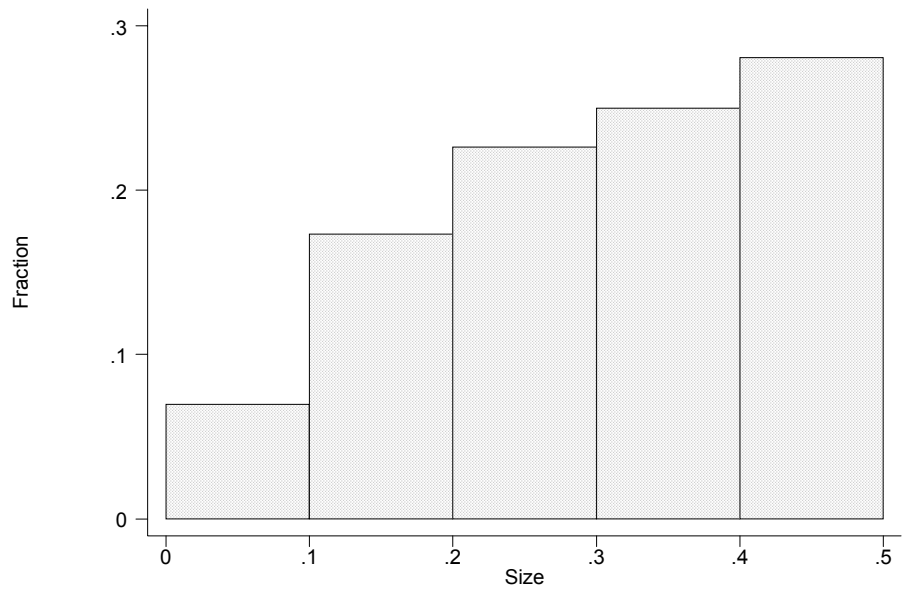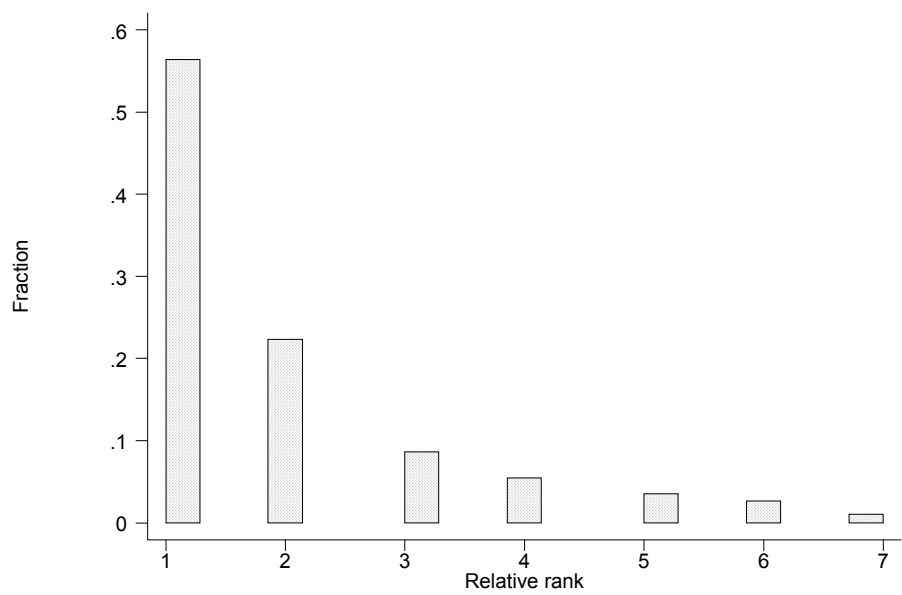Figure 3: Distribution of the size of the recognized parties



Figure 4: Distribution of the relative rank of the recognized parties

are chosen to make government proposals. Also, we want our empirical results to be general, and not to depend on the details of specific models of the government formation process. In particular, in order to incorporate into the empirical analysis the sample of observations following a failed government formation attempt, one would need to explicitly model the "selection" that generates these observations (e.g., the equilibrium agreement rule in a multilateral bargaining model).[13] Different models of the negotiations over the formation of a new government, however, have different implications regarding the likelihood of observing agreement on the first proposal and the distribution of delays in these negotiations. Hence, any inference one could draw on the coalitional bargaining procedure after the first formation attempt, would be conditional on the choice of a particular bargaining model of the government formation process. For this reason, we restrict attention to the choice of the first proposer (i.e., before any "selection" in the data), where these considerations do not apply.

