

Coalition Policy Perceptions

[Running Header: *Coalition Policy Perceptions*]

Shaun Bowler^{*1}, Thomas Gschwend^{†2}, and Indridi H. Indridason^{‡1}

¹University of California, Riverside

²University of Mannheim

April 21, 2019

*Professor, Department of Political Science, University of California, Riverside, Riverside, CA 92521.
e-mail: shaun.bowler@ucr.edu

†Professor, Department of Political Science, University of Mannheim. e-mail: gschwend@uni-mannheim.de

‡Professor, Department of Political Science, University of California, Riverside, Riverside, CA 92521.
e-mail: indridi.indridason@ucr.edu

Abstract

We examine how voters form expectations about the policy positions of coalition governments. The literature generally assumes that voters believe the influence of coalition parties on government policy is proportional to the coalition parties' sizes. Yet little is known about whether, or how, voters form such expectations. In this paper we leverage data from Austria, Germany, and Sweden and find that voters do not see coalition party influence as proportional. Voters take account of the coalition parties' bargaining strength, perceiving smaller coalition parties to have disproportional influence on coalition policy. In other words, voters who live under and vote for coalition governments have a somewhat different sense of policy outcomes than the literature currently suggests.

Keywords: Coalitions, Coalition Policy, Voter Heuristics, Accountability, Strategic Coalition Voting

Data and Replication Materials: Replication files are available in the JOP Data Archive on Dataverse (<https://dataverse.harvard.edu/dataverse/jop>). Supplementary material for this article is available in the appendices in the online edition.

Financial Support: Indridason's work was supported by the Iceland Research Fund.

Representative democracy rests on the principle that elected officials represent citizens who in turn hold their representatives accountable for their performance in office at election time. As a generation of scholarship has shown, holding coalition governments accountable is a harder task for voters than holding single-party governments accountable. In single-party governments the policy position of the government is the policy position of the party in government. In a coalition government, however, no single party can expect to have its whole policy platform adopted. Instead, coalition parties negotiate the government's agenda (Martin and Vanberg, 2011, 2014).

For representative democracy to function effectively, voters must be able to exercise their ability to hold individual coalition parties accountable. In order to evaluate whether the representatives have acted faithfully in the interest of the voter, the voter must evaluate what each coalition party achieved in office and whether the compromises struck reflect effort and commitment on part of the representative. Thus, voters need a basic understanding of how casting votes for parties influences coalition policy. Without such expectations, voters cannot assess the degree to which individual coalitions were successful in implementing their policy platforms — and whether to reward or punish the party for its performance. Whether voters develop expectations about coalition policy is, therefore, highly relevant to our understanding of representative democracy and of individual parties are held to account.

Furthermore, scholars have begun examining how voters' expectations about coalition bargaining outcomes shape vote choice where strategic voting depends on voters forming expectations about coalition policy (e.g., Bargsted and Kedar, 2009; Kedar, 2011; Indridason, 2011; Meffert and Gschwend, 2010). This literature assumes that vote choice is affected by expectations about which coalition will form *and* which policies it will implement. Yet, to date, there have been no systematic analyses of whether voters form such expectations and whether they respond to the factors that generally are thought to influence coalition policy.

In this article we examine how voters form expectations about coalition policy and the degree to which the assumptions in the literature about coalition parties' influence on

government policies are reflective of voters' perceptions. Thus, we ask the following question: Given a voter's beliefs about the parties' policy positions and their sizes, what policy does she expect a given government coalition to implement?¹ Assuming that the government's policy position represent a compromise between the coalition parties, the question can be rephrased in terms of how much weight the voter assigns to each coalition party.

We examine voters' ex ante evaluations of coalitions that may form after an election using the voter's expectations of the ex post, i.e., post-electoral, bargaining power. Our plan of attack is as follows: First, as voters may have limited incentives to exert great effort to form accurate expectations, we posit three heuristics that voters may employ, i.e., an equal influence, a proportional influence, and a bargaining strength heuristic. Second, we introduce a simple model to estimate each coalition party's weight and compare those with the weights implied by the aforementioned heuristics. Third, we modify the model to allow a direct test of the proportional influence heuristic when voters' expectations about party size are heterogeneous. Finally, we consider non-linear least squares models that allows estimation of the influence of other covariates on the parties' coalition weights.

Our empirical analysis employs unique data on policy perceptions of voters from Austria, Germany, and Sweden. We find that voters are quite comfortable with reporting perceived policy positions of both parties and coalitions. The perceived coalition policies appear to be stable, indicating that they derive from some underlying logic of forming expectations. Our findings suggest that voters do not expect parties' policy influence to be proportional to their size but that larger and centrist parties are expected to have greater influence on coalition policy. However, we also find that voters expect small coalition parties to "punch above their weight". Voters, thus, see small parties as having disproportional influence on coalition policy. Interestingly, a similar small party bonus has repeatedly been demonstrated in the empirical literature on portfolio allocation in the context of Gamson's Law (e.g., [Warwick](#)

¹That is, how do voters map a vector of policy positions, $\{p_1, p_2, \dots, p_k\}$, and an associate vector of party sizes, $\{v_1, v_2, \dots, v_k\}$, into expectations about government policy when parties i and j form a coalition?

and Druckman, 2006) and voters' perception thereof (Lin et al., 2017).

Expectations about Government Coalition Policy

Voters in most multi-party parliamentary systems know that no single party will obtain a legislative majority in a given election and that a coalition cabinet will form. This coalition will subsequently implement policies that reflect the preferences of the individual coalition parties in some manner. Thus, voters that care about policy outcomes face the rather daunting task of forming expectations about how their votes affect the coalition formation process and the policy that the coalition will implement.² This task essentially involves determining how much weight each coalition party carries. We are interested in how voters determine those weights, i.e., how they perceive parties' influence on coalition policy. The idea that a coalition party's size and ideological position affect its influence on coalition policy is common.³ It seems reasonable that voters will consider these same factors. Thus, we are interested in exploring how perceptions of coalition policy are influenced by voters' perceptions of its constituent parties' policy positions and their expectations about their size.

Of course, sophisticated voters may form expectations about coalition policy⁴ on the basis of a variety of factors, in addition to size and party ideology, that are likely to influence government policy. In reality, however, it is probably fair to say that policy-making in parliamentary systems — even among scholars — is not very well understood. Moreover, even highly sophisticated voters have little incentive to invest effort in forming expectations about policy as each voter is unlikely to be pivotal. It, thus, seems reasonable for voters to

²Fortunato and Stevenson (2013*a*) ask how voters form expectations about the outcome of the coalition formation and find that voters rely on heuristics such as the PM coming from the largest party.

³See, e.g., Laver and Budge (1992); Kedar (2005); Bargsted and Kedar (2009); Indridason (2011); Duch, May and Armstrong II (2010); Powell (2000); Huber and Powell (1994).

⁴Fortunato and Stevenson (2013*a*) address voters' expectations about the outcome of the coalition formation process. On a related note, Duch, Przepiorka and Stevenson (2015) examine how experimental subjects attribute responsibility in coalition governments.

rely on simple heuristics in forming their expectations.

Which heuristic might voters employ? Starting with a particularly simple heuristic, voters may expect coalition parties to wield equal influence and government policy to be the average of the parties' policy positions. This heuristic requires very little information. Voters only need to hold beliefs about the coalition parties' positions. Equal influence may seem an unlikely candidate as it is not common for scholars to use that assumption. However, one might argue that this assumption is embedded in an influential strand of theorizing about coalitions, veto-player theory, where each veto-players' assent is required for a policy change to occur, thus, having the same ability to influence policy (Tsebelis, 2002). Indeed, when Tsebelis (2002) considers the effects of government alternation, the magnitude of the change is measured as a change in the midpoint of the coalition's ideological range.⁵ A number of other scholars (e.g, Kedar, 2005; Pedrazzani and Zucchini, 2013; Stecker and Tausendpfund, 2016; Pellegata, 2016; Zucchini, 2016; Borghetto, Visconti and Michieli, 2017; Rebessi and Zucchini, 2018) have also used the same assumption, either as their main measurement of government policy or as a robustness check. It is also worth considering that the assumptions scholars make about the making of coalition policy may not be the best guide as to what a normal citizen might assume, or be capable of. Assessing voter knowledge, including knowledge of party size, Fortunato, Lin and Stevenson (2014, 1) find, e.g., that "it can be strikingly low." If this is the case, then it may not be unreasonable to assume that voters see them as having equal influence. Finally, even though we are somewhat skeptical of the idea that voters have no idea about how big the parties are, considering the equal influence heuristics is useful simply as a benchmark for considering how the other heuristics perform.

Heuristic 1 (*Equal Influence*) *Voters expect government policy to be the (unweighted) average of the perceived coalition parties' policy positions.*

Heuristics may also employ observable political outcomes. Scholars have sought to evaluate the influence of individual parties on government policy but, since measuring government

⁵Note that this assumption is equivalent to equal influence in two-party coalitions.

policy is not trivial, they have often focused on bargaining outcomes that are easily quantifiable such as the allocation of ministerial portfolios (see, e.g., Gamson, 1961; Browne and Franklin, 1973; Warwick and Druckman, 2006). The study of portfolio allocation revealed one of the strongest empirical relationships in political science; according to Gamson's Law, the allocation of portfolios is proportional to the legislative strength of the coalition parties. This finding has widely been adapted in empirical work and taken to imply that each coalition party's influence on policy is proportional to its seat share.⁶ The Comparative Manifesto Project, e.g., calculates government policy in this manner. Kim and Fording (2002) use a similar approach, weighing the parties' positions by their cabinet seats. In the context of portfolio allocation, proportional allocation is also often considered fair (Verzichelli, 2008), which may further support voters' beliefs that policy influence is proportional to coalition party seat share. Voters can use this heuristic with relative ease; it only requires two pieces of information, the size of the coalition parties and their ideological positions.

Heuristic 2 (*Proportional Influence*) *Voters expect government policy to be the seat share weighted average of the perceived coalition parties' policy positions.*

It is worth noting that a subset of the literature employing the proportional influence assumption examines how government policy factors into voters' decisions, thus implicitly assuming that voters employ a proportional influence heuristic. This is a very strong assumption that has not been explored empirically before.

Voters may also be more sophisticated and consider how the bargaining process favors some parties. Formal theories of bargaining tend to focus on the parties' bargaining power, which generally suggest that the formateur should reap a disproportionately large share of the spoils (see, e.g., Austen-Smith and Banks, 1988; Baron and Ferejohn, 1989).⁷ In these models

⁶See, e.g., Ferland (2016); Golder and Stramski (2010); Golder and Lloyd (2014); Indridason (2011). Others, e.g., De Sinopoli and Iannantuoni (2008) assume it is the weighted mean of *all* the parties' positions.

⁷Not all coalition bargaining models predict a formateur advantage and the respective empirical evidence is mixed. While the allocation of portfolios appears highly proportional, much less is known about how much influence coalition parties have on policy (see, e.g., Warwick, 2011).

bargaining power derives from two sources; party size and ideological position. Large parties enjoy an advantage for two reasons. First, large parties tend to have more opportunities to form coalitions, making the threat to walk away from the bargaining table more credible. Second, they are more likely to take a leading role in the coalition bargaining and occupy the formateur role (Diermeier and Merlo, 2004). The former factor, in particular, is not directly related to party size (while correlated with it) — an increase in party size does not affect a party’s bargaining power if it doesn’t change which coalitions are backed by a majority (see, e.g., Ansolabehere et al., 2005). Thus, scholars regularly use bargaining power indices to capture how bargaining strength is affected by the coalition formation available to each party. Ideological position influences bargaining strength for similar reasons. It affects the desirability of alternative coalitions and, therefore, the credibility of threats to terminate negotiations. A centrist party will have more options, i.e., it may find coalition partners on the left or on the right, whereas less centrist parties have few options other than to look towards the center. Centrist parties not only derive strength from having more potential partners but also through credible threats to form a coalition with a party whose preferences are opposed to that of its current bargaining partner. Note that throughout we use *bargaining strength* to refer to any factor or attribute that strengthens a party’s bargaining position while *bargaining power* is only used to refer to size-related factors (i.e., party size and bargaining indices) affecting the parties’ bargaining position, or bargaining strength.

The idea that voters consider particular party or party system characteristics as heuristic devices for assessing parties’ *bargaining strength* is less straightforward and the possible bargaining strength heuristics vary in their sophistication. Relatively simple forms of the heuristic might involve merely focusing on either party size or the parties’ ideological positions to gauge its bargaining strength. More sophisticated voters might substitute party size with consideration of how many different potential coalitions the party can form (or how many of the potential majority coalitions the party is pivotal to as captured by, e.g., the Banzhaf

index).⁸ Even more sophisticated voters might rely on heuristics that also take into account that bargaining power and ideological centrality interact, e.g., noting that ideological centrality might be more valuable to small parties. For example, a small median party will always find itself in a strong bargaining position and changes in its position will have little effect as long as it retains its median position. In contrast, a small party on the extremes of the ideological spectrum may have more to gain from moderating its position in order to be considered a viable coalition partner. Thus, Heuristic 3 presents a set of bargaining strength heuristics that voters may employ in forming their expectations.

Heuristic 3 (*Bargaining Strength*) *Voters expect parties that i) are larger, ii) are ideologically closer to the voter's perceived median party, and/or iii) have greater bargaining power according to the Banzhaf index to have a disproportionate influence on the coalition's policy.*

The three heuristics vary in terms of sophistication (as does the set of heuristics that fall under bargaining strength heuristics). The simplest one merely requires voters to associate each party with an ideological position. The most complex heuristic requires a sense of how bargaining strength derives from the ideological positions and the sizes of *all the parties*. While the set of bargaining strength heuristics appear to ask a lot of voters, voters may still get by with fairly limited information for at least the simpler forms of these heuristics⁹ — it may be enough for voters to recognize that larger parties have more coalition formation opportunities, are more likely to lead the eventual coalition, and to associate those patterns with greater influence.¹⁰ That association may simply stem from empirical observation. As

⁸Note that the simpler proportional influence heuristic only requires information about the coalition parties whereas measures relying on whether parties are pivotal to the various potential coalitions requires information about all parties.

⁹The influence of bargaining strength may even be indirect, i.e., large, centrist parties may receive disproportional attention in the media that in turn colors voters' evaluations.

¹⁰Recent research shows that voters assign greater responsibility (Angelova, König and Proksch, 2016) and more portfolios (Lin et al., 2017) to the party of the prime minister (see also Crabtree et al., 2019).

“members of the polity” (Lewis-Beck and Skalaban, 1989), citizens learn to distinguish small parties from large and observe coalition governments in office (Armstrong and Duch, 2010; Gschwend, 2007; Herrmann, 2014). Electoral polls help citizens identify which coalitions are feasible and parties sometimes form pre-electoral coalitions (Golder, 2005) or announce with which parties they might, or will not, form a coalition (Gschwend, Meffert and Stoetzer, 2017; Gschwend, Stoetzer and Zittlau, 2016). Thus, voters may apply such heuristics without a deep understanding of the coalition formation process.¹¹ Those heuristics can also be viewed in terms of how favorable the outcome is to the largest party. The equal influence heuristic ignores party size while the proportional influence heuristic sees influence on policy in proportion to party size. Finally, the bargaining strength heuristic rewards parties for being large, having more bargaining power, and/or being ideologically central.¹²

To examine whether voters employ these heuristics, we leverage all pre-election studies we know of that include questions about coalition policy positions. The data comes from three countries: (1) the 2009 German Longitudinal Election Study (GLES), (2) the 2013 Austrian Election Study (AUTNES), and (3) the 2014 Swedish National Election Study (SNES).¹³ First, we show that voters are quite comfortable with reporting perceived policy positions of parties and coalitions and that those coalition policy positions appear to be stable, indicating that they derive from some underlying logic of forming expectations. Second, we introduce a simple model to estimate each coalition party’s weight and compare those with the weights implied by the heuristics. Third, we estimate a model that allows a direct

¹¹Fortunato, Lin and Stevenson (2014), find, e.g., that while political knowledge may be limited, voters are better informed about the aspects of the political system that are relevant in a given political context.

