Why Parties Form Ideological Blocs Pre-Electoral Coalitions in Multiparty Systems*

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ABSTRACT

Proportional representation tends to produce fragmented party systems, which is widely seen as undermining electoral accountability. Pre-electoral coalitions (PECs) have been argued to restore some clarity in PR elections. But what determines their ideological shape — do parties ally within blocs or bridge the political center? This distinction shapes whether voters face a clear choice between competing government options or whether the option essentially dampens electoral competition. We develop a formal model and simulations showing that strategic voting incentives systematically favor Bloc-PECs over Median-PECs because the pool of strategic defectors available to the pivotal party is larger with an ideological bloc. We test this prediction using data on PEC formation in 420 elections across 22 democracies from 1946 to 2015. Results confirm that same-side parties are roughly twice as likely to form a pre-electoral coalition. These findings suggest that proportional representation contains a dark self-correcting mechanism: strategic incentives push parties toward bloc competition that simplifies electoral choice, even as the system is designed to enable fragmentation.

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1 Introduction

Voters choose parties, but parties choose governments. In multiparty systems where governing requires coalition partners, this gap can make it difficult for voters to anticipate which government their vote will help bring into office. The problem is particularly familiar under proportional representation (PR), where electoral choices shape government policy through subsequent negotiations between parties (Kedar, 2012). Yet, parties do not always leave the choice of coalition partners until after the election. Pre-electoral coalitions are public agreements between parties to coordinate before an election. We focus on agreements that involve a reciprocal commitment to govern together if the partners secure a legislative majority. By announcing these partnerships before voters cast their ballots, parties can organize a fragmented party system into more identifiable governing alternatives (Powell, 2000). This particularly holds when parties also coordinate within polarized, ideologically cohesive blocs. By contrast, pre-electoral coalitions that span the political center may blur the distinction between competing governing alternatives.

We distinguish between *bloc* pre-electoral coalitions, whose members are located on the same side of the median voter, and *median* pre-electoral coalitions, whose members are located on opposite sides. This distinction captures an aspect of coalition configuration that is not measured by ideological distance alone. Two parties can be equally far apart but occupy different positions relative to the median voter. Existing research has identified important incentives to form pre-electoral coalitions, including electoral viability, ideological proximity, and gains from coordinating under electoral rules that disadvantage parties competing independently (Golder, 2005, 2006*a*; Ibenskas, 2016). Coalition cooperation shapes voters' perceptions and electoral choices, which in turn affect parties' behavior (Fortunato, 2021). We examine how parties anticipate strategic voting when choosing prospective governing partners before an election. Specifically, we ask how the ideological configuration of a prospective coalition shapes electoral responses and, through changes in the partners' relative bargaining weights, their expected policy outcomes.

Our argument connects parties' strategy to signal with whom they prefer to govern before the election to strategic coalition voting. Voters in multiparty systems consider potential coalition governments (Blais et al., 2006; Gschwend, 2007; Meffert and Gschwend, 2010) and anticipated coalition policies when deciding which party to support (Bargsted and Kedar, 2009; Duch, May and Armstrong, 2010). Such coalition signals can change vote intentions by increasing the weight voters attach to coalition considerations relative

to party considerations (Gschwend, Meffert and Stoetzer, 2017). Formal work further demonstrates that incentives for strategic voting depend on anticipated coalition formation and bargaining (Indriðason, 2011). We examine how parties anticipate these electoral responses when choosing their prospective partners. The relevant consequence is not simply a change in the coalition's total support. When parties' influence over government policy depends on their relative electoral strength, strategic voting can redistribute bargaining power within the coalition and thereby change the resulting government policy.

We develop a four-party model of electoral competition and coalition formation. The central intuition concerns the incentives of a moderate party that can cooperate either with a party on its own side of the median voter or with a party across the median. Announcing a bloc pre-electoral coalition can attract strategic votes from outside the bloc to its more moderate member, as these voters seek to move the prospective government's policy toward their own preferences. The resulting increase in the moderate party's bargaining weight can make the bloc coalition preferable to the government it would otherwise form. Its more extreme partner can also benefit: although the agreement shifts policy toward the moderate party, this outcome may still be preferable to the alternative government in which the more extreme party would not participate. Forming a pre-electoral coalition can therefore be mutually attractive.

The incentives differ for a median pre-electoral coalition. Parties on opposite sides of the median voter can each attract strategic votes from supporters of parties outside the coalition. Because both partners may gain, additional electoral support need not increase the pivotal party's relative bargaining weight. The partners' electoral gains can offset one another in their effects on relative bargaining weights, limiting the policy advantage that a commitment offers the pivotal party. Hence, our theoretical model identