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Who Gets into Government? Coalition Formation in European Democracies

HOLGER DÖRING and JOHAN HELLSTRÖM

This article investigates different dynamics in government formation in 16 Western and 10 Central-Eastern European democracies during the post-war period. The study provides the first systematic comparison of determinants of participation in government in the East and the West. Applying mixed effects logit regression models while taking into account missing values in the dataset, the results demonstrate substantial differences between the two regions and show that most of the existing findings about participation in government are driven by Western democracies. Policy-based factors are relevant in Western countries, but no indications were found for these factors in Central-East European democracies where membership of government is mainly the result of electoral gains and losses.

We know that party systems and electoral volatility in the West and the East differ significantly (e.g. Bielasiak 2002). In West European democracies we find well-established party systems and quite stable electoral support for parties. In contrast, the last two decades of democratic consolidation in Central-Eastern Europe have been accompanied by major changes in the party systems of those countries, significantly higher levels of electoral volatility and more significant vote losses of parties in government (e.g. Pop-Eleches 2010; Roberts 2008). Based on existing theories of coalition formation, we would expect these differences to result in different determinants of government participation in Western and Central-Eastern European democracies. However, existing research has focused on one of the two regions and we are in need of more systematic comparisons between the West and East.

Two major research questions about government formation can be distinguished. Firstly, what is the probability of a parliamentary party becoming a government member (e.g. Mattila and Raunio 2004; Tavits 2008; Warwick 1996)? Stated differently, what are the factors that determine whether a party with a given set of characteristics such as size, ideological position and recent electoral performance takes part in a government? Secondly, given all

potential coalitions, which one actually does form a government, i.e. what are the characteristics of potential coalitions (see Martin and Stevenson 2001)? In this paper, we refer to the former (party-level) question in order to investigate differences in patterns of government formation between established Western and new Central-East European democracies.¹

So far, empirical investigations of government formation have been mostly applied to Western countries whereas only a few studies exist of Central-East European democracies (e.g. Druckman and Roberts 2007; Grzymala-Busse 2001). For both regions, existing research has mainly focused on one specific factor while investigating only a limited set of countries or time periods. Besides, no distinction between pure coalition bargaining from government formations under a majority party or caretaker governments has been made. Thus, work that distinguishes more carefully between types of governments and different dynamics of government formation in the East and the West would considerably enhance our understanding about the making of governments in modern democracies.

For our study, we can draw on a new dataset and significantly extend the number of observations to include about 500 government formations in 16 West European countries and more than 100 governments from 10 Central-East European countries. In this study, we distinguish all instances of government formation, including caretaker and majority cabinets from pure coalition bargaining environments and highlight their differences. We also discuss and take into account the most important methodological challenges, which arise when dealing with binary time-series cross-sectional data on government formation. Methodologically, we use mixed effects logit, with random intercepts estimation. Besides, we take account of problems of missing data by multiple imputation (see Beck *et al.* 1998; Honaker and King 2010) in order to investigate how government formation differs between new and established democracies.

Our analysis reveals substantial differences in patterns of government formation between Western and Central-East European countries. Electoral dynamics have a much bigger impact in the East and dominate policy-based traits of government participation. In the West, a party's ideological position, the seat strength in parliament, its electoral performance, incumbency and previous governmental experience are of particular importance. In Central-Eastern Europe, a party's electoral performance is the most important factor, so that higher levels of electoral volatility eliminate incumbency advantages whereas a party's ideological position is not relevant.

In the next section, we present a short overview of the historical evolution of studies on government formation and highlight the progress that has been made over recent decades. In the third section, we draw on theoretical models of government formation to derive predictions about potential government members and distinguish between different mechanisms of government formation in new and old democracies. In the fourth section, we discuss the research design and introduce our data. In the following section, we present our empirical investigation of the question – which parties get into government?

Finally, the concluding section discusses how our results differ from previous studies and presents implications for further research.

Existing Work on Coalition Formation

What do we know about government formation in modern democracies today? Most work is based on Western democracies and we can distinguish two waves of innovation in the study of government formation. During the first period in the late 1960s and early 1970s, the basic theoretical models of coalition formation were developed (cf. Axelrod 1970; de Swaan 1973; Riker 1962). A second period of work on the process of government formation and termination started in the early 1990s, as students of comparative politics began to investigate more systematically which governments form and why they break (cf. Martin and Stevenson 2001; Warwick 1996). Most of these studies have been based on Western (European) democracies and only a few studies have investigated government formation in Central-Eastern Europe (cf. Druckman and Roberts 2007). However, the two regions have to be compared rigorously. Below, we provide a short overview of the main findings from existing research on government formation. We start with theoretical work based on studies about the West and proceed with a discussion of research that focuses particularly on the East.

The first school of scholars developed the basic distinction between office-seeking (Riker 1962) and policy-seeking (Axelrod 1970; de Swaan 1973) parties which form governments. Office-seeking models led scholars to expect minimal winning coalitions that controlled a majority in parliament but carried no additional, unnecessary partner. Policy-seeking models predict that parties in a coalition mainly try to maximise 'policy coherence' and form coalitions with parties connected in the political space. A second period of systematic work in the early 1990s on the making and breaking of governments was strongly shaped by Michael Laver and his co-authors' work on theoretical (Laver and Shepsle 1990) and empirical (Laver and Budge 1992) aspects of coalition cabinets. Later empirical work by Warwick (1996) led to innovations by setting up a comprehensive dataset about coalition formation in Western countries and by introducing maximum-likelihood estimations to the study of coalition formation. Warwick's study provided the first systematic empirical work related to the question that motivates this paper: who gets into government?