¹²The placement of the bargaining strength heuristic can be questioned as, e.g., a large extremist party may lack bargaining strength, and this ranking will, thus, not always hold true. However, as larger parties tend to be relatively centrist, this ranking doesn’t strike us as unreasonable.

¹³We use the GLES Short-term Campaign Panel (wave 6) (Rattinger et al., 2015), the AUTNES pre-study module (Kritzinger et al., 2017), and the Swedish Internet Campaign Panel, particularly waves 2 and 6 (Boije and Dahlberg, 2014). Each of these was conducted ahead of the election.

test of the proportional influence heuristic that takes into account heterogeneity in voters' expectations about the sizes of the coalition parties. Finally, we estimate non-linear least squares models in order to consider how additional covariates influence the parties' coalition weights.

Perceptions of Coalition Policy

Austria, Germany, and Sweden all have a history of coalition governments, which means that voters have substantial experience in judging coalition possibilities.¹⁴ Respondents were asked to place parties and several coalitions on a 0 – 10 left/right scale. In the GLES, for instance, 80 – 82% of all respondents report a policy position for the CDU¹⁵, the SPD, the FDP, and the Greens (B90).¹⁶ While one might think evaluating coalition policies is difficult, this suggests respondents feel comfortable placing coalitions on a left/right scale as well.¹⁷

Moreover, the Swedish data provides a unique opportunity to assess the reliability of those judgments as respondents reported the perceived position of the Social Democrat (SAP) – Green (MP) coalition in two waves (2 and 6) four months apart. A full 43% placed the coalition at the very same value in both waves and about 85% report a value within a unit distance on the 0 – 10 left/right scale. While one might worry that respondents do not have clear expectations about coalition policy and simply guess, the observed stability suggests that there is logic to how they arrive at those expectations. In the next section, we introduce a simple model to estimate how voters perceive the policy positions of coalitions.

¹⁴The Austrian and the Swedish data only include questions about perceived ideological positions of parties and coalitions while the GLES is the only study we are aware of that also measures respondents' expected vote share of each party, which allows for a direct test of the heuristics.

¹⁵We refer to the CDU/CSU pre-electoral coalition as CDU and use the perceived position of the CSU for Bavarian respondents.

¹⁶About the same share of respondents identify with a party; a standard survey item. Other studies of voter perceptions of coalitions report that 80% of all respondents know which parties are in government (Angelova, König and Proksch, 2016).

¹⁷For more details about the context of each election and key variables, see appendix A and tables A1–A3.

A Model of Coalition Policy Perceptions

In theoretical and empirical work, coalition policy is usually assumed to be a function — typically a convex combination — of the coalition parties’ policy positions: $C = \alpha_A A + \alpha_B B = \alpha_A A + (1 - \alpha_A)B$, where A and B are the positions of the coalition parties, α_j is party j ’s *coalition weight*, and C is the government policy.¹⁸ If the weight of the parties is assumed to be proportional to their legislative seat share — as the literature often assumes — α_j equals the coalition seat share $s_j = \frac{l_j}{\sum_{j \in G} l_j}$ where G is the set of coalition parties and l_j is party j ’s legislative seat share.

As voters may evaluate different coalitions, or parties, in different ways, we consider each coalition separately. For this we employ the simple two-party model above:

$$C_i = \alpha_A A_i + (1 - \alpha_A)B_i, \quad (1)$$

where A_i and B_i now represent each voters’ perceived party positions and C_i the respective perceived coalition position. Rearranging equation 1 we obtain:

$$C_i = \alpha_A A_i + B_i - \alpha_A B_i \quad (2)$$

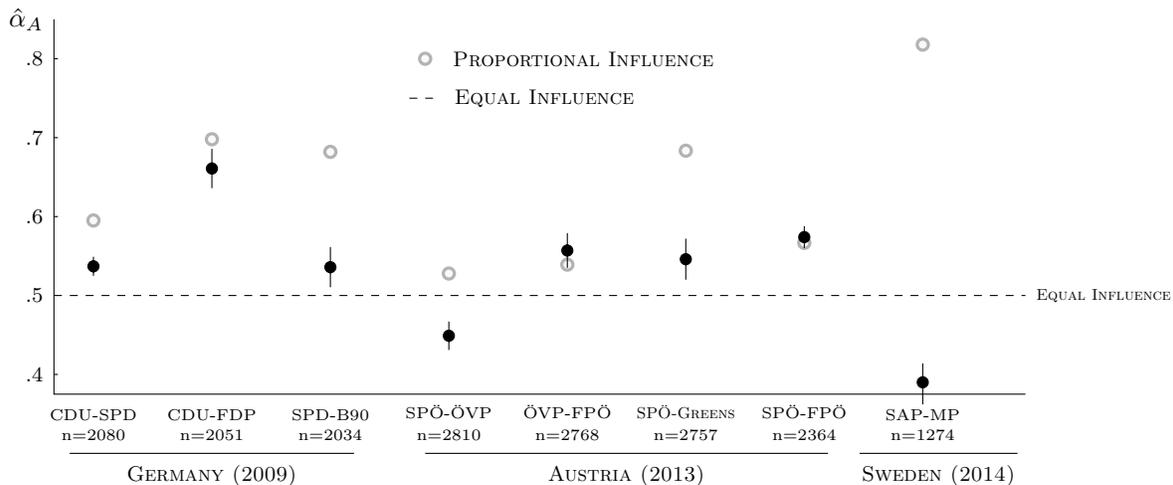
$$C_i - B_i = \alpha_A (A_i - B_i) \quad (3)$$

Thus, we can estimate party A ’s coalition weight $\hat{\alpha}_A$, the perceived influence of party A on the coalition policy directly by regressing the respondents’ perceived difference between the coalition policy and party B ’s policy ($C_i - B_i$) on perceived difference ($A_i - B_i$) between the policy positions of parties A and B .¹⁹ Throughout we refer to the first-named coalition

¹⁸More generally, we can be written as $C = \sum_{j \in G} \alpha_j p_j$, where G is the set of the coalition parties, p_j the policy position of party j , and α_j the weight of party j with $\sum_{j \in G} \alpha_j = 1$.

¹⁹Endogeneity is a potential concern as respondents may infer party positions from past coalition experiences (Fortunato and Stevenson, 2013b). This is unlikely to be a cause of concern in the surveys as the respondents are asked about the parties before any coalition is mentioned. It is, of course, true that perceptions may be shaped by past coalition experiences but that is inconsequential here as the question is simply how respondents see the coalitions’ policy position *given their perceptions of the parties’ policy positions*, whatever the origin of those perceptions. We can, however, not completely rule out that respondents update their beliefs on the

Figure 1: ESTIMATED COALITION WEIGHT ($\hat{\alpha}_A$) OF FIRST PARTY



party as A and the second-named party as B . Figure 1 shows the estimated coalition weights, $\hat{\alpha}_A$, and the 95% confidence intervals along with the predicted weights based on the equal influence (dashed line) and the proportional influence (hollow circle) heuristics (using actual vote share).²⁰ Note that the comparison with proportional influence benchmark relies on the assumption that the respondents' expectations about the parties' sizes are correct on average.

The results offer three lessons. First, voters do not employ the equal influence heuristic. None of the confidence intervals around the estimated coalition weights cross the dashed line. Although the heuristic is easy to apply for any coalition, respondents consistently consider the coalition parties to have unequal influence on coalition policy.

Second, voters generally do not seem to use the proportional influence heuristic either. The coalition weights consistent with proportional influence are typically quite different from the estimated weights. The only exceptions are coalitions that include the Austrian FPÖ. However, when the estimated and the expected weights differ, the estimated weight is consistently smaller than implied by proportionality, i.e., the larger coalition party is

basis of coalition membership when asked about particular coalitions.

²⁰Estimation results are presented in appendix B. We consider the possibility of attenuation bias due to measurement error in appendix D and the effects of respondent's political knowledge in appendix H.

consistently expected to have less influence. Instead, our evidence is consistent with the small party advantage found in the portfolio allocation literature (e.g., Browne and Frensdreis, 1980) and also with recent work on voters' perceptions of portfolio allocation (Lin et al., 2017).

Third, voters do take party size into account.²¹ Across all the coalitions (with two exceptions), the larger party's estimated weight is greater than that of its coalition partner. Moreover, the coalition weight of the larger party in each coalition increases with the party's relative size, e.g., the CDU in Germany carries greater weight in a coalition with a small party (FDP) than a large party (SPD). In Austria and Sweden, we observe the same pattern for the coalitions that do not conform to proportional influence.²² However, party size is not the only thing that matters. The estimated weights for the CDU in the CDU-SPD coalition and SPD in the SPD-B90 coalition are highly similar although the SPD provided a larger coalition seats share in the SPD-B90 coalition than the CDU did in the CDU-SPD coalition.

As noted above, scholars often make assumptions about the policy positions of coalitions in empirical and theoretical work where the coalition policy affects voters' choices. Commonly it is assumed that coalition policy is determined in a Gamson's Law-like fashion (e.g., Ferland, 2016; Golder and Stramski, 2010; Golder and Lloyd, 2014; Indridason, 2011) but this will cause problems if voters' perceptions diverge far from proportional influence.

To evaluate the size of this discrepancy, we calculate the expected coalition policy (i) assuming that respondents form expectations about coalition policy in accordance with the proportional influence heuristic (C_i^{PI}), in which case their expectations about party size determine the weight of each party, and then (ii) using the estimated weights shown in Figure 1. In each case we use the respondents' reported party positions (A_i and B_i). Thus, we first

²¹We examine another measure of bargaining power, the Banzhaf index, below.

²²The large discrepancy in the Swedish SAP-MP coalition is noteworthy. Polls ahead of the election indicated that the two parties would fall short of a majority with around 40% of the vote. It was, thus, clear that the coalition would have to rely on the support of a party outside the coalition, which in this case was the Left Party that sits to the left of the coalition. If voters expect the coalition to make concessions to the Left Party, our estimates would be biased towards giving the MP greater weight.

calculate $C_i^{PI} = \alpha_{PI}A_i + (1 - \alpha_{PI})B_i$, where α_{PI} is the respondent’s expectation about party A ’s coalition vote share, and compare it with the expected coalition policy obtained using the estimated weights, i.e., $\hat{C}_i = \hat{\alpha}_A A_i + (1 - \hat{\alpha}_A)B_i$. Table 1 shows the mean difference ($|C_i^{PI} - \hat{C}_i|$) for each coalition. The mean difference ranges from very small (.03 for the SPÖ-FPÖ coalition) to quite substantial (.60 for the SAP-MP coalition).

Table 1: DIFFERENCES IN PREDICTED COALITION POLICY POSITIONS
— PROPORTIONAL INFLUENCE (VOTES) VS. ESTIMATED WEIGHT —

	COALITION	MEAN DIFFERENCE	% OF DISTANCE B/W COALITION PARTIES
GERMANY	CDU-SPD	.20	6
	CDU-FDP	.16	12
	SPD-B90	.18	14
AUSTRIA	SPÖ-ÖVP	.19	8
	ÖVP-FPÖ	.05	2
	SPÖ-GREENS	.27	14
	SPÖ-FPÖ	.03	1
SWEDEN	SAP-MP	.60	43

The magnitude of these differences must be kept in context — a difference of .25 might be considered insubstantial for a coalition whose parties are quite far apart ideologically but one would arrive at the opposite conclusion if they are close ideologically. One way to get a sense of the substantive significance of these differences is to consider the average difference as a fraction of the distance between the coalition parties: $\frac{|C_i^{GL} - \hat{C}_i|}{|A_i - B_i|}$ as shown in the last column of Table 1. The differences as a share of the perceived distance between the parties ranges from low to moderate with the exception of the SAP-MP coalition in Sweden where the difference is about 43% of the distance between the coalition parties.

There are several ways to get at the substantive meaning of a change in the policy position of a coalition. In the literature on coalition voting that has assumed proportional influence to calculate government policy, coalition voting can take different forms. ‘Balancing’ refers to a form of coalition voting where voters aim to ‘pull’ government policy towards their preferred policy. A centrist voter whose most preferred party is the CDU might, e.g., opt to vote for the SPD with the goal of pulling the coalition policy closer to the center. The basic result from

the formal literature is that the expected coalition policy divides voters in terms of which coalition party they should vote for; a voter preferring a policy further to the left should vote for the coalition party on the left while a voter preferring a policy to the right should do the opposite. Thus, if coalition parties' influence coalition policy is assumed to be proportional to their size then we would make an incorrect prediction about voters whose preferred policy lies between the proportional influence prediction and the true expectations of the voters. Sticking with the CDU-SPD coalition in Germany, 6% of the voters whose preferred policy lies between the platforms of the two coalition partners is not a negligible number.²³

Another way to examine the substantive implications of our findings is to look at the impact of, say, a .20 change in coalition policy on outcome variables in the context of existing research. For instance, [Martin and Vanberg \(2014\)](#) model the number of bill's subsections amended in the legislative processes as a function of the ideological distance between the minister under whose jurisdiction the legislation falls and the coalition compromise, which assumes proportional influence. Using [Martin and Vanberg's \(2014\)](#) results, and focusing on Germany, we find that the predicted number of subsections amended changes by about 2% when the coalition compromise changes by .20 (as in our results for the CDU-SPD coalition). In sum, our results show that incorrectly assuming that voters expect coalition parties to have proportional influence does have substantive consequences, sometimes quite large ones.

To sum up, voters use neither the equal influence heuristic nor the proportional influence heuristic when evaluating coalition policy. There is, however, a clear small party bonus, i.e., their perceived influence is greater than their size would suggest. This assumes that respondents correctly anticipate the relative sizes of the coalition parties, which could explain the lack of support for the proportional influence heuristic. If expectations about party size are heterogeneous, then the coalition weights respondents use in forming expectations about coalitions' policy position will vary — even when using the same heuristic. In the next section

²³This assumes that the distribution of these voters is uniform. If the distribution is not uniform and the voter density close to the expected coalition policy is higher, this percentage would be larger.

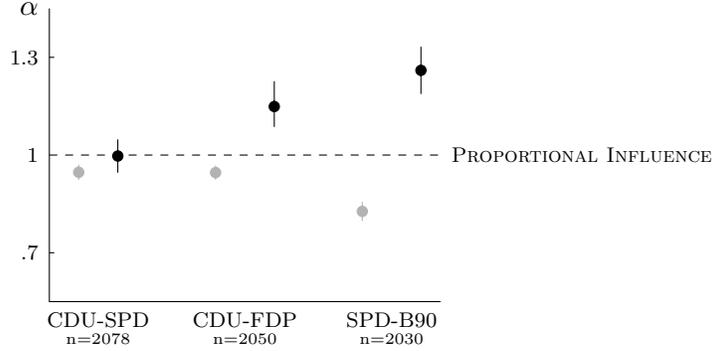


Figure 2: ESTIMATED PARTY WEIGHT
(PROPORTIONAL INFLUENCE: $\alpha_i = 1$)

we, therefore, take respondents' expectation about party size into account.

Heterogenous Expectations and Order Effects

The simple model in equation (1) is a convenient first approximation but it mostly serves an illustrative purpose as respondents differ in their expectations about party size. To better test whether voters perceive the parties' influence on coalitions policy to be proportional to their size or whether there is a small party bonus, we rewrite equation (1) as a function of expected vote shares — to account for respondents' heterogenous expectations — and perceived policy positions of the parties:

$$C_i = \alpha_A V_{Ai} A_i + \alpha_B V_{Bi} B_i \quad (4)$$

where V_{ji} denotes respondent i 's expectation about party j 's contribution to the coalition's majority. We use expected vote share as the German study did not include questions about seat share. Neither measure was available in the Austrian and the Swedish data. Thus, $V_{ji} = \frac{v_{ji}}{v_{ji} + v_{ki}}$, where v_{ji} is party j 's expected vote share relative to the expected vote share of party j and k .²⁴ $V_{Ai} A_i$ and $V_{Bi} B_i$ are the respondent specific vote-weighted policy positions of parties A and B . If the parties' influence is proportional to vote share then $\alpha_A = \alpha_B = 1$. Again, we estimate the parties' influence using a linear model without a constant.

