

Pre-Electoral Coalition Formation in Parliamentary Democracies

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Political parties that wish to exercise executive power in parliamentary democracies are typically forced to enter some form of coalition. Parties can either form a pre-electoral coalition prior to election or they can compete independently and form a government coalition afterwards. While there is a vast literature on government coalitions, little is known about pre-electoral coalitions. A systematic analysis of these coalitions using a new dataset constructed by the author and presented here contains information on all potential pre-electoral coalition dyads in twenty industrialized parliamentary democracies from 1946 to 1998. Pre-electoral coalitions are more likely to form between ideologically compatible parties. They are also more likely to form when the expected coalition size is large (but not too large) and the potential coalition partners are similar in size. Finally, they are more likely to form if the party system is ideologically polarized and the electoral rules are disproportional.

In most parliamentary democracies, single parties are unable to command a majority of support in the legislature. As a result, political parties wishing to exercise executive power are typically forced to enter some form of coalition. In effect, parties have two options. They can compete independently at election time and hope to be part of any government coalition that subsequently forms. Or they can form a pre-electoral coalition with another party (or parties) prior to the election in the hopes of governing together afterwards. The fact that coalition government is the norm rather than the exception across the world has encouraged a vast literature to develop in political science. However, the overwhelming majority of this literature focuses purely on government coalitions; pre-electoral coalitions are virtually ignored. This study seeks to redress this imbalance in our knowledge of coalitions by focusing explicitly on pre-electoral coalitions. Specifically, it aims to explain why pre-electoral coalitions form in some circumstances but not others.

Understanding the formation of electoral coalitions is important for at least three reasons. First, electoral coalitions can have a significant impact on election outcomes and the types of policy that are ultimately implemented. Consider an election in which there are two blocs of parties, one on the left and one on the right. The right-wing bloc has more electoral support than the left. Suppose the parties on the left form an electoral coalition and field a common candidate in each district. Suppose the parties on the right do not. They would be likely to lose the election. In this example, the possibility arises that a majority of voters could vote for a group of politicians who support similar policies and that these politicians might still lose the election by failing to co-ordinate sufficiently. The result is that the left party is elected to implement policies that a majority of voters do not want.

* Department of Political Science, Florida State University. The author is grateful to Bill Clark, Mike Gilligan, Matt Golder, Jonathan Nagler, Bing Powell, Alastair Smith and two anonymous reviewers for helpful comments. A detailed codebook, along with all of the data and computer code necessary to replicate the results and figures in this analysis, will be made available at the author's webpage on publication. STATA 8 was the statistical package used in this study.

In this case, it is the absence of an electoral coalition that has significant electoral and policy consequences.

Secondly, the coalition strategies employed by parties may also have important normative implications for the representative nature of governments. In the 'majoritarian version' of democratic government, a party with a majority (or plurality) of the vote wins the election and governs the country until the next election.¹ In this type of system the electorate directly influences which party exerts executive power and implements policy. In contrast, elections in the 'proportional representation version' of democratic government 'serve primarily as devices for electing representative agents in postelection bargaining processes, rather than as devices for choosing a specific executive'.² Since governments ultimately form beyond the scrutiny of the electorate in proportional systems, they may not reflect voter preferences very closely. Pre-electoral coalitions can alleviate this problem by allowing voters to identify government alternatives at election time. As a result, electoral coalitions may increase democratic transparency and provide coalition governments with increased legitimacy and stronger policy mandates.³ In fact, party leaders in the Netherlands, Ireland and Germany have made this type of argument publicly in order to explain their participation in electoral coalitions and in an attempt to appeal to voters.⁴

Finally, electoral coalitions are not rare phenomena. In the 292 elections used in this study, 44 per cent had at least one pre-electoral coalition and roughly a quarter of all the governments that formed after the elections were based on pre-electoral agreements. Moreover, in their recent study on the types of formal government coalition agreements in Western Europe, Strøm and Müller concluded that many of the coalition cabinets in their sample had an 'identifiable coalition agreement' and that more than a third of these were written *prior* to the election.⁵ Though the focus on written coalition agreements yields a conservative estimate of the occurrence of electoral coalitions, their work does emphasize the fact that coalition bargaining often occurs prior to elections in a wide range of countries. The strong empirical link between pre-electoral coalitions and government coalitions suggests that if we think that government coalitions are important, then it must logically follow that pre-electoral coalitions are as well.

Despite the well-developed coalition literature in comparative politics, there has been little theoretical or empirical research addressing pre-electoral coalitions since Duverger's

¹ G. Bingham Powell, *Elections as Instruments of Democracy: Majoritarian and Proportional Visions* (New Haven, Conn.: Yale University Press, 2000).

² John Huber, *Rationalizing Parliament* (New York: Cambridge University Press, 1996), p. 185.

³ Powell, *Elections as Instruments of Democracy*.

⁴ Jan De Jong and Bert Pijnenburg, 'The Dutch Christian Democratic Party and Coalitional Behaviour in the Netherlands: A Pivotal Party in the Face of Depillarisation', in Jeffrey Pridham, ed., *Coalitional Behaviour in Theory and in Practice: An Inductive Model for Western Europe* (Cambridge: Cambridge University Press, 1986), pp. 145–70; Paul Mitchell, 'Government Formation: A Tale of Two Coalitions', in Michael Marsh and Paul Mitchell, eds, *How Ireland Voted 1997* (Boulder, Colo.: Westview, 1999), pp. 243–63; Thomas Saalfeld, 'Germany: Stable Parties, Chancellor Democracy, and the Art of Informal Settlement', in Wolfgang C. Müller and Kaare Strøm, eds, *Coalition Governments in Western Europe* (Oxford: Oxford University Press, 2000), pp. 32–85.

⁵ Kaare Strøm and Wolfgang C. Müller, 'The Keys to Togetherness: Coalition Agreements in Parliamentary Democracies', in Lawrence D. Longley and Reuven Y. Hazen, eds, *The Uneasy Relationship Between Parliamentary Members and Leaders* (London: Frank Cass, 2000), pp. 255–82.

discussion of them in the 1950s.⁶ Both formal and empirical models of coalition behaviour focus predominantly on government coalitions that form after elections.⁷ The most likely place to find references to pre-electoral coalitions is in single-country case studies, particularly those focusing on France, Germany or Ireland.⁸ Books on government coalitions that include detailed information on particular countries may also briefly address pre-electoral coalitions that formed in certain elections. Rarely, one might also find references to pre-electoral coalitions in some quantitative studies of government coalitions. For example, Martin and Stevenson find that the probability of a particular government coalition forming increases if the parties in question had formed a pre-electoral coalition. Despite these occasional references, though, electoral coalitions have never been at the centre of any systematic, cross-national research.⁹ Given the prevalence of electoral coalitions and their potential impact on government composition and policies, I believe that this represents a serious gap in our knowledge about coalitions. This study begins to address this oversight by examining the conditions under which electoral coalitions are likely to form.

Before proceeding I define what I mean by a pre-electoral coalition. A pre-electoral coalition exists when multiple parties choose to co-ordinate their electoral strategies rather than run for office alone. This co-ordination can take many forms. For example, party leaders may announce to the electorate that they plan to form a government together if successful at the polls or they may simply agree to run under a single name with joint lists or nomination agreements. The common link, though, between these situations is that (i) parties never compete in elections as truly independent entities and (ii) the co-ordination of party strategies is made public.¹⁰

⁶ In the conclusion of his recent book, G. Bingham Powell notes: 'One area that cries out for more serious theoretical and empirical work is the appearance of announced preelectoral coalitions between political parties. We know too little about the origins of such coalitions and about the great variety of forms (shared manifestos, withdrawal of coalition partners, recommendations to voters) that they can take. But in a number of countries such coalitions unmistakably play a critical role at both the electoral and legislative levels.' (Powell, *Elections as Instruments of Democracy*, p. 247); see also Maurice Duverger, *Political Parties: Their Organization and Activity in the Modern State*, 2nd edn (New York: John Wiley, 1957).

⁷ For nice overviews of the vast empirical and formal literatures examining coalition behaviour, see Lanny W. Martin and Randy Stevenson, 'Government Formation in Parliamentary Democracies', *American Journal of Political Science*, 45 (2001), 33–50; and Michael Laver, 'Models of Government Coordination', *Annual Review of Political Science*, 1 (1998), 1–25.

⁸ David Hanley, 'Compromise, Party Management and Fair Shares: The Case of the French UDF', *Party Politics*, 5 (1999), 171–89; Mitchell, 'Government Formation'; Saalfeld, 'Germany'.

⁹ Martin and Stevenson, 'Government Formation in Parliamentary Democracies'. Kaminski uses a co-operative game-theoretic model to examine pre-electoral coalitions and mergers in Poland in the 1990s. However, his analysis has not been extended to other cases and does not take account of bargaining or policy issues (Marek Kaminski, 'Coalitional Stability of Multi-Party Systems: Evidence from Poland', *American Journal of Political Science*, 45 (2001), 294–312).

¹⁰ There are, of course, finer distinctions that could be made among the various types of electoral coalition. For example, one might argue that coalitions composed of parties with different geographical bases of support are different from those composed of parties that normally compete in the same districts. There are only two such cases in my dataset (the Christian Democratic Union and the Christian Socialist Union in Germany, and the National and Liberal parties in Australia), and their exclusion does not affect the inferences drawn in this article. In fact, I was forced to treat the Christian Democrats as a single party because the policy data I used coded them as such. In the Australian case, I re-estimated the models of coalition formation after recoding the electoral coalition as a single party; the results were qualitatively similar to those presented in this article. In general, given the limited research on pre-electoral coalitions, my main focus is on the defining characteristic of a pre-electoral coalition – that parties do not compete independently – rather than on the various ways in which these coalitions can be disaggregated.

In the next section, I present a theory of electoral coalition formation and outline several hypotheses. In the third section, I test these hypotheses using a random-effects probit model with a new dyadic dataset that I have collected consisting of every possible pair of parties in each election in twenty parliamentary democracies from 1946 to 1998. The results provide strong support for the hypotheses. The concluding section discusses implications for future research.

THEORY

There is an underlying logic to the formation of pre-electoral coalitions. Just as with government coalition formation, the emergence of pre-electoral coalitions is the result of a bargaining process among party leaders who care about policy and office benefits. For example, party leaders who wish to form a pre-electoral coalition must reach agreement over a joint electoral strategy and the distribution of office benefits that might accrue to them. This may involve outlining a common coalition platform, deciding which party gets to run the more powerful ministerial posts, choosing which party's candidates should step down in favour of candidates from their coalition partner(s) in particular districts, or determining which leader is to become prime minister. Clearly, any pre-electoral coalition bargaining process will involve a thorny set of distributional and ideological issues. Ultimately, party leaders must weigh the incentives to form electoral coalitions against the incentives to run independently.

Before elaborating on these incentives, it is worth noting that the pre-electoral coalition formation process is not quite the same as the government coalition formation process. First, electoral advantages that come from competing together as a coalition, particularly in countries with disproportional electoral rules, will create incentives to form an electoral coalition that is no longer relevant in the post-election context. Put differently, government coalition bargaining that begins only after the votes have been counted cannot influence the probability of electoral victory; electoral coalitions can. Secondly, it is possible that the ideological compatibility constraint facing potential coalitions is likely to be stronger prior to the election than afterwards. This is because voters might be unwilling to vote for electoral coalitions comprising parties with incompatible policy preferences; after the election, parties have more leeway to enter into these types of government coalitions because voters are no longer such an immediate constraint on politicians' actions.¹¹ My point here is only that it would be a mistake to assume immediately that the same factors that have been found to be important in the government coalition bargaining process will be the same factors that shape pre-electoral coalition formation.

The theory of electoral coalition formation that I present here is based on the belief that party leaders care about winning office benefits and about policy.¹² Each party leader must compare the utility that they expect to receive if they compete independently to the utility that they expect to receive if they compete as part of an electoral coalition. Consider first the case where party *i* decides to run independently. In this scenario, the party may be sufficiently successful at the polls that it gets to enter government. If the party wins more

¹¹ Parties may feel constrained in their coalition choices even after the election because they recognize that they will have to face the electorate again in the future. However, if party leaders think that a particular 'incompatible' coalition is likely to be successful in office, they may gamble that voters will not punish them in the next elections.

¹² Müller and Strøm, 'Political Parties and Hard Choices'.

than 50 per cent of the seats it could form a government on its own. In this situation the party would obtain all of the office benefits associated with being in power and could set policy at its own ideal point. Clearly, this would be the first choice for party *i*. However, party *i* will recognize that it is relatively rare for a single party to control a majority of the seats in most parliamentary systems. If party *i* is to enter government, then it is much more likely to do so as part of a government coalition. In this case, party *i* would receive some utility from its share of the office benefits and would suffer some utility loss from having government policy set at the ideal point of the coalition rather than at its own ideal point. Naturally, the utility loss suffered by each coalition partner would be lower the more ideologically compatible the government coalition. Finally, party *i* will know that there is some probability that it will not get to enter government if it runs independently. If this situation arises, then it will receive no office benefits and will suffer the utility loss associated with having the government set policy at the government ideal point and not at party *i*'s ideal point. Clearly, the lowest possible utility for party *i* from running independently would occur if it was in opposition and government policy was ideologically distant from its own ideal point.

The second case is when party *i* decides to run as part of an electoral coalition. Note that in order to form a pre-electoral coalition it is likely that party *i* will need to make some concessions in terms of policy and office to its potential coalition partners. For example, it is highly unlikely that party *i* would get to set the coalition policy exactly at its own ideal point and/or obtain all of the office benefits if the electoral coalition entered government. These concessions are essentially the same concessions that parties running independently would have to make when forming a government coalition after the election. These concessions may be more costly to make prior to an election than afterwards. This is because any concessions that must be made to other parties in terms of ministerial posts or coalition policies after an election can more easily be presented to party members as a consequence of the votes cast by the electorate; if the concessions occur before an election then they can only be blamed on the party leadership.¹³ Given this, one might reasonably wonder why parties do not simply wait until after the election to make these concessions. Indeed, in many elections this is precisely what happens.

However, the key thing to note about pre-electoral coalitions is that they can affect the probability that a party gets to enter government. Recognizing this, party leaders will form a pre-electoral coalition if they think that this will increase their probability of entering government to such an extent that the expected utility from doing this is larger than the expected utility from running independently. There are several reasons why pre-electoral coalitions might be electorally advantageous.¹⁴ First, it may be the case that an electoral coalition would attract a higher number of votes than any of the coalition parties would win running independently. This situation might occur if voters are risk averse with regard to the policy positions of potential future governments. That is, they prefer being able to identify a government alternative to being faced with a lottery over possible government

¹³ In cases where nomination agreements (to pick a single coalition candidate per district) are not necessary, and where parties can get away with vague coalition policy statements during the campaign, parties may be able to wait until after the election to proceed with more detailed bargaining. In this case, the parties are not likely to face larger costs for negotiating an electoral coalition before the election than they do afterwards.

¹⁴ I do not claim that pre-electoral coalitions will always be electorally advantageous. After all, it may be the case that a coalition is composed of parties that are so ideologically incompatible that their respective electorates refuse to vote for the coalition.

outcomes, even if the mean expected policy position in both cases is identical. The lottery over possible government outcomes is less desirable because the variance in possible policy positions is greater.¹⁵ By decreasing voter uncertainty over which government coalition might form and thus which policy would get implemented, the parties that form a pre-electoral coalition can attract more votes than would otherwise be the case.

Secondly, and more important, probably, is the strong empirical evidence that disproportional electoral institutions, such as low district magnitude or high electoral thresholds, provide an electoral bonus to large parties or coalitions through their mechanical effect on the translation of votes into seats.¹⁶ Since all electoral systems are disproportional to some extent, electoral coalitions may hold out significant advantages in terms of extra legislative seats. Although we do not yet have an entirely satisfactory model of how particular distributions of legislative seats get translated into government coalitions, it seems reasonable to think that these extra legislative seats will be positively correlated with an increased probability of being in government.

Several hypotheses follow from the fact that pre-electoral coalitions arise from a bargaining process in which party leaders compare the expected utility from running independently to the expected utility from forming a coalition. Just like government coalitions, pre-electoral coalitions should form more easily between parties with similar ideological positions.¹⁷ This is because the utility loss associated with having policy set at the coalition's ideal point rather than one's own ideal point is minimized to the extent that the coalition members are ideologically similar. Moreover, a party's electorate, along with its rank-and-file members, should be more willing to support the pre-electoral coalition if there is no need to make significant policy concessions. Thus, the first hypothesis is:

HYPOTHESIS 1: Pre-electoral coalitions are less likely to form when the ideological distance between potential coalition members increases.

Since the probability of being in government should be a function of the seat share controlled by a coalition, the likelihood of electoral coalition formation should increase with the expected size of the coalition. However, it is important to note that if the coalition becomes sufficiently large then at least one of the coalition members may think that it has a realistic chance of entering government by running independently. This suggests that an increase in the potential electoral coalition size should make coalition formation *more* likely when the coalition is small, but should make coalition formation *less* likely when the coalition size is large.

Note, though, that the point at which the electoral coalition becomes 'too large' will depend on the relative sizes of the coalition parties. For example, imagine two potential

¹⁵ James M. Snyder Jr and Michael M. Ting, 'An Informational Rationale for Political Parties', *American Journal of Political Science*, 46 (2002), 90–110; James Enelow and Melvin J. Hinich, 'A New Approach to Voter Uncertainty in the Downsian Spatial Model', *American Journal of Political Science*, 25 (1981), 483–93.

¹⁶ William Roberts Clark and Matt Golder, 'Rehabilitating Duverger's Theory: Testing the Mechanical and Strategic Modifying Effects of Electoral Laws', *Comparative Political Studies*, 39 (2006), forthcoming; Gary W. Cox, *Making Votes Count: Strategic Coordination in the World's Electoral Systems* (New York: Cambridge University Press, 1997); Arend Lijphart, *Electoral Systems and Party Systems: A Study of Twenty-Seven Democracies 1945–1990* (New York: Oxford University Press, 1994); Duverger, *Political Parties*.

¹⁷ Ian Budge and M. J. Laver, 'Coalition Theory, Government Policy and Party Policy', in Ian Budge and M. J. Laver, eds, *Party Policy and Government Coalitions* (New York: St Martin's Press, 1992).

two-party coalitions that each expect to win 40 per cent of the seats. In the first coalition each party expects to win the same percentage of seats (20 per cent). In the second coalition, one party expects to win 30 per cent of the seats while the other expects to win only 10 per cent. It seems obvious that the larger party in this second coalition is more likely to want to compete independently than are either of the *smaller* parties in the first potential coalition. This is the case even though the expected size of the two coalitions is the same. In other words, potential coalitions between parties that are asymmetric in size should be less likely to form when the overall coalition size becomes sufficiently large. This line of reasoning generates two hypotheses:

HYPOTHESIS 2: The probability that an electoral coalition forms is a quadratic function of the expected size of the potential pre-electoral coalition. It should be increasing in the first term (size) and decreasing in the second term (size squared).

HYPOTHESIS 3: If the expected coalition size is sufficiently large, then pre-electoral coalitions are less likely to form if there is an asymmetric distribution of electoral strength among the potential coalition parties.

Not entering government and being in opposition means receiving no utility from office benefits as well as suffering a utility loss from having policy implemented by the government. This loss in utility might be quite significant if the government is ideologically extreme relative to one's own ideal point. Parties will presumably want to do all that they can to keep such an 'extreme' government from coming to power. Parties will be likely to form a pre-electoral coalition in these circumstances if the probability of entering government is larger as a coalition than it is after running independently. In other words, parties will be more likely to form a pre-electoral coalition if this is the best way of keeping an 'extreme' government from coming to power.¹⁸ As I have already argued, the probability of entering government as an electoral coalition compared to running independently should be larger the more disproportional the electoral system, that is, the more the translation from votes to seats gives a 'bonus' to larger parties and penalizes smaller ones. While it is not possible to know the precise identity of the potential government prior to the election, parties should expect to suffer a greater utility loss from government policy when the party system is ideologically polarized. This line of reasoning generates two related hypotheses:

HYPOTHESIS 4: Party system polarization increases the likelihood of pre-electoral coalitions when the electoral system is sufficiently disproportional.

HYPOTHESIS 5: An increase in the disproportionality of the electoral system will increase the probability of forming a pre-electoral coalition. This positive effect should be stronger when the party system is polarized.

Although coalition analysts have suggested for years that coalitions are more likely to form between parties with similar policy preferences, four of the five hypotheses presented here have not appeared in the government coalition literature. To some extent, this should not come as a surprise. After all, the disproportionality of the electoral rules should not

¹⁸ Parties that care a great deal about policy would be willing to give up more office benefits in order to keep a relatively extreme government out of power than would parties that are equally concerned with both policy and office benefits.

affect the government coalition formation process. However, one would think that party leaders who are deciding whether to form a coalition and contemplating possibly being in opposition should take account of the ideological position of other potential governments, irrespective of whether this coalition bargaining process is occurring prior to the election or afterwards. However, it is rare for the government coalition literature to address the ideological positions of other potential governments.

EMPIRICS

In this section, I first describe the data and the methods employed to test the hypotheses outlined above. I then present and discuss the results.

Methods and Data

The dataset used in the following analysis is new and addresses electoral coalitions in 292 legislative elections in twenty advanced industrialized parliamentary democracies between 1946 and 1998.¹⁹ Unlike with government coalitions, it is difficult from a practical point of view to know accurately the total number of electoral coalitions that form. This is because these coalitions are rarely listed as such in official election results or on electoral ballots. This leaves the interested researcher scouring through the vast case study literature that addresses elections and party competition. The problem is magnified once one realizes that pre-electoral coalitions have rarely been the focus of scholarly attention in these studies. These practical reasons may explain why I have failed to locate a detailed database on these coalitions and why there have been no statistical analyses attempting to explain pre-electoral coalition formation prior to this study.²⁰

The data are organized in dyadic format to reflect the fact that the majority of pre-electoral coalitions in my sample (74 per cent) are between two parties.²¹ This means that each observation is a potential two-party coalition. Using a dyadic format yields 4,460 potential two-party electoral coalitions. An example might help illustrate the data structure. In the 1983 Australian election there were three parties, so there are three dyads: Labour–National, National–Liberal, and Liberal–Labour. If the two parties in a dyad formed a pre-electoral coalition (PEC), the dependent variable is coded as 1; it is coded 0 otherwise. If a coalition forms among more than two parties, each of the relevant dyads can be coded as part of the coalition accordingly. For instance, if a pre-electoral coalition forms among three parties on the French left, then the dyads Communist–Socialist, Communist–Greens and Socialist–Greens would each be coded as 1. I follow Budge *et al.* and include ‘all the significant parties which are represented in the national assembly’ in

¹⁹ The countries included are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden and the United Kingdom. I do not include Israel or Greece because data were not available for all of the relevant variables.

