Regional Government Formation in Varying Multi-Level Contexts

A Comparison of Germany, Netherlands, Spain and Sweden

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Abstract

Even though governing in multi-level settings has become a prominent research field, there are few comparative studies focusing on the question of what determines sub-national coalition outcomes in such settings. In this paper we set out to study regional government formation in Germany, Netherlands, Spain and Sweden. We draw a number of hypotheses from the coalition literature and from the literature on governance in multi-level settings. For example, we hypothesize that parties at the regional level are likely to ‘copy’ the pattern of government formation at the national level, and that we will thus find a high degree of national-regional congruence in coalition outcomes. We also hypothesize that the role of congruence varies across contexts. In order to evaluate coalition theories we need access to regional data on party policy positions and to obtain such data we have analyzed regional manifestos by using automated content analysis. Our results show that parties in Germany, Netherlands and Sweden are more likely to form congruent coalitions, and that parties are less likely to form such coalitions in regions where the elections are highly ‘localized’ and in regions that have strong competencies.
Introduction

Governing in multi-level settings has become a prominent research field in comparative politics (e.g., Hooghe and Marks 2003; Pollack 2005). While one approach focuses on the impact of European Integration on policy implementation in sub-national areas (Hooghe 1996; Keating 1998; Jeffery 2000; Bulmer et al. 2006), other researchers concentrate on patterns of electoral and party politics in federally structured states (Deschouwer 2003; Hough and Jeffery 2006). Studies on party competition at the sub-national level in the United Kingdom, Belgium, Spain and Germany have revealed that sub-national parties adopt different policy positions as well as diverse coalition strategies compared to parties at the national level (see e.g. Swenden 2002; Pogorelis 2005; Bräuninger and Debus 2008; Debus 2008; Ştefuriuc 2009).

This paper focuses on the aspect mentioned last and asks to which degree political parties at the regional level deviate from the policy positions and coalition strategies of the respective parties at the national level. We start out by estimating the policy positions of political actors on both levels of party competition by applying the ‘wordscores’ method developed by Laver et al. (2003) to regional and national party manifestos. These data are then used to evaluate whether the specific policy positions of regional-level parties or the congruence with the patterns of party competition at the national level influence the outcome of the government formation process in the regions. Thus, the main question that we focus on in this paper is ‘what are the determinants of coalition outcomes in sub-national government formation?’.

Among the few studies that exist of sub-national government formation, some have analyzed sub-national governments as independent systems, and have focused on determinants that can be drawn from more ‘classical’ coalition theories, focusing on the different goals that parties may be driven by, such as office-seeking and policy-seeking (see e.g. Bäck 2003a; 2003b). Other researchers have instead treated sub-national systems as integrated within specific multi-level settings, and have drawn on studies on ‘nested game’ strategies (Tsebelis 1988; 1990), as well as from approaches on governing in multi-level systems (e.g., Downs 1998; Deschouwer 2003, 2006; Thorlakson 2006, 2007). The main hypothesis is that parties at the sub-national level are likely to ‘copy’ the pattern of government formation at the national level, and thus show a high degree of national-regional congruence in coalition outcomes (see e.g. Debus 2008; Ştefuriuc 2009). Among studies focusing on the multi-level character of sub-national government formation, some hypotheses have also been presented which state that the importance of ‘congruence’ should vary across contexts. However, more systematic evaluations of such contextual hypotheses are scarce (see e.g. Däubler and Debus 2009; Ştefuriuc 2009).

We draw on all of these types of studies of sub-national government formation and evaluate both more traditional hypotheses about the goals that parties are driven by, and more recently formulated hypotheses about the importance of congruence focusing on regions in four countries. For example, we evaluate the hypothesis that a high degree of congruence is expected in settings where the electoral competition is highly ‘nationalized’, and the hypothesis that coalition patterns will display a lower degree of congruence in systems where the regions have strong competencies. In order to evaluate this latter hypothesis we have based our case selection on this feature. On the basis of data drawn from the index of regional authority, recently constructed by Marks et al. (2008a), we select the Netherlands and Sweden as examples of states where regional authorities have a low degree of competencies, and we focus on party
competition in Germany and Spain as cases where the regions have stronger competencies in some areas of policy-making. We thus base our analysis on a completely new dataset that covers information on the parties and the coalitions formed at the regional level since the 1990s in four differently structured West European countries, giving us a dataset of about 300 formation opportunities. To analyze these data we use the methodological approach presented by Martin and Stevenson (2001), which applies a conditional logit model, where formation opportunities are the units of analysis and where potential governments are the discrete choices.

Several authors have stressed the advantages of using sub-national data to evaluate coalition theories. First, we access a large number of cases of government formation that have never been used as data in coalition studies. This solves the problem that coalition researchers have relied heavily on national-level data from parliamentary democracies in post-war Western Europe, even though some coalition theories have been formulated as a result from observation of these same data. Second, the use of sub-national data gives us greater opportunities to test coalition theories, since we can study a number of cases within one country and at a single moment in time. Thus, we control for several key factors without including them as variables in the model (see e.g. Bäck 2003a; Laver 1989a). However, there are a number of important distinctions between sub-national and national government, which we should consider. Laver et al. (1987) argue that the most important difference between national and local government is that there is not always a direct equivalent to the national-level cabinet at the local level. For example, in Swedish municipalities all parties are represented in the formal executive, which implies that no coalitions form when this committee is appointed. However, we can find something that approximates the national-level government coalition if we consider the informal institutional structure. Bäck and Johansson (2000) argue that Swedish municipalities can be characterized as ‘quasi-parliamentary’, since a majority coalition typically appoint committee leaders and full-time posts. Whether there is an equivalent of the national-level cabinet varies across contexts, and we thus now turn to discussing the regional contexts in our four countries more in depth.

The regional setting in four countries

In regional research it is common to distinguish between functional regions (defined by patterns of interaction), identity or cultural regions and administrative/political regions. Marks et al. (2008a) define a region with three criteria: (1) a region refers to a given territory having a single, continuous, and non-intersecting boundary, (2) subnational regions are intermediate between local and national governments, and (3) a regional government is a set of legislative and executive institutions responsible for authoritative decision making.

It is obvious that the regions discussed are administrative/political regions, not the least by the fact that cultural and particularly functional regions almost by definition have fuzzy and changing boundaries. A particular problem is introduced by the second criterion, as there may be several intermediate levels in a given polity. This is solved by Marks et al. in the related article by collecting data on all intermediate units exceeding the 150,000 population limit. Another solution is to identify the “principal regional level”. This is the approach taken in this paper. As a consequence there is a considerable variation between the four countries studied in the average size of the regional governments considered (see table 1).
There also is a huge variation in the competencies and the role of the regional authorities in the respective multilevel systems of the four countries. Marks et al. (2008a) distinguish two dimensions in classifying the systems: *Regional self-rule*, which is defined very close to the criteria used in the Council of Europe Charter on Local Self-Government (i.e. policy scope, control of economic resources and local representation) and *shared rule*, which is a matter of the opportunities that are provided to the regions to influence national politics and policy-making. The opposite relationship, that is the national government’s steering of the regions, is implicit in the first dimension, regional self-rule (or rather in the restrictions to regional self-rule). This would imply that a system with a low degree of self-rule and a high degree of shared rule could be characterized as a “fused” system. The opposite pole would be the combination of high degree of self-rule and a low degree of shared rule, which would be a “dualistic” system where the two tiers are largely independent of each other. The asymmetric combinations – low self-rule, low shared rule and high self-rule combined with high shared rule – stand for centralized “top-down” and decentralized “bottom-up” systems.

**German federalism as a bottom-up system**

Germany is the only federal system of the four selected countries. Today’s 16 federated states (*Länder*) are post-war constructions in the west and a re-unification product in the previous GDR. The allocation of competencies is laid down in the Constitution (Basic law). The basic principle is that the *Länder* have residual competence after enumeration of the competencies of the federation. From the outset three categories of functions in which the federation is competent were outlined: exclusive competencies; concurrent competencies in which federal law takes precedence, and matters in which the federation can pass framework laws with Länder furnishing the details. Following a 2006 constitutional reform the framework law category was abolished. An objective of the reform was to purify the allocation of functions and increase the independence of the two tiers of government (Hrbek 2007; Jeffery 2007; Schmidt 2007).

Among the more important Länder tasks are cultural policy, municipal affairs and police law. Even if most legislation in actual practice is federal, the remit of the Länder is considerable. It should also be observed that the Länder are responsible for the administration not only of their own policy competencies, but also for most federal legislation at least until the ‘Föderalismusreform’ came into effect in 2006 (Schmidt 2007: 216-218). This implies that in economic terms the Länder are responsible for about half of all public expenditure. Shared taxes are by far the most important, and of them, income and corporation taxes are shared half and half between the federation and the Länder (Leonardy 1999). Value-added tax revenue is currently divided between the federation, the Länder and municipalities in the ratio of 52:45:2. An equalization formula then redistributes funds to poorer Länder. Keating (1998) concludes that the “system gives Länder little fiscal autonomy but they have a large role in approving federal taxes and in negotiating the distribution”. This conclusion is dependent on the fact that the consent is needed of the upper chamber (*Bundesrat*) representing the Länder governments for all fiscal legislation affecting the Länder competencies.