We begin our analysis by introducing some useful notation. Let $j$ index a country. For each observation in the sample, let $N^j = \{1, ..., n_j\}$ denote the set of parties represented in the parliament in country $j$, where 1 denotes the largest party, 2 the second largest party, and so on, and $n_j$ denotes the number of parties represented in the parliament in country $j$. Let $\Pi^j = (\pi_1, ..., \pi_{n_j})$ denote the vector of the parties' seat shares in the parliament. To economize on notation, we suppress the subscript indexing an observation. Note, however, that both $N^j$ and $\Pi^j$ can vary across observations and are not constant for each country.

At the beginning of the government formation process, the head of state appoints a formateur, denoted by $\Bbbk$, to try to form a new government. If the formateur is a member of parliament or is formally affiliated with a party represented in parliament, then we identify the formateur with his party, in which case $\Bbbk \in N^j$. If instead the formateur is not a member of parliament and is not formally affiliated with any party represented in parliament, then we let $\Bbbk = 0$ and adopt the normalization $\pi_0 = 0$.[14] Hence, $\Bbbk \in \widetilde{N^j} = N^j \cup \{0\}$.

According to the (deterministic) coalitional bargaining procedure we call *selection-in-*

Diermeier and Van Roozendaal (1998).

[13] See, for example, Diermeier, Eraslan and Merlo (2000).

[14] Occasionally, public figures that are not affiliated with any party are selected as formateurs. In our data set, this event occurs in 2.6% of the cases.

*order* (Austen-Smith and Banks 1988), the probability that the head of state in country $j$ selects alternative $i \in \widetilde{N^j}$ to be the formateur is given by

$$P_i^{SO} = \begin{cases} 1 & \text{if} \quad i = 1, \\ 0 & \text{if} \quad i \neq 1. \end{cases} \tag{1}$$

In the first column of Table 1, we report the fraction of times the largest party is chosen to make the first proposal in a negotiation over the formation of a new government for each country in our sample. As we can see from this table, it is never the case that a country always selects the largest party as the formateur. Based on the evidence, we can thus conclude that, in its strict interpretation, selection-in-order can not be justified on empirical grounds.

A more useful question, however, is whether the main intuition behind the selection-in-order rule captures important features of the data. To address this question, we propose an amended (probabilistic) version of selection-in-order, where the probability that the head of state in country $j$ selects alternative $i \in \widetilde{N^j}$ to be the formateur is given by

$$P_i^{SO'}(\varepsilon) = \begin{cases} 1 - \varepsilon & \text{if} \quad i = 1, \\ \frac{\varepsilon}{n_j} & \text{if} \quad i \neq 1, \end{cases} \tag{2}$$

where $\varepsilon$ captures the deviation from the deterministic rule. Using this specification, we can then test whether or not for each country in our sample, a "small" deviation is sufficient to fit the data.

The non-parametric procedure we use to test this hypotheses is based on Pearson's goodness-of-fit test (see, e.g., Bickel and Doksum 1977). Let $p_j$ denote the empirical frequency of first proposals made by the largest party in country $j$ (that is, the numbers reported in the first column of Table 1), and let $\widehat{p}_j(\varepsilon)$ denote the predicted frequency according to the model specified in equation (2) for a given value of $\varepsilon$. Note that when we let $\varepsilon \to 0$, then $\widehat{p}_j(\varepsilon) \to 1$. Then, the test-statistic

$$Q_j^{SO}(\varepsilon) = T_j \left\{ \frac{[p_j - \widehat{p}_j(\varepsilon)]^2}{\widehat{p}_j(\varepsilon)} + \frac{[(1 - p_j) - (1 - \widehat{p}_j(\varepsilon))]^2}{1 - \widehat{p}_j(\varepsilon)} \right\}, \tag{3}$$

where $T_j$ is the number of observations in country $j$, has a chi-square distribution with one degree of freedom. Note that $Q_j^{SO}$ is a measure of the departure of the observed choices of a formateur from the theoretical predictions based on the probabilistic version of the

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Table 1: Selection in order of seat share*

|  | $p_j$ | $Q_j^{SO}(0.05)$ | $Q_j^{SO}(0.10)$ | $Q_j^{SO}(0.15)$ |
|---|---|---|---|---|
| Belgium | 0.48 | 150.32 | 63.20 | 34.51 |
| Denmark | 0.72 | 31.15 | 9.97 | 3.60$^{\#}$ |
| Finland | 0.44 | 193.71 | 83.01 | 46.44 |
| France | 0.07 | 455.01 | 213.59 | 133.12 |
| Germany | 0.71 | 24.56 | 8.05 | 3.03$^{\#}$ |
| Iceland | 0.41 | 135.51 | 58.91 | 33.54 |
| Ireland | 0.80 | 9.47 | 2.22$^{\#}$ | 0.39$^{\#}$ |
| Italy | 0.89 | 4.25 | 0.07$^{\#}$ | 0.64$^{\#}$ |
| Netherlands | 0.62 | 48.42 | 18.42 | 8.79 |
| Norway | 0.63 | 53.37 | 20.17 | 9.53 |
| Sweden | 0.80 | 11.84 | 2.78$^{\#}$ | 0.49$^{\#}$ |

* The symbol # denotes significance at the 5% level

selection-in-order rule. If $Q_j^{SO} \leq 3.84$ (that is, the departure is relatively "small"), then the null hypothesis that the model represents a true approximation of the data generating process cannot be rejected at conventional significance levels for country $j$.[15] The values of $Q_j^{SO}$ for each of the 11 countries in our data set are reported in columns 2, 3, and 4 of Table 1, for values of $\varepsilon$ equal to 0.05, 0.10, and 0.15, respectively. Several interesting observations emerge from this table. A 5% deviation from the deterministic selection-in-order rule (i.e., $\varepsilon = 0.05$), cannot account for the observed formateur choices in any of the countries in our sample. When we allow for looser interpretations of the selection-in-order rule (that is, we consider larger deviations), its ability to explain certain features of the data improves. In particular, when $\varepsilon = 0.10$ the formateur selection rule described in equation (2) cannot be rejected for 3 out of the 11 countries in our sample (namely, Ireland, Italy, and Sweden). When we increase the deviation form the deterministic rule to 15%, this finding extends to two additional countries (namely, Denmark and Germany).[16] Hence, we conclude that while selection-in-order has some support in the data, the empirical evidence is rather weak.

Next, we turn our attention to the coalitional bargaining procedure we call *proportional selection* (Baron and Ferejohn 1989). According to this procedure, the probability that the head of state in country $j$ selects alternative $i \in \widetilde{N^j}$ to be the formateur is given by

$$P_i^{PS} = \pi_i. \tag{4}$$

To test the null hypothesis that the model specified in equation (4) represents a true approximation of the data generating process, we use a non-parametric procedure based on Pearson's goodness-of-fit test similar to the one described above. Let $h = 1, 2, ..., 5$ index the bins of the support of the histogram of the size distribution of the parties chosen as formateurs, where $h = 1$ denotes the [0-0.1] bin, $h = 2$ denotes the (0.1-0.2] bin, and so on, with $h = 5$ denoting the (>0.4) bin.[17] Let $f_h^j$ denote the empirical frequency of the observations

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[15]Throughout the paper, we use 5% as our threshold level for statistical significance.

[16]Notice that when we increase $\varepsilon$ to 0.20 (that is, we allow for a 20% deviation from the deterministic selection-in-order rule), the set of countries where the rule cannot be rejected at conventional significance levels remains unchanged. The values of the country-specific tests for this case (not reported here) are available from the authors.