In the last decade, studies focused on one explanatory factor at a time to better understand the process of government participation. For instance, Mattila and Raunio (2004) evaluated preceding electoral performance more carefully to investigate the impact of losing or winning parliamentary seats on a party's chances of becoming a government member. Bäck and Dumont (2008) examined the role of formateurs to better understand the two-stage process of coalition building. Tavits (2008) investigated the impact of past defection from coalitions as a potential cause of government exclusion and Bolleyer (2007) studied the pivotal role of small parties in coalition formation. Almost all of the major studies in the field based their investigations on a limited set of West

European countries. Only Tavits (2008) included five Central-East European democracies in her study, but she did not investigate differences between consolidated and new democracies and concentrated on the role of 'defector parties'. As valuable as these recent contributions are, the broader question of who gets into government, taking into account a set of conditional factors, has been overshadowed by a focus on single causes of government participation. This paper contributes to the current debate by returning to the more general question of causes of government participation in the West and the East.

West vs. East

Several studies have highlighted differences between Central-East European and established Western democracies. We find higher levels of electoral volatility and less structured party systems in the East compared to the West (Bielasiak 2002). In particular, the regular and strong electoral losses of incumbent parties in almost all democratic elections over the last two decades have been emphasised (Roberts 2008). Pop-Eleches (2010) argues that we have recently seen a significant shift towards unorthodox parties, in terms of both electoral success and government participation, after voters in the East were dissatisfied with the governing record of major left-wing and right-wing parties. There has also been a debate about the structure of political divides and electoral competition in Central-Eastern Europe since the democratisation of former Communist regimes (cf. Kitschelt *et al.* 1999). Casal Bértoa and Mair (2012: 104) argue that party systems in the region have never been strongly structured and the level of institutionalisation has even declined recently. Rohrschneider and Whitefield (2009: 284–85) compare three different perspectives on party system structure in the East (no structure, unidimensionality and structured diversity) and conclude that *tabula rasa* arguments of unstructured divides can be refuted and that systematic patterns of political competition have emerged in post-Communist democracies but vary between countries.

Why may coalition building differ between Western and Central-Eastern European democracies? In post-Communist states, a rift exists between parties originating in the old regime and those that emerged in opposition to the regime. Kitschelt *et al.* (1999: 352ff.) and Grzymala-Busse (2001) have put forward an argument about the effects of this regime divide on government formation. They argue that parties of the left and centre-left may be limited in their willingness and ability to enter coalitions with Communist successor parties due to historical legacies and high electoral costs. The argument undermines the predictive power of policy-based theories, because some potential coalitions of programmatically close parties may not be feasible due to old divides from the Communist past. Druckman and Roberts (2007) offer systematic empirical evidence about the impact of Communist successor parties on government formation and show that they are indeed less likely to become cabinet members. In addition, they are more often members of surplus majority coalitions and control a smaller share of portfolios.

TABLE 1
GOVERNMENT FORMATION IN THE WEST AND EAST (1945–2009)

	Elections	Cabinets	Minority	Surplus	Single-party majority	Caretaker	Duration	Cabinet parties	Legislative parties	Polarisation	Volatility
Austria	20	26	1	1	4	0	2.45	1.8	2.7	0.37	8.47
Belgium	20	40	5	17	3	3	1.57	3	5.5	0.36	13.36
Denmark	25	35	31	0	0	0	1.83	1.5	4.6	0.43	12.20
Finland	18	48	12	25	0	7	1.55	2.6	5.1	0.38	9.44
France	18	59	11	35	0	4	1.03	2.4	3.7	0.49	27.98
Germany	17	21	0	7	0	0	3.01	1.9	3.4	0.34	9.82
Greece	13	18	1	1	13	3	2.05	1.1	2.3	0.37	14.97
Iceland	20	31	6	3	0	1	2.08	2	3.7	0.41	12.39
Ireland	19	25	12	2	6	0	2.66	1.3	2.9	0.27	11.44
Italy	17	56	28	23	0	1	1.11	1.6	4.3	0.43	20.05
Luxembourg	15	19	0	1	0	0	3.4	2	3.5	0.31	12.40
Netherlands	19	26	4	11	0	5	2.4	2.5	4.8	0.36	14.44
Norway	17	30	19	0	6	0	2.14	1.6	3.6	0.42	13.79
Portugal	12	19	6	3	3	3	1.85	1.4	3.1	0.38	13.24
Spain	10	11	8	0	3	0	3.08	1	2.7	0.42	17.17
Sweden	20	29	21	0	2	0	2.19	1.3	3.5	0.39	10.71
	280	493	165	129	40	28	2.15	1.93	3.80	0.38	13.65
Bulgaria	6	9	4	0	2	3	2.21	1.2	3.1	0.3	42.92
Czech republic	6	12	5	1	0	2	1.71	1.6	3.6	0.45	25.33
Estonia	5	11	3	0	0	0	1.45	2.1	4.9	0.38	37.33
Hungary	5	9	1	4	0	0	2.36	1.4	3.0	0.48	30.68
Latvia	6	17	8	6	1	0	1.1	2.9	5.3	0.45	41.26
Lithuania	6	15	7	3	3	1	1.25	1.6	4.2	0.3	59.63
Poland	7	21	11	3	0	2	0.89	1.9	4.6	0.37	38.71
Romania	6	15	10	3	1	4	1.31	1.7	3.7	0.24	39.08
Slovakia	6	12	3	3	0	0	1.38	2	4.7	0.30	35.61
Slovenia	4	10	2	1	0	0	1.66	2.3	5.2	0.33	29.42
	57	131	54	24	7	7	1.53	1.92	4.23	0.36	38.29

Note: Table includes all governments that formed in democratic elections in these countries in the post-war period including post-transition elections in Central-Eastern Europe. Number of elections and cabinets (total, minority, surplus, single-party majority, caretaker); mean cabinet duration in years; mean effective number of cabinet and legislative parties; mean polarisation of legislative parties; mean volatility of seat share (Pedersen's index). National councils and cabinets are included for Czech Republic and Slovakia between 1990 and 1992.