The Länder are governed by a cabinet led by a Ministerpräsident together with a legislative body (The Landtag). The legislatures are popularly elected and the Ministerpräsident is chosen
by a majority vote in the Landtag. The Ministerpräsident appoints the cabinet. The parties represented in the regional parliaments are almost exclusively the national parties (in Bavaria CSU appears instead of the CDU). Some parties, mainly right-wing parties, represented in regional parliaments have national ambitions but have failed to gain representation in the Bundestag. The Left party and its predecessor PDS, heir to the state-bearing party SED of the GDR, has a strong concentration of its representation in the East German Länder, thereby partly appearing as a regional party. The only purely regional party without intention to be represented nationally is the Südschleswiger Wählerverband (SSW) in Schleswig-Holstein representing the Danish-speaking minority. Voter associations (‘Freie Wähler’) have been recently successful in the Bavarian state election in 2008 (e.g., Bräuninger and Debus 2008, 2009a).

The Länder governments are represented in the federal parliament, their delegations making up the second chamber – the Bundesrat. In contrast to most other senates in federal systems the Bundesrat consists of delegations of the state governments rather than directly or indirectly elected representatives. The delegations are bound by instructions and cast en bloc votes. The participation of the Bundesrat is necessary in various degrees in federal law-making. Laws to change the Constitution require a two thirds majority in the Bundesrat. Laws affecting Länder finances, administrative sovereignty, areas of joint government responsibility or modification of Länder boundaries require absolute majority. In other legislation Bundesrat objections can be overruled by a majority in the Bundestag (lower chamber). The share of all bills that required the consent of the Bundesrat was around 40 percent in the 1950s and increased to more than 60 percent in the 1990s. The Länder governments are through their institutional representation able to exert an unusually strong influence over federal policy-making (see., e.g., Lehbruch 1998; Bräuninger and König 1999; König 2001; Scharpf 2006; Manow and Burkhart 2007).

Consequently Marks et al. (2008b) give Germany high scores with regard to shared rule. The German system ranks first of our four countries in this respect. Also concerning self-rule the scores are high – second only to the Spanish autonomous communities. Germany thus represents a case combining a high level of regional autonomy with a high level of influence over national politics, which in the terminology of the previous section would be a “bottom-up” system of regional government.

*The fused Dutch system*

The 12 Dutch provinces have a glorious history. The origin of the modern Dutch state was until the late 18th century a federal republic of sovereign provinces. In today’s Netherlands the provinces have a very shadowed position. De Vries (2004) uses the expression “a rusty hinge between central and local government.” The centre of gravity in Dutch local government is the municipalities. The municipalities account for some 90 percent of the total expenses of the relatively large local government sector of the country. The provinces account for only some 2 percent of total government expenses. Most service provision is a municipal remit. The provinces are primarily responsible for control of municipalities and water boards as well as planning tasks for the regional public sector, including central government outposts. The provincial competencies, often shared with national and municipal government include Land management, transport, regional infrastructure and regional public transport, economy and agriculture, environment and conservation, recreation, welfare and culture. Dutch local government is highly dependent on central government funding. The own resources – including
the revenues from local property tax – is around 15 percent of total funding. Central government grants are dominated by task-specific grants accounting for some 50 percent of total revenues.

The political organization of the provinces consists of the popularly elected assembly, the by the assembly appointed executive and the by central government appointed province governor (commissioner of the Queen). The centrally appointed top office is a particularity of the low countries. Mayors in municipalities and county governors are appointed after consulting the local/provincial assembly, but not necessarily taking account of local election results or the composition of the local or provincial assembly. This is an archaic construction long abandoned in most other western democracies. Attempts to reform this system introducing direct elections of mayors and governors have hitherto failed. In the early 2000s an organizational reform was implemented in Dutch local government – including the provinces – under the catchword “dualization” intended to strengthen the position of the executive and making the respective roles of executive and assembly more distinct.

The political parties gaining representation in the provincial assemblies are primarily the same parties that are represented in the national parliament. In the 2007 elections regionally based parties received only around 2 percent of the seats. The most prominent exception is the Frisian National Party in province Friesland holding 12 percent of the seats in the provincial assembly. The executives represent majority coalitions in the assemblies. These coalitions are very often broad – encompassing both parties of the left and parties of the right. In 2007 the parliamentary bases of the executives varied from 51 to 75 percent averaging 62 percent.

If the central government appointment of governors constitutes an institutional link from central government to the provinces there is also a reverse link in the procedure for electing the upper house of the bicameral Dutch parliament. The members of the upper chamber are elected by the members of the provincial assemblies. As the Senate is elected by the popularly elected provincial assemblies (and not by the provincial executives) by proportional representation, the composition of the Senate does not deviate significantly from the composition of the lower chamber. It is thus very doubtful whether the upper house should be considered an instrument for province influence over national politics.

Marks et al. (2008b) conclude that the self-rule exerted by Dutch provinces is very weak. With regard to self-rule the Netherlands takes the last position of the four studied countries. Mainly due to the institutional links with the national parliament the rank for shared rule on the other hand becomes high. The Dutch system ranks second after Germany. This would qualify Dutch province government as a “fused system”. Regional self-government is particularly weak, but on the other hand national politics is to some degree dependent on the provinces. This is in line with what other analysts conclude. Hendriks (2001) concludes that “regional government in the Netherlands is often a matter of co-government”, even if his conclusion seems to be more founded in the allocation of tasks and responsibilities rather than the institutional links.

**Spanish regional autonomy as a dualistic system**

The Francoist authoritarian regime was highly centralistic suppressing all regionalist tendencies. After Franco’s death it was deemed necessary to provide an option for autonomy at least for the “historic nationalities” of Catalonia, the Basque Country and Galicia. The post-Franco constitution therefore granted autonomy to the “nationalities and regions”. The constitution only codified the general principles, and the actual institutionalization of autonomous communities...
was left to bottom-up initiatives. The constitution granted particular rights to the traditional nationalities. Furthermore there are two lists of competencies in the constitution, a list of competencies reserved exclusively for central government, and another list that can be transferred to the autonomous communities. Another clause stipulates that matters not explicitly reserved to central government can be devolved. Each individual statute of autonomy contains the list of competencies which can be amended by agreement of the national parliament.

These regulations in the constitution have produced a variation in the competencies of autonomous communities. The original intention was not that autonomous communities would cover the entire Spanish territory, but primarily the traditional nationalities. It soon, however, turned out that there was interest in all parts of the country, and the 17 communities today cover all Spain. Among the particular regulations for the traditional nationalities the right to erect own police forces and particular fiscal autonomy for the Basque country and Navarre has been emphasized. The bottom-up procedure and the ruling that competencies be specified in each individual regional constitution together with the mentioned special rights of the traditional nationalities has produced an asymmetry arousing much interest in other countries. The general opinion today, however, is that the Spanish system is becoming much more symmetrical as slow-track regions acquire more competencies. Aja (2001) argues that the Spanish system displays important federalist features – the constitutional protection of the autonomous communities as well as the use of the constitutional court for the settlement of conflicts. Asymmetry on the other hand distinguishes Spain from more purely federal systems.

The regional governments are responsible for schools, universities, health, social services, culture, urban and rural development. Among functions that may be transferred, public works, internal railways, environmental protection, tourism, social assistance and health could be mentioned. The wide task portfolio implies that autonomous communities account for a considerable share (38 percent) of public spending. As public expenditures amount to some 20 percent of GNP, regional government accounts for slightly below 10 percent of GNP. Funding draws on three sources: tax revenues raised by the autonomous communities, central government grants and a fiscal equalization system. Central government allows regions to use 30 percent of locally-raised income tax. The particular arrangements in Navarre and the Basque Country imply that in Navarre the regional government regulates and collects almost all taxes and transfers part of the total revenues to central government. In the Basque country the same powers are vested in each of the three provincial administrations. Keating (1998) concludes that “the Spanish system has been evolving gradually towards more fiscal autonomy”.

The basic political institutions are the popularly elected regional parliament, the by parliament elected president and a government, nominated by the president and appointed by parliament. The parties contesting regional elections are the nation-wide parties and a number of regionally based parties. The non-national parties in 2007 were supported by 19 percent of the electorate on the average. Support varied in the range 2 percent to 55 percent (Basque Country) (Wilson 2009). In the Basque Country and Catalonia regional parties usually enjoy support from a majority of voters. The Cortes Generales – the national parliament – is comprised of two chambers, the Congress of Deputies and the Senate, the latter having far fewer powers. The Senate has 207 members elected to represent the provinces, and another fifty or so appointed by the parliaments of the autonomous communities. The regional parties also contest national elections. Following the 2008 elections regionally based parties held 24 seats (7 percent) in the
Congress of Deputies. Keating (1998) concludes that by “using their presence in the Congress of Deputies, the CiU, PNV and CC have played an important role in central government … and holding the balance of power at national level”.

Marks et al. (2008b) assign high self-rule scores to Spain. Among the four selected countries Spain ranks first in this respect. Shared rule scores on the other hand are low: Spanish autonomous communities here take the next-to-last position ahead of only the Swedish counties. This would categorize the Spanish system as a “dualistic” system.

The Swedish top-down system

The 20 counties (landsting) all have formal status as local authorities, and their status and organization is regulated by the same law as the municipalities. Sweden has a reputation of having a strong local self-government. This reputation is primarily based on (1) the functional importance of local authorities, (2) the right to levy local income taxes and (3) the elaborated political organization involving some 50,000 people (of a total population of 9 million) as democratically elected office-holders. The first characteristic, however, primarily accrues to the municipalities, and not to the county councils.

In the Swedish system local government is responsible for the provision of welfare services. This implies that the aggregate local government sector is considerably larger than central government. There, however an allocation of tasks within the local government sector, rendering the county councils much less multifunctional than municipalities. While municipalities are responsible for the provision of primary and secondary education, care of the elderly and disabled persons, individual welfare services, cultural and recreational amenities, local infrastructure et c, county councils are strongly focussed on health care (88 percent of current expenditures). The principal sources of revenue for Swedish local authorities are local income tax, central government grants and fiscal equalization grants. Municipal local income tax amounts to some 20 percent, while county council tax is a around 10 percent. Local taxes and other sources under county council control represent almost 80 percent of total revenues.

County councils are popularly elected and the parties represented in the assemblies usually are the same as those represented in the national parliament, although lately some regional parties have appeared (parties not represented in the Riksdag). These regional parties, however, are usually defined by ambitions to prioritize health care (e.g. resisting the closing down of local hospitals) rather than regionalist ideas. The assembly elects by proportional representation an executive committee. Beside this statutory executive there is, however, a more informal executive made up of the committee chairpersons representing a council majority party or coalition. This “quasi-parliamentary” system is typical of Swedish local government and is also present in the municipalities. Similar systems can be found in Denmark and Norway.

There are no formal institutions for local governments to influence national politics. Informally there are of course important channels for mutual influence structured by the party system. The Swedish Association of Local and Regional Authorities also plays an important role as a pressure group towards central government. A system where the second chamber of parliament was elected by the county councils was abolished in the early 1970s.

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1 Sources for the description of Sweden: Bäck (2007); Larsson and Bäck (2008); Lidström (2001).
Swedish regional authorities (county councils and regional authorities) thus can be considered to enjoy a low to medium level of local self-government. The main restrictions are (1) the relatively thin task portfolio and (2) influences from the central level mainly channelled through the intermediation of the party system. On the other hand, the opportunities of county councils to exert influence over national decision-making are very small. These characteristics would lead us to classify the Swedish system as a dualistic or perhaps even more accurate a top-down system. These conclusions are in line with the observations of Marks et al. (2008b) with Sweden ranking third of our four countries on the index for regional self-rule, and taking the last position if the countries are ranked according to shared rule.

Theories about government formation

As mentioned above, we here draw on both traditional coalition theories, which were typically formulated with the national-level arena in mind, and on more recent hypotheses about politics in multi-level settings. We first give a brief review of the more classical theories.

Classical coalition hypotheses

Most early coalition theories are policy-blind, assuming that parties are motivated exclusively by the aim to attain the payoffs associated with being in office. Among the first to model coalition formation were von Neumann and Morgenstern (1953), who argue that we should expect that only minimal winning coalitions will form. Such coalitions are characterized by the feature that if any member leaves the government, the coalition loses its winning status in the sense that it ceases to control a majority of the seats in the legislature. Thus, we hypothesize that potential governments are more likely to form if they are minimal winning coalitions.

Given the often high number of solutions predicted by this proposition, scholars like Gamson and Riker have proposed a restricted version: within the set of minimal winning coalitions, the coalition that controls the minimum number of seats will form (Riker 1962; Gamson 1961). This “minimum seats” proposition is based on the same logic as its predecessor, as any potential coalition partner would prefer to be in a winning coalition with a partner as small as possible (in terms of seats) so that it can expect a larger share of the spoils than with a bigger partner. Hence, from this refinement we identify the hypothesis that potential governments are more likely to form if they are minimal winning coalitions. Another variation of the minimal winning concept was suggested by Leiserson (1968). Based on the logic that it is easier to reach an agreement and then to implement it, the smaller the number of parties involved in bargaining, Leiserson predicts that the minimal winning coalition with the smallest number of actors will form. Thus, from Leiserson’s theory we draw the prediction that potential governments are more likely to form the fewer the number of parties they include.

These three theories rely on the assumption that parties are pure office-seekers, that is, actors are solely interested in reaping the benefits that come with being in office. These theories also have in common that they predict that governments of a specific size will form. A basic size concern that is already integrated in these theories is that coalitions that form should control a majority of seats in parliament. And as the assumption behind this size school is that the only payoff that parties wish to maximize is holding office, an opposition controlling a majority of
seats would never tolerate the formation of a minority cabinet as it would exclude its members from these office benefits. Hence, a basic size hypothesis that can be formulated is that potential governments are more likely to form if they control a majority of seats in the legislature.

Scholars have also argued that in systems dominated by one particular party, the latter is difficult to exclude (Peleg 1981; van Deemen 1989; van Roozendal 1992). A “dominant player” can be operationalized as the party controlling a relative majority of the seats in the legislature. Other reasons as to why the largest party is likely to be in the cabinet have also been put forth. For example, Warwick (1996: 474) argues that the largest party is advantaged for formateur status since “the closer a party is to majority status, the less need it has for coalition partners”. We therefore evaluate the prediction that potential governments are more likely to form if they include the largest party in the legislature.

Other researchers have argued that we need to consider that parties are not only office-seeking – parties are also motivated by policy-seeking concerns. For example, De Swaan (1973: 88) argues that “considerations of policy are foremost in the minds of the actors”, and that parties evaluate potential coalitions on the basis of how closely they expect the government’s policy program will resemble their own ideal position. From this theory we draw the prediction that potential governments are more likely to form the smaller their ideological range.

A more recent important account about coalition formation is the notion that incumbent administrations are favored in bargaining, since they represent ‘the reversion point in the event the other parties fail to agree on an alternative’ (Strøm, Budge and Laver 1994: 311). Other arguments for why we should expect incumbent governments to be advantaged have also been presented. For instance, parties who have cooperated before in government are likely to be informed about each other’s preferences and should have established routines for cooperating. Transaction costs are thus likely to increase when parties change coalition partners, which implies that parties that have governed together will prefer to continue this cooperation rather than creating a new cabinet. We thus expect that potential governments are more likely to form if they include incumbent cabinets (see Bäck 2003a; Bäck and Dumont 2007; Warwick 1996).

Hypotheses about government formation in multi-level settings

Beside these office-based and policy-based factors, some determinants of sub-national level government formation can be drawn from the literature of governing in multi-level settings. The most important argument made in the literature on multi-level government formation is the one made about congruence. In general, congruent coalitions can be defined as sub-national coalitions whose partisan composition overlaps with the federal government (Ștefuriuc 2009). The importance of congruence in multi-level settings has been stressed by a number of authors (e.g. Downs 1998; Däubler and Debus 2009; Pappi et al. 2005; Roberts 1989; Ștefuriuc 2009), and has been defined and termed in various ways. Ștefuriuc (2009: 96) argues that the congruence feature can take on three values; “full congruence – the same parties are participating in both the regional and central government; full incongruence – there is no overlap; and partial (in)congruence – some, but not all, of the governing parties at one level are also governing at the other level”. We contend that what matters is less that a regional-level coalition has exactly the same composition as the national-level government (“full congruence” as defined by Ștefuriuc 2009), but rather that the coalition does not cut across the federal government-opposition divide. Däubler and Debus (2009) call such coalitions ‘cross-cutting’.
Thus, the argument is that cross-cutting coalitions are less likely to form in multi-level systems than the two other types of coalitions, i.e. ‘fully congruent’ and ‘fully incongruent’ coalitions, which can be seen as less problematic for the parties. We will in the following use the term ‘congruent’ coalition when we talk about these latter two types of coalitions, and the term ‘cross-cutting’ or ‘non-congruent’ coalition when we talk about regional coalitions consisting of some parties that are in government at the national level and some parties which are not participating in the national-level coalition.

The question is why should we expect congruent coalitions to form in multi-level systems? Why should parties at the regional and national level care about achieving congruence? Several authors have pointed to the advantages offered by congruent coalitions in multi-level systems. For example, Bolleyer (2006) argues that congruent coalitions are advantageous since they facilitate cooperation in policy-making across levels. In those policy areas which necessitate joint decision-making between the center and the regions, non-congruent coalitions can lead to stalemate (Hough and Jeffery 2006; Ştefuriuc 2009).

In the German system, congruence is important due to the fact that the Bundesrat can be a veto player in federal legislation (Fabritius 1976; Pappi et al. 2005). In terms of federal-level party competition, cross-cutting coalitions serve neither the government nor the opposition. In addition, such coalitions must agree on their voting behavior with regard to controversial bills in the Bundesrat (Pappi et al. 2005). Therefore, cross-cutting coalitions are generally avoided. Both qualitative and quantitative studies of state level government formation corroborate this hypothesis (Jun 1994; Kropp 2001; Pappi et al. 2005).

In addition, in certain situations the disadvantage of cross-cutting coalitions should become even more pronounced. Important in this regard is the composition of the second chamber (Däubler and Debus 2009). In general, the Bundesrat passes bills with a simple majority of its votes. Thus, the crucial question with regard to the seat distribution is which of the following patterns applies (Pappi et al. 2005): do the state governments congruent with the federal government control an absolute majority of votes (often referred to as ‘A majority’), or do the state governments congruent with the federal opposition hold at least half of the seats (‘B majority’), or is there no clear majority for any of the camps? Fabritius (1976) first suggested that the incentives to form a cross-cutting Länder coalition further decrease when the majority situation in the Bundesrat could be altered depending on the respective coalition outcome.

Däußler and Debus (2009) also argue that another factor that is likely to shape the (non-) desirability of cross-cutting coalitions is the timing of the Land-level coalition formation game with regard to the federal electoral cycle. In addition to the indirect effects arising from potential midterm losses, the temporal proximity of federal elections can be expected to exert a direct influence on the coalition formation process. As the coming Bundestag elections approach, party competition at the federal level becomes more intense. Therefore, prior to Bundestag elections, federal parties are concerned with pointing out programmatic differences between the camps and denying each other the competence to govern. Forming cross-cutting Länder coalitions would be counterproductive in such situations.