²⁰ While some scholars conducting cross-national analyses have addressed electoral coalitions, these coalitions have never been their primary focus (Powell, *Elections as Instruments of Democracy*; Martin and Stevenson, ‘Government Formation in Parliamentary Democracies’). Moreover, the information collected on various aspects of these coalitions is quite limited. For example, Martin and Stevenson identify only fourteen elections out of the 170 in their sample (about 8 per cent) as having a pre-electoral coalition. In fact, I have identified that there were actually sixty-nine elections that had pre-electoral coalitions in their sample (about 41 per cent).

²¹ Dyadic data are also the format of choice in the international relations literature addressing coalition or alliance behaviour.

the dataset, where the significance of a party is defined in terms of government coalition or blackmail potential.²² In effect, no parties with less than 0.01 per cent of the vote are included. Of the 4,460 potential two-party electoral coalitions in the dataset that could have formed, only 237 actually formed; this is roughly 5 per cent. As is often the case with dyadic data, the phenomenon of interest occurs only rarely.²³ As I noted earlier, though, the more substantively interesting figure to remember is that pre-electoral coalitions competed in 44 per cent of all elections in the dataset.

Given the dichotomous nature of my dependent variable, I use a probit model to test my hypotheses. In this model, the latent variable *PEC** measures the underlying propensity of party leaders in a dyad to form a pre-electoral coalition. The propensity to form a pre-electoral coalition *PEC** is modelled as a linear function of several independent variables:

$$PEC^* = \beta_0 + \beta_1 \text{Ideological Incompatibility} + \beta_2 \text{Polarization} + \beta_3 \text{Electoral Threshold} + \beta_4 \text{Polarization} \times \text{Electoral Threshold} + \beta_5 \text{Coalition Size} + \beta_6 \text{Coalition Size}^2 + \beta_7 \text{Asymmetry} + \beta_8 \text{Asymmetry} \times \text{Coalition Size} + \varepsilon_i,$$

where *PEC** is assumed to be less than 0 when we do not observe a pre-electoral coalition and greater than 0 when we do.

Ideological Incompatibility measures the absolute ideological distance between the parties in the dyad and is a proxy for the lack of ideological compatibility in the coalition. Data on the ideological position of each party are taken from the Manifesto Research Group, which evaluates each party on a one-dimensional scale that ranges from -100 (extreme left) to $+100$ (extreme right).²⁴

Polarization is a measure of the ideological dispersion in the party system and is calculated as the absolute ideological distance between the largest left-wing and right-wing party in the party system. The data are again taken from the Manifesto Research Group. This particular measure of party system polarization is most appropriate because of the fact that government coalitions are almost always going to contain either the main party on the left or the main party on the right. Thus, parties worried about a government that is 'extreme' (relative to them) coming to power will be concerned primarily with the ideological positions taken by these parties.

Electoral Threshold measures the effective electoral threshold.²⁵ This variable acts as a proxy for the disproportionality of the electoral system: the higher the effective threshold,

²² 'Government potential' refers to a party that is a former, actual, or (realistically) possible member of government. 'Blackmail potential' refers to a party that is able to affect the tactics of party competition among government-oriented parties (Ian Budge *et al.*, *Mapping Policy Preferences: Estimates for Parties, Electors, and Governments 1945–1998* (New York: Oxford University Press, 2001), p. 216. The Budge *et al.* criteria are drawn, in turn, from Giovanni Sartori, *Parties and Party Systems: A Framework for Analysis* (Cambridge: Cambridge University Press, 1976).

²³ Gary King and Langche Zeng, 'Explaining Rare Events in International Relations', *International Organization*, 55 (2001), 693–715.

²⁴ Budge *et al.*, *Mapping Policy Preferences*.

²⁵ Lijphart, *Electoral Systems and Party Systems*. The effective threshold is the mean of the threshold of representation and exclusion. It is calculated as $(50\%/(M+1)) + (50\%/2M)$, where M is the district magnitude. If there are legal thresholds and/or upper-tier seats, the calculation is slightly more complicated. See Rein Taagepera, 'Effective Magnitude and Effective Threshold', *Electoral Studies*, 17 (1998), 393–404; Rein Taagepera, 'Nationwide Inclusion and Exclusion Thresholds of Representation', *Electoral Studies*, 17 (1998), 405–17. The effective electoral threshold ranges from a low of 0.7 in the Netherlands since 1956 to a high of 35 in countries with single-member districts such as Canada and the United Kingdom.

the larger the disproportionality. An alternative measure of electoral system disproportionality is the district magnitude. While district magnitude has long been considered the decisive factor in determining the proportionality of an electoral system, it only captures one element of it.²⁶ In contrast, the effective threshold takes account of several aspects of the electoral system – the district magnitude, legal thresholds and upper-tier seats. It is for this reason that I prefer to use the effective threshold.²⁷ The interaction term *Polarization* \times *Electoral Threshold* is included to test the conditional nature of Hypotheses 4 and 5. Remember that party system polarization should only increase the likelihood of pre-electoral coalition formation when the electoral threshold is sufficiently high and that the positive effect of electoral system disproportionality should be even stronger when the party system is polarized.

Coalition Size measures the percentage of the total seats won by the two parties in the dyad in the previous election. This variable is a proxy for the expected success of the potential coalition in the current election.²⁸ In order to test the quadratic nature of Hypothesis 2 it is necessary to also include *Coalition Size Squared*.

Asymmetry measures the asymmetric strength of the two parties in the potential coalition dyad and ranges from 0 to 1, with larger numbers indicating a higher level of asymmetry. The interaction term *Asymmetry* \times *Coalition Size* is included to test the conditional nature of Hypothesis 3. In other words, the size of the coalition that makes pre-electoral coalitions less likely to form is modified by the level of coalition asymmetry. Higher levels of asymmetry mean that increasing the expected size of the coalition will have a negative effect on coalition formation more quickly than would be the case for a coalition with a low level of asymmetry.

Results and Interpretation

The results from two models are provided in Table 1. The first column presents results from a random-effects probit model where observations are clustered by election in order to determine whether any unobserved factors specific to each election influence pre-electoral coalition formation. The random effects are similar to fixed effects in that they are both used to model unobserved heterogeneity. However, they measure unobserved heterogeneity in different ways. The fixed effects model introduces dummy variables, essentially modelling unobserved heterogeneity as an intercept shift. In contrast, a random effects estimation models unobserved heterogeneity with an additional disturbance term that is drawn from a normal distribution with mean 0. There are at least two reasons why random effects are preferable here. Theoretically, a random-effects specification is more appropriate when inferences are being made about a population on the basis of a sample, as is the case here.²⁹ More practically, running a fixed-effects model by election would mean that all elections in which no pre-electoral coalition formed would be dropped. This

²⁶ Cox, *Making Votes Count*; Rein Taagepera and Matthew Shugart, *Seats and Votes: The Effects and Determinants of Electoral Systems* (New Haven, Conn.: Yale University Press, 1989); Douglas Rae, *The Political Consequences of Electoral Laws* (New Haven, Conn.: Yale University Press, 1967).

²⁷ Qualitatively similar results to those presented here are found if the log of average district magnitude is used instead of effective thresholds.

²⁸ The largest pre-electoral coalition to form occurred in the Austrian elections of 1959 between the People's party and the Socialist party. Between them, the coalition members controlled 95 per cent of the legislative seats.

²⁹ William H. Greene, *Econometric Analysis*, 5th edn (Englewood Cliffs, N.J.: Prentice-Hall, 2003); Cheng Hsiao, *Analysis of Panel Data*, 2nd edn (Cambridge: Cambridge University Press, 2003).