Table 1 gives some descriptive data about the countries in our study. A more detailed presentation of the dataset will be provided later on in the section on research design. In the table, we can see that there are a significant higher (effective) number of parties in Central-East European parliaments. Hence, party systems are more fragmented but not more polarised, as a comparison of the level of polarisation between West and East shows. However, there is substantially higher volatility between elections in post-Communist democracies. Moving to the cabinet level, we find that government duration differs considerably between West and East. Whereas governments last for a little more than two years on average in the West, they break down in the East on average after one and a half years. In addition, the number of parties in the East is slightly higher than in the West. With respect to the types of governments, differences between East and West prevail. Most cabinets in the West are minimum winning cabinets, but we find a significantly higher number of minority cabinets in Central-East European democracies.

How are differences in the structure of party systems between Central-Eastern European countries and established democracies connected to the process of government formation? Party systems are less structured and more volatile in Central-Eastern Europe, especially in the early years following democratisation. Hence, we expect policy-seeking factors to be less relevant, given the more limited structure of the political landscape in the region and the remaining controversies over the existence of unidimensional party competition. Besides, we expect to find higher effects of electoral gains and losses in determinants of government participation. Elections in Central-Eastern Europe with high levels of electoral volatility and losses for governing parties often change the balance of power among the major parties significantly and increase the potential of winning parties to gain a strong mandate for forming a new government.

Determinants of Who Gets into Government

Previous theoretical and empirical work on government formation has singled out a set of factors, at both the party and party system/country level, that determine a party's chance of becoming a government member. Here we derive our hypotheses from theoretical work on coalition building. We start by discussing the factors at the individual party level and the empirical implications from the median party theorem: under the assumption that coalition formation takes place in a one-dimensional political space, we would expect the median party to have a high likelihood of becoming a member of a cabinet (cf. de Swaan 1973; Laver and Schofield 1990: 110–13). Information about the position of the median party should also narrow down the set of potential coalition partners. Given that parties have some policy preferences and try to find similar ideological partners (i.e. pursuing policy-seeking behaviour), parties positioned close to the median party should be more likely to become government members. It follows that more extreme parties are theoretically less likely to get into government. Given the higher volatility of party systems and the lesser

focus on ideology by voters in Central-Eastern Europe, we expect a lower impact of policy concerns in these countries. Nevertheless, Rohrschneider and Whitefield (2009: 299) demonstrate with an expert survey that party competition in the East is often structured along one political dimension. Consequently, we test whether the *left-right median* as well as the *left-right distance from the median party* are predictors of coalition membership. We code this information as the distance of a party from the median position in the left-right dimension (*left-right median distance*).² As previously discussed, the impact of political positions may be less relevant for Communist successor parties in Central-Eastern Europe, as new parties tend to avoid ideologically similar parties that grew out of the old regime; therefore we include an indicator for *Communist successor parties* in some of our models.

The democratic process should guarantee that citizens have the chance to hold their political representatives accountable (Manin *et al.* 1999). Elections are a means for achieving accountability and offer citizens a way of evaluating government performance. Hence, performance in the most recent national election should provide us with information about likely government members. There are several mechanisms that explain the impact of electoral results on government formation. Firstly, majority control will almost guarantee government membership and strongly reduces the incentives to invite coalition partners. However, out of all governments with a parliamentary majority winner, about 20 per cent are surplus majority coalitions. These cases include some of the French and Italian cabinets. Secondly, in most countries, the party that gained the *highest number of seats (largest party)* in parliament is given the first chance to form a government and becomes the formateur in the process of coalition formation (Bäck and Dumont 2008: 366). Hence, it should be more likely to become a government member. Finally, we expect parties that win elections, which gain seats, to become government members rather than parties that lose seats (*seats change*). This simply follows from the democratic process of electoral accountability and the substantial effect should be higher in Central-East European countries given the more volatile election results and the tendency to punish incumbent parties.

Finally, there are two types of government experience that matter for a party's chance to join cabinet ranks. Firstly, parties that are *members of the previous government (incumbents)* should be taken into account (Mattila and Raunio 2004). Given that the partners still control a majority in parliament, most governments try to renew their coalition after an election. Secondly, Warwick (1996) has demonstrated that some parties are consistently excluded from government formation. These may be anti-system parties, populist or politically extreme parties. Warwick used a measure for the share of previous cabinet participation. However, it can be shown that this information is of a binary nature only. A little less than half of the party observations in our dataset are parties in parliament without any governmental experience (*government experience*) and thus we use an indicator variable as a proxy for the abovementioned parties in the analysis. In addition, at the party-system level, we follow previous studies and include the *effective number of parties* and *volatility* in our analysis.

Research Design, Data and Measurements

We draw on a new dataset that combines information about parties, in particular party positions, election results and government composition in the West and the East (Döring and Manow 2010).³ We record a change of government for each of the following four criteria: a change in the party composition of cabinet; a change of prime minister, a formal cabinet resignation or elections (Budge and Keman 1993: 10). The data used for this study includes 26 democracies (16 West and 10 East European countries) and contains all parties in the respective parliaments for 337 elections and 621 government formation opportunities. We cover all government formations that followed free and competitive elections for the whole post-war period until the end of 2009. Table 1, introduced in the section on Central-Eastern Europe, provides some descriptive accounts for each country. The data also includes caretaker governments and all cabinets in Central-Eastern Europe, which have been formed after the first free elections. These first elections were often fought by loose electoral alliances to replace the Communist rulers and the party systems in these countries stabilised in succeeding elections only. To investigate instances of pure coalition bargaining, we exclude these government formations in some of our statistical models; we also exclude caretaker governments and cabinets with a majority winning party in parliament. Remember that the latter does not automatically exclude all other parliamentary parties from the government as there are several instances of surplus majority coalitions with a majority party. Previous studies have focused on either the full sample of governments or pure coalition formations. By distinguishing pure instances of coalition bargaining from all government formations, we are able to discriminate causes of government participation in more constrained bargaining environments when coalitions have to secure legislative support.

Studies of government formation focus either on the party (e.g. Warwick 1996) or the potential coalition (e.g. Bäck and Dumont 2007; Martin and Stevenson 2001) as the unit of analysis and the two approaches allow answering different research questions. In this study, the unit of analysis is every party in parliament at an incidence of government formation and we indicate whether the party becomes a government or an opposition member. We locate parties on a left/right scale by drawing on positional information from the Comparative Manifesto Project (Budge *et al.* 2001; Klingemann *et al.* 2006). The appropriateness of using a single scale based on left/right measures from the CMP data for the West and the East has been demonstrated by Klingemann *et al.* (2006: 54 ff.). There is an extensive debate about the merits and shortcomings of different approaches to determine party positions (cf. Marks 2007). In our view, drawn from two arguments, manifesto-based left/right positions are the most appropriate data source, despite its weaknesses (for a more comprehensive discussion see Hellström 2009: 11–13). Firstly, the CMP data set has a better coverage than expert data, i.e. includes more parties and makes analysis over a longer time-period possible. Secondly, only manifesto-based party positions vary over the whole period we investigate. However, to

avoid determining results that are based on a specific measure of parties' left-right positions we also conducted our analysis with positional information based on party expert surveys (see Table A2 in the appendix).

For all parties, we include information about their seat strength in parliament and data about their previous electoral performance. We determine the position of the median party on the basis of parties' left-right positions (weighted by the number of seats in parliament) and calculate the distance of each party from the median legislator. As previously noted, we also include information about the electoral performance of legislative parties and whether a party has any previous governmental experience. We take into account some party system characteristics. Thus, this extensive set of information about government formation in modern democracies should allow us to carefully investigate the determinants of government participation.

Our data on government formation are binary panel (or binary time-series cross-sectional) data, where parties are nested into cabinets in different countries measured over time. There are several methodological issues that arise from this type of data and that need to be addressed to gain reliable inferences from the data at hand (cf. Tavits 2008: 500). Firstly, a common source of error when dealing with binary panel data is associated with temporal dependence.⁴ Although the coefficient estimates will be consistent in the presence of temporal dependence, the standard errors will be biased (e.g. Beck and Katz 1997; Maddala 1987). Thus, failing to account for serial correlation may lead to an upward bias in the statistical significance of coefficient estimates. Beck *et al.* (1998) and Beck (2001) argue that the problem of temporal dependence can be addressed by including time dummies or counter and cubic splines in an ordinary logit or probit model, along with the independent and control variables. Nonetheless, we have to examine whether the observations are temporally dependent, because adding temporal dummies or cubic splines may introduce unnecessary collinearity. To investigate this, we use a procedure suggested by Beck *et al.* (1998) and test whether temporal dummies and cubic splines are jointly significantly different from zero. Our tests indicate that the observations are in fact serial correlated and so we account for temporal dependence by including cubic splines in the estimated models.

Secondly, we need to pay attention to unobserved heterogeneity, i.e. unmodelled or omitted variables. The estimates of the effect of all included predictors on the binary outcome will be biased if not all relevant individual variables that affect the outcome are included in the model. In contrast to linear models, the problem of unobserved heterogeneity is of particular importance in non-linear models, because it biases parameter estimates even if the unobserved heterogeneity is not correlated with observed independent variables (e.g. Wooldridge 2005). To account for unobserved heterogeneity, all models in this paper are estimated using mixed effects logit regression models, with random intercepts (or, in other words, random effects logit).⁵

A final methodological note concerns missing data. Difficulties that arise from missing values have been addressed only recently in comparative politics

due to problems of imputation methods with time-series cross-section data structures (Honaker and King 2010). For our dataset, the variable ‘left/right median distance’ does not cover all observations in the dataset and contain a significant amount (about 20 per cent) of missing values. Ignoring these observations would significantly reduce our number of observations, discard valuable information and possibly bias our results. We have only missing data on one variable (left/right median distance) and removing these observations through listwise deletion would lead to severe selection bias. Problems of missing data have been largely ignored in previous work on government formation even though it may introduce considerable bias. To mitigate this problem, we employ a multiple imputation algorithm to estimate the missing values in our panel, as implemented in *Amelia II* (Honaker and King 2010). The algorithm uses values from parties where data is not missing to generate estimates for parties where it is missing. Consequently, all results reported below are based on imputed datasets and this allows us to include all our observations in the analysis.⁶

Analysis and Results

We proceed in two steps to present and discuss our results. Firstly, we use the full sample including both Western and Eastern countries. This analysis allows us to answer the general question of government participation, gives us the opportunity to discuss the effects of some of the variables and establishes a baseline for the comparison between regions. Secondly, we focus on observed differences between advanced democracies in the West and newly established democracies in Central-Eastern Europe. Table 2 shows the main results for all countries investigated and Table 3 from Western and Central-East European countries, respectively.

The first model in Table 2 presents the results of an ordinary logit analysis with cluster-robust standard errors (clustering on party). As previously discussed, all other models are based on mixed effects logit regression models with random intercepts. Model 4 only includes cabinets during the period 1990–2009 to allow comparisons with the results presented in Table 3 (i.e. model 7 and 8). Among the models in both tables, we have two subgroups, the full sample (model 1, 2, 5 and 6) and a subsample including only instances of pure bargaining environments (model 3, 4, 7 and 8). We exclude caretaker governments, cabinet formations under a majority party and government formation after the first democratic elections in Central-Eastern Europe to establish the subsample of pure bargaining instances.