[17]As we pointed out in Section 2 above, there are a few observations in the data where the size of a party

within bin $h$ in country $j$, and let $\widehat{f}_h^j$ denote the predicted frequency according to the model specified in equation (3). Then, the test-statistic

$$Q_j^{PS} = T_j \sum_{h=1}^{5} \frac{\left(f_h^j - \widehat{f}_h^j\right)^2}{\widehat{f}_h^j}, \tag{5}$$

where $T_j$ is the number of observations in country $j$, has a chi-square distribution with four degrees of freedom. Like in the previous case, $Q_j^{PS}$ is a measure of the departure of the observed choices of a formateur from the theoretical predictions based on the proportional selection rule. If $Q_j^{PS} \leq 9.49$ (that is, the departure is relatively "small"), then the null hypothesis that the model represents a true approximation of the data generating process cannot be rejected at conventional significance levels for country $j$.[18]

The values of $Q_j^{PS}$ for each of the 11 countries in our data set are reported in Table 2.[19] As we can see from this table, proportional selection has much stronger support in the data than selection-in-order. In particular, for 8 out of the 11 countries in our sample (namely, Belgium, Finland, France, Germany, Iceland, Ireland, Netherlands, and Norway), we cannot reject the hypothesis that the observed formateur choices were generated using proportional selection. Hence, we conclude that the coalitional bargaining procedure based on proportional selection can be justified on solid empirical evidence.

To conclude our analysis, we focus attention on the two countries where the results of our non-parametric tests indicate that both coalitional bargaining procedures capture important aspects of the data (i.e., Germany and Ireland). In order to assess the relative importance of seat shares and order statistics in predicting the probability that parties are selected as formateur in each of these two countries, we specify a *conditional logit model* (McFadden 1973).[20] In particular, we write the probability that the head of state in country $j$ selects

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is larger than 0.5. Notice that our results remain the same if instead of 5 bins we consider 6 bins, with the last bin including only these observations.

[18] Note that the distribution of $Q_j^{PS}$ has four degrees of freedom. This explains why the critical value of the test at the 5% threshold is different from the one for $Q_j^{SO}$ whose distribution has only one degree of freedom.

[19] The values of $f_h^j$ and $\widehat{f}_h^j$ that are used to derive the tests are reported in Table 4 in the Appendix.

[20] Note that given the objective of our analysis, it would be inappropriate to use a *simple logit model*. The

Table 2: Selection proportional to seat share*

|            | $Q_j^{PS}$ |
|------------|------------|
| Belgium    | 8.99#      |
| Denmark    | 15.94      |
| Finland    | 2.98#      |
| France     | 8.04#      |
| Germany    | 9.20#      |
| Iceland    | 5.68#      |
| Ireland    | 7.90#      |
| Italy      | 35.09      |
| Netherlands| 7.63#      |
| Norway     | 4.65#      |
| Sweden     | 12.31      |

* The symbol # denotes significance at the 5% level

alternative $i \in \widetilde{N^j}$ as

$$P_i^{CL} = \frac{\exp(\beta_1 \pi_i + \beta_2 d_i)}{\sum_{\ell \in \widetilde{N^j}} \exp(\beta_1 \pi_\ell + \beta_2 d_\ell)}, \tag{6}$$

where $d_i \in \{0,1\}$ is an indicator variable which takes the value 1 if $i = 1$ (that is, party $i$ is the largest) and zero otherwise. This specification allows us to disentangle the effects of a party's seat share $(\beta_1)$ and its status as the dominant party in parliament $(\beta_2)$ on its probability of being selected as formateur.

Table 3: Maximum likelihood estimates*

|  | Germany | Ireland |
|---|---|---|
| $\beta_1$ | 0.29 | 0.11 |
|  | (0.14) | (0.04) |
| $\beta_2$ | -0.43 | 0.02 |
|  | (0.79) | (0.94) |
| *Log-likelihood* | -10.64 | -11.78 |

* Standard errors in parentheses

Table 3 contains the maximum likelihood estimates of the parameters for Germany and Ireland, respectively. As we can see from this table, for both countries, the coefficient associated with the dummy variable $d_i$ is not statistically different from zero at conventional significance levels. On the other hand, the coefficient associated with the variable $\pi_i$ is statistically different from zero at conventional significance levels both for Germany and Ireland. These results suggest that after controlling for the size of a party, whether or not that party is the largest one represented in parliament does not affect its probability of being selected to make the first government proposal in either country. Thus, the main insight provided by the proportional selection rule is sufficient to explain the selection of

question at hand is not whether or not a party is selected as formateur (simple logit), but which party from among a finite set of alternatives is selected (conditional logit).

formateurs in Germany and Ireland.