Thus, the authors stress the fact that cross-cutting coalitions may be disadvantageous for electoral reasons. This argument is based on the assumption that parties are vote-seeking, which they are likely to be for instrumental reasons, i.e. parties should care about winning votes in order to facilitate government participation, which in turn should increase their chances of
implementing a specific policy program (see e.g. Müller and Strøm 1999). As argued by Ştefuriuc (2009) governing at one level with a party that is your opponent at another level can be difficult to sell to the party’s voters. For example, if a party at the national level stresses that its national-level coalition partner is the party that makes it most likely that the party will be able to implement a specific policy program, it may be difficult to convince the voters that another party is a more appropriate partner at the regional level.

Thus, there are several reasons for parties to form congruent coalitions in multi-level systems, and from this discussion we therefore hypothesize that:

\[ H1: \text{Potential coalitions which are cross-cutting are less likely to form at the regional level, i.e. regional coalitions should be less likely to form if they consist of parties who participate in the national-level government and parties who do not.} \]

Thus, in general congruent coalitions are more likely to form in multi-level systems. How desirable congruence is, however, depends on the institutional setting (see e.g. Roberts 1989). Ştefuriuc (2009) argues that the distribution of power across levels should influence whether the actors have incentives to form congruent coalitions. As suggested by the German case, in systems where regions are veto players in national-level decision-making, congruent coalitions should be more likely to form (see e.g. Thorlakson 2006). Even in systems where regions do not act as veto players, congruent coalitions should be more likely to form when governmental decision-making is shared between the national and regional level, for example since the intra-party arena can serve as a “complementary channel of negotiation in addition to the institutional one” (Ştefuriuc 2009: 98). Thus, congruent coalitions should be more likely to form where bilateral vertical intergovernmental cooperation between levels is required, or differently put, where shared rule is high. From this discussion we draw the hypothesis:

\[ H2: \text{Cross-cutting coalitions are less likely to form in systems where governmental decision-making is interlocked between the national and regional levels of government, i.e. in systems with high shared rule.} \]

When discussing the asymmetry of the Spanish system, which gives different regions varying levels of fiscal autonomy, Ştefuriuc (2009) implicitly introduces a hypothesis related to the other aspect discussed by Marks et al. (2008), i.e. the level of self-rule of the regions. Ştefuriuc (2009) argues that since the regions the Basque Country, Catalonia and Navarre enjoy higher levels of fiscal autonomy and higher policy-making powers, they should be less dependent on regional investments from and cooperation with the central government. Hence, parties in such regions should have lower incentives to form congruent coalitions. Thus, the argument is that some regions need cooperation with the national government more than others, either for economic reasons, or for particular policy projects (Ştefuriuc 2009), and that congruence with the national-level government should be more important for the parties in such regions. In regions with high self-rule, congruence should be less important and parties are thus free to form cross-cutting coalitions. From this discussion we can derive the hypothesis that:

\[ H3: \text{Cross-cutting coalitions are more likely to form in regions with high policy-making power and autonomy, i.e. in systems with high self-rule.} \]

As should have become clear from the description of the regional contextual setting in our four countries, the countries vary with respect to the degree of shared rule and the degree of self-rule
of the regions. We can thus make some country predictions about the role of congruence based on these two features. These predictions are summarized in table 2 below. This table illustrates that in two of our countries we can make a clear prediction about the role of congruence, in the Netherlands and in Spain. The Dutch regions are characterized by a low degree of self-rule and a relatively high level of shared rule, and therefore we expect congruence to be important in these regions. Thus, cross-cutting coalitions are less likely to form. The Spanish regions are instead characterized by a very high degree of self-rule and a relatively low degree of shared rule, which suggests that congruence should not be particularly important for the Spanish parties, implying that cross-cutting coalitions are not significantly less likely to form.

| TABLE 2 ABOUT HERE |

In the two other cases, Sweden and Germany, it is more difficult to predict the role of congruence. German regions are characterized by a high level of self-rule and a high degree of shared rule. The high self-rule suggests that congruence is not important, whereas the high shared rule should make congruence of vital importance. Thus, we are not able to make a clear prediction since it is not clear what feature is most important in driving the role of congruence. The same is true for Swedish regions since they are characterized by a low degree of self-rule and a low degree of shared rule. The low self-rule suggests that it is important for the parties to achieve congruence, whereas the low shared rule suggests that this is not essential.

Several authors have argued that the character of party competition may influence the decisions of actors involved in sub-national coalition formation (see e.g. Bäck 2003a; Denters 1985; Downs 1998; Ştefuriuc 2009). In a study of local coalitions, Denters (1985) argues that if local parties believe that voters base their local vote choices on evaluations of the behavior of the national parties, they should not have to consider the effects on future elections when forming coalitions. This type of feature has been termed ‘localization’ or ‘nationalization’ of elections (which may vary within countries), and we argue that it should influence the role of congruence in multi-level systems. We suggest that congruent coalitions are more likely to form in regions where the elections are highly nationalized since voters in such regions are more likely to accept coalition choices of the regional parties that correspond to the coalition choices made at the national level. Thus, for vote-seeking reasons, parties should avoid cross-cutting coalitions in systems where elections are highly nationalized, and the hypothesis to be tested is:

\[ H4: \text{Cross-cutting coalitions are more likely to form in systems where elections are highly ‘localized’, i.e. where regional electoral outcomes are highly dissimilar from the national election outcomes.} \]

To sum up, we expect that coalitions consisting of parties included in the national-level government and parties not included in this coalition, i.e. cross-cutting coalitions, are less likely to form in multi-level systems. Moreover, the importance of congruence varies across contexts, and we hypothesize that cross-cutting coalitions are less likely to form in regions characterized by high shared rule, by low self-rule, and by a high degree of nationalization of the elections.
Methods and data

The conditional logit approach

In this paper we use a statistical approach, originally presented by Martin and Stevenson (2001) that has now become standard in studies of government formation (see e.g. Bäck 2003b; Bäck and Dumont 2007; Debus 2008). This approach models government formation as “an unordered discrete choice problem where each formation opportunity […] represents one case and where the set of discrete alternatives is the set of all potential combinations of parties that might form a government”. Thus, we assume that the actors in a political system choose one of the often very large number of governments that may form. The number of potential governments in a political system is equal to $2^n - 1$, where $n$ is the number of parties represented in parliament.

To evaluate this discrete choice problem, Martin and Stevenson (2001) adopt the conditional logit model (McFadden 1973; 1974). In political science, the conditional logit model has for example been applied to discrete choice problems such as a voter’s choice between the Conservatives, Labor or the SDP-Liberal Alliance (see e.g. Alvarez and Nagler 1998). Applied to coalition formation, the logic is that the actors involved in bargaining make a choice between the governments that may form. The dependent variable in this analysis describes the actors’ choice and is a variable indicating the outcome in each formation opportunity.

Using this type of approach we can include a number of different types of variables, for example we are able to include variables drawn from more traditional coalition theories, which typically vary across potential governments, that is, they are choice-specific features (e.g. whether a potential government is minimal winning). In addition, we can also include variables that only vary across formation opportunities, for example across contexts, such as a feature measuring the nationalization of the electoral results in the different regions. Such variables however have to be interacted with a choice-specific feature in order to not fall out of the analysis. Since we are here interested in evaluating whether some contextual features increase or decrease the importance of regional-national congruence in coalition patterns, we thus interact such contextual features with a variable specifying if a potential government is congruent with the national-level cabinet in office at the time of formation.

Extracting party policy positions from manifestos using automated content analysis

Information on a wide array of factors needs to be collected in order to evaluate the hypotheses about coalition formation. The most important piece of information needed is data on the parties’ ideal policy positions along some key dimension. When studying national-level coalitions, there are two main sources of party policy positions at hand, using the data drawn from expert surveys (see e.g. Laver and Hunt 1992; Huber an Inglehart 1995; Benoit and Laver 2006; Warwick 2006), or using data drawn from the manifesto research project (see e.g. Budge et al. 2001; Klingemann et al. 2006). The MRG data is based on a content analysis of the election manifestos of the political parties in a vast number of countries during the post-war period. When studying coalition formation at the sub-national level, there is no such readily available information on party policy positions, which means that gathering such data can be a significant hurdle. In a study of local coalitions, Bäck (2003) solves this problem by performing
a survey among local MPs, arguing that information about local politicians’ perceptions is appropriate since the politicians are the actors involved in coalition bargaining, and they are thus the actors who make the decisions that lead to the outcomes that we wish to explain.

Since we do not have the resources to perform such a survey, we here have to rely on other data, more specifically on data drawn from regional election manifestos. Nearly every party or party alliance publishes a – briefer or longer – programme for government, in which its goals for the next legislative period are outlined. Election manifestos have the advantage that they are published before each election. Moreover, because election programmes normally have to be passed by a party congress or at least by a wider group of party elites, they should reflect more or less the mean of the positions of all intra-party groups weighted by their importance (Kavanagh 1981; Klingemann et al. 1994: 27; Müller and Strom 2008).