²⁴The responses were summed-up automatically to facilitate the respondent's predictions add up to 100%.

Figure 2 displays the estimated weights, $\hat{\alpha}_A$ and $\hat{\alpha}_B$, together with the 95% confidence intervals (see also appendix, Table A9). The proportional influence hypothesis can safely be rejected for all three coalitions.²⁵ None of the confidence intervals intersect the reference line that indicates the expected value if voters use this heuristic. Instead, the evidence points again to a small party bias. The estimated weights of the small parties, FDP and B90, are estimated to be systematically higher than the proportional influence heuristic implies. Interestingly, Lin et al. (2017) come to a similar conclusion regarding voters’ perceptions of portfolio allocation, i.e., that while voters’ expectations tend toward proportionality, they expect smaller parties to do slightly better than their size would suggest.

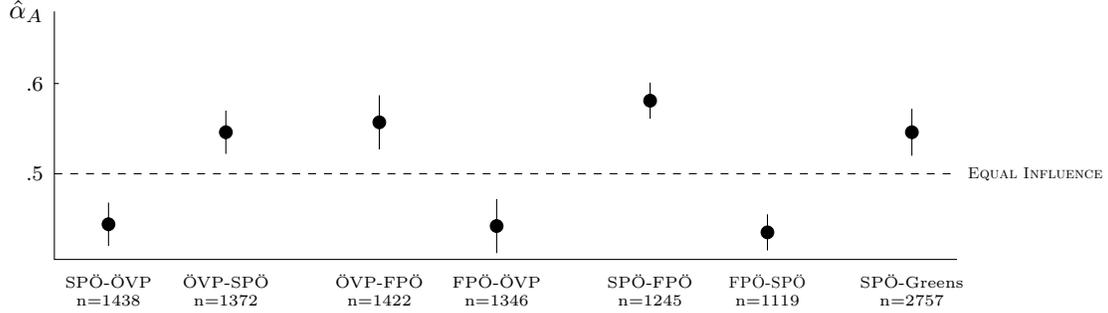
Next, we look at the order in which the parties are presented. So far we have assumed that the first named party in each coalition was expected to be the stronger party within the coalition and, therefore, was likely to act as a formateur or to lead the coalition.²⁶ In each case the first named party was estimated to have less influence than its vote share suggested and there is, therefore, little indication of respondents perceiving a formateur advantage. What if this order assumption is wrong? What if voters do not focus on party size, as we assume, but simply assign a higher coalition weight to first-named parties on the assumption that the first-named party will lead the coalition? This would cast doubts on our interpretation of the results. Fortunately, the Austrian data (Kritzinger et al., 2017) allows us to test this alternative explanation as it included a random split-sample design. Half of the sample was asked about the three coalitions as we reported them above (SPÖ-ÖVP, ÖVP-FPÖ, and SPÖ-FPÖ) while the other half saw the order of the parties reversed (ÖVP-SPÖ, FPÖ-ÖVP, and FPÖ-SPÖ). The order of the SPÖ-Greens coalition was not randomized.

The coalition weights, $\hat{\alpha}_A$, estimated using equation 1 and confidence intervals are graphed

²⁵Significance tests with $H_0 : \alpha_A = \alpha_B = 1$. CDU-SPD: $F_{2,2076} = 33.70$ ($p < .0001$), CDU-FDP: $F_{2,2028} = 74.57$ ($p < .0001$), SPD-B90: $F_{2,1817} = 102.6$ ($p < .0001$).

²⁶It bears noting that Austrian and German coalitions are formed in a ‘free-style’ form of coalition bargaining and there is no formal formateur but, as is the case where a formateur is appointed, the leader of the largest party is likely to adopt a role as a formateur.

Figure 3: ESTIMATED COALITION WEIGHT ($\hat{\alpha}_A$) OF FIRST PARTY



in Figure 3 (see appendix, Table A7). If the estimated coalition weights are above the reference line the influence of the first-named party on the coalition policy is perceived to be stronger than the influence of the second-named party. No matter whether it is the first-named party or not, with the exception of one coalition (SPÖ-ÖVP), voters weighed larger parties more heavily. When the order is flipped, the coefficient flips ‘around’ the equal influence line. Thus, voters seem to distinguish larger from smaller parties when deriving coalition policy positions.

Modeling the Coalition Weight of Parties

We now extend our model (eq. 1) to allow the coalition weight (α) to also depend on other covariates that may explain why voters perceive a party to be influential in determining coalition policy. Our key covariates examine the role of the heuristics above in structuring voters’ expectations.²⁷ Starting with the set of *Bargaining Strength* heuristics, we focus on the three factors that we identify as influencing bargaining strength. To measure the parties’ size-related bargaining power, we consider, first, *Party Size* and, second, the Banzhaf power index. In each case, we operationalize the bargaining power variable as $\frac{BP_{A_i}}{BP_{A_i} + BP_{B_i}}$ with BP representing the parties’ expected vote share or Banzhaf index. The normalized bargaining power adds up to one so only party A ’s bargaining power is needed in the model. The third factor we argue influences bargaining strength is *Ideological Centrality*, which is the

²⁷We restrict the analysis here to the German data as it is the only survey that asks about party size.

respondent’s perceived proximity of the party to the perceived median party. To construct our covariate Δ *Ideological Centrality*, we take the perceived difference in the coalition parties’ ideological centrality. Theoretically, the measure ranges from -10 to 10 and is positively related to party A ’s bargaining advantage.²⁸ Finally, we consider interactions between the two bargaining power variables and Δ *Ideological Centrality* to see whether voters consider ideological centrality more valuable to small parties.

The *Proportional Influence* heuristics implies that the marginal effect of the *Party Size* variable discussed above should equal one. In contrast, the *Equal Influence* heuristic implies that the coefficients for all three variables (as well as their interactions) should equal zero. The *Bargaining Strength* heuristics offer less clear-cut expectations — they merely imply that respondents assign greater weight to larger parties, to parties whose value on the Banzhaf index is higher, and/or parties that are ideologically more central.

We control for leader evaluations, party preferences, and political knowledge. Voters may be influenced by personality of the party leaders involved in the coalition negotiations and who lead their parties in government. Respondents may attribute greater influence to parties whose leaders they think show resolve in negotiations, have deep convictions and strong principles, are hard-working, or are simply stubborn, i.e., characteristics that plausibly affect the negotiations. Voters’ party preferences may also be a source of perceptual biases that affect evaluations of coalition policy (Meyer and Strobl, 2016). If a voter finds a party’s argument in favor of certain policies persuasive, she may assume that others will also find them persuasive. We operationalize Δ *Leader Evaluation* and Δ *Party Preference* as the differences between the respondent’s evaluation of, respectively, the leaders and the parties and scale the result to range from -1 to 1 .

Finally, we control for *Political Knowledge* as voters’ perceptions of influence may depend on their level of intellectual engagement with politics. Respondents’ relative placements of political parties as well as their expectation about party size may differ between political

²⁸That is, if the perceived median is 5 then $(5 - |p_A - 5|) - (5 - |p_B - 5|) = -|p_A - 5| + |p_B - 5|$.

experts and respondents who don't know much about politics. We construct a political knowledge scale (Cronbach's $\alpha = .83$) ranging from 0 to 1 using 13 factual knowledge items.²⁹

To sum-up, we extend model (1) above to allow the coalition weight (α_i) to depend on individual specific covariates, e.g., in the first specification in Table 2 we estimate:

$$\begin{aligned}
 C_i &= \alpha_i A_i + (1 - \alpha_i) B_i + \epsilon_i \text{ with} & (5) \\
 \alpha_i &= \text{logit}^{-1}(\gamma_0 + \gamma_1 \text{BargainingPower}_i + \gamma_2 \Delta \text{IdeologicalCentrality}_i \\
 &\quad + \gamma_3 \Delta \text{LeaderEvaluation}_i + \gamma_4 \Delta \text{PartyPreference}_i + \gamma_5 \text{PoliticalKnowledge}_i)
 \end{aligned}$$

The perceived policy position of a coalition depends, eq. (5), on the perceived positions of the constituent parties, individual specific coalition weights, and an error term ϵ_i with zero mean. Thus, we allow α_i to vary across respondents as a logistic transformation of a linear and additive function of individual specific covariates. This ensures that the resulting $\hat{\alpha}_i$ is a proper weight, i.e., it lies within the unit interval. The γ parameters are estimated using non-linear least squares (Davidson and MacKinnon, 1993), which can then be used to recover $\hat{\alpha}_i$ post-estimation. A positive $\hat{\gamma}$ indicates that a larger value of the covariate increases the weight respondents assign to the first-named coalition party ($\hat{\alpha}_i$) and, consequently, decreases the coalition weight of the second-named party ($1 - \hat{\alpha}_i$).

Table 2 shows the estimation results for two of the German two-party coalitions: CDU-SPD (grand coalition) and CDU-FDP (black-yellow coalition).³⁰ For each coalition we estimate four models — with and without an interaction between $\Delta \text{Ideological Centrality}$ and Bargaining

²⁹In appendix H we also examine whether political knowledge influences the choice of heuristics by considering high and low knowledge respondents separately (as well as exploring interactions). We disregard knowledge items that were measured after wave 6, where respondents' perceived coalition policy was measured.

³⁰The results for the SPD-B90 coalition are provided in appendix E (table A11) as almost all respondents (93%) expected it to be a minority coalition and, thus, to be reliant on the support of parties in the opposition. Modeling expectations for minority coalitions is a more complicated task as it requires information about the respondents' assumptions about support parties and the concessions that those parties might demand. Respondents also saw these parties as very similar ideologically — nearly half placed them at the same position. The results suggest voters evaluate this coalition on very different terms than the other two.

Power and for two different measures of bargaining power, i.e., *Party Size* and *Banzhaf Index*.

Table 2: DETERMINANTS OF COALITION WEIGHT (α)
—PARTY SIZE & BANZHAF INDEX TO MEASURE *Bargaining Power*—

	CDU-SPD				CDU-FDP			
	Party Size	Party Size	Banzhaf Index	Banzhaf Index	Party Size	Party Size	Banzhaf Index	Banzhaf Index
Intercept	0.418 (0.274)	0.390 (0.272)	0.362** (0.169)	0.466*** (0.178)	-0.936* (0.549)	-0.446 (0.673)	-0.858** (0.387)	-0.421 (0.431)
Δ Ideological Centrality	0.021*** (0.008)	0.083** (0.037)	0.019** (0.008)	0.072*** (0.024)	0.056*** (0.020)	0.621*** (0.172)	0.057*** (0.020)	0.417*** (0.110)
Bargaining Power	0.012 (0.461)	0.162 (0.463)	0.101 (0.238)	0.054 (0.241)	1.897** (0.751)	0.958 (0.887)	1.746*** (0.499)	0.968* (0.536)
Δ Ideol. Centr. \times Barg. Power		-0.110* (0.063)		-0.086** (0.036)		-0.804*** (0.230)		-0.521*** (0.146)
Δ Leader Evaluation	0.095 (0.095)	0.100 (0.095)	0.085 (0.096)	0.074 (0.096)	-0.159 (0.212)	-0.176 (0.213)	-0.125 (0.211)	-0.122 (0.212)
Δ Party Preference	0.037 (0.082)	0.028 (0.082)	0.037 (0.082)	0.045 (0.082)	0.005 (0.245)	0.050 (0.244)	0.026 (0.244)	0.053 (0.242)
Political Knowledge	-0.385*** (0.124)	-0.443*** (0.129)	-0.387*** (0.124)	-0.446*** (0.127)	0.354 (0.247)	0.571** (0.251)	0.424* (0.245)	0.548** (0.249)
OBSERVATIONS	1644	1644	1640	1640	1632	1632	1625	1625
ROOT MSE	1.15	1.15	1.15	1.14	1.11	1.11	1.11	1.10

* p < 0.10; ** p < 0.05; *** p < 0.01.

The estimated effect of Δ *Ideological Centrality* is consistent across the model specifications for the two coalitions. Respondents that see the CDU as being closer to the ideological center attribute greater weight to the CDU’s policy position and, consequently, smaller weight to its partner’s position.³¹ The coefficients for *Bargaining Power* are positive as expected for the models without the interaction terms but are only statistically significant in CDU-FDP models.³² The more bargaining power the CDU was expected to have, the more weight respondents placed on the CDU’s position when evaluating the coalition. This implies that respondents see the CDU — by virtue of most voters seeing it as having more bargaining power — as being more influential. Thus, the perceived coalition policy is closer to the perceived CDU position than the coalition partner, the SPD or the FDP.

The estimated coefficients for the interaction terms are also consistently negative and,

³¹As shown in online appendix F, this remains the case if ideological centrality is calculated treating the midpoint of the scale (5) as the ideological center.

³²The marginal effects of Δ *Ideological Centrality* and *Bargaining Power* can be negative in the models with an interaction but the covariate values required for that to be the case are uncommon in the sample, e.g., the marginal effect of *Party Size* is negative for about 7% of the sample values of Δ *Ideological Centrality*.

generally, statistically significant at the conventional levels. This indicates that the two sources of bargaining strength are substitutes rather than complements, e.g., the parties have most to gain from an increase in bargaining power when they are disadvantaged in terms of ideological centrality. Thus, on the whole, voters perceive larger and more centrist parties of a coalition to be more influential in determining coalition policy.

We find little evidence of voters being influenced by perceptual biases. While the $\Delta Party Preference$ coefficients have the expected sign, the size of the effect is small in comparison with the standard errors. This is an interesting — and potentially instructive — finding when compared with Meyer and Strobl (2016) who do find evidence of perceptual biases. The Austrian survey they analyze did not ask for respondents' expectation about the parties' vote shares. Perceptual biases may work by influencing how persuasive respondents find the parties' arguments and those biases may then be reflected in the respondents' expectations about party size. That is, if a voter finds a party's platform appealing then she may assume other voters will agree and, consequently, expect more voters to cast their votes for the party. If perceptual biases operate primarily by influencing expectations about party size, the inclusion of party size in our models will capture the effects of perceptual biases. This is what our results show — $\Delta Party Preference$ has no independent effect in our model specification, suggesting that the causal mechanism by which perceptual biases matter primarily operate through biasing voters' expectations about electoral outcomes. Similarly, there is no direct evidence to suggest that party leader evaluations matter — although the same caveats apply here as with the effects of party preferences.³³

Finally, the estimated coefficients for *Political Knowledge* do not show a consistent pattern. Politically knowledgeable respondents place less weight on the CDU in the CDU-SPD coalition.

³³Thus, we cannot rule out the possibility that perceptual biases matter. A more favorable opinion of a party or a party leader may lead a respondent to expect a higher vote share for a party that in turns affects its influence on coalition policy. Indeed, expected coalition vote share is correlated with both party and leader evaluations are correlated. For an example of the magnitude of the correlation, a jump from the 10th to the 90th percentile of $\Delta Party Preference$ corresponds to about 4%- 7%-point increase in the party's vote share.