TABLE 1 *Determinants of the Propensity to Form Pre-Electoral Coalitions (PEC*)*

Regressor	Probit 1 (random effects)	Probit 2
<i>Ideological Incompatibility</i>	− 0.007** (0.002)	− 0.005** (0.002)
<i>Polarization</i>	− 0.003 (0.005)	− 0.001 (0.02)
<i>Electoral Threshold</i>	0.020 (0.01)	0.021** (0.005)
<i>Polarization × Electoral Threshold</i>	0.0005 (0.0003)	0.0002 (0.0001)
<i>Coalition Size</i>	0.051** (0.011)	0.043** (0.008)
<i>Coalition Size Squared</i>	− 0.0005** (0.0001)	− 0.0004** (0.0001)
<i>Asymmetry</i>	− 0.096 (0.299)	− 0.02 (0.22)
<i>Asymmetry × Coalition Size</i>	− 0.028** (0.009)	− 0.024** (0.006)
<i>Constant</i>	− 2.42** (0.31)	− 2.10** (0.18)
<i>N</i>	3,495	3,495
Log likelihood	− 616.64	− 670.72

* $p < 0.05$, ** $p < 0.01$ (two-tailed).

Notes: Dependent variable: pre-electoral coalition formed = 1; no pre-election coalition formed = 0. Standard errors are given in parentheses (robust for Probit 2). Random effects clustered on each election. Data: 4,460 dyads, twenty advanced industrialized countries, 1946–98.

would leave me with less than half of the observations and potentially introduces selection bias. The second column in Table 1 reports results from a probit model with robust standard errors. The results across the two models are very similar. However, a likelihood ratio test indicates that the random-effects probit model is superior.³⁰ As a result, my inferences are based on this model.

The results presented in Table 1 indicate that all of the coefficients have the predicted signs and are statistically significant where expected. For instance, the coefficient on *Ideological Incompatibility* (β_1) is expected to be negative since the likelihood of electoral coalition formation is expected to decline as the potential coalition partners become more ideologically incompatible. In fact, the results bear this out. Electoral coalitions are less likely to form the more ideologically incompatible the potential coalition members.

³⁰ The log-likelihood from the model with random effects is − 616.64, while the log-likelihood from the model without them is − 670.72. This gives a χ^2 statistic of 108.16, i.e. $2(-616.64 + 670.72) = 108.16$. The p -value of obtaining a χ^2 statistic of this magnitude or larger if the random effects are not required is less than 0.0001 with one degree of freedom. This strongly suggests that random effects should be retained.

However, the interpretation of the other coefficients is complicated by the use of multiple interaction terms. In addition, the fact that all of the coefficients in Table 1 relate to the latent propensity to form pre-electoral coalitions rather than the actual quantity of interest – the probability of forming a pre-electoral coalition – further complicates matters.³¹

Thus, rather than analysing the probit results in Table 1, we can get much more revealing and substantively meaningful information if we explicitly examine the marginal effect of each variable on the probability of pre-electoral coalition formation. A good way to examine the marginal effects of variables in interaction models is graphically.³²

Hypothesis 5 states that an increase in the disproportionality of the electoral system will increase the probability of pre-electoral coalition formation and that this positive effect should be stronger when the party system is more polarized. In Figure 1, I plot the marginal effect of a one-unit increase in the electoral threshold on the probability that an electoral coalition forms across the observed range of party system polarization when all other variables are held at their means. The solid black line indicates how this marginal effect changes with party system polarization. The 95 per cent confidence intervals around this

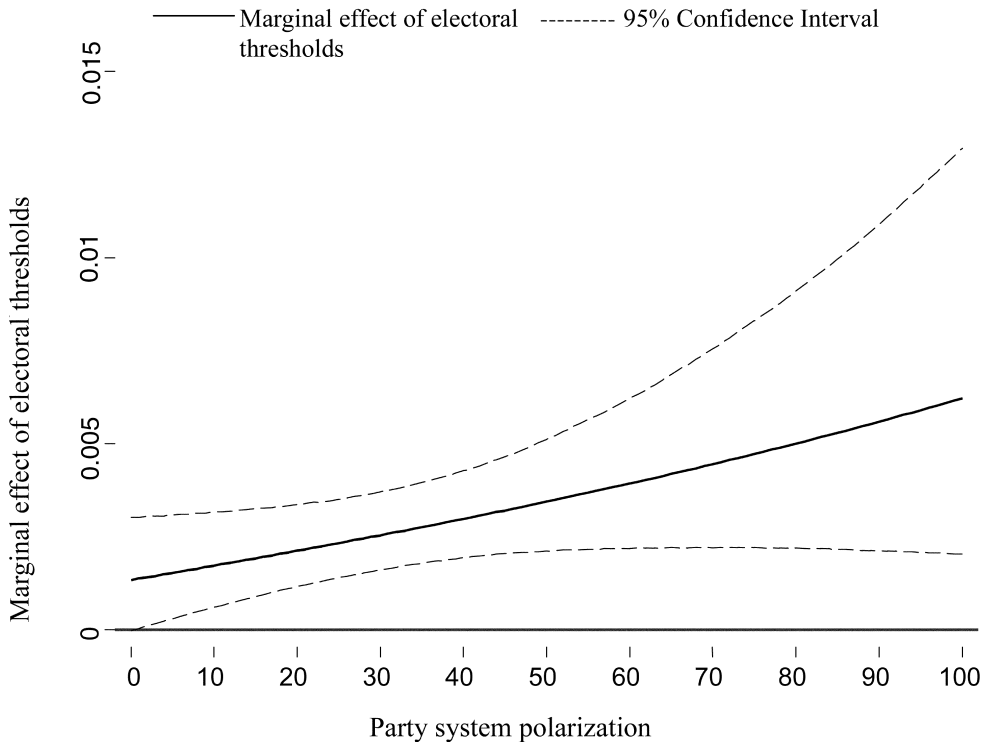


Fig. 1. Marginal effect of a one unit increase in electoral thresholds on the probability of electoral coalition formation

³¹ Gary King, Michael Tomz and Jason Wittenberg, 'Making the Most of Statistical Analyses: Improving Interpretation and Presentation', *American Journal of Political Science*, 44 (2000), 341–55.

³² Thomas Brambor, William Roberts Clark and Matt Golder, 'Understanding Interaction Models: Improving Empirical Analyses', *Political Analysis*, 14 (2006), 63–82.

line allow us to determine the conditions under which electoral thresholds have a statistically significant effect on the likelihood of pre-electoral coalition formation.³³ The marginal effect is statistically significant whenever the upper and lower bounds of the confidence interval are both above (or below) the zero line. Figure 1 clearly indicates that more disproportional electoral systems increase the probability of electoral coalition formation at all levels of party system polarization. Figure 1 also indicates that this positive effect increases with party system polarization. Overall, Hypothesis 5 is strongly confirmed by the evidence.

Hypothesis 4 states that party system polarization should only increase the likelihood of pre-electoral coalitions when the electoral system is sufficiently disproportional. In Figure 2, I plot the marginal effect of a one unit increase in party system polarization across the observed range of electoral system disproportionality when all other variables are held at their means. Again, the solid black line indicates how this marginal effect changes with the electoral threshold when all other variables are set at their means. The dashed lines continue to represent 95 per cent confidence intervals. Figure 2 indicates that party system polarization only makes pre-electoral coalitions more likely when the electoral threshold is greater than twenty-seven. To get a better feel for the substantive significance of this result, it should be noted that 11.3 per cent of the sample has an electoral threshold greater

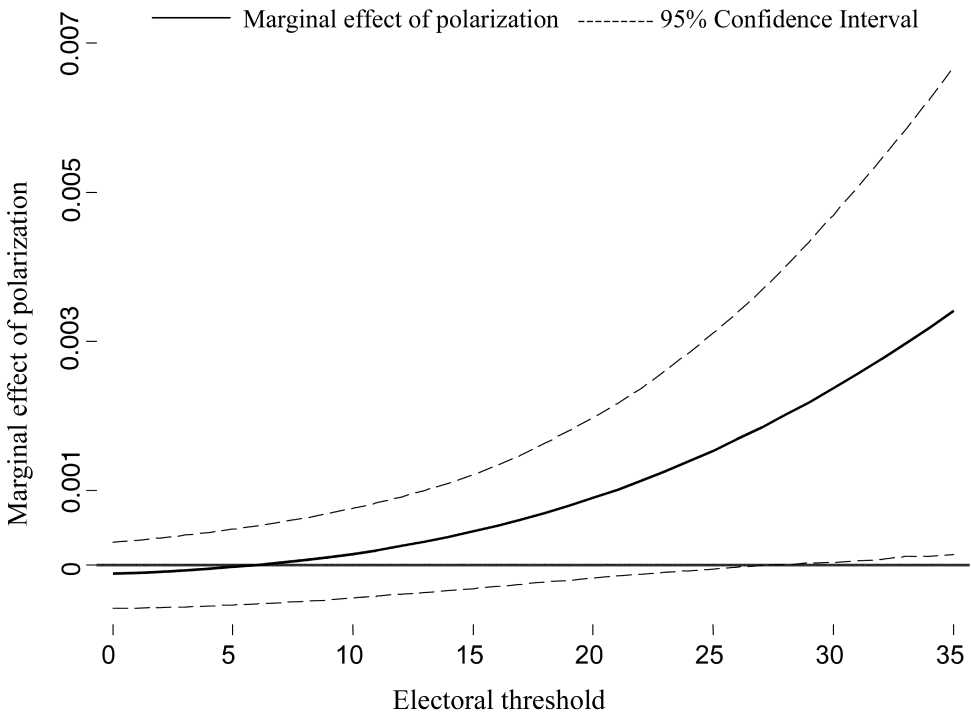


Fig. 2. Marginal effect of a one unit increase in party system polarization on the probability of electoral coalition formation

³³ Confidence intervals are based on simulations using 10,000 draws from the estimated coefficient vector and variance-covariance matrix.

than this. In other words, an increase in party system polarization is expected to increase the probability of pre-electoral coalition formation in roughly a tenth of the observed cases. In sum, Figure 2 provides strong support for Hypothesis 4.

Hypothesis 3 states that an increase in the asymmetric distribution of electoral strength among coalition partners should reduce the likelihood of electoral coalition formation when the potential coalition size is sufficiently large. As a result, I plot the marginal effect of a 0.01 unit increase in electoral coalition asymmetry across the possible range of coalition size in Figure 3. Again, all other variables are held at their means. It is easy to see that *Asymmetry* only makes electoral coalition formation less likely when the potential coalition size is greater than 11 per cent of the legislative seats. This is exactly as predicted and is substantively significant since potential coalition size is greater than 11 in 84.4 per cent of the sample observations. Thus, Figure 3 provides strong support for Hypothesis 3.

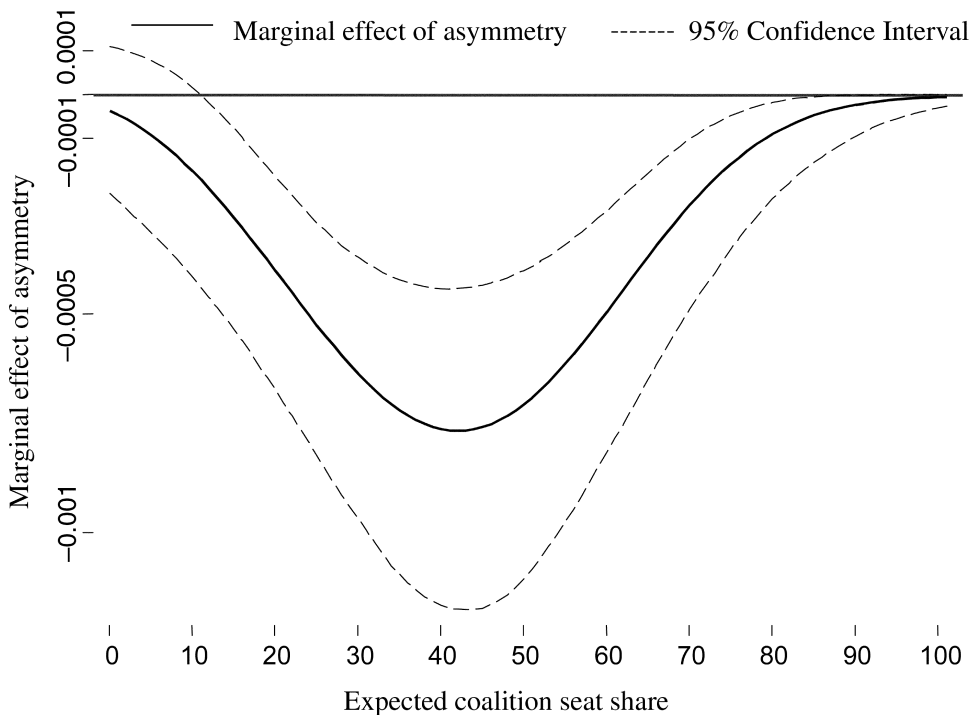


Fig. 3. Marginal effect of a 0.01 unit increase in asymmetry on the probability of electoral coalition formation

Hypothesis 2 states that pre-electoral coalition formation should be a quadratic function of expected coalition size – the likelihood that a pre-electoral coalition forms should initially rise with expected coalition size and then fall. In Figure 4, I plot the marginal effect of a one unit increase in expected coalition size at all possible values of coalition size when *Asymmetry* is one standard deviation below its mean (Figure 4a), when *Asymmetry* is at its mean (Figure 4b), and when *Asymmetry* is one standard deviation above its mean (Figure 4c). Consider Figure 4a first. If the potential coalition is expected to win less than 34 per cent of the seats, then increasing the coalition size makes electoral coalitions more likely.