In the case of regional parties, no comparative dataset exits that covers party policy positions or issue saliences. A study by Pogorelis et al. (2005) developed a MRG styled coding scheme to extract issue saliences of Scottish and Welsh regional parties. Their promising results show that regional parties in the United Kingdom indeed stress different policy issues compared to their national counterparts. Libbrecht et al. (2009) developed a similar coding scheme for the parties in the Spanish autonomous communities. Because of the problems to obtain election manifestos for all parties represented in regional parliaments, they focus, however, on a hand-coded analysis of manifestos of the two major Spanish parties, the socialist PSOE and the conservative PP, in nine autonomous regions only. Bräuninger and Debus (2008, 2009a; cf. Däubler and Debus 2009; Müller 2009) collected the manifestos and coalition agreements of German parties and governments on the Ländereb level and conducted automated content analysis using the wordscores technique (Laver et al. 2003; cf. Lowe 2008). Their results show that German parties at the state level not only adopt policy positions that come close to the preferences of the respective electorate in each Land (Müller 2009), but also that the state party positions are better predictors of coalition formation outcomes at the state level than the positions of the national parties (Bräuninger and Debus 2008: 333).

We therefore use the Bräuninger and Debus (2008, 2009a) dataset as a starting point for our analysis. Likewise to their approach, we collected election manifestos of Dutch, Spanish and Swedish parties on the regional level. Because of the problems to obtain the respective documents for older elections, we concentrated on finding the party manifestos for the respective last regional election, which was held in the Netherlands in 2007, in Spain (mostly) in 2006, and in Sweden also in 2006.2 We estimate positions of regional parties on a general left-right dimension by applying the wordscores approach. The main advantage of approaches like wordscores is that the position estimation is left completely to computer algorithms. Therefore, potential problems associated with MRG/CMP-styled hand coding (see Volkens 2001) or the ‘dictionary procedure’ (Laver and Garry 2000) do not arise.

‘Wordscores’ compares the relative word frequency of a text whose programmatic position is known to the word distribution of a text of the same character whose position is unknown. Laver, Benoit and Garry (2003: 314-315) refer to these two sorts of documents as ‘reference

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2 It was not possible to find all manifestos of parties that won parliamentary representation in the last regional election. In the case of those parties, we estimate the mean left-right score of all regional manifestos we have from this party and allocate them to the regional parties were an election manifesto is still missing.
texts’ and ‘virgin texts’, respectively. In a nutshell, the position of a virgin text changes if the frequencies of some ‘signal’ words goes up or down. Signal words are not determined ex ante but assumed to signal a (particular reference text) position insofar they occur more often in one virgin text than in another. The key assumption behind wordscores or the more recent approach ‘wordfish’ (Slapin and Proksch 2008) is that political actors do not use words randomly. Instead, to include ‘ideological signals’ (Pappi and Shikano 2004) in election manifestos parties will use some words more often and others less often or even never. To show their hostile position towards raising taxes, liberal parties for instance often use the word ‘tax’ in connection with the demand to decrease the tax burden. This approach and the theory behind it are similar to saliency theory and the approach behind the Manifesto Research Group project.

Despite discussions on the standardization method for wordscores estimates (Martin and Vanberg 2008; Benoit and Laver 2008), and on the method itself (Budge and Pennings 2007a, 2007b; Benoit and Laver 2007), a study by Klemmensen, Hobolt and Hansen (2007) shows the robustness of the method by analyzing Danish election manifests and government declarations between 1945 and 2005. The extracted policy positions of Danish political actors correlate strongly with estimates by expert surveys and the MRG/CMP dataset. Here, we use the election manifests of the national parties as reference texts and score them with the left-right position of national parties provided by the Benoit and Laver (2006) expert survey. In contrast to the studies by Bräuninger and Debus (2008, 2009a), we do not estimate policy area-specific positions of parties on the regional level but rather focus on a general left-right axis. A descriptive analysis of regional party positions presented in the next section shows that applying automated text analysis provides promising results.

Empirical analysis of regional parties and governments

*Party policy positions drawn from regional manifestos*

We estimated the positions of regional parties on a general left-right dimension by applying the wordscores technique. This analysis is based on 176 regional manifestos from the 2007 Dutch provincial elections, on 36 manifestos of regional parties from the elections to the autonomous regions in Spain in 2007/2008 and on 123 manifestos from the Swedish *landsting* elections held in 2006. In the case of Germany, we build on the Bräuninger and Debus (2008, 2009a) dataset which covers 401 regional election manifests and coalition agreements in the German Länder since 1990. Obviously, a number of Spanish regional election manifests are still missing. In cases where we were not able to find a programmatic document that covers the policy preferences of a regional party, we allocated the arithmetic mean of the respective regional party’s score to the missing cases. Furthermore, we allocated the estimated regional party positions from the last elections to some of the ‘older’ government formation processes in order to increase our number of observations. The time period covered in this study starts in the 1990s and ends in the mid of the 2000s. To be more specific, we analyze regional government formation in Germany for the time period between 1990 and 2008, for Sweden between 1998 and 2006, for the Netherlands from 1991 to 2007, and for Spain from 1991 until 2007.
Table 3 below shows the left-right positions drawn from the Benoit and Laver (2006) expert survey and the arithmetic mean of the estimated regional left-right positions per party and country. The party left-right positions by Benoit and Laver (2006) served as reference scores for the wordscores analysis. Reference texts were the respective national election manifestos of the parties for the first national election in the 21st century.³

[TABLE 3 ABOUT HERE]

As the data reveals, there are clear differences between the positions of parties on the regional and national level on the one hand and between the regions on the other hand. In the German case, the parties at the Länder level are more moderate than their national counterparties. We also get very moderate positions for some state-specific parties like the one of Danish minority (SSW) in Schleswig-Holstein and the Free Voter’s Association (FW) in Bavaria.⁴

We get a different picture when turning to the left-right positions of Dutch provincial parties. The mean score of the regional manifestos of the Christian democratic CDA, the liberal VVD, the libertarian D66, the socialist SP and both Calvinist parties SGP and CU are more extreme than the respective national parties. Only the Dutch Social Democrats (PvdA) on the provincial level, the Greens (GL) and the right wing-populist List Pim Fortuyn (LPF) are more moderately placed than the respective national parties. Note, however, that there is a large range in the estimated regional party positions and, therefore, a large standard error. The Party for Sealand (PVZ) and the Party for the North (PvhN), which compete for votes in the provinces of Zeeland and Groningen, are located slightly to the right of the centre.

In the case of Spain, the mean left-right score for the two dominant Spanish parties – the Socialists (PSOE) and the Peoples Party (PP) – on the provincial level is likewise to Germany also more moderate. The left-socialist IU is however, more extreme on the regional level. The same is true for the Basque Nationalist Party (PNV).

In the Swedish case, we do not get very clear results. The mean score of the regional parties is located to the centre of the left-right dimension. Even the left-socialist Vänsterpartiet (V) and the Green Party (MP) get moderate scores. Yet, note that there is a large standard error due to the wide range of estimated left-right positions for all Swedish parties. One reason for these unclear results might be that a lot of Swedish regional manifestos are very short and deal only with issues of health care, which is the central policy area were a Landsting has competencies. Since comparisons of CMP left-right scores and wordscores estimates for Sweden shows a strong correlation of around p=0.7 (see Bräuninger and Debus 2009b), we still refer to the estimated Swedish regional party scores in the next steps of our analysis.

*Descriptive overview of the coalition outcomes*

Table 4 provides an overview of the characteristics of potential and formed coalitions. The number of potential party combinations varies between the countries included in this study.

³ In the case of Germany, we refer to the 2002 federal election manifestos. For the Netherlands, we refer to the programmatic documents written before the 2003 election. In Spain and Sweden, our reference point are the 2004 and 2002 national election manifestos, respectively.
⁴ We restrict the presentation to a small number of region-specific parties per country.
Because the number of potential governments increases as the number of parliamentary parties increases (Laver 1989b), the 60 coalition governments in the Dutch provinces formed between 1991 and 2007 emerged from 19,332 alternatives. In case of Germany, for instance, the relationship between potential and formed coalitions is more balanced. Of the 1,323 potential coalitions between 1990 and 2008, a total of 73 formed.

The classical coalition variables include two sorts of independent variables. The first group includes variables that reflect the mechanisms of the office-orientated approaches to coalition politics. The variables ‘minimal winning coalition’ and ‘minimum winning coalition’ are coded with the value one if a coalition fulfills the criteria of the coalition formation theories of von Neumann and Morgenstern (1944) and Riker (1962), respectively. As can be seen from Table 4, 178 and 85 coalitions that formed were minimal winning and minimum winning coalitions, respectively. Furthermore, 164 of the 268 (coalition) governments are in line with the bargaining proposition model. If, by contrast, a party combination has no parliamentary majority, then the chances should decrease that this potential government gets into office. As the data reveal, only 29 of the 268 governments under consideration here did not control a majority of parliamentary seats. With respect to the bargaining position of the largest parliamentary party, it is further assumed that the inclusion of that party increases the chances of a potential coalition forming. With respect to the results of the descriptive statistics given in Table 4, there is evidence for a pivotal position of the largest parliamentary actor in the coalition game: 225 of 268 governments include the largest parliamentary party.

The second group includes information on the ideological diversity of every potential coalition and an incumbency variable. The squared ideological distance of all possible coalitions reaches a value of 87.54, while the heterogeneity of all formed coalitions is significantly lower with a mean value of 33.27. According to the hypothesis presented by Franklin and Mackie (1983) coalitions are more likely to form if they include the same parties as the incumbent government. Therefore, the variable ‘incumbent government’ is given a positive value if the coalition is the same as the one currently ruling. According to the descriptive analysis, in 136 cases the parties that formed the incumbent government also participated in the next one.

A multivariate analysis of regional government formation

We now turn to evaluating our hypotheses about what determines coalition formation in the regions of our four countries in a multivariate analysis. As mentioned above we here rely on the conditional logit model where the formation opportunities are the cases and the potential governments are the choices. We start out by presenting country-specific analyses (in table 5) and we then present pooled analyses including all four countries in the data set (in table 6).

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For Germany data on the seat shares and cabinet composition are taken from the homepages in the respective regions and from the data set on the German state parties by Bräuninger and Debus (2008; 2009). For the Netherlands we rely on information drawn from www.politiekcompendium.nl. For Spain we rely on data presented by Wilson (2009) and Stelburiuc (2008). For Sweden, our data on the seat distributions are from Statistics Sweden, and our data on the governing coalitions were graciously provided by Bo Per Larsson at the Swedish Association of Local and Regional Authorities.
the pooled analyses our data set includes 268 formation opportunities and over 32,000 potential governments. For all models we present unstandardized conditional logit coefficients, which tell us if a variable increases or decreases the likelihood that a potential government will form.

In table 5 we present two models for each country, where the first model (models 1, 3, 5, 7) includes the classical coalition variables, including a minority government variable, the minimal winning variable, the minimum variable, the variable drawn from the bargaining proposition, the variable describing if a potential government includes the largest party, the policy range variable and the incumbent administration variable. In the second model (models 2, 4, 6, 8) we add the variable specifying if a potential government is a cross-cutting coalition.

Let us first take a look at the results for our classical coalition variables in the four countries. The minority government variable exerts a significant negative effect in two countries, in the Netherlands and in Sweden, whereas the effect is negative, but not significant in Germany and even positive (but not significant) in Spain. Since the model also includes a minimal winning variable, the effect of both the minority government variable and the minimal winning variable should be interpreted in relation to an oversized government variable (the ‘left-out dummy’). Thus, in the Netherlands and Sweden, minority governments are less likely to form than oversized governments, whereas this is not the case in Germany and in Spain.

[TABLE 5 ABOUT HERE]

In three countries, Germany, Spain and Sweden, the minimal winning variable exerts a significant effect, suggesting that minimal winning coalitions are more likely to form than oversized cabinets. These results describe the fact that oversized governments are relatively common in the Dutch regions, that minority governments are common in Spain, and that minimal winning cabinets are the most common type of governments in German and Swedish regions. Among the remaining size variables, only two variables exert a significant effect: the minimum winning variable (in Spain) and the largest party variable (in Spain and Germany).

The classical coalition model also includes a variable measuring the ideological distance between the parties on the extremes in the potential government. This variable only exerts a significant effect in two of our countries, in Germany and the Netherlands. The effect of this variable is in all four countries (in model 1, 3, 5, 7) negative as expected, giving support to the hypothesis that potential governments are more likely to form the smaller their ideological distance. The poor performance in Spain and Sweden may suggest that policy goals are not so important for the parties in these countries. However, the lack of a significant effect of the policy range variable in these two countries could also be explained by a poor quality of the data on policy positions in these cases. We have already discussed some of the problems with analyzing the Swedish election manifestos, and a previous study of coalition formation in Swedish local government, where policy-seeking variables performed particularly well (Bäck 2003a), suggest that the non-significant effect is likely to be due to poor data quality.

The incumbent administration variable exerts a positive and significant effect in all models presented in table 5, giving strong support to the hypothesis that potential governments are more

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6 We here follow previous studies (see e.g. Bäck and Dumont 2007; Martin and Stevenson 2001) who evaluate the hypothesis that majority governments are more likely to form by including a minority government variable (instead of a majority government variable) in the analysis.
likely to form if they were the incumbent cabinet. The fact that parties in the four countries choose the same coalition partners over and over again could thus suggest that parties in all four regional contexts aim at minimizing transaction costs when forming coalitions.

To fully evaluate the performance of the classical coalition variables we also calculate the prediction rate of our models by generating predicted probabilities from our models and predicting that the government with the highest predicted probability will form (see Martin and Stevenson 2001). The prediction rates for the classical coalition model varies a lot across countries, with a very high prediction rate in Germany and Spain (0.61 and 0.56), a relatively low prediction rate in the Netherlands (0.37), and an even lower prediction rate in Sweden (0.22). In comparison to a study of the Swedish municipalities, where classical coalition variables predicted over 50 percent of the coalitions (Bäck 2003a), this result again supports the conclusion that the policy range measure used here is not of satisfactory quality.

In the second models presented for each country (models 2, 4, 6, 8) we add one feature drawn from the literature on coalition formation in multi-level settings, the variable that describes if the potential government is a cross-cutting coalition, i.e. the variable has a positive value when the government includes some parties included in the national-level government and some parties not included in this cabinet. As is seen in table 5, this variable exerts a negative effect in all four regional contexts, but the effect is only significant in three cases, in Germany, Netherlands and Sweden. Thus, in these three countries, cross-cutting coalitions are less likely to form, or differently put, congruent coalitions are more likely to form.

This variation across the country contexts is in line with the country predictions presented above, where we predicted that congruence should be important in the Dutch regions and not so important in the Spanish regions, whereas we could not give a clear prediction for the Swedish and German cases since the two features describing the distribution of power across levels of government, shared rule and self-rule, suggested opposite effects in these two cases. The results suggest that the high shared rule, or the interconnectedness of regional and federal decision-making in Germany motivates the actors to form coalitions that are congruent with the national-level coalition. The results for Sweden could instead imply that the low degree of self-rule is the explanation to the lack of cross-cutting coalitions or the high degree of congruence.

Studying the prediction rates of our models when the cross-cutting coalition variable is added to the classical coalition variables, surprisingly Sweden is the only case where the prediction rate is increased substantially (from 0.22 to 0.35). The superior performance of the cross-cutting variable in the Swedish case could again point to the poor quality of the policy position data for Sweden – in this case, the cross-cutting variable may simply be picking up part

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7 Pappi, Becker and Herzog (2005: 456–458) argue that the share of correct predictions is a misleading measure of the empirical performance of government formation models, since a prediction may be correct by chance. That is, for party systems with a small number of actors the chance to predict the outcome is higher than for parliaments with a large number of parliamentary party groups. We therefore rely on the more conservative measure developed by Pappi et al. (2005) which takes the total number of predictions as the denominator rather than the number of formation opportunities (see also Bäck and Dumont 2007).

8 In Sweden, the national-level government that formed after the 1998 and 2002 elections was a single-party Social Democrat government. However, since this government was supported by the Greens and the Left party, and the three parties even had a written policy agreement, we have chosen to code these three parties as included in the governing coalition. Bale and Bergman (2006: 422) call the Swedish situation ‘contract parliamentarism’ which is characterized by “minority governments that have relationships with their ‘support’ parties that are so institutionalized that they come close to majority governments”.

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of the effect of the policy-seeking motivations of parties since coalitions that have formed at the national level are likely to be policy cohesive coalitions. The small (or non-existent) increase of the prediction rate in the Dutch case is of course rather disappointing since a large increase in the prediction rate would have given stronger support to the hypothesis that congruent coalitions are more likely to form in this particular national context.

In table 6 we present the results from five analyses where we have pooled the data from our four countries. We first present a base model including only the classical coalition variables, we then add the cross-cutting variable, and in the last three models we add the different interaction terms where the cross-cutting variable is interacted with two contextual features. First, we create an interaction variable taking the product of the cross-cutting variable and the regional authority index presented by Marks et al. (2008). Ideally, we would have liked to interact the cross-cutting variable with the two separate variables describing shared rule and self-rule since we have distinct hypotheses about these features. Unfortunately, we do not have enough variation in these variables across our four countries to include them both in a controlled analysis. In this analysis, we instead rely on the composite index presented by Marks et al. (2008), which can be seen as a measure of the ‘strength’ of regional authorities.9 Second, we also interact the cross-cutting variable with a measure of the ‘localization’ of regional elections.10

First looking at the classical coalition variables (model 9) we can see that most of the hypotheses are given support in the pooled analyses – the only feature that does not exert a significant effect is the minimum winning variable. Thus, from studying regions in this four-country sample, we see that potential governments are more likely to form when they control a majority of seats, when they are minimal winning, when they are minimal winning coalitions with the smallest number of parties, when the include the largest party, when they display a small ideological range, and when they constitute the incumbent administration.

In model 10 we add the cross-cutting variable. In this pooled analyses, the cross-cutting variable exerts a significant negative effect, giving support to the idea that cross-cutting or non-congruent coalitions are less likely to form in these multi-level contexts. We can also see that when this variable is added there is an almost 4 percentage points increase in the prediction rate of the model (the prediction rate is increased from 0.38 to 0.42), which gives further support to the hypothesis that congruent coalitions are more likely to form in the regions studied here.

9 The regional authority index presented by Marks et al. (2008) varies mainly across countries, but there is some variation across time and across regions (in Spain). The measure takes the value 21 for all German regions, the values 13.5 for the Dutch regions before 1994 and 14.5 since 1994, the values 15.5 for the Spanish region Navarra and 13.5 for the other Spanish regions before 1997 and 14.5 since 1997, and it takes the value 10 for all Swedish regions.