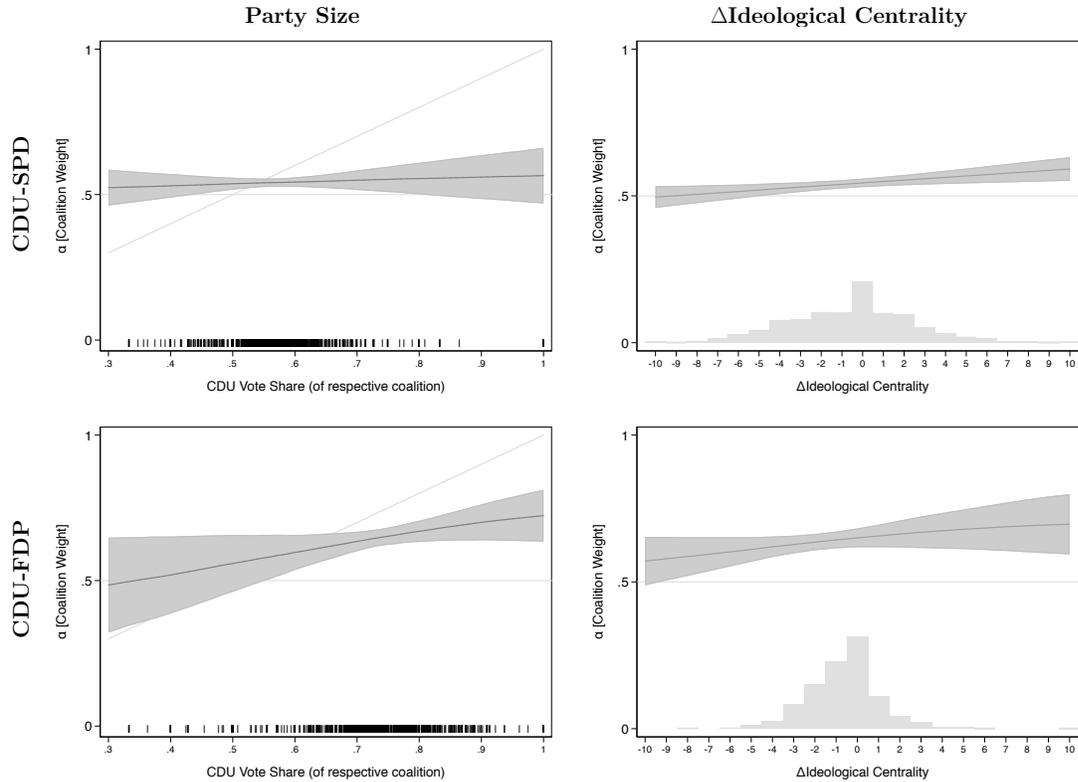


Figure 4: IMPACT OF PARTY SIZE & IDEOLOGICAL CENTRALITY ON COALITION WEIGHT (α)
The reference lines at $\alpha = .5$ indicate the predictions of the Equal Influence heuristic. The reference lines with slope of one in the left panels show the predictions of the Proportional Influence heuristic conditional on CDU’s share of the coalition’s vote.

The opposite is true for the CDU-FDP coalition although the *Political Knowledge* estimates are less precise and not statistically significant across all the model specifications. This difference is intriguing and suggests that politically knowledgeable voters may indeed evaluate coalition influence on different terms. We explore this further in online appendix H and find consistent evidence that less informed respondents appear to give greater weight to ideological centrality and, in the case of the CDU-SPD coalition, differences in leader evaluations.

What do the results suggest about the use of heuristics? The *Equal Influence* heuristic can quickly, and unsurprisingly, be ruled out — respondents appear to consider ideological centrality and bargaining power while the heuristic implies that neither should have an effect. The non-linear parameterization of the coalition weight (α_i) makes adjudicating between the other heuristics less straightforward as the substantive effects cannot immediately be read

from the estimated coefficients. The effects can, however, be examined by predicting the coalition weights at different values of the covariates using the estimated $\hat{\gamma}$'s. Figure 4 graphs the effects of *Party Size* and Δ *Ideological Centrality* for the two coalitions.³⁴ To derive the average predicted weights together with the 95% confidence intervals, the values of the two variables, *Party Size* (on the left) and Δ *Ideological Centrality* (on the right), were varied while all other independent variables were held at their observed value for each respondent. The distributions of the covariates are shown using rugplots and histograms at the bottom of the figures. The panels on the left shows the average predicted weights conditional on the CDU's expected size (as a share of the expected two-party coalition vote share) and, on the right, the average predicted weights conditional on the CDU's perceived ideological centrality advantage. The graphs show that respondents who expect the CDU to win more votes or perceive it as more ideologically central, have higher predicted values of α , i.e., they expect the CDU will have a bigger impact on government policy.

The horizontal lines show the expectation according to the equal influence heuristic, i.e., $\alpha = .5$. As noted above, the heuristic can be dismissed as the predicted coalition weights depend on the parties' expected vote shares and how central they are perceived ideologically. Furthermore, the figures show that the CDU's predicted coalition weights are almost always greater, and, for the majority of the respondents, the confidence intervals do not overlap .5. This suggests that an average voter perceives the CDU to have at least a slight advantage in determining coalition policy — this is evident from the CDU's predicted coalition weight being larger than .5 for voters that expects the coalition parties to have an equal vote share.

Respondents employing the proportional influence heuristic, would simply assign a coalition weight to the party proportional to its expected coalition vote share. The reference lines with slope of one in the left panels illustrate those predictions. The panels on the left make clear that the effect of *Party Size* is often smaller than implied by the proportional

³⁴The graphs for the model where the Banzhaf index is used as a measure of bargaining power is presented in online appendix G.

influence heuristic. While the confidence intervals overlap the reference line for proportional influence prediction for low values of the CDU vote share in the bottom left panel, it bears noting that only about 10% of the respondents form coalition policy perceptions consistent with the proportional influence heuristic. In case of the CDU-SPD coalition, about 21% of the respondents fall in the vote share range where the 95% confidence interval covers the prediction of the proportional influence heuristic. Overall, there is little reason to conclude that the proportional influence heuristic accurately describes how voters form expectations about the parties' policy influence.

Instead, the results across both coalitions suggest that the CDU pays a policy penalty as the predicted coalition weight is mostly below what would be expected were influence proportional. Although the CDU seems to have more influence over coalition policy than its coalition partner, the larger the CDU is expected relative to its coalition partner, the higher its policy penalty seems to be. Consequently, the smaller party within the coalition has disproportionately large influence on coalition policy.

Overall, then, the respondents' expectations appear to fall somewhere in between the *Equal Influence* and *Proportional Influence* heuristics. Importantly, the standard assumption invoked in the literature — that voters expect the policy influence of coalition parties to be proportional to their size — is *not* supported by our data. Instead respondents appear to see smaller coalition parties having disproportional influence on policy, which echoes the findings in the literature that smaller parties receive a disproportionate share of cabinet portfolios (see, e.g., Browne and Franklin, 1973; Browne and Frendreis, 1980; Warwick and Druckman, 2006; Indridason, 2018). This finding also suggests that voters do not perceive a formateur advantage — although the evidence on this point is indirect as no formateurs are formally appointed in the German system and the conclusion can, thus, only be supported if one is willing to assume that larger parties are more likely to occupy a formateur-like role. Bargaining power clearly matters, however. Respondents appear to recognize that parties with more bargaining power will be better able to influence coalition policy. The

finding that bargaining power influences a party’s policy influence does, however, tell us little about whether this advantage derives from the party’s size or other factors, such as greater likelihood of acting as a formateur or leading the coalition.

Ideological centrality, the other component of bargaining strength that we examine, suggests that voters behave as if they pay attention to the bargaining context, i.e., how the parties’ ideological position affects their ability to form coalitions or the value of their outside options. The right panels of Figure 4 show how ideological centrality affects expectations about coalition policy. Perceived ideological centrality has a positive effect on the party’s coalition weight. This suggests that voters see centrist parties as having a bargaining advantage in line with the bargaining strength heuristic.³⁵ Another thing to note is that the CDU’s weight tends to be higher ($> .5$) even when the CDU is disadvantaged in terms of ideological centrality (i.e., $\Delta Ideological\ Centrality < 0$). This is explained by the predicted weights being calculated holding other covariates fixed at their actual values and the CDU is generally perceived to be the bigger party. Interestingly, the distribution of the difference in ideological centrality, as shown by the histograms in Figure 4, does not favor the CDU. Thus, the effect of party size seems to outweigh the effects of ideological centrality — although this is far clearer in the case of the CDU-FDP coalition than the CDU-SPD coalition.

In sum, we find that a party’s perceived bargaining strength — whether driven by size-related heuristics or from being perceived more ideological centrist — has a positive effect on the weight voters assign to a party’s ability to influence government policy. On this evidence, voters, on balance, appear to lean towards the more sophisticated heuristics we considered. Not only do voters appear to consider both bargaining power and ideology, they also appear to view these as substitutes. The level of sophistication suggested by the results is somewhat surprising in light of findings about voter knowledge such as Fortunato, Lin and Stevenson

³⁵The finding could also be interpreted as indirect support for McDonald and Budge’s (2005) argument about the median mandate, i.e., that political parties will have a hard time moving policy away from the median legislator and voters, therefore, would assign less weight to the policy influence of parties that are further away from the middle of the policy spectrum.

(2014) but, as they also suggest, voters may seek out information that is valuable given the political context they are in. And, while we do not want to overstate voters' use of relatively sophisticated heuristics, forming expectations about coalitions policy can be seen as fairly fundamental in multi-party parliamentary systems.

Conclusions

Taking its cue from Gamson's Law, a considerable body of work on politics and policy-making in multi-party parliamentary systems assumes policy influence in coalition governments follows the same pattern as is evident in the allocation of cabinet portfolios, i.e., that the policy positions of coalition governments are simply the weighted average of the coalition parties' positions. More recently, scholars have noted that instrumental voters in multi-party systems have an incentive to cast their votes both as to influence which coalitions form as well as the policies adopted by coalition governments. 'Coalition voting' of this form requires voters to form expectations about the policies coalition governments will implement and, implicitly or explicitly, much of the literature assumes that voters expect policy influence to be proportional to party size. Our evidence, using unique survey data on the policy positions of parties and government coalitions, suggests, however, that voters do not perceive policy influence to be proportional to party size. This result is in line with recent work on responsibility attribution in coalition governments. There is experimental evidence on responsibility attribution in the context of collective decision making, akin to coalition governments, (Duch, Przepiorka and Stevenson, 2015) and survey evidence (Angelova, König and Proksch, 2016) showing that voters neither assign responsibility equally nor in proportion to size.

While our results provide evidence that voters perceive parties' influence on coalition policy to be neither equal nor proportional, they do suggest that voters are sensitive to the coalition parties' bargaining strength. That is, we find that bargaining power matters — albeit not in strict proportion in the case of party size — but also that ideology, which acts as

constraint on the parties' threats to credibly pursue alternative coalitions, influences voters' perceptions. Thus, although our findings are a cause for concern for theories that rely on the proportional influence assumption, some comfort can be taken in the fact that voters do respond to the key factors scholars have argued determine coalition policy. That is, voters appear capable of forming expectations about coalition policy and those expectations vary in predictable manner with bargaining power (whether measured in terms of party size or the Banzhaf power index) and ideological centrality.

The question, then, is how our results inform future work on coalition politics. At this stage, our recommendations are necessarily limited as data availability restricts our analysis to a handful of coalitions and there is considerable variation in terms of how well, or poorly, the observed expectations approximate the proportional influence heuristic. More extensive data on a larger number of coalitions would offer an opportunity to examine party and contextual factors that may explain that variation — and, thus, offer predictions that can serve as a guide for selecting coalition weights in empirical and formal work. For now, however, our findings merely demonstrate voters' perception of coalition policy (i) are not quite proportional to party size but (ii) are, however, shaped by voters' perceived ideological positions of the parties. This then, suggests, first, that scholars that rely on the assumption of proportional influence may, at minimum, want to examine the robustness of their results to alternative assumptions about coalition weights that accord proportionally greater influence to smaller coalition parties. Second, as far as we know, scholars generally don't consider how ideological position may affect coalition policy (or perceptions of it) through its role in influencing the parties' bargaining strength — yet we find that the relative proximity to the ideological center to be one of our most robust finding and it would, therefore, seem important to incorporate ideological centrality into measures of coalition policy.

As noted above, our analysis is necessarily limited to the three pre-election studies in Austria, Germany, and Sweden that included questions about coalition policy and only the German survey asked respondents about their expectations about party size, which provides

leverage to examine more closely how party size (or bargaining power) affects parties' coalition weights. Our hope is that future election studies will increasingly incorporate questions about coalition policy and respondent's expectations of other important party characteristics, e.g., expected vote share. One potential issue here stems from the possibility that the variation in the expected vote share derives from a lack of political knowledge or interest, which might then bias our results (although our analysis of the role of political knowledge in online appendix H doesn't provide clear indication that this is an issue). However, this suggests that a fruitful way forward would involve utilizing experiments in which party characteristics can be randomly assigned. An obvious benefit of such an approach would be to allow the consideration of a variety of different contexts in a more efficient manner than possible in regular election studies where in each election there are only a handful of potential coalitions.

Our findings raise several questions that invite further study. First, are voters' expectations accurate? Answering this question is a significant challenge as it requires knowledge of how much influence individual coalition parties actually have but our understanding of government policy making in parliamentary systems remains underdeveloped.³⁶ By the same token, it would be of considerable interest to see how politicians form expectations about coalition policy. It is important to note, however, that the question of whether voters' expectations are accurate is not relevant when it comes to studying, e.g., coalition voting — the question there is whether voters respond systematically to *their perceptions* of the political context.

Second, on a related note, we might flip the question around and ask whether scholars' expectations about coalition policy are accurate. The assumption of proportional influence is quite dominant in the literature (see, e.g., Martin and Vanberg, 2014; Indridason, 2011) despite the fact that it is at best a rough approximation given the empirical regularities scholars observe to the contrary in the context of portfolio allocation (see, e.g., Browne and

³⁶This is not to say the question has been ignored. Warwick (2001), Laver and Budge (1992), and Debus (2008), for example, have sought to estimate the influence of coalition parties by comparing the manifestos of coalition parties with coalition agreements.

Frendreis, 1980; Warwick and Druckman, 2006). The dominant assumption of proportional influence in the literature is, as we have seen here, also at odds with voters' coalition policy perceptions and similarly, at odds with voters' perception of portfolio allocation (Lin et al., 2017). While one may doubt that voters are able to make informed inferences about the influence of coalition parties, it is intriguing that their perceptions mirror the deviations from Gamson's Law established in the literature on portfolio allocation.

Finally, understanding whether and how voters form expectations about coalition policy is not only important in terms of improving theoretical and empirical research on coalition politics and voting behavior — it also has quite significant implications for representation and voters' ability to hold governments accountable. Whether they adopt a retrospective or prospective outlook, voters risk voting against their own interest if they lack understanding of how their votes affect policy outcomes. To make effective use of their votes, prospective voters need both a basic understanding of what to expect from the coalition formation process and how much influence individual coalition parties have on policy outcomes. Similarly, retrospective voters need to be able to evaluate the performance of individual coalition parties. Doing so requires also establishing benchmarks against which to measure the performance of parties. That is, it may not be reasonable to expect a small coalition partner to have the same influence as a major coalition party and one might, therefore, consider a minor party to have performed well even if it has only been moderately successful in pursuing its policy agenda. The extent to which voters evaluate coalition parties on those terms is not clear. Some accounts suggest that this may not be the case. Strøm (1984), e.g., argues that one reason minority governments form is that they wish to avoid the electoral penalty that comes with being in government — incorrect expectations about influence on coalition policy would then potentially further dissuade small parties from joining governing coalitions. While our results necessarily fall short of showing that voters form accurate expectations about coalition policy, they do show that voters form expectations and that those expectations tend to vary in predictable ways with factors that ought to influence the bargaining strength of the parties.