Overall, based on the findings of our analysis we conclude that the coalitional bargaining procedure originally proposed by Baron and Ferejohn (1989), which postulates that the probability a party is selected as formateur is proportional to its seat share, can be justified on empirical grounds and captures important features of the data.

# 5   Conclusion

In this article, we have presented an empirical analysis of formateur selection rules. In particular, we have tried to determine which one of the coalitional bargaining procedures commonly used in formal models of government formation can best account for what we observe in the data. Our analysis has yielded the following two main results. First, there is little empirical support for the coalitional bargaining procedure originally proposed by Austen-Smith and Banks (1988), which postulates that parties are selected to make government proposals in order of their seat shares. Second, by and large, the coalitional bargaining procedure originally proposed by Baron and Ferejohn (1989), which postulates that the probability parties are selected to make government proposals is proportional to their seat shares, fits the data well.

Formateur selection rules are an important building block of formal models of government formation. But the importance of these rules is not just confined to questions of modelling assumptions. In multi-party democracies, the choice of executive is typically not determined by an election alone. No party commands a majority of seats and there are typically many viable coalition governments. This makes the selection of a formateur a decision with important political consequences. For example, if changes in electoral outcomes do not lead to likely corresponding changes in government composition, voters may perceive this as a lack of control over their elected representatives. Concerns like these may lead to a constitutional crisis as recently witnessed in Italy.

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# Appendix

Table 4: Actual and predicted size distribution of formateurs

| | Belgium | | Denmark | | Finland | | France | |
|---|---|---|---|---|---|---|---|---|
| $h$ | $f_h^j$ | $\widehat{f}_h^j$ | $f_h^j$ | $\widehat{f}_h^j$ | $f_h^j$ | $\widehat{f}_h^j$ | $f_h^j$ | $\widehat{f}_h^j$ |
| 1 | 0.03 | 0.13 | 0.00 | 0.21 | 0.11 | 0.15 | 0.11 | 0.04 |
| 2 | 0.09 | 0.22 | 0.14 | 0.26 | 0.14 | 0.24 | 0.71 | 0.57 |
| 3 | 0.42 | 0.26 | 0.17 | 0.15 | 0.75 | 0.61 | 0.14 | 0.25 |
| 4 | 0.21 | 0.17 | 0.38 | 0.23 | 0.00 | 0.00 | 0.04 | 0.14 |
| 5 | 0.25 | 0.22 | 0.31 | 0.15 | 0.00 | 0.00 | 0.00 | 0.00 |
| | Germany | | Iceland | | Ireland | | Italy | |
| $h$ | $f_h^j$ | $\widehat{f}_h^j$ | $f_h^j$ | $\widehat{f}_h^j$ | $f_h^j$ | $\widehat{f}_h^j$ | $f_h^j$ | $\widehat{f}_h^j$ |
| 1 | 0.00 | 0.12 | 0.00 | 0.03 | 0.00 | 0.08 | 0.06 | 0.18 |
| 2 | 0.00 | 0.11 | 0.14 | 0.26 | 0.00 | 0.06 | 0.06 | 0.10 |
| 3 | 0.05 | 0.01 | 0.32 | 0.22 | 0.10 | 0.09 | 0.00 | 0.17 |
| 4 | 0.52 | 0.51 | 0.32 | 0.38 | 0.05 | 0.20 | 0.15 | 0.19 |
| 5 | 0.43 | 0.25 | 0.22 | 0.11 | 0.85 | 0.57 | 0.73 | 0.37 |
| | Netherlands | | Norway | | Sweden | | | |
| $h$ | $f_h^j$ | $\widehat{f}_h^j$ | $f_h^j$ | $\widehat{f}_h^j$ | $f_h^j$ | $\widehat{f}_h^j$ | | |
| 1 | 0.14 | 0.18 | 0.08 | 0.13 | 0.00 | 0.08 | | |
| 2 | 0.05 | 0.16 | 0.13 | 0.27 | 0.12 | 0.29 | | |
| 3 | 0.10 | 0.24 | 0.04 | 0.06 | 0.08 | 0.15 | | |
| 4 | 0.71 | 0.42 | 0.13 | 0.07 | 0.00 | 0.02 | | |
| 5 | 0.00 | 0.00 | 0.62 | 0.47 | 0.80 | 0.46 | | |