10 We here rely on a very simple measure of localization which takes the sum of all absolute differences in the seat shares between the national party and its regional counterpart. Thus, we here rely on a measure of the differences in the absolute seat shares across national and regional levels. An alternative measure would instead focus on the ‘swings’ in seat shares across national and regional elections. For example Denters (1985) and Downs (1998) considers localization as the extent to which changes in party voting shares between elections at the local arena deviate from the changes for the national counterpart between these elections (see also Bäck 2003). For an alternative measure based on the Gini index, see Jones and Mainwaring (2003). In future versions of this papers we plan to try such alternative measures.
As mentioned above we are not fully able to evaluate the two hypotheses formulated about the role of congruence in systems with a varying distribution of power between the regional and national level. We therefore interacted the regional authority index presented by Marks et al. (2008) with the cross-cutting coalition variable in order to investigate whether the level of regional authority in general influences the role of congruence in different multi-level settings. As we can see in model 10, this interaction terms is positive and significant, which implies that in regions with a higher level of regional authority cross-cutting coalitions are more likely to form. This could suggest that the regional authority index is mainly capturing the degree of self-rule, and this result thus supports the hypothesis that says that regions with a high degree of self-rule should see more cross-cutting coalitions since the parties are less dependent on the national government in such settings. What should also be noted here is that the cross-cutting variable by itself exerts a significant negative effect even when this interaction variable is added, suggesting that congruent coalitions are in general more likely to form in this sample.

In model 11 we add the interaction between the localization variable and the cross-cutting variable. The effect of this variable is positive and significant at the 0.01 level, giving strong support to the hypothesis that cross-cutting coalitions are more likely to form in regions where the elections are highly localized, i.e where the regional election outcome does not closely mirror the national result. Thus, this implies that parties who operate in regional settings where the elections are highly nationalized seem to be more motivated to form coalitions that resemble the national-level coalition, i.e. they choose to not deviate from the coalitional choices made by their national-level counterparts. In model 12 we add both of the interaction terms included in model 10 and 11, and again we find that cross-cutting coalitions are more likely to form in contexts where regional authority is high and when the elections are highly localized.

Conclusions

The aim of this paper has been to answer the question of ‘what are the determinants of coalition outcomes in sub-national government formation?’ By focusing on regional government formation in four countries we believe we are now one step closer to answering this question. In this paper we draw hypotheses from the more classical literature on coalition formation, focusing on the office- and policy-seeking goals that parties are driven by, and from the more recent literature on government formation in multi-level settings.

One of the most important pieces of information needed to evaluate classical coalition theories is data on the parties’ ideal policy positions along some key dimension. When studying national-level coalitions, we can rely on comparative expert surveys or data drawn from the manifesto research project to measure parties’ positions, whereas there is no such available data set for the sub-national level. We have solved this problem by gathering regional election manifestos in the countries studied here. These manifestos were analyzed by the help of automated content analysis (‘wordscores’, see Laver et al. 2003). The results found here suggest that patterns of party competition at the regional level is different to the one at the national level, and that there is a large variation in the parties’ positions across regions.

The data on parties’ policy positions drawn from the regional manifestos are then used in a conditional logit analysis to evaluate the role of policy-seeking features in regional government formation. The results found in this multivariate analysis suggest that regional government
formation is determined by a number of factors. First, traditional coalition variables perform rather well, exerting several significant effects in the expected direction and showing an overall high predictive performance, predicting almost 40 percent of the governments in the pooled sample. Second, cross-cutting coalitions are clearly less likely to form in the multi-level settings studied here, even though the role of congruence seems to vary across countries, where Spanish regions display the lowest degree of congruence between national and regional coalitions. Trying to explain the varying role of congruence we also include some contextual features in a pooled analysis, and we find that congruent coalitions are more likely to form in contexts with a low level of regional authority and where the regional elections are highly nationalized.

One of the problems in this analysis is that we are here dealing with a very small country sample, which creates problems when evaluating the role of congruence in systems with a varying distribution of power between the regional and national level. Since features such as the level of shared rule and the level of self-rule of regions (see Marks et al. 2008) mainly vary across countries, we simply do not have enough variation in our sample to fully evaluate the role of such features. A necessary step is thus to increase the country sample of our analysis.

This paper is the first of a larger comparative project that seeks to discover the dimensionality of policy spaces at the sub-national level in Western and Eastern European states. The wordscores technique applied here is a useful, but perhaps not the best way to extract policy positions of regional actors. For example, in cases like Sweden, where regional authorities mainly deal with health care, regional programs may be problematic to analyze using automated content analysis since they cannot easily be compared to the national-level programs. To get information on the characteristics of the relevant policy dimensions in the regions of one country and the positions political actors take on these dimensions, a manual or dictionary-based analysis of political texts should therefore be performed (see e.g. Laver and Garry 2000).
References


Pogorelis, Robertas; Maddens, Bart; Swenden, Wilfried; Fabre, Elodie (2005): Issue Salience in Regional and National Party Manifestos in the UK. In: West European Politics 28, 992-1014.


Tables and figures

Table 1. Size and number of principal regional authorities

<table>
<thead>
<tr>
<th>Country</th>
<th>Principal regional authority</th>
<th>Number of regions</th>
<th>Average population millions (year 2000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>Land</td>
<td>16</td>
<td>5.1</td>
</tr>
<tr>
<td>Netherlands</td>
<td>Province</td>
<td>12</td>
<td>1.3</td>
</tr>
<tr>
<td>Spain</td>
<td>Autonomous community</td>
<td>17</td>
<td>2.3</td>
</tr>
<tr>
<td>Sweden</td>
<td>County (landsting)</td>
<td>20</td>
<td>0.5</td>
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Table 2. The hypothesized role of congruence in different regional contexts

<table>
<thead>
<tr>
<th>Shared rule</th>
<th>Self-rule</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
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<tr>
<td>High</td>
<td>Low</td>
<td>Congruence should be important (Netherlands)</td>
<td>Congruence may be important (Germany)</td>
</tr>
<tr>
<td>Low</td>
<td>High</td>
<td>Congruence may be important (Sweden)</td>
<td>Congruence should not be important (Spain)</td>
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Table 3. Mean left-right positions of parties at the national and regional level

<table>
<thead>
<tr>
<th>Country</th>
<th>Party</th>
<th>Left-right score (national level)</th>
<th>Left-right score (regional level)</th>
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</thead>
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<tr>
<td></td>
<td></td>
<td>Mean expert placement</td>
<td>Mean</td>
</tr>
<tr>
<td>Germany</td>
<td>CDU/CSU</td>
<td>13.6</td>
<td>12.0</td>
</tr>
<tr>
<td></td>
<td>SPD</td>
<td>8.4</td>
<td>9.8</td>
</tr>
<tr>
<td></td>
<td>FDP</td>
<td>13.4</td>
<td>12.9</td>
</tr>
<tr>
<td></td>
<td>B90/Greens</td>
<td>7.1</td>
<td>8.6</td>
</tr>
<tr>
<td></td>
<td>PDS/Linke</td>
<td>3.6</td>
<td>6.8</td>
</tr>
<tr>
<td></td>
<td>SSW</td>
<td>–</td>
<td>10.3</td>
</tr>
<tr>
<td></td>
<td>FW</td>
<td>–</td>
<td>11.3</td>
</tr>
<tr>
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<td>CDA</td>
<td>13.3</td>
<td>15.5</td>
</tr>
<tr>
<td></td>
<td>PvdA</td>
<td>8.1</td>
<td>9.9</td>
</tr>
<tr>
<td></td>
<td>VVD</td>
<td>16.8</td>
<td>17.4</td>
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<td></td>
<td>GL</td>
<td>5.1</td>
<td>7.0</td>
</tr>
<tr>
<td></td>
<td>D66</td>
<td>10.0</td>
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<td>2.5</td>
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<td>SGP</td>
<td>13.1</td>
<td>19.2</td>
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<td>LPF</td>
<td>16.3</td>
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<tr>
<td></td>
<td>PvhN</td>
<td>–</td>
<td>12.7</td>
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<td></td>
<td>PVZ</td>
<td>–</td>
<td>12.4</td>
</tr>
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<td>Spain</td>
<td>PSOE</td>
<td>8.2</td>
<td>10.6</td>
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<td>IU</td>
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<td>2.7</td>
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<tr>
<td></td>
<td>CC</td>
<td>–</td>
<td>9.9</td>
</tr>
<tr>
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<td>PNV</td>
<td>14.5</td>
<td>16.2</td>
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<tr>
<td>Sweden</td>
<td>SAP</td>
<td>8.3</td>
<td>12.1</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>17.2</td>
<td>12.8</td>
</tr>
<tr>
<td></td>
<td>KD</td>
<td>16.0</td>
<td>11.7</td>
</tr>
<tr>
<td></td>
<td>FP</td>
<td>14.2</td>
<td>10.6</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>12.2</td>
<td>11.7</td>
</tr>
<tr>
<td></td>
<td>MP</td>
<td>7.5</td>
<td>9.7</td>
</tr>
<tr>
<td></td>
<td>V</td>
<td>3.6</td>
<td>10.6</td>
</tr>
</tbody>
</table>

Abbreviations: German parties: CDU/CSU: Christian Democrats; SPD: Social Democrats; FDP: Free Democrats; B90/Greens: Alliance 90/The Greens; PDS/Linke: Socialists; SSW: Danish minority in Schleswig-Holstein; FW: Free Voters Association (Bavaria).

Dutch parties: CDA: Christian Democrats; PvdA: Social Democrats; VVD: Liberals; D66: Libertarians; SP: Socialists; SGP: Orthodox Calvinists; CU: Christian Union (moderate Calvinists); LPF: List Pim Fortuyn; PvhN: Party for the North; PVZ: Party voor Zeeland.

Spain: PSOE: Socialists; PP: Peoples Party (Conservatives); IU: (former) Communists; CC: Canarian Coalition; PNV: Basque National Party.