What are the substantial findings about government formation in advanced democracies that our analysis establishes and how do these findings differ from previous work? The models in Table 2 provide considerable support for the hypothesised determinants of who gets into government, regardless of whether we use the full sample as in models 1 to 2 or pure instances of coalition bargaining situations as in model 3 and 4. Both factors connected to electoral

TABLE 2
 MAXIMUM LIKELIHOOD ESTIMATES FOR THE PROBABILITY OF WHO GETS INTO
 GOVERNMENT IN 26 DEMOCRACIES (1945–2009; 1990–2009)

	Full sample (logit) (1)	Full sample (2)	Pure bargaining environments (3)	Pure bargaining (1990–2009) (4)
<i>Party-level factors</i>				
Seats share parliament	0.0298*** (0.0063)	0.0640*** (.0090)	0.0576*** (0.0086)	0.0331*** (0.0120)
Seats change (%)	0.0483*** (0.0073)	0.0391*** (0.0067)	0.0473*** (0.0076)	0.0461*** (0.0104)
Largest party	0.705*** (0.250)	1.012*** (0.201)	1.009*** (0.230)	2.0375*** (0.355)
Left–right median distance	–0.0149*** (0.0031)	–0.0143*** (0.0033)	–0.0128*** (0.0036)	–0.0181*** (0.0069)
Incumbent	1.140*** (0.155)	0.993*** (0.129)	0.985*** (0.139)	1.039*** (0.238)
Government experience	0.950*** (0.146)	0.523*** (0.164)	0.661*** (0.172)	0.790*** (0.238)
<i>Country-level factors</i>				
Number of parties	0.152*** (0.043)	0.199*** (0.048)	0.245*** (0.053)	0.139* (0.075)
Volatility	–0.0147** (0.0060)	–0.0122** (0.0050)	–0.0127** (0.0054)	–0.006 (0.009)
Constant	–2.582*** (0.318)	–3.295*** (0.492)	–3.574*** (0.529)	–2.913*** (0.652)
σ_{μ}^2		0.2059	–0.0399	–0.265
σ_{ν}^2		1.109	0.980	0.876
ρ		0.272	0.226	0.189
Log likelihood	–1941.66	–1894.87	–1659.06	–702.68
Wald chi ²	894.29***	727.46***	594.20***	284.63***
Groups (parties)	566	566	506	395
Observations	4703	4703	3995	1687

Note: Dependent variable is whether a given party was included in a given government. Table entries for model 2, 3 and 4 are mixed effects logit, with random intercepts estimates and their standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; cubic splines, country dummies and time dummies are excluded from the table but are available in the replication file.

performance and policy-related variables are key determinants of government membership. Firstly, parties with more seats in parliament have a greater probability of becoming a coalition partner. It holds that seat strength in parliament is one of the most important factors for predicting which parties get into government. For each additional percentage of seats in parliament (holding other covariates at their mean values), we can determine an increase of about 3–7 per cent in the odds of getting into government. Secondly, somewhat contrary to the findings of Mattila and Raunio (2004), our results indicate that both gains and losses of seats are important predictors of entering into government. Parties losing seats in the general elections have, on average, a lower probability of getting into government, while parties that were more successful at winning seats have an average higher probability of getting into government.⁷ In addition, being the largest party is also an important factor and the odds of

TABLE 3
 MAXIMUM LIKELIHOOD ESTIMATES FOR THE PROBABILITY OF WHO GETS INTO
 GOVERNMENT – WEST VS. EAST (1990–2009)

	West (Full sample) (5)	CEE (Full sample) (6)	West (bargaining environments) (7)	CEE (bargaining environments) (8)
<i>Party-level factors</i>				
Seats share parliament	0.035** (0.016)	0.0408** (0.0185)	0.0233 (0.0152)	0.0493** (0.0218)
Seats change (%)	0.0577*** (0.0186)	0.0354*** (0.0118)	0.0763*** (0.0197)	0.0500*** (0.0144)
Largest party	2.552*** (0.535)	1.735*** (0.437)	2.502*** (0.564)	1.570*** (0.505)
Left–right median distance	-0.0297*** (0.0092)	0.0086 (0.0094)	-0.0279*** (0.0091)	0.0022 (0.0126)
Incumbent	1.474*** (0.410)	0.764*** (0.290)	1.766*** (0.428)	0.418 (0.328)
Government experience	1.160*** (0.348)	0.296 (0.319)	1.339*** (0.354)	0.599* (0.361)
Communist successor party		-0.994** (0.434)		-1.012* (0.520)
<i>Country-level factors</i>				
Number of parties	0.0180 (0.171)	0.109 (0.073)	0.262 (0.180)	0.188* (0.096)
Volatility	-0.0122 (0.0160)	-0.0229** (0.0114)	-0.0218 (0.0165)	-0.0279** (0.0140)
Constant	-3.054*** (1.029)	-3.205*** (0.975)	-4.180*** (1.083)	-2.628*** (1.309)
σ_{μ}^2	-0.437	0.281	-0.823	0.460
σ_{ν}^2	0.804	1.151	0.663	1.259
ρ	0.164	0.287	0.118	0.325
Log likelihood	-368.33	-439.62	-337.45	-335.92
Wald χ^2	188.22***	144.45***	183.20***	97.38***
Groups (parties)	232	209	223	170
Observations	1037	979	930	723

Note: Dependent variable is whether a given party was included in a given government. Table entries are mixed effects logit, with random intercepts estimates and their standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; Cubic splines, country dummies and time dummies are excluded from the table but are available in the replication file.

being a member of a new government are about three to almost eight times (in model 4) higher for the largest parties than for other parties.