Acknowledgements: We are grateful to Tarik Abou-Chadi, Vincent Buskens, Rense Corten, David Fortunato, Annika Fredén, Lanny Martin, Nolan McCarty, Thomas Meyer, Carolina Plescia, Daniel Rubenson, Lukas Stoetzer, and Jeroen Weesie as well as panel participants at the annual meetings of the European Political Science Association 2014, the Midwest Political Science Association 2014, seminar participants from the Comparative Political Behavior Lecture Series, Humboldt-University Berlin 2017, the “Making Electoral Democracy Work” workshop, Montreal 2017, the Center for Comparative and International Studies, Zurich 2017 as well as the “New Developments in the Study of Representation and Electoral Systems” workshop at Hebrew University 2018 for their comments and suggestions. Furthermore, we would like to thank Stefan Dahlberg for access to Swedish Panel data.

References

- Angelova, Mariyana, Thomas König and Sven-Oliver Proksch. 2016. "Responsibility attribution in coalition governments: Evidence from Germany." *Electoral Studies* 43:133–149.
- Ansolabehere, Stephen, James M. Jr. Snyder, Aaron B. Strauss and Michael M. Ting. 2005. "Voting in Weights Formation of Formateur Advantages Governments." *American Journal of Political Science* 49(3):550–563.
- Armstrong, David A. and Raymond M. Duch. 2010. "Why can voters anticipate post-election coalition formation likelihoods?" *Electoral Studies* 29(3):308–315.
- Austen-Smith, David and Jeffrey S. Banks. 1988. "Elections, Coalitions, and Legislative Outcomes." *American Political Science Review* 82:405–422.
- Bargsted, Matias A. and Orit Kedar. 2009. "Coalition-Targeted Duvergerian Voting: How Expectations Affect Voter Choice under Proportional Representation." *American Journal of Political Science* 53(2):307–323.
- Baron, David P. and John A. Ferejohn. 1989. "Bargaining in Legislatures." *The American Political Science Review* 83(4):1181–1206.
- Boijje, Edvin and Stefan Dahlberg. 2014. The 2014 Internet Campaign Panel. Technical report University of Gothenburg.
- Borghetto, Enrico, Francesco Visconti and Marco Michieli. 2017. "Government Agenda-Setting in Italian Coalitions. Testing the "Partisan Hypothesis" Using Italian Investiture Speeches 1979-2014." *Rivista Italiana di Politiche Pubbliche* 12(2):193–220.
- Browne, Eric C. and John P. Frenreis. 1980. "Allocating Coalition Payoffs by Conventional Norm: An Assessment of the Evidence from Cabinet Coalition Situations." *American Journal of Political Science* 24(4):753–768.

- Browne, Eric C. and Mark N. Franklin. 1973. "Aspects of Coalition Payoffs in European Parliamentary Democracies." *American Political Science Review* 67(2):453–469.
- Crabtree, Charles, Matt Golder, Thomas Gschwend and Indridi H Indridason. 2019. "It's Not Only What you Say, It's Also How You Say It: The Strategic Use of Campaign Sentiment." *Journal of Politics* forthcoming.
- Davidson, Russell and James G. MacKinnon. 1993. *Estimation and Inference in Econometrics*. Oxford University Press.
- De Sinopoli, Francesco and Giovanna Iannantuoni. 2008. "Extreme voting under proportional representation: The multidimensional case." *Social Choice and Welfare* 30(3):401–417.
- Debus, Marc. 2008. "Office and Policy Payoffs in Coalition Governments." *Party Politics* 14(5):515–538.
- Diermeier, Daniel and Antonio Merlo. 2004. "An empirical investigation of coalitional bargaining procedures." *Journal of Public Economics* 88(3-4):783–797.
- Duch, Raymond M., Jeff May and David A. Armstrong II. 2010. "Coalition-directed Voting in Multiparty Democracies." *American Political Science Review* 104(04):698–719.
- Duch, Raymond, Wojtek Przepiorka and Randolph Stevenson. 2015. "Responsibility Attribution for Collective Decision Makers." *American Journal of Political Science* 59(2):372–389.
- Ferland, Benjamin. 2016. "Revisiting the ideological congruence controversy." *European Journal of Political Research* 55(2):358–373.
- Fortunato, David, Nick Lin and Randolph T. Stevenson. 2014. "Political Knowledge in Coalition Democracies." *Paper prepared for the Annual Meeting of Midwest Political Science Association, April 2014, Chicago, IL* .
- Fortunato, David and Randolph T. Stevenson. 2013a. "Heuristics and coalition expectations." *Working Paper* .

- Fortunato, David and Randolph T. Stevenson. 2013b. "Perceptions of Partisan Ideologies: The Effect of Coalition Participation." *American Journal of Political Science* 57(2):459–477.
- Gamson, William A. 1961. "A Theory of Coalition Formation." *American Sociological Review* 26(3):373–382.
- Golder, Matt and Gabriella Lloyd. 2014. "Re-evaluating the relationship between electoral rules and ideological congruence." *European Journal of Political Research* 53(1):200–212.
- Golder, Matt and Jacek Stramski. 2010. "Ideological Congruence and Electoral Institutions." *American Journal of Political Science* 54(1):90–106.
- Golder, Sona Nadenichek. 2005. "Pre-electoral coalitions in comparative perspective: A test of existing hypotheses." *Electoral Studies* 24(4):643–663.
- Gschwend, Thomas. 2007. "Ticket-splitting and strategic voting under mixed electoral rules: Evidence from Germany." *European Journal of Political Research* 46(1):1–23.
- Gschwend, Thomas, Lukas Stoetzer and Steffen Zittlau. 2016. "What drives rental votes? How coalitions signals facilitate strategic coalition voting." *Electoral Studies* 44:293–306.
- Gschwend, Thomas, Michael F. Meffert and Lukas F. Stoetzer. 2017. "Weighting Parties and Coalitions: How Coalition Signals Influence Voting Behavior." *The Journal of Politics* 79(2):642–655.
- Herrmann, Michael. 2014. "Polls, coalitions and strategic voting under proportional representation." *Journal of Theoretical Politics* 26(3):442–467.
- Huber, John D. and G. Bingham Powell. 1994. "Congruence between Citizens and Policy-makers in Two Visions of Liberal Democracy." *World Politics* 46(03):291–326.
- Indridason, Indridi H. 2011. "Proportional Representation, Majoritarian Legislatures, and Coalitional Voting." *American Journal of Political Science* 55(4):955–971.

- Indridason, Indridi H. 2018. "Live for Today, Hope for Tomorrow? Rethinking Gamson's Law." Working Paper.
- Kedar, Orit. 2005. "When Moderate Voters Prefer Extreme Parties: Policy Balancing in Parliamentary Elections." *American Political Science Review* 99(2):185–199.
- Kedar, Orit. 2011. "Voter Choice and Parliamentary Politics: An Emerging Research Agenda." *British Journal of Political Science* 42(03):537–553.
- Kim, Heemin and Richard C. Fording. 2002. "Government partisanship in Western democracies, 1945-1998." *European Journal of Political Research* 41(2):187–206.
- Kritzinger, Sylvia, Eva Zeglovits, Julian Aichholzer, Christian Glantschnigg, Konstantin Glinitzer, David Johann, Kathrin Thomas and Markus Wagner. 2017. "AUTNES Pre- and Post Panel Study 2013. GESIS Data Archive, Cologne. ZA5859 Data file Version 2.0.1."
- Laver, Michael J. and Ian Budge. 1992. *Party Policy and Government Coalitions*. Basingstoke: Macmillan.
- Lewis-Beck, Michael S. and Andrew Skalaban. 1989. "Citizen Forecasting: Can Voters See into the Future?" *British Journal of Political Science* 19(01):146–153.
- Lin, Nick C. N., Mathias Wessel Tromborg, Randolph Stevenson and David Fortunato. 2017. "Gamson's Law and voters' perceptions of portfolio allocation." *European Journal of Political Research* 56(4):912–940.
- Martin, Lanny W. and Georg Vanberg. 2011. *Parliaments and Coalitions: The Role of Legislative Institutions in Multiparty Governance*. Oxford: Oxford University Press.
- Martin, Lanny W. and Georg Vanberg. 2014. "Parties and policymaking in multiparty governments: The legislative median, ministerial autonomy, and the coalition compromise." *American Journal of Political Science* 58(4):979–996.
- McDonald, Michael D. and Ian Budge. 2005. *Elections, parties, democracy: Conferring the median mandate*. Oxford: Oxford University Press.

- Meffert, Michael F. and Thomas Gschwend. 2010. "Strategic coalition voting: Evidence from Austria." *Electoral Studies* 29(3):339–349.
- Meyer, Thomas M. and Daniel Strobl. 2016. "Voter perceptions of coalition policy positions in multiparty systems." *Electoral Studies* 41(1):80–91.
- Pedrazzani, Andrea and Francesco Zucchini. 2013. "Horses and hippos: Why Italian government bills change in the legislative arena, 1987–2006." *European Journal of Political Research* 52(5):687–714.
- Pellegata, Alessandro. 2016. "Assessing the complex relationship between government alternation and ideological congruence." *International Political Science Review* 37(1):51–65.
- Powell, G. Bingham. 2000. *Elections as Instruments of Democracy: Majoritarian and Proportional Visions*. New Haven & London: Yale University Press.
- Rattinger, Hans, Sigrid Roßteutscher, Rüdiger Schmitt-Beck, Bernhard Weßels and Markus Steinbrecher. 2015. "Short-term Campaign Panel (GLES 2009). GESIS Data Archive, Cologne. ZA5305 Data. Version 5.0.0."
- Rebessi, Elisa and Francesco Zucchini. 2018. "The role of the Italian Constitutional Court in the policy agenda: Persistence and change between the First and Second Republic." *Italian Political Science Review/Rivista Italiana di Scienza Politica* pp. 1–17.
- Stecker, Christian and Markus Tausendpfund. 2016. "Multidimensional government-citizen congruence and satisfaction with democracy." *European Journal of Political Research* 55(3):492–511.
- Strøm, Kaare. 1984. "Minority Governments in Parliamentary Democracies: The Rationality of Nonwinning Cabinet Solutions." *Comparative Political Studies* 17(2):199–227.
- Tsebelis, George. 2002. *Veto Players: How Political Institutions Work*. Princeton, NJ: Princeton University Press.
- Verzichelli, Luca. 2008. Portfolio Allocation. In *Cabinets and Coalition Bargaining: The*

- Democratic Life Cycle in Western Europe*, ed. Kaare Strøm, Wolfgang C. Müller and Torbjörn Bergman. pp. 237–267.
- Warwick, Paul V. 2001. “Coalition Policy in Parliamentary Democracies: Who Gets How Much and Why.” *Comparative Political Studies* 34(10):1212–1236.
- Warwick, Paul V. 2011. “Voters, Parties, and Declared Government Policy.” *Comparative Political Studies* 44(12):1675–1699.
- Warwick, Paul V. and James N. Druckman. 2006. “The portfolio allocation paradox: An investigation into the nature of a very strong but puzzling relationship.” *European Journal of Political Research* 45(4):635–665.
- Zucchini, Francesco. 2016. The republic of vetoes: Legislative change and stability in the Italian political system. In *Crisis as a Permanent Condition?* Nomos Verlagsgesellschaft mbH & Co. KG pp. 133–154.

Biographical Statement:

Shaun Bowler is a Professor at the University of California, Riverside, Riverside, CA 92521.

Thomas Gschwend is a Professor at the University of Mannheim, Mannheim, D-68131.

Indriði H. Indriðason is a Professor at the University of California, Riverside, Riverside, CA 92521.

Appendix: Coalition Policy Perceptions

Shaun Bowler^{1*}, Thomas Gschwend^{2†}, and Indridi H. Indridason^{1‡}

¹University of California, Riverside

²University of Mannheim

April 21, 2019

A Context of the studied elections

In the paper we analyze voters' perceptions reported in surveys conducted ahead of the 2009 German election, the 2013 Austrian election, and the 2014 Swedish election.

At the time the 2009 election campaign in *Germany*, the incumbent government was a CDU-SPD grand coalition led by Chancellor Angela Merkel (CDU). Respondents perceived the CDU correctly as a moderately conservative party with a perceived mean left-right score of 6.7 while the SPD as a moderate party on the left with a perceived mean left-right score of 3.8 (see Table A1). Going into the election, the CDU aimed to form a right-of-center coalition, either as with a majority of its own or as coalition with the FDP (mean of 5.9) as junior coalition partner. The perceived policy distance between those two parties is clearly smaller (less than one unit) than the perceived policy distance of the incumbent coalition (with a mean policy distance of almost three units on an underlying 11-point left-right scale). The main alternative on the left was a coalition formed by the SPD and the Greens. Public

*Professor, Department of Political Science, University of California, Riverside, Riverside, CA 92521.
e-mail: shaun.bowler@ucr.edu

†Professor, Department of Political Science, University of Mannheim. e-mail: gschwend@uni-mannheim.de

‡Professor, Department of Political Science, University of California, Riverside, Riverside, CA 92521.
e-mail: indridi.indridason@ucr.edu

opinion polls, however, quickly made it clear that the SPD's only viable option to stay in government was as junior partner with the CDU — a SPD-Green majority had little or no chance of winning majority. The polls indicated that a red-green coalition would merely win between 34-38% of the vote.¹ Accordingly, very few respondents in the survey we analyze considered the SPD-B90 coalition as a viable government alternative (only about 7%). Thus, we devote relatively little attention to this coalition as it would have had to rely on the support from other parties that, presumably, would demand policy concessions in return — and the survey contained no instruments useful for identifying who these parties might be (nor how much influence they might be able to extract). More likely, however, is the possibility that respondents might simply not know how to think about the question given the preponderance of majority coalitions in Germany.² The perceived strength in terms of vote shares, an instrument that was only implemented in the German pre-election study, shows that respondents perceive the size of the relevant parties on average pretty accurately (Election result 2009: CDU/CSU 33.8%, SPD 23.0%, FDP 14.6%, Greens 10.7%, Left Party 11.9%). Finally, respondents don't seem to find placing a coalition on the left-right scale much harder than placing the parties on the same scale judging by the number of valid responses for survey items.

Coalition governments are fairly typical in *Austria* as well. Like in Germany, the incumbent coalition heading into the 2013 election campaign was a grand coalition consisting of the SPÖ and the ÖVP with Werner Faymann (SPÖ) as Chancellor. The party system consisted of two mainstream parties, the Social Democrats (SPÖ) and the People's Party (ÖVP) as well as two 'established' niche parties; the Greens on the left and the FPÖ on the right. The BZÖ, that had a fair showing in the 2008 election by winning about 10% of the vote, more or less disintegrated after the death of its leader, Jörg Haider. Other smaller parties included Team

¹See, e.g., <http://www.wahlrecht.de/umfragen/politbarometer/politbarometer-2009.htm>

²Another reason making the consideration of the coalition difficult is the fact that respondents saw little difference between the SPD and the Greens in terms of ideology as shown in (Table A1).

Table A1: DESCRIPTIVE OVERVIEW: GERMANY

	mean	sd	min	max	count
Left-Right CDU	6.7	1.9	0	10	2284
Left-Right SPD	3.8	1.8	0	10	2282
Left-Right FDP	5.9	1.9	0	10	2259
Left-Right Green	3.4	1.7	0	10	2242
Left-Right CDU-SPD	5.4	1.5	0	10	2121
Left-Right CDU-FDP	6.6	1.8	0	10	2111
Left-Right SPD-Green	3.6	1.6	0	10	2106
Predicted Vote Share CDU/CSU	34.0	8.0	0	99	2774
Predicted Vote Share SPD	26.1	6.9	0	90	2774
Predicted Vote Share FDP	12.7	5.5	0	90	2774
Predicted Vote Share Green	10.8	4.3	0	50	2774
Predicted Vote Share Left Party	10.4	6.6	0	90	2774
Pol. Knowledge	0.6	0.3	0	1	2774

Stronach (anti-European) and NEOS (pro-European). Several coalition possibilities were discussed during the 2013 election campaign while the SPÖ ruled out a coalition with FPÖ from the get-go. Respondents were asked to place four of the potential two-party coalitions (including the SPÖ-FPÖ coalition) that are all viable options for potential governments (Meyer and Strobl, 2016). Table A2 shows that the great majority respondents seem not to have issues with placing the coalitions on the left-right scale along with the parties. Only the SPÖ-FPÖ coalition, where the number of valid responses is lower than for the other coalitions, seems to have caused respondents problems. This is, however, likely explained by the fact that the SPÖ had ruled a coalition with the FPÖ out.