Sweden: SAP: Social Democrats; M: Moderates (Conservatives); KD: Christian Democrats; FP: Progress Party (Liberals); C: Centre Party (Agrarians); MP: Green Party; V: Left-Socialists.
Table 4. Characteristics of potential and formed coalitions in Germany, the Netherlands, Spain and Sweden since the 1990s

<table>
<thead>
<tr>
<th>Country</th>
<th>Potential coalitions</th>
<th></th>
<th>Formed coalitions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Alternatives</td>
<td>Formations</td>
<td>Minority government</td>
<td>Minimal winning</td>
</tr>
<tr>
<td>Germany</td>
<td>1,323</td>
<td>73</td>
<td>627</td>
<td>226</td>
</tr>
<tr>
<td>Netherlands</td>
<td>19,332</td>
<td>60</td>
<td>9,781</td>
<td>1,039</td>
</tr>
<tr>
<td>Spain</td>
<td>2,008</td>
<td>75</td>
<td>967</td>
<td>223</td>
</tr>
<tr>
<td>Sweden</td>
<td>9,988</td>
<td>60</td>
<td>4,964</td>
<td>677</td>
</tr>
<tr>
<td>Total</td>
<td>32,651</td>
<td>268</td>
<td>16,339</td>
<td>2,165</td>
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</tbody>
</table>

* Correlation between formed/not-formed coalition significant at 0.1%-level (Fisher’s exact test)

+ Differences in means between formed/not-formed coalition significant at 0.1%-level (t-Test).
### Table 5. Conditional logit analyses of classical coalition variables and multi-level features in four countries (separate country analyses)

<table>
<thead>
<tr>
<th></th>
<th>Germany (1)</th>
<th>Germany (2)</th>
<th>Netherlands (3)</th>
<th>Netherlands (4)</th>
<th>Spain (5)</th>
<th>Spain (6)</th>
<th>Sweden (7)</th>
<th>Sweden (8)</th>
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<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Minority government</td>
<td>-0.26</td>
<td>-0.79</td>
<td>-4.41</td>
<td>-4.91</td>
<td>0.90</td>
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<td>-1.08</td>
<td>-3.01</td>
</tr>
<tr>
<td></td>
<td>(1.32)</td>
<td>(1.34)</td>
<td>(1.31)***</td>
<td>(1.36)***</td>
<td>(0.66)</td>
<td>(0.69)</td>
<td>(0.54)**</td>
<td>(0.70)***</td>
</tr>
<tr>
<td>Minimal winning</td>
<td>3.39</td>
<td>3.38</td>
<td>0.24</td>
<td>0.17</td>
<td>1.68</td>
<td>1.66</td>
<td>2.59</td>
<td>1.51</td>
</tr>
<tr>
<td></td>
<td>(1.29)***</td>
<td>(1.29)***</td>
<td>(0.84)</td>
<td>(0.85)</td>
<td>(0.78)**</td>
<td>(0.78)**</td>
<td>(0.41)***</td>
<td>(0.49)***</td>
</tr>
<tr>
<td>Minimum winning</td>
<td>0.46</td>
<td>0.21</td>
<td>-0.97</td>
<td>-0.93</td>
<td>1.57</td>
<td>1.36</td>
<td>-0.58</td>
<td>-0.85</td>
</tr>
<tr>
<td></td>
<td>(0.55)</td>
<td>(0.56)</td>
<td>(1.03)</td>
<td>(0.99)</td>
<td>(0.49)***</td>
<td>(0.51)***</td>
<td>(0.59)</td>
<td>(0.61)</td>
</tr>
<tr>
<td>Bargaining proposition</td>
<td>0.52</td>
<td>0.47</td>
<td>1.65</td>
<td>1.59</td>
<td>0.35</td>
<td>0.32</td>
<td>-0.18</td>
<td>-0.12</td>
</tr>
<tr>
<td></td>
<td>(0.72)</td>
<td>(0.73)</td>
<td>(0.87)*</td>
<td>(0.87)*</td>
<td>(0.48)</td>
<td>(0.49)</td>
<td>(0.42)</td>
<td>(0.43)</td>
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<tr>
<td>Largest party included</td>
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<td>-0.19</td>
<td>-0.22</td>
<td>1.21</td>
<td>1.14</td>
<td>0.04</td>
<td>-0.00</td>
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<tr>
<td></td>
<td>(0.80)*</td>
<td>(0.81)</td>
<td>(0.62)</td>
<td>(0.62)</td>
<td>(0.43)***</td>
<td>(0.43)***</td>
<td>(0.39)</td>
<td>(0.44)</td>
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<tr>
<td>Ideological distance</td>
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<td>-0.06</td>
<td>-0.01</td>
<td>-0.01</td>
<td>-0.01</td>
<td>-0.01</td>
<td>-0.00</td>
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<tr>
<td></td>
<td>(0.03)***</td>
<td>(0.02)**</td>
<td>(0.00)***</td>
<td>(0.00)***</td>
<td>(0.01)</td>
<td>(0.01)</td>
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<td>(0.00)</td>
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<tr>
<td>Incumbent government</td>
<td>1.94</td>
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<tr>
<td></td>
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<td>(0.51)***</td>
<td>(0.32)***</td>
<td>(0.32)***</td>
<td>(0.40)***</td>
<td>(0.40)***</td>
<td>(0.39)***</td>
<td>(0.45)***</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>-1.09</td>
<td>-0.64</td>
<td></td>
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<tr>
<td></td>
<td>(0.39)**</td>
<td>(0.65)*</td>
<td>(0.65)</td>
<td>(0.43)</td>
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<tr>
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<td>1,323</td>
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<td></td>
<td>(0.39)**</td>
<td>(0.65)*</td>
<td>(0.65)</td>
<td>(0.43)</td>
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<td></td>
</tr>
<tr>
<td>Number of formations</td>
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<td>73</td>
<td>60</td>
<td>60</td>
<td>75</td>
<td>75</td>
<td>60</td>
<td>60</td>
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<tr>
<td>Log likelihood</td>
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<td>-56.00</td>
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<td>-143.11</td>
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<td>-135.47</td>
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<td>0.72</td>
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<td>0.57</td>
<td>0.53</td>
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</tr>
<tr>
<td>AIC</td>
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<td>0.620</td>
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<td>0.370</td>
<td>0.560</td>
<td>0.565</td>
<td>0.220</td>
<td>0.346</td>
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</table>

Note: Significant at * the 0.10 level, ** the 0.05 level, *** the 0.01 level. Parameter estimates are unstandardized conditional logit coefficients with standard errors in parentheses.
Table 6. Conditional logit analyses of coalition and multi-level features (pooled analyses)

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<th>(10)</th>
<th>(11)</th>
<th>(12)</th>
<th>(13)</th>
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<td><strong>Classical coalition variables</strong></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Minority government</td>
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<td>(0.35)**</td>
<td>(0.35)**</td>
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<td>(0.28)**</td>
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<td>(0.23)**</td>
<td>(0.23)**</td>
<td>(0.23)**</td>
<td>(0.23)**</td>
</tr>
<tr>
<td>Largest party included</td>
<td>0.59</td>
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<td>0.54</td>
<td>0.57</td>
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<tr>
<td></td>
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<td>(0.25)**</td>
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</tr>
<tr>
<td>Incumbent government</td>
<td>4.17</td>
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<td>4.05</td>
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<td>4.01</td>
</tr>
<tr>
<td></td>
<td>(0.20)**</td>
<td>(0.20)**</td>
<td>(0.21)**</td>
<td>(0.21)**</td>
<td>(0.21)**</td>
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<td><strong>Multi-level variables</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Cross-cutting coalition</td>
<td>-1.93</td>
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<td>-3.31</td>
<td>-3.31</td>
<td>-5.02</td>
</tr>
<tr>
<td></td>
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<td>(0.65)***</td>
<td>(0.38)***</td>
<td>(0.68)***</td>
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</tr>
<tr>
<td>Cross-cutting × regional authority</td>
<td>0.17</td>
<td>0.17</td>
<td>0.17</td>
<td>0.17</td>
<td>0.17</td>
</tr>
<tr>
<td></td>
<td>(0.04)**</td>
<td>(0.04)**</td>
<td>(0.04)**</td>
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<tr>
<td>Cross-cutting × localization</td>
<td>4.09</td>
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</tr>
<tr>
<td></td>
<td>(0.93)***</td>
<td>(0.93)***</td>
<td>(0.93)***</td>
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</tr>
<tr>
<td>Number of formations</td>
<td>268</td>
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<tr>
<td>Log likelihood</td>
<td>-546.73</td>
<td>-503.00</td>
<td>-494.43</td>
<td>-493.35</td>
<td>-488.62</td>
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<td>Mc Fadden's Pseudo R2</td>
<td>0.47</td>
<td>0.51</td>
<td>0.52</td>
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<td>0.52</td>
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<tr>
<td>AIC</td>
<td>1107.459</td>
<td>1022.002</td>
<td>1006.864</td>
<td>1004.701</td>
<td>997.2493</td>
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<tr>
<td>BIC</td>
<td>1166.174</td>
<td>1089.105</td>
<td>1082.355</td>
<td>1080.192</td>
<td>1081.128</td>
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<tr>
<td>Prediction rate</td>
<td>0.382</td>
<td>0.417</td>
<td>0.417</td>
<td>0.423</td>
<td>0.422</td>
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</tbody>
</table>

Note: Significant at * the 0.10 level, ** the 0.05 level, *** the 0.01 level. Parameter estimates are unstandardized conditional logit coefficients with standard errors in parentheses.