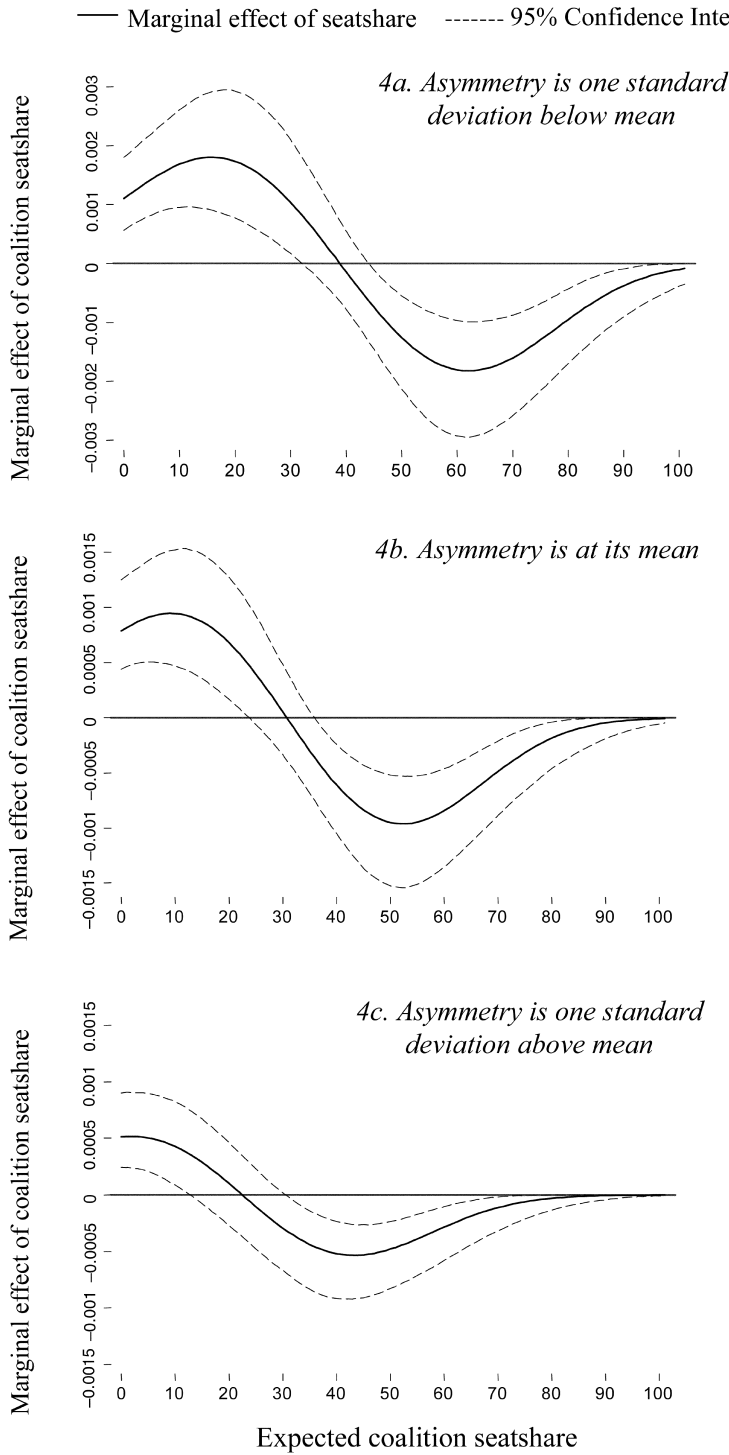


Fig. 4. Marginal effect of a one unit increase in expected coalition size on the probability electoral coalition formation

Over 47 per cent of the sample falls into this category. However, if the potential coalition is expected to win more than 44 per cent of the seats, then increasing the coalition size any more is expected to make electoral coalitions less likely. Roughly 41 per cent of the potential coalition dyads expect to win more seats than this. Thus, Figure 4a provides strong evidence that an increase in coalition size will make electoral coalitions less likely when the expected size of the coalition is large, but more likely when the expected size is small. While Figures 4b and 4c provide corroborating evidence for this, they also allow the reader to see how increasing the asymmetry between coalition parties conditions the effect of an increase in coalition size. Note that as we increase *Asymmetry* (move from 4a to 4b to 4c), the coalition size at which making the coalition any larger would reduce the probability of electoral coalition formation falls. For example, I already noted that if *Asymmetry* is one standard deviation below its mean, then increasing coalition size makes pre-electoral coalitions less likely when the coalition is expected to win more than 44 per cent of the seats. However, the point at which an increase in coalition size is expected to make electoral coalitions less likely is at 31 per cent of the seats if *Asymmetry* is one standard deviation above its mean. Overall, the evidence presented in Figure 4 provides strong support for both Hypothesis 2 and Hypothesis 3.

Thus far, I have shown that the explanatory variables affect the probability of electoral coalition formation in the predicted manner. However, it is natural to ask whether these effects are substantively significant.³⁴ How much more likely is a pre-electoral coalition to form if I increase one of the variables by a standard deviation? How many more (or fewer) pre-electoral coalitions would be observed in a sample of this size if one of the variables increased by a standard deviation? This information is presented in Table 2.

The first and second columns in Table 2 indicate the predicted probability that a pre-electoral coalition forms when the row variable is at its mean or one standard deviation higher, respectively, while all of the variables are held at their means (unless otherwise specified). Thus, the predicted probability that a coalition forms when all the variables are at their means is 0.032 with a 95 per cent confidence interval (0.020, 0.049). Similarly, the predicted probability when *Electoral Threshold* is at its minimum observed value and all other variables are at their means is 0.018 (0.009, 0.030). The second column indicates the predicted probability of pre-electoral coalition formation when the row variable increases by one standard deviation above its mean, while all other variables are held at their means. For instance, the predicted probability of electoral coalition formation is 0.024 (0.013, 0.039) when *Ideological Incompatibility* is one standard deviation above its mean and all other variables are at their means. The third column indicates the change in predicted probability between the first and second column. In other words, the third column captures the effect of a one standard deviation increase in the row variable on the predicted probability of electoral coalition formation. Thus, an increase of one standard deviation in the electoral threshold above its mean increases the probability that an electoral coalition

³⁴ One might also wonder about the predictive power of my analysis. As with all rare event data, the predicted probability of a pre-electoral coalition forming is quite low (King and Zeng, 'Explaining Rare Events in International Relations'). However, the results from my analysis show that the mean predicted probability of an electoral coalition forming for those dyads that actually did form an electoral coalition (0.10) is twice as large as the mean predicted probability for those dyads that did not form a coalition (0.05). The fact that simulations show that we can be highly confident (greater than 99 per cent) that these mean predicted probabilities are different provides support for the predictive power of my analysis.

TABLE 2 *Substantive Effect of Explanatory Variables on Pre-Electoral Coalition Formation*

Variable	Predicted Probability				
	Mean	Plus 1 st. dev.	Difference in probability	% Change in probability	Numerical significance
<i>Ideological Incompatibility</i>	0.032 (0.020, 0.049)	0.024 (0.013, 0.039)	-0.008 (-0.015, -0.002)	-26.1 (-42.6, -7.8)	-37.3 (-67.5, -10.6)
<i>Polarization (Threshold at min)</i>	0.018 (0.009, 0.030)	0.016 (0.007, 0.031)	-0.002 (-0.009, 0.007)	91.3 (54.5, 142.0)	+7.2 (-40.9, +32.2)
<i>Polarization (Threshold at max)</i>	0.169 (0.101, 0.252)	0.245 (0.149, 0.358)	0.076 (0.003, 0.157)	147.8 (101.5, 207.2)	+339.7 (+12.5, +698.5)
<i>Electoral Threshold (Polarization at min)</i>	0.031 (0.014, 0.055)	0.047 (0.022, 0.083)	0.016 (-0.0002, 0.038)	156.6 (99.5, 237.0)	+71.3 (-0.7, +170.3)
<i>Electoral Threshold (Polarization at max)</i>	0.044 (0.011, 0.108)	0.137 (0.052, 0.264)	0.092 (0.031, 0.183)	361.0 (169.6, 724.9)	+414.1 (139.5, 815.0)
<i>Asymmetry (Coalition Size at min)</i>	0.009 (0.003, 0.019)	0.008 (0.003, 0.018)	-0.002 (-0.005, 0.004)	94.9 (55.9, 149.7)	-2.7 (-22.9, +17.3)
<i>Asymmetry (Coalition Size at max)</i>	0.809 (0.390, 0.992)	0.551 (0.150, 0.911)	-0.258 (-0.419, -0.076)	-34.3 (-64.9, -7.8)	-1,152.6 (-1,866.7, -338.5)

Notes: The first and second columns present the predicted probability of a pre-electoral coalition forming when the row variable is either at its mean or one standard deviation higher, while all other variables are held at their means (unless otherwise specified). The third and fourth columns present the difference and percentage change in the two predicted probabilities respectively. Given a sample size of 4,460, the final column indicates how many more (or fewer) electoral coalitions are expected to form if the row variable was one standard deviation above its mean. All estimates have 95 per cent confidence intervals in parentheses. Confidence intervals were calculated via simulation.

forms by 0.092 (0.031, 0.183) when *Polarization* is at its maximum observed value and the other variables are at their means.