With respect to positional factors, the ideological distance from the median party (*left–right median distance*) is a highly influential determinant for predicting the outcome; moderate left/right parties are more likely to enter governments and they try to find like-minded coalition partners. This finding is in line with predictions based on policy-seeking parties and their assumed intent to form ideologically coherent coalitions. According to the analysis in Table 2, our results indicate that incumbency and government experience increase the

likelihood of getting into government, which is an indication not only of incumbency effects, but also that there are some parties (mainly radical left and right parties) that do not have the opportunity to gain office and are regularly excluded from governments. More precisely, the odds of getting into a new government is about three times higher for parties that were included in the previous government and about 1.5 to 2.5 times higher for parties with previous government experience than other parties.

There are some substantial and methodological insights that our analysis of the full sample of countries from the West and the East provides. A distinction between all instances of government formation and a more constrained bargaining environment do not alter our findings significantly. Pure instances of coalition building in situations where no party controls a legislative majority do not differ substantially from general patterns of government formation including instances of majority control and caretaker governments.

Turning to the comparison between the West and the East, the results from the estimations of cabinet formation in these old and new democracies are shown in Table 3. We find that patterns of government formation differ between West and East, as our findings for the full sample (i.e. Europe as a whole) hold only for advanced Western democracies (models 5 and 7). For these countries, party positions *and* electoral shifts play a significant role. In Central-Eastern Europe (models 6 and 8), government participation is driven by electoral shifts as well as size-related variables. We found no indication that the political position of a party on the left/right dimension matters for its chances of getting into government. Stated differently, for Western countries, parties that are ideologically moderate and have been in government previously, are those that participate in most governments. Our study shows that a party's increased political distance from the median party reduces its probability of becoming a government member in the West. The finding follows naturally from the median party theorem and policy-based theories of coalition building. However, this robust theoretical prediction and established empirical fact from existing studies of coalition formation does not seem to hold in Central-Eastern Europe, as the results in models 6 and 8 demonstrate. Based on existing theoretical as well as previous empirical work, we expected a smaller impact of policy-based factors in the East and our finding provides considerable new evidence about different dynamics in the East and the West.⁸

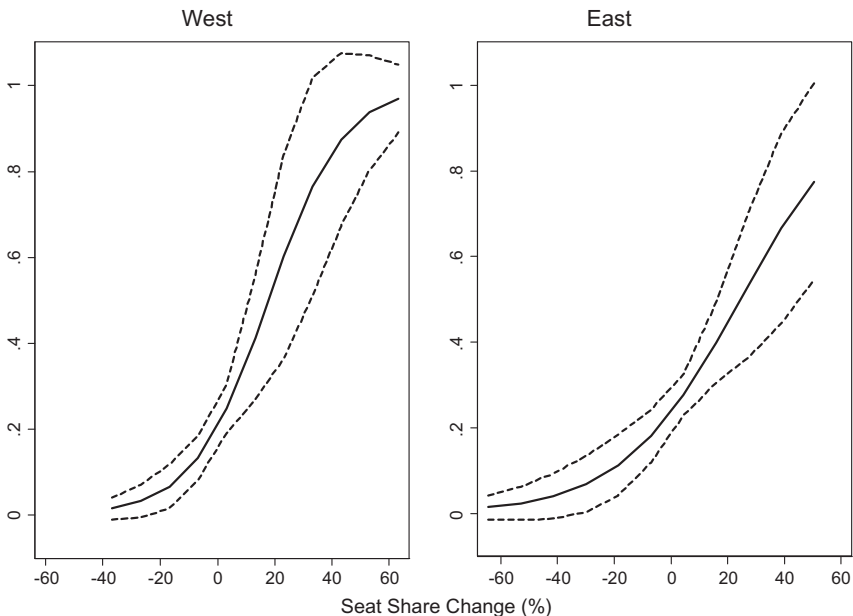
Moreover, electoral results have a dominating impact on government formation in Central-Eastern Europe. In this region, chances of government participation are determined more by electoral strength and less by party system characteristics, such as party positions or the number of parties. Only the largest party in parliament, the size of the party, and parties with significant seat gains in the most recent election are robust explanatory factors for government participation in the East and our results to some extent support previous findings about the lower probability of Communist successor parties getting into cabinet. Previous government experience seems to play no or a limited role in coalition building in the East whereas it increases the probability of

becoming a cabinet member in the West. Among the factors at the party system level, we find only weak support that a higher (effective) number of parties in parliament affects the probability of being in government in the East, but no support that this party system factor matters in the West.

Two factors matter consistently in Western and Central-Eastern European countries; having seat gains and being the largest party in parliament. Figure 1 provides additional information on the effects of recent electoral performance of parties. The graph plots the effects of changes in the share of parliamentary seats on the probability of government participation. It shows that seat gains increase the likelihood of becoming a government member in both the West and East to a large extent. The second consistent factor identified, being the largest party, is one of the most important determinants for a party's chances of getting into government in both regions. The odds of being a member of a new government are about 12 (in model 7) and almost five times (in model 8) higher for the largest parties in any given government formation opportunity than for other parties. Put differently, being the largest party means that the probability of getting into government increases on average by about 54 per cent in the West and about 28 per cent in Central-Eastern Europe.⁹

However, there are important differences between all instances of government formation in the West and the East and pure bargaining environments.

FIGURE 1
EFFECTS OF CHANGE IN PARLIAMENTARY SEAT SHARE ON GOVERNMENT
FORMATION (1990–2009)



Note: Predicted probabilities with 95 per cent confidence intervals.

Incumbency increases the likelihood of government participation only in the full sample of Central-East European countries and has no significant effect in pure bargaining instances. Besides, seat shares in parliament are no longer significant in the Western sample consisting of pure bargaining cases.

Our findings establish that government formation in Western and Central-Eastern Europe differs significantly in some aspects, but that it is also difficult to compare our findings to previous results about government formation in Central-Eastern Europe. Druckmann and Roberts (2007) focus on the role of Communist successor parties and do not take into account variables that measure electoral performance and political positions. However, these are exactly the variables that we have focused on in our study. Tavits (2008) includes only five Central-East European countries in her study and does not discuss differences between East and West. As a consequence, we are hesitant to compare these findings directly with existing work. Having established new findings about major differences in government participation between the East and the West, we leave a more fine-grained investigation about the underlying causes for future research.