We only have data for a single two-party coalition in *Sweden*; the coalition of the social democratic SAP and the MP (the Greens). Heading into the 2014 election campaign both parties were seen as challenging the incumbent center-right Alliance for Sweden coalition. The Alliance for Sweden coalition consisted of four parties: Moderate Party, Liberal People's Party, Centre Party, and Christian Democrats. The incumbent coalition sought to retain its majority while the main alternative was a red-green coalition of SAP, MP, and the Left Party.

Thanks, in large part, to the success of the far-right Sweden Democrats in the 2014

Table A2: DESCRIPTIVE OVERVIEW: AUSTRIA

	mean	sd	min	max	count
Left-Right SPÖ	3.7	1.6	0	10	3042
Left-Right ÖVP	5.8	1.6	0	10	3035
Left-Right FPÖ	7.9	2.1	0	10	3048
Left-Right Green	2.6	2.0	0	10	2988
Left-Right SPÖ-Green	3.2	1.8	0	10	2868
Left-Right ÖVP-SPÖ	5.0	1.3	0	10	2897
Left-Right ÖVP-FPÖ	6.7	2.0	0	10	2845
Left-Right SPÖ-FPÖ	5.4	1.8	0	10	2432
Political Knowledge	0.6	0.3	0	1	3266

election, neither a center-right nor a center-left majority coalition could be formed, and the eventual outcome was a SAP-MP minority government. Given Sweden’s extensive experience with minority governments, it is reasonable to think that respondents anticipated this outcome or, at least, saw it as possible outcome of the election and coalition formation process. While both parties are seen as very similar ideologically, as can be seen in Table A3,³ their minority coalition would require the support of other parties to stay in office and to advance its legislative agenda. Thus, the perceived coalition policy position of a minority governmental coalition might not simply take the government parties’ positions into account as our theory suggests but, potentially, the influence of other parties as well. As the results in the body of the text, and Table A3, show, the smaller MP (about one-fifth the size of the SAP) appears to have much larger coalition weight. One reason for this, is that respondents may have expected the coalition to be supported by the Left Party, which is located to the left of the MP (with a perceived mean policy position of 1.1). The results, therefore, appear consistent with the idea that the SAP-MP coalition would have to make policy compromises to the Left Party, which, in our analysis of the two-party coalition, gives the appearance of the

³Note that the survey only asked a subset of the respondents for the parties’ left-right positions. Therefore, we cannot infer anything about the respondents’ comfort in placing the coalition on the left-right scale from the number of valid responses as in our other cases.

MP being disproportionately influential. Thus, the results for Sweden should be taken with a grain of salt. The fact that the respondents place the coalition that includes the Left Party in addition to the SAP and MP even further to the left, as shown in Table A3, suggests that respondents may already factor in the price of the Left Party's support when forming expectations about the policy position of the SAP-MP coalition.

Table A3: DESCRIPTIVE OVERVIEW: SWEDEN

	mean	sd	min	max	count
Left-Right SAP	3.7	1.4	0	10	1274
Left-Right MP	3.2	1.7	0	10	1274
Left-Right Left Party	1.1	1.1	0	8	1263
Left-Right SAP-MP	3.3	1.4	0	8	1274
Left-Right SAP-MP-Left	2.0	1.4	0	10	1261

B Estimated Coalition Weight ($\hat{\alpha}_A$) of First-Named Party

In this section we present the regression results that are shown graphically in Figure 1 in the paper as well as formal hypotheses tests for the null hypotheses that the coalition weight differs from 0.5 (i.e., equal influence).

Table A4: ESTIMATED COALITION WEIGHT (GERMANY)

	COALITION		
	CDU-SPD	CDU-FDP	SPD-B90
α	0.536*** (0.006)	0.656*** (0.013)	0.538*** (0.014)
OBSERVATIONS	2080	2051	2034

Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$ for $H_0: \alpha = 0.5$.

Table A5: ESTIMATED COALITION WEIGHT (AUSTRIA)

	COALITION			
	SPÖ-ÖVP	ÖVP-FPÖ	SPÖ-Greens	SPÖ-FPÖ
α	0.449*** (0.009)	0.557*** (0.011)	0.546*** (0.013)	0.574*** (0.007)
OBSERVATIONS	2810	2768	2757	2364

Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$ given $H_0: \alpha = 0.5$.

Table A6: ESTIMATED COALITION WEIGHT (SWEDEN)

	SAP-Greens
α	0.390*** (0.014)
OBSERVATIONS	1274

Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$ given $H_0: \alpha = 0.5$.

C Testing the Order Effect

The Austrian survey included a survey experiment in which the order of the coalition parties was randomized. Here we present the regressions results for the Austrian survey experiment that were presented graphically in Figure 3 in the paper as well as formal hypotheses tests that the coalition weight differs from 0.5 (i.e., equal influence).

Table A7: ESTIMATED COALITION WEIGHT OF FIRST PARTY IN AUSTRIA

	COALITION						
	SPÖ-ÖVP	ÖVP-SPÖ	ÖVP-FPÖ	FPÖ-ÖVP	SPÖ-Greens	SPÖ-FPÖ	FPÖ-SPÖ
α	0.444*** (0.012)	0.546*** (0.012)	0.557*** (0.015)	0.442*** (0.015)	0.546*** (0.013)	0.581*** (0.010)	0.435*** (0.010)
OBSERVATIONS	1438	1372	1422	1346	2757	1245	1119

Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$ given $H_0: \alpha = 0.5$.

D Robustness Check: Accounting for Measurement Error

Figures 1 and 2 in the paper suggest that when it comes to voters, the proportional influence heuristic doesn't apply. However, it is possible that measurement error in the independent variable has an attenuating effect on our estimate of the coalition weight α . Given the data available to us, we cannot simply identify a measurement model to examine directly how strong the impact of measurement error in attenuating our estimates is. A second-best strategy is to look at a subsample of 'political experts'. Such a subsample of 'political experts' should provide an estimate of the estimated coalition weight that is most likely not plagued by measurement error. For this robustness test we focus on the German data as it includes a very comprehensive instrument to measure a respondent's political knowledge. We define 'political experts' as respondents of the 2009 GLES that rank in the upper half of a knowledge scale we constructed based on thirteen factual political knowledge items. Again, while expectations of 'non-experts' is likely to include a fairly large random component the expectations of 'political experts' should be more accurate and, thus, the 'political experts' subset of data should contain less measurement error.

Table A4 in the previous section provides the estimates that are displayed in Figure 1 using the full sample of respondents. We can see, mirroring the results that have been presented graphically in Figure 1 that the coalition weight of the first-named party of each coalition is systematically larger than .5.

Table A8: ESTIMATED COALITION WEIGHT (GERMANY)
– EXPERTS ONLY –

	COALITION		
	CDU-SPD	CDU-FDP	SPD-B90
α	0.523** (0.007)	0.658** (0.018)	0.560** (0.019)
OBSERVATIONS	1064	1059	1054

Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$ for $H_0: \alpha = 0.5$.

The estimation results using only the subsample of ‘political experts’ (Table A8) show that the estimated coalition weights are nearly identical in magnitude to the ones presented in Table A4. Moreover, the estimated weights are actually larger in two out of three cases, which further suggests that attenuation bias is not a significant issue here. The standard errors are, naturally, larger due to the reduced sample size. Despite the larger standard errors, we can still conclude that the estimated coalitions weights are systematically larger than .5. Thus, even using a subsample of ‘political experts’ where the measurement error can be expected to be less severe, citizens seem not to use the equal inference heuristic. Moreover, all the estimated coalition weights for political experts are also systematically different from what the proportional influence heuristic would predict (i.e., $\alpha_{CDU} = .62$ for the CDU-SPD coalition, $\alpha_{CDU} = .72$ for the CDU-FDP coalition, and $\alpha_{SPD} = .68$ for the SPD-Green coalition).

In addition to the simple model presented in equation (1) of the paper, we extended our analysis to account for respondents’ heterogenous expectations about party size. We estimated the model shown in equation (4) and presented the estimated weights in Figure 2. The regression results using the full sample of respondents are shown in Table A9.

Table A9: TESTING THE PROPORTIONAL INFLUENCE HEURISTIC

	CDU-SPD	CDU-FDP	SPD-B90
α_A	0.947*** (0.012)	0.946*** (0.011)	0.827*** (0.015)
α_B	0.997 (0.026)	1.149*** (0.032)	1.260*** (0.037)
OBSERVATIONS	2078	2050	2030

Standard errors in parentheses. *p < 0.10, **p < 0.05, ***p < 0.01 given $H_0: \alpha = 1$.

The estimated weights are (with the exception of the SPD weight in the CDU-SPD coalition) systematically different from ‘1’, i.e., the expected weight if voters employ the proportional influence heuristic. Again, as we discuss in the body of the paper the paper, voters — even when we account for their varying expectations about the coalition parties’

sizes — don't appear to form expectations in accordance with the proportional influence heuristic.

Again, measurement error may be responsible for why the estimated weights are different from '1'. As above, we replicate our analysis using only the subsample of 'political experts'. In this subsample we obtain, again, very similar estimates and somewhat larger standard errors as can be seen in Table A10.

Table A10: THE PROPORTIONAL INFLUENCE HEURISTIC (POLITICAL EXPERTS)

	CDU-SPD	CDU-FDP	SPD-B90
α_A	0.945*** (0.015)	0.941*** (0.015)	0.849*** (0.022)
α_B	0.970 (0.038)	1.201*** (0.046)	1.179*** (0.055)
OBSERVATIONS	1063	1059	1053

Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$ given $H_0: \alpha = 1$.

The estimated weights do not support the prediction of the proportional influence heuristic except for the SPD in the CDU-SPD coalition. Moreover, strictly speaking, the proportional influence heuristic implies that both weights should equal '1'. Again, this can also be safely rejected for all three coalitions (Significance tests with $H_0: \alpha_A = \alpha_B = 1$. CDU-SPD: $F_{2,1061} = 40.03$ ($p < .0001$), CDU-FDP: $F_{2,1057} = 9.57$ ($p < .001$), SPD-B90: $F_{2,1051} = 37.61$ ($p < .0001$). The results of the hypotheses tests for the models estimating the full sample of respondents were presented in footnote 25 in the main text).

Thus, we conclude that if the observations in the subset of 'political experts' contain less measurement error, there is very little to suggest that attenuation bias is driving our conclusion that voters deviate systematically from what one would expect were voters using a proportional influence heuristic.⁴

⁴Moreover, one can straightforwardly show that differential item functioning (DIF), which also can generate measurements that are different from the 'true value', does not bias regression estimates but merely causes heteroscedastic errors.

E Determinants of SPD-B90 coalition weight

In the following table for completeness we document the estimated coefficients of our model defined in equation 6 in the main body of the paper for the SPD-B90 coalition in Germany. We do not consider this coalition further because only about 7% of the respondents thought that this coalition is viable to win a majority in parliament.

Table A11: DETERMINANTS OF SPD-B90 COALITION WEIGHT (α)
 —PARTY SIZE & BANZHAF INDEX TO MEASURE *Bargaining Power*—

	SPD-B90			
	Party Size	Party Size	Banzhaf Index	Banzhaf Index
Intercept	0.426 (0.495)	0.466 (0.497)	0.242 (0.343)	0.309 (0.351)
Δ Ideological Centrality	-0.047*** (0.017)	-0.011 (0.076)	-0.050*** (0.016)	-0.001 (0.057)
Bargaining Power	-0.899 (0.673)	-0.884 (0.681)	-0.779* (0.432)	-0.753* (0.435)
Δ Ideol. Centr. \times Barg. Power		-0.055 (0.114)		-0.074 (0.084)
Δ Leader Evaluation	0.309 (0.207)	0.303 (0.207)	0.282 (0.214)	0.274 (0.213)
Δ Party Preference	0.448** (0.203)	0.437** (0.205)	0.490** (0.207)	0.454** (0.211)
Political Knowledge	0.585** (0.246)	0.527* (0.271)	0.713*** (0.247)	0.608** (0.270)
OBSERVATIONS	1582	1582	1562	1562
ROOT MSE	1.06	1.06	1.04	1.04

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

F Robustness test: A different measure of *Ideological Centrality*

We present yet another robustness check on our results. In the following table A12 we replicate the models we present in the main body of the paper using another measure of *Ideological Centrality* that is treating the midpoint of the scale (5) as the ideological center. It bears noting that the coefficient on the interaction term remains negative but is rarely statistically significant when ideological centrality is measured in terms of distance from the midpoint of the 0-10 scale. At the same time, *Bargaining Power*, is estimated to have a statistically significant effect in the unconditional models. Thus, the results using this measure of *Ideological Centrality* do not change the substantive conclusion.

Table A12: DETERMINANTS OF COALITION WEIGHT (α)
—PARTY SIZE & BANZHAF INDEX TO MEASURE *Bargaining Power*—

	CDU-SPD				CDU-FDP			
	Party Size	Party Size	Banzhaf Index	Banzhaf Index	Party Size	Party Size	Banzhaf Index	Banzhaf Index
Intercept	0.055 (0.253)	0.131 (0.278)	0.183 (0.153)	0.205 (0.162)	-0.616 (0.540)	0.465 (0.705)	-0.661* (0.382)	-0.426 (0.495)
Δ Ideol. Centrality	0.213*** (0.020)	0.305** (0.145)	0.217*** (0.020)	0.254*** (0.078)	0.090*** (0.032)	0.741*** (0.259)	0.094*** (0.032)	0.222 (0.177)
Barg. Power	0.883** (0.427)	0.741 (0.478)	0.616*** (0.212)	0.572** (0.233)	1.600** (0.737)	0.009 (0.965)	1.625*** (0.492)	1.271* (0.674)
Δ Ideol. Centr. \times Barg. Power		-0.165 (0.256)		-0.061 (0.125)		-0.894** (0.348)		-0.177 (0.240)
Δ Leader Evaluation	0.092 (0.094)	0.087 (0.094)	0.067 (0.094)	0.063 (0.095)	-0.276 (0.215)	-0.249 (0.218)	-0.256 (0.214)	-0.254 (0.214)
Δ Party Preference	0.004 (0.079)	0.010 (0.079)	-0.014 (0.079)	-0.011 (0.080)	0.114 (0.241)	0.060 (0.243)	0.138 (0.239)	0.130 (0.240)
Pol. Knowledge	-0.426*** (0.122)	-0.420*** (0.123)	-0.429*** (0.122)	-0.424*** (0.122)	0.305 (0.244)	0.420* (0.249)	0.373 (0.242)	0.402 (0.244)
OBSERVATIONS	1644	1644	1640	1640	1632	1632	1625	1625
ROOT MSE	1.11	1.11	1.10	1.10	1.11	1.11	1.11	1.11

* p < 0.10; ** p < 0.05; *** p < 0.01.

G Simulation using Banzhaf Index

In Figure A1 we provide visual representation of the effects of *bargaining power* when it is measured in terms of the Banzhaf Index, analogous to the one presented for *Party Size* in Figure 4 in the body of the paper. That is, we use the same simulation procedure to obtain the predicted coalition weights and confidence intervals. The reference lines, again, depict the *Equal Influence* and *Proportional Influence* heuristic. While Gamson's Law is usually associated with party size (and the allocation of portfolios), Gamson's (1961, 374) argument was actually framed in terms of the *resources* that each actor, or party, brings to the coalition. While in the context of coalition politics, it is probably most natural to focus on the number of legislative seats held by each party, Gamson did consider examples where the parties' resources were characterized in terms of power indices. The figure verifies what was apparent from the regression results, i.e., that the substantive conclusions do not depend on whether bargaining power is measured using *Party Size* or the *Banzhaf Index*. Thus, the effect of the *Banzhaf Index* conforms neither with the *Equal Influence* nor the *Proportional Influence* — the effect is somewhere between those and is closer to the proportional influence heuristic in the case of the CDU-FDP coalition. Perhaps the only noteworthy difference between the results shown here and those obtained from measuring bargaining power in terms of party size, is that the uncertainty about the estimated effect of the *Banzhaf Index* is smaller in the CDU-FDP coalitions than what Figure 4 shows us for *Party Size*.

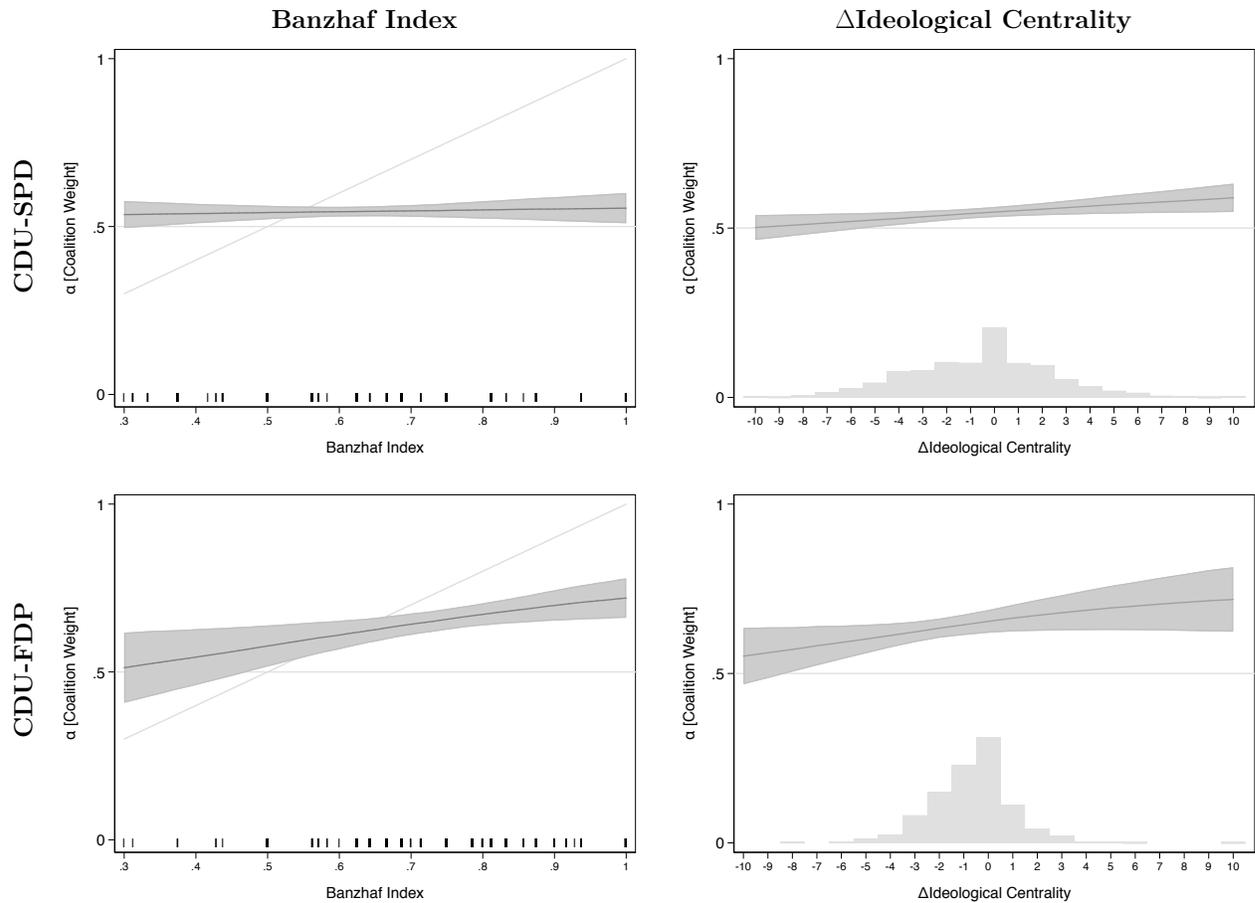


Figure A1: IMPACT OF BANZHAF INDEX & IDEOLOGICAL CENTRALITY ON COALITION WEIGHT (α) *The reference lines at $\alpha = .5$ indicate the predictions of the equal influence heuristic. The reference lines with slope of one in the left panels show the predictions of the proportional influence heuristic conditional on CDU's coalition relative share of the Banzhaf Index.*

H Political Knowledge

The models reported in the body of the paper include a control for the respondents' level of political knowledge. These models only allow for the possibility that those who score high on our political knowledge scale attribute greater policy influence to one or the other of the coalition parties essentially allowing the *Political Knowledge*-variable to capture the effects of any unobserved variables that are correlated with *Political Knowledge*. A more interesting question concerns whether the politically knowledgeable, the political experts, evaluate coalition policy differently and, in particular, whether they employ different heuristics than political novices. To explore this possibility we re-estimate our models while including an interaction between *Political Knowledge* and our other independent variables. The results are reported in Tables A13 and A14 for, respectively, the CDU-SPD and the CDU-FDP coalitions. The first four columns in each table operationalize *Bargaining Power* as *Party Size* while the following four operationalize it as the *Banzhaf Power Index*. For convenience, we report the original models from the body of the paper (columns 1 & 5) along with the models estimated in subsamples of low (columns 2 & 6) and high political knowledge (columns 3 & 7), which allows for easy comparison across the two groups of respondents.⁵ Finally, columns 4 and 8, show the results of the models where political knowledge is interacted with the other independent variables.

Starting with the CDU-SPD coalition, the comparison of novice and expert respondents suggests that the results are fairly similar although there are some minor differences. In particular, novices appear to give greater weight to parties that are ideologically more centrist. There are slight indications that experts accord greater weight to parties with greater bargaining power, but the effect is not statistically significant when estimated on the smaller subsamples. Turning to the CDU-FDP coalition, the differences are less clear, i.e., whereas we didn't observe much difference in the estimated coefficient for the interaction

⁵Low (*Novices*) and high (*Experts*) knowledge respondents are defined by splitting the sample at the median value of the political knowledge scale.

Table A13: DETERMINANTS OF CDU-SPD COALITION WEIGHT (α)
 USING PARTY SIZE & BANZHAF INDEX TO MEASURE *Bargaining Power*

	Party Size				Banzhaf Index			
	All	Novices	Experts	All	All	Novices	Experts	All
Intercept	0.390 (0.272)	0.355 (0.356)	-0.084 (0.518)	0.898 (0.598)	0.466*** (0.178)	0.294 (0.226)	-0.173 (0.255)	1.110*** (0.419)
Δ Ideological Centrality	0.083** (0.037)	0.076* (0.043)	0.001 (0.113)	0.269*** (0.063)	0.072*** (0.024)	0.074** (0.030)	0.040 (0.060)	0.223*** (0.052)
Bargaining Power	0.162 (0.463)	-0.226 (0.613)	0.253 (0.902)	-0.693 (1.025)	0.054 (0.241)	-0.085 (0.339)	0.397 (0.392)	-0.923 (0.619)
Δ Ideol. Centr. \times Barg. Power	-0.110* (0.063)	-0.069 (0.074)	-0.000 (0.200)	-0.332*** (0.104)	-0.086** (0.036)	-0.066 (0.044)	-0.072 (0.095)	-0.237*** (0.070)
Δ Leader Evaluation	0.100 (0.095)	0.231 (0.148)	0.049 (0.135)	0.871*** (0.298)	0.074 (0.096)	0.199 (0.150)	0.046 (0.135)	0.803*** (0.301)
Δ Party Preference	0.028 (0.082)	-0.017 (0.130)	-0.069 (0.117)	-0.145 (0.267)	0.045 (0.082)	0.001 (0.132)	-0.090 (0.116)	-0.074 (0.268)
Political Knowledge	-0.443*** (0.129)			-0.978 (0.984)	-0.446*** (0.127)			-1.528** (0.620)
Δ Ideol. Centr. \times Pol. Knowledge				-0.508*** (0.136)				-0.346*** (0.093)
Barg. Power \times Pol. Knowledge				0.786 (1.689)				1.530* (0.926)
Δ Ideol. Centr. \times Barg. Power \times Pol. Knowledge				0.730*** (0.233)				0.411*** (0.135)
Δ Leader Evaluation \times Pol. Knowledge				-1.075*** (0.411)				-1.007** (0.413)
Δ Party Preference \times Pol. Knowledge				0.281 (0.365)				0.178 (0.365)
OBSERVATIONS	1644	778	668	1644	1640	774	668	1640
ROOT MSE	1.15	1.30	0.97	1.14	1.14	1.29	0.97	1.13

* p < 0.10; ** p < 0.05; *** p < 0.01.

Table A14: DETERMINANTS OF CDU-FDP COALITION WEIGHT (α)
 USING PARTY SIZE & BANZHAF INDEX TO MEASURE *Bargaining Power*

	Party Size				Banzhaf Index			
	All	Novices	Experts	All	All	Novices	Experts	All
Intercept	-0.446 (0.673)	-0.072 (0.937)	-4.919** (1.931)	-0.145 (1.661)	-0.421 (0.431)	-0.275 (0.552)	0.450 (0.797)	-0.728 (1.017)
Δ Ideological Centrality	0.621*** (0.172)	0.800*** (0.256)	-1.847*** (0.650)	1.710*** (0.501)	0.417*** (0.110)	0.477*** (0.154)	-0.030 (0.272)	0.731*** (0.283)
Bargaining Power	0.958 (0.887)	0.906 (1.232)	7.465*** (2.633)	0.869 (2.215)	0.968* (0.536)	1.181 (0.718)	0.263 (1.105)	1.585 (1.338)
Δ Ideol. Centr. \times Barg. Power	-0.804*** (0.230)	-0.987*** (0.331)	2.375*** (0.877)	-2.156*** (0.653)	-0.521*** (0.146)	-0.555*** (0.197)	-0.049 (0.371)	-0.831** (0.361)
Δ Leader Evaluation	-0.176 (0.213)	-0.216 (0.304)	-0.237 (0.347)	-0.506 (0.612)	-0.122 (0.212)	-0.110 (0.299)	-0.201 (0.351)	-0.380 (0.603)
Δ Party Preference	0.050 (0.244)	-0.267 (0.343)	0.889** (0.432)	-0.373 (0.626)	0.053 (0.242)	-0.174 (0.336)	0.865** (0.429)	-0.069 (0.614)
Political Knowledge	0.571** (0.251)			-0.783 (2.683)	0.548** (0.249)			0.769 (1.592)
Δ Ideol. Centr. \times Pol. Knowledge				-2.282*** (0.832)				-0.719 (0.480)
Barg. Power \times Pol. Knowledge				1.261 (3.602)				-0.703 (2.147)
Δ Ideol. Centr. \times Barg. Power \times Pol. Knowledge				2.875*** (1.102)				0.763 (0.636)
Δ Leader Evaluation \times Pol. Knowledge				0.480 (0.901)				0.365 (0.893)
Δ Party Preference \times Pol. Knowledge				0.581 (0.934)				0.233 (0.929)
OBSERVATIONS	1632	767	668	1632	1625	761	667	1625
ROOT MSE	1.11	1.21	0.98	1.10	1.10	1.20	0.99	1.10

* p < 0.10; ** p < 0.05; *** p < 0.01.

between Δ *Ideological Centrality* and *Bargaining Power*, most of model specification suggest that there is an interaction between the two variables.

Of course, one cannot say whether the difference between the coefficients estimated on the two subsamples is statistically significant. Moreover, dichotomizing political knowledge throws away some variation, which is why we also estimate a model interacting political knowledge with all the variables.

Interpreting the results of models with triple interaction is, naturally, slightly more tedious. To facilitate interpretation of the results we present the average marginal effects of bargaining power and ideological centrality in Figures A2 and A3 conditional on political knowledge. The conditioning on ideological centrality (the panels on the left) and bargaining power (the panels on the right) simply enter through the calculation of the marginal effects where all covariates (apart from the political knowledge and the marginal effect being examined) are held at their observed values. Thus, we estimate the marginal effect — as the difference in predicted coalition weights calculated using the maximum and the minimum value of the variables under examination — conditional on political knowledge for each respondent by holding all other covariates at their observed value and then *average* the individual marginal effects across all respondent.

Figures A2 and A3 largely confirm what the results from the estimation on the subsamples suggested. The marginal effect of *Party Size* (Figure A2) is not affected much by political knowledge — there is a slight indication that the marginal effect is larger at intermediate values of political knowledge in the CDU-FDP coalition but those differences are dwarfed by the size of the confidence intervals. The same applies to bargaining power when measured by the *Banzhaf Index* (Figure A3). The results with regard to ideological centrality are a little bit more interesting. For both coalitions, it seems as if the marginal effect of Δ *Ideological Centrality* is smaller, and statistically insignificant, for the most politically knowledgeable respondents. This is true whether we operationalize *Bargaining Power* in terms of *Party Size* or the *Banzhaf Index*. In terms of uncertainty, or statistical significance, the effect is more

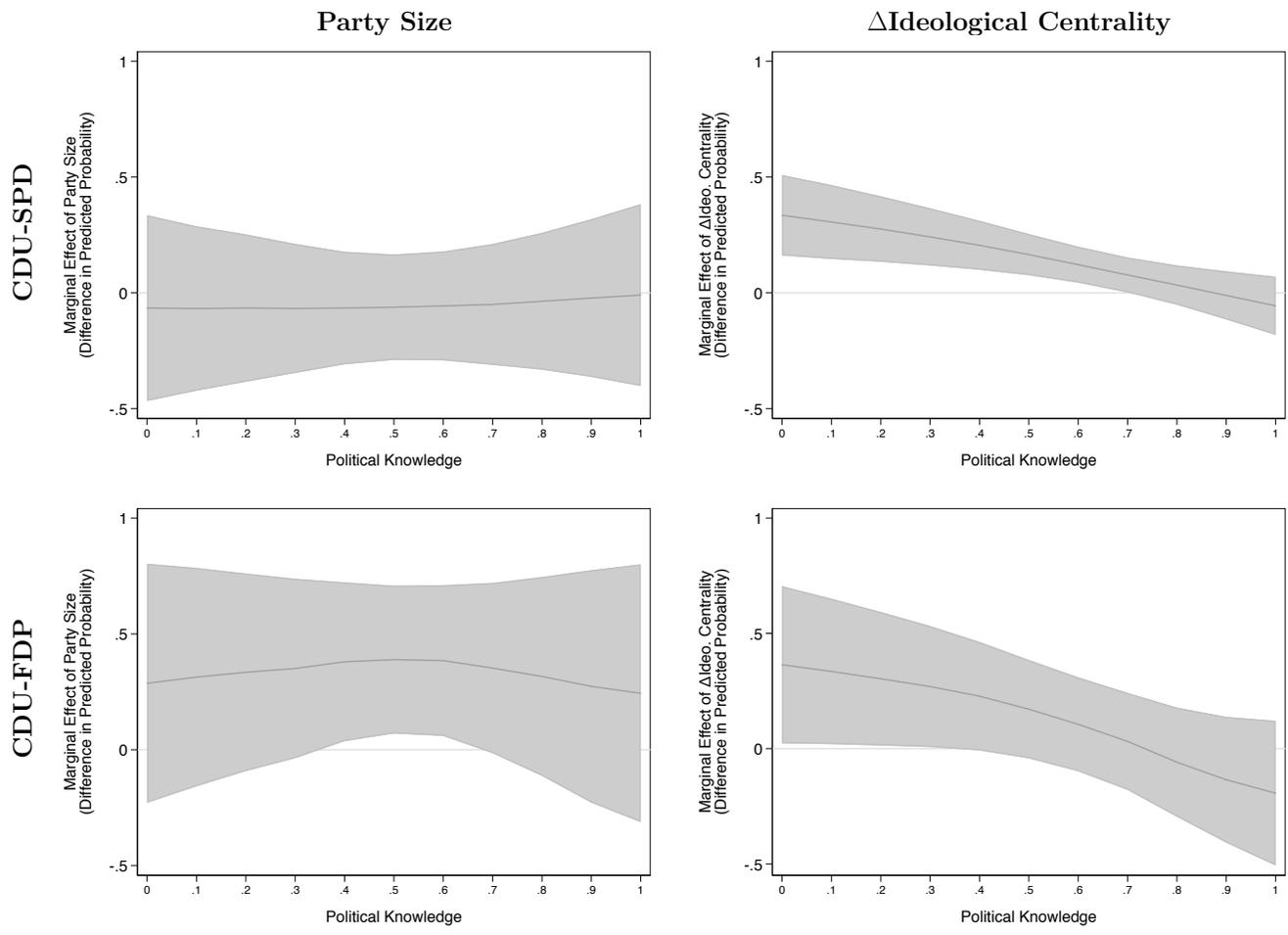


Figure A2: AVERAGE MARGINAL EFFECT OF PARTY SIZE & Δ IDEOLOGICAL CENTRALITY CONDITIONAL ON POLITICAL KNOWLEDGE

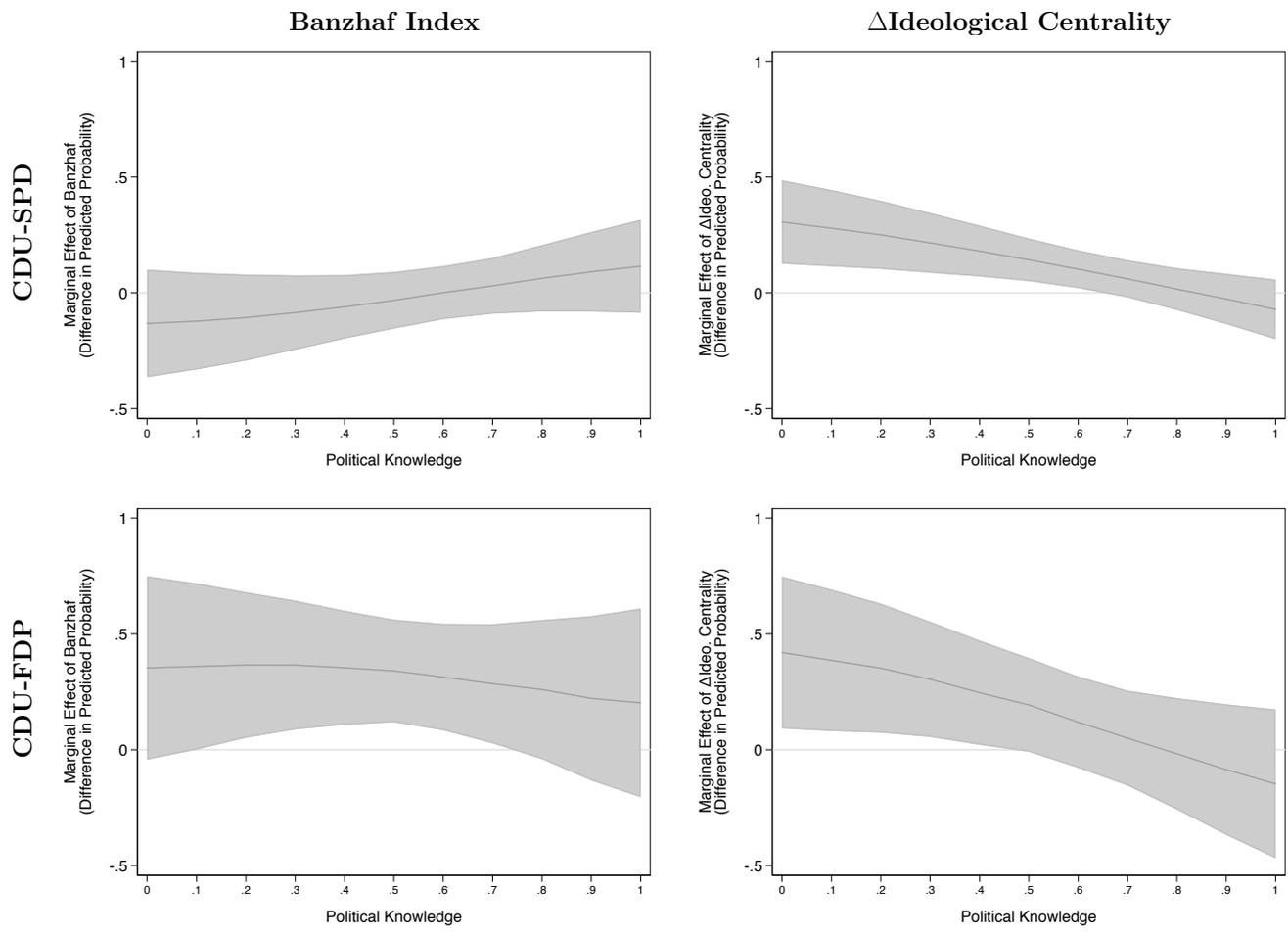


Figure A3: AVERAGE MARGINAL EFFECT OF BANZHAF INDEX & Δ IDEOLOGICAL CENTRALITY CONDITIONAL ON POLITICAL KNOWLEDGE

pronounced in the case of the CDU-SPD coalition. The confidence intervals of the marginal effect are substantially larger for the CDU-FDP while the conditioning effect of political knowledge remains quite similar.

In the models in the body of the paper we control for leader evaluations and party preference and it is also interesting to consider whether the effect of these variables is conditioned by political knowledge. In particular, one might assume that the politically less knowledgeable might be more susceptible letting their expectations being colored by a favorable opinion of the party or its leader. Figures A4 and A5 graph the average marginal effects of leader evaluations and party preference at different levels of political knowledge holding other covariates at their observed values for the models, operationalizing bargaining power as, respectively, party size and Banzhaf index. In line with expectations, the less politically knowledgeable appear to assign greater weight to the party whose leader they rate more highly for the CDU-SPD coalition. Contrary to expectations, there are slight indications that the more politically knowledgeable respondents assign greater weight to the party whose leader the rate more highly in the case of the CDU-FDP coalition and the party that the prefer more (for both coalitions). However, the standard errors of the marginal effect are large relative to the change in the magnitude of the marginal effect, thus making it difficult to reject the hypothesis that there is no interaction effect between party preference, or leader evaluations (for the CDU-FDP coalitions) in those cases. On the whole, it is difficult to draw clear conclusions about how political knowledge conditions perceptions of coalition policy. A conclusion favorable to the conjecture that political knowledge matters would focus on the fact there appear to be contexts in which leader evaluations matter (perhaps when the coalition parties are fairly evenly balanced in terms of bargaining strength) whereas a less favorable interpretation would focus on the fact that evidence in the other, more numerous, scenarios suggest that there is not much evidence in support of political knowledge conditioning perceptual biases through leader evaluations and party preferences.⁶

⁶In addition, one may raise an objection to these being characterized as ‘biases’.

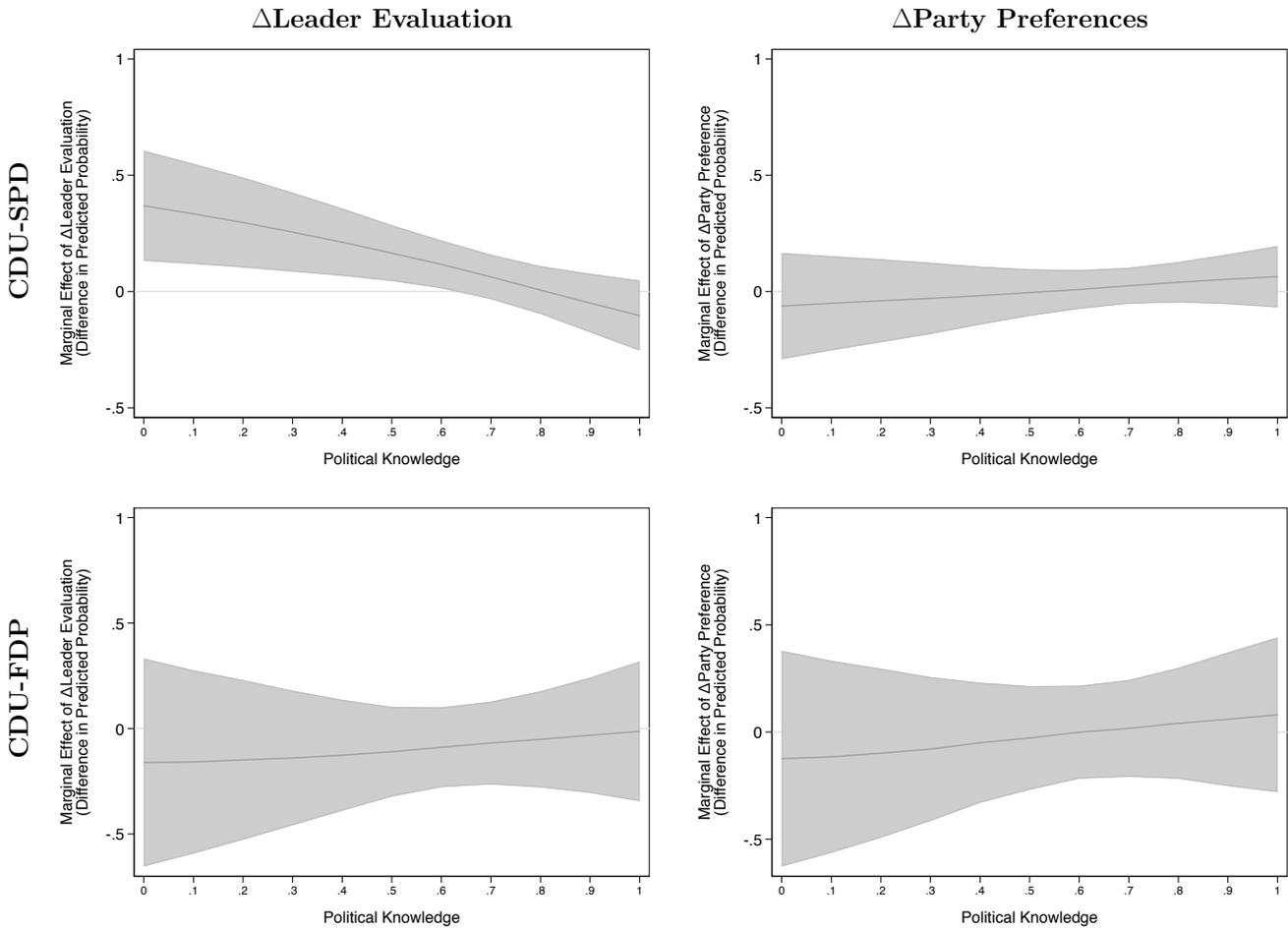
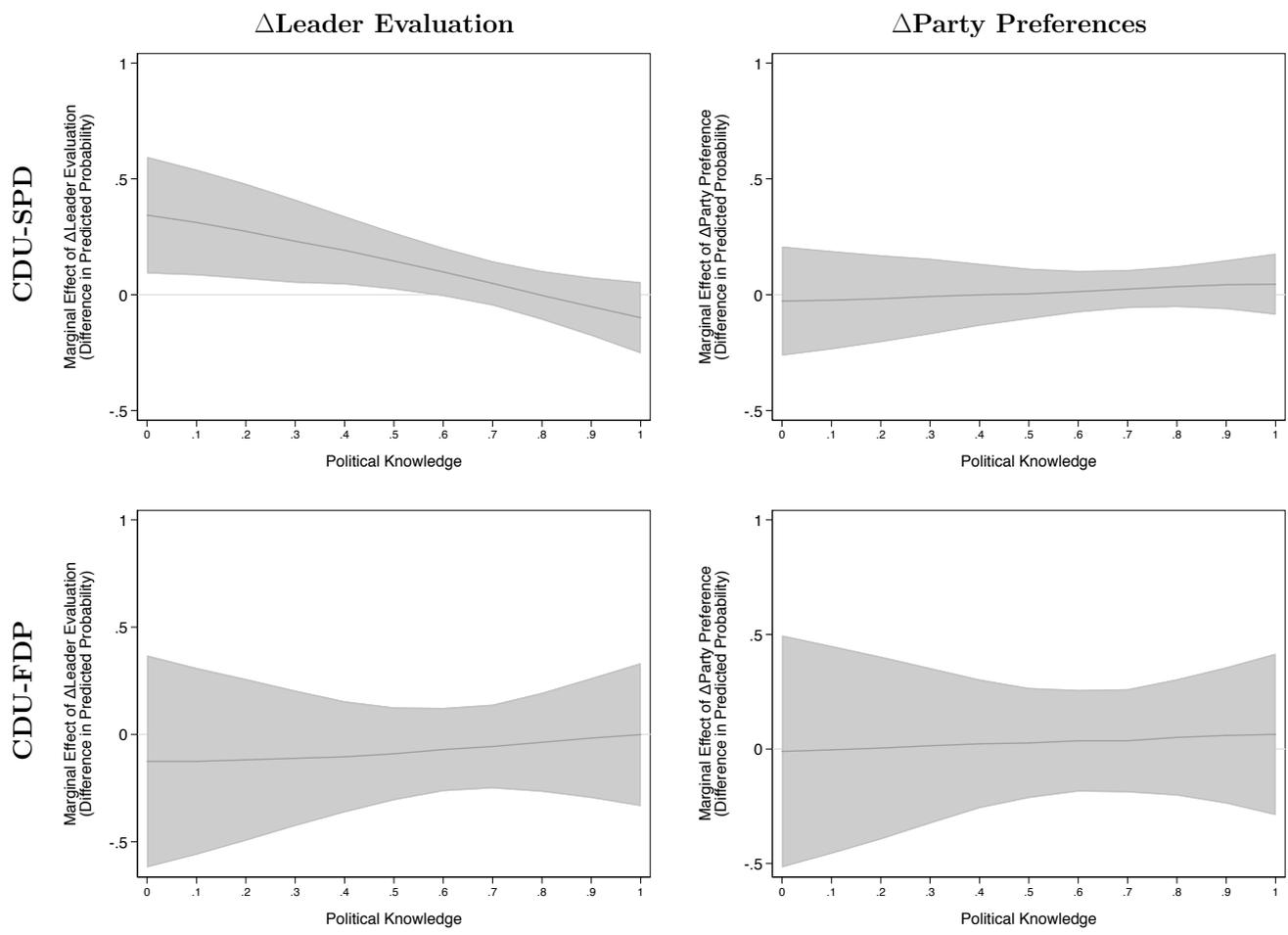


Figure A4: AVERAGE MARGINAL EFFECT OF Δ LEADER EVALUATION & Δ PARTY PREFERENCES FOR MODEL INCLUDING PARTY SIZE
CONDITIONAL ON POLITICAL KNOWLEDGE

It is important, however, to keep in mind that our results are limited by the data available to use — only the German survey included the survey instruments necessary to address these questions. To determine whether the effects of political knowledge are, indeed, context dependent, then it is essential for future electoral studies to incorporate questions tapping into respondents’ perceptions about coalition policy (as well as the other covariates we have identified in our analysis).



**Figure A5: AVERAGE MARGINAL EFFECT OF ΔLEADER EVALUATION & ΔPARTY PREFERENCES FOR MODEL INCLUDING BANZHAF INDEX
CONDITIONAL ON POLITICAL KNOWLEDGE**