The fourth and fifth columns provide perhaps the most substantively interesting information. The fourth column indicates the percentage change in predicted probability that arises from a one standard deviation increase in the row variable. This is often referred to as the 'relative risk'. Thus, a one standard deviation increase in *Ideological Incompatibility* above its mean *reduces* the probability that a pre-electoral coalition will form by 26.1 per cent (7.8, 42.6) when all the other variables are set at their means. It should be noted that although the predicted probabilities associated with the different scenarios presented in Table 2 appear quite small, it is clearly the case that changes in each explanatory variable can be of significant substantive importance. As King and Zeng note, 'relative risks are typically considered important in rare event studies if they are at least 10–20%' when we increase an explanatory variable from one standard deviation below

its mean to one standard deviation above its mean.³⁵ Note that here I am only increasing each variable by one standard deviation above its mean and yet the best estimate as to the relative risks is higher than 20 per cent in all cases.

Finally, the fifth column indicates how many more (or fewer) electoral coalitions there would be in a sample of this size (4,460) if the row variable increases by one standard deviation above its mean. This is calculated as the difference in predicted probability multiplied by the sample size. Thus, a one standard deviation increase in *Ideological Incompatibility* above its mean would lead to 37.3 (10.6, 67.5) fewer electoral coalitions when all other variables are held at their means. If the electoral threshold increases by a standard deviation when party system polarization is at its maximum observed value, then we would expect to see an extra 414.1 (139.5, 815.0) electoral coalitions. Given that there were only 237 pre-electoral coalitions in the dataset, the numbers in this column represent substantial changes.

Taken together the results presented in Table 2 indicate that the explanatory variables not only have a statistically significant effect on pre-electoral coalition formation but that they have a substantively meaningful effect as well. Even a small change in the effective electoral threshold (all else equal) can have a significant effect on the likelihood of pre-electoral coalition formation. If all of the countries in the sample were to move from a very low threshold of 2 per cent (Denmark in the 1970s) to a slightly higher threshold of 8.9 per cent (Norway in the 1970s), the percentage change in predicted probabilities would be 173 per cent, and we would see an additional 61 pre-electoral coalitions. More dramatic changes to the electoral threshold would have even larger effects on pre-electoral coalition formation, particularly in countries with several smaller or medium-sized parties.

CONCLUSION

Given that it is often infeasible for a single party to govern alone in parliamentary democracies, party leaders are faced with a strategic choice. They can either form an electoral coalition prior to the election or participate in government coalition bargaining afterwards. Despite the fact that electoral coalitions are common in many countries, that they often affect electoral and policy outcomes, and that they influence the ability of voters to pick governments of their own choosing, the vast majority of the coalition literature has ignored them. As a result, this analysis represents the first attempt systematically to analyse the factors that influence the likelihood of electoral coalition formation in a cross-national setting.

The implicit claim in the government coalition literature is that pre-electoral coalitions are a simple function of electoral rules.³⁶ For example, Strøm, Budge and Laver state that, 'Systems not based on PR lists tend to force parties to coalesce before elections in order to exploit electoral economies of scale. The more disproportional the electoral system, the greater the incentives for pre-electoral alliances.'³⁷ However, a quick glance at the data suggests that this explanation is not especially satisfying. Pre-electoral coalitions do form in highly proportional electoral systems. For instance, pre-electoral coalitions formed in

³⁵ King and Zeng, 'Explaining Rare Events in International Relations', p. 711.

³⁶ Kenneth Shepsle and Mark S. Bonchek, *Analyzing Politics: Rationality, Behavior, and Institutions* (New York: W. W. Norton, 1997); Michael Laver and Norman Schofield, *Multiparty Government: The Politics of Coalition in Europe*, 2nd edn (Ann Arbor: University of Michigan Press, 1998).

³⁷ Kaare Strøm, Ian Budge and Michael J. Laver, 'Constraints on Cabinet Formation in Parliamentary Democracies', *American Journal of Political Science*, 38 (1994), 303–35, p. 316.

six of the sixteen Dutch elections and in ten of the fifteen Austrian elections that occurred between 1946 and 1998. (Of these, five Dutch and nine Austrian pre-electoral coalitions entered government following the election.) Moreover, the focus on electoral institutions that change relatively infrequently makes it impossible to explain the temporal variation in electoral coalition formation that occurs within countries.

The theory presented here does not deny that electoral rules are an important determinant of electoral coalition formation. However, it recognizes that there are costs as well as benefits to forming a pre-electoral coalition. The emphasis on electoral institutions tends to address the benefits that might accrue from forming an electoral coalition but ignores the costs. Pre-electoral coalitions emerge from a bargaining process in which party leaders must reach an agreement on how they would distribute office benefits and what type of policies they would implement if they came to power. It is precisely because parties must make concessions on office and policy that helps to explain why pre-electoral coalitions often fail to form even when there are clear electoral incentives for them to do so. The theory that I present explicitly takes account of these costs. The hypotheses that are generated by this approach were subjected to several tests using a new dataset containing information on potential coalition dyads in twenty industrialized parliamentary democracies from 1946 to 1998. I find that pre-electoral coalitions are more likely to form between ideologically compatible parties. They are also more likely to form when the expected coalition size is large, but not too large, and when the potential coalition partners are similar in size. Finally, they are more likely to form if the party system is polarized and the electoral institutions are disproportional.

The theory of pre-electoral coalition formation that I provide is much richer than the implicit claims made in the government coalition literature. An advantage of this richness is that it helps make sense of the temporal variation in electoral coalition formation that occurs in some countries. Consider the case of France. The French Socialist party only really overcame its reluctance to form electoral alliances with the French Communist party (PCF) once the Communist party's dogmatic allegiance to Stalinism had begun to wane in the late 1960s and early 1970s. Prior to this, electoral coalitions between these parties had been uncommon due to the traditional and deep-seated hostility on the non-Communist left towards the PCF.³⁸ This indicates the importance of having ideologically compatible coalition partners to the electoral coalition formation process. Evidence from France also highlights the important role that party system polarization can play. For example, the mainstream right parties were much more willing to form electoral coalitions in the 1960s and 1970s when the Communist party was the dominant party on the left compared to later decades when the Socialist party became the main opposition party. Electoral rules cannot explain this temporal variation in the willingness of parties to form pre-electoral coalitions on the left or right in France since they have remained constant (with the exception of the 1986 legislative elections) across this time. The theory that I propose can.

As I suggested earlier, governments based on pre-electoral coalitions potentially offer significant normative advantages over government coalitions that simply form after elections. In many ways, pre-electoral coalitions offer the opportunity of combining the best elements of the majoritarian vision of democracy with the best elements of the proportional vision of democracy.³⁹ For example, they offer one way to improve the

³⁸ Tony Judt, *Marxism and the French Left: Essays on Labour and Politics in France, 1830–1981* (Oxford: Clarendon Press, 1986).

³⁹ Powell, *Elections as Instruments of Democracy*.

accountability, legitimacy and identifiability of coalition governments as well as giving them a stronger mandate to govern. The analysis presented here suggests that if policy makers wanted to do this, then one way they could increase the likelihood of electoral coalition formation would be to make the electoral rules more disproportional. Of course, the actual impact of doing this would vary from country to country depending on the size and ideological polarization of the party system.

Further research on electoral coalitions is obviously necessary. For example, it would be useful to know more about other differences between the coalitions that form prior to elections and those that form afterwards. For instance, what systematic features of parties or party systems account for the timing of coalition formation? Thus one direction for future research might be to analyse the factors that would make bargains more difficult or more costly prior to elections as opposed to afterwards. Examining how the incentives to form pre-electoral coalitions may change in response to an electoral coalition forming between other parties in the party system would also be a useful direction of inquiry.⁴⁰ Finally, it is important to begin looking at the effects that pre-electoral coalitions may have on various aspects of government formation, function and duration. Is it merely the case that coalition governments based on pre-electoral coalitions are more pleasing from a normative point of view, or are they different in other ways from governments that are formed 'from scratch' after the election? The theory of pre-electoral coalition formation presented in this article will hopefully encourage scholars to consider the link between pre-electoral and post-electoral coalitions explicitly.

⁴⁰ I thank an anonymous reviewer for raising this point.