Conclusion

In this study, we provided a systematic comparative analysis about the causes of government participation in Western and Central-East European post-war democracies. Our findings show that determinants of government participation differ between the West and the East. Some of the established findings on government formation in the West cannot be transferred to Central-Eastern Europe and substantial differences between the two regions prevail. In the West, variables based on both policy and electoral strength determine a party's chances of participating in government. In these countries, large centre-left and centre-right parties with gains in the most recent election and previous executive experience become government members. Contrary to these findings about Western countries, we have shown that policy-based variables and previous governmental experience does not seem to matter in determining cabinet membership in Central-Eastern Europe. In the latter set of countries, only the seat strength in parliament, the size of the party and recent electoral performance allow the probability of getting into government to be predicted. Our findings about different patterns of government formation in Central-Eastern Europe largely confirm electoral strength-based theories of government formation, but contrary to what could be predicted from spatial theories, we found little indication that policy positions have a direct effect on the probability of getting into office. Investigating the causes of these stark differences in patterns of government formation between East and West is a task that requires further research.

In our view, two aspects need special attention: the changing patterns of government formation over time and the differences between types of political systems and stages of democratic consolidation. In the East, the lack of policy-based determinants of government participation may be driven by different factors over time. Shortly after democratisation the establishment of

political parties with stable positions took time and Communist successor parties were less likely to become government members. Two decades later, party systems in some countries consolidated, but are still rather volatile in other countries. How do these changes over time impact on the participation of parties in government? A focus on changes in patterns of government formation over time should also provide new insights for Western countries. Most existing work uses a rather static perspective and discusses government formation in the West as a stable process that has not changed over recent decades. Nonetheless, party systems in Western countries have become more volatile, electoral shifts have become more pronounced and the set of feasible coalitions has expanded over time. How these changes affect who gets into government remains an open question for further investigation.

Disentangling the group of Central-Eastern European countries may shed light on the determinants of policy-based government building in new democracies. Some of the countries in the East have developed rather stable party systems and parties with distinct and identifiable political positions. In other countries, recent elections have been successfully won by new parties whose political positions are often hard to identify. As a consequence, our findings about the limited impact of policy-based factors may be driven by some of the countries in Central-Eastern Europe and specific types of party competition. Understanding the differences between Central-East European countries and potential changes in the process of democratic consolidation in these countries may help us to achieve a better understanding of when and how policy-based factors matter for government formation in the East.

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Notes

1. The unit of analysis in our study is an individual party and we aim to investigate parties' likelihood to enter cabinet and not to explain which coalition forms from a finite set of potential coalitions. Hence, we deliberately decided not to use a discrete choice modelling in this study, a methodological approach that has been applied more frequently in recent studies of government formation.

2. Including a measurement that assesses which party is the median party together with a second-measurement that calculates its distance from the median would introduce multicollinearity, because the latter proxy is a perfect predictor of the former. We chose to use the later measurement in our analysis only.
3. Our data is derived from ParlGov (Döring and Manow 2010), a data infrastructure on parties, elections and cabinets, that collects electoral results and cabinet compositions and systematically links this information to existing data on party positions. The documentation of ParlGov includes a list of sources used to code cabinet parties and electoral results. ParlGov covers only those Central-East European countries that are also members of the European Union. The particular data set we use (including seats change) was created from ParlGov by a software script and we added information about party positions from the Comparative Manifesto Project (Budge *et al.* 2001; Klingemann *et al.* 2006). Replication data for this study are available at <http://dvn.iq.harvard.edu/dvn/dv/johan-hellstrom>.
4. For our example, it may affect a party's probability to get into government at time, t , if a party is in government at time $t - 1$. In other words, the dependent variable is time-dependent and first-order auto/serial-correlation may be present.
5. An alternative would be to use conditional (or fixed) effects logit to account for unobserved heterogeneity. However, fixed effects estimates can be biased for short panels with a lagged dependent variable such as our measure of incumbency. In addition, fixed effects models rely solely on within-group variation and any time-invariant variables (e.g. country dummies) cannot be estimated (cf. Beck 2001). Nonetheless, we also estimated the same models using conditional (or fixed) effect estimators and the results gave nearly analogous results compared to those reported here.
6. Rather than producing a single estimation for each missing observation, we set up Amelia to generate multiple datasets (in our case, five), each with unique values for the missing observations. The variance in the imputed values across these five datasets reflects the uncertainty about the observation's true value. Our estimations are run with each of the five datasets, and the results are combined by using a procedure designed to reflect the appropriate uncertainty levels for each of the missing values. In addition, we also estimated the same models presented in this paper on the original data and obtained similar, but not identical, results (not shown here).
7. We replicated the approach used by Mattila and Raunio (2004) with our dataset and measured gains and losses in the parliament by using two indicator (dummy) variables for gains and losses. The indicator for loss of seats was not significant, but this was attributed to the fact that its effect was too similar to the reference group (neither gain nor loss of seats). If changing the reference group to those parties that gained seats, it was also significant and thus shows that losing seats somewhat lowers the average probability of getting into government.
8. However, if we use party expert data in order to measure party positions (cf. models 6 and 8 in Table A2 in the appendix), we find a contradictory result. These results indicate that the distance from the median party on the left/right dimension matters for a party's chances of getting into government, but less so than in Western Europe. Whether this result is a genuine effect of politics in the CEE region or if it occurs because of shortcomings in the expert data (i.e. lower coverage and insufficient time variation) is difficult to say, and we leave further investigation of this issue for future research.
9. The plots in Figure 1 are based on model 7 and 8 in Table 3, setting all other covariates to their mean values. The probabilities reported in the text for the impact of being the largest party are based on calculations using the average predicted probabilities.

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APPENDIX

TABLE A1
LIST OF VARIABLES

Variables	Mean	Std. Dev.	Min	Max
<i>Total sample</i>				
Dependent variable	0.32	0.47	0	1
Gov. experience	0.56	0.50	0	1
Incumbent	0.30	0.46	0	1
Largest party	0.13	0.34	0	1
Left/right median distance	16.18	16.03	0	101.8
Left/right median dist. (expert)	1.92	1.64	0	6.88
Seats share parl.	13.30	13.67	0.20	77.1
Seats change (%)	2.22	9.46	-64.5	77.1
(Effective) no. of parties	4.35	1.58	1.63	10.79
Volatility	20.33	17.12	0	74.35
<i>West sample (1945-2009)</i>				
Dependent variable	0.32	0.47	0	1
Gov. Experience	0.59	0.49	0	1
Incumbent	0.31	0.46	0	1
Largest party	0.13	0.34	0	1
Left/right median distance	17.30	16.72	0	101.8
Left/right median dist. (expert)	1.96	1.66	0	6.88
Seats share parl.	13.27	13.92	0.2	73.3
Seats change (%)	1.13	7.17	-44.6	73.3
Mwes' share	0.13	0.18	0	1
(Effective) no. of parties	4.21	1.37	1.72	9.05
Volatility	14.57	11.81	0	51.6
<i>West sample (1990-2009)</i>				
Dependent variable	0.29	0.45	0	1
Gov. Experience	0.54	0.50	0	1
Incumbent	0.29	0.45	0	1
Largest party	0.12	0.33	0	1
Left/right median distance	15.86	14.64	0	64.85
Left/right median dist. (expert)	2.14	1.68	0	6.88
Seats share parl.	12.36	13.53	0.2	63.3
Seats change (%)	0.82	7.31	-36.9	63.3

(Continued)

TABLE A1. (Continued).

Variables	Mean	Std. Dev.	Min	Max
(Effective) no. of parties	4.55	1.71	2.15	9.05
Volatility	16.80	11.07	2.45	50.9
<i>East sample</i>				
Dependent variable	0.32	0.47	0	1
Communist successor party	0.17	0.38	0	1
Gov. Experience	0.45	0.50	0	1
Incumbent	0.28	0.45	0	1
Largest party	0.14	0.34	0	1
Left/right median distance	11.94	12.21	0	66.75
Left/right median dist. (expert)	1.70	1.53	0	6.74
Seats share parl.	13.39	12.66	0.2	77.1
Seats change (%)	6.34	14.57	-64.5	77.1
(Effective) no. of parties	4.87	2.13	1.63	10.79
Volatility	42.08	16.61	9.2	74.35

TABLE A.2
 ROBUSTNESS TESTS LEFT-RIGHT MEDIAN DISTANCE BASED ON PARTY EXPERT SURVEYS; NON-IMPUTED DATA

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Seats share parl.	0.028*** (0.007)	0.047*** (0.008)	0.045*** (0.009)	0.022* (0.013)	0.051** (0.022)	0.006 (0.019)	0.036* (0.022)	0.007 (0.021)
Seats change (%)	0.045*** (0.009)	0.037*** (0.007)	0.04*** (0.008)	0.039*** (0.022)	0.023 (0.015)	0.043*** (0.013)	0.052** (0.024)	0.055*** (0.015)
Largest party	0.690** (0.270)	0.924*** (0.227)	0.857*** (0.246)	2.110*** (0.386)	2.746*** (0.619)	1.732*** (0.475)	2.864*** (0.677)	1.552*** (0.534)
Left-right median.	-0.463*** (0.047)	-0.612*** (0.053)	-0.603*** (0.056)	-0.592*** (0.083)	-0.950*** (0.171)	-0.375*** (0.092)	-0.908*** (0.173)	-0.427*** (0.104)
Incumbent	1.060*** (0.167)	0.946*** (0.138)	0.931*** (0.149)	1.056*** (0.265)	1.403*** (0.481)	0.660** (0.312)	1.941*** (0.521)	0.393 (0.352)
Gov. Experience	0.670*** (0.150)	0.354** (0.174)	0.392** (0.184)	0.516* (0.267)	0.414 (0.442)	0.538 (0.342)	0.622 (0.454)	0.689* (0.377)
CSP						-0.49 (0.39)		-0.37 (0.45)
No. of parties	0.157*** (0.052)	0.175*** (0.052)	0.242*** (0.058)	0.097 (0.088)	0.046 (0.210)	0.039 (0.080)	0.331 (0.221)	0.109 (0.099)
Volatility	-0.014* (0.007)	-0.011** (0.005)	-0.010* (0.006)	0.001 (0.010)	0.024 (0.020)	-0.019 (0.020)	0.036* (0.021)	-0.023 (0.014)
Constant	-1.733*** (0.380)	-1.953*** (0.518)	-2.299*** (0.542)	-1.855** (0.726)	-2.030 (1.281)	-1.898** (0.885)	-3.930*** (1.357)	-1.140 (1.155)
σ^2_μ		-0.251	-0.257	-0.153	0.670	-0.624	0.550	-0.296
σ^2_ν		0.882	0.879	0.926	1.398	0.732	1.316	0.862
ρ		0.191	0.190	0.207	0.373	0.140	0.345	0.184
Log Likelihood	-1606.79	-1575.51	-1399.29	-574.60	-322.04	-319.93	-294.70	-255.18
Wald Chi ²	740.40***	597.90***	510.19***	228.63***	119.38***	122.88***	114.43***	88.23***
Groups (parties)	343	343	324	292	181	128	174	117
Observations	3736	3736	3229	1338	902	679	808	527

Note: The models correspond to those in table 2 and 3. Standard errors in parentheses; ***, $p < 0.01$, **, $p < 0.05$, * $p < 0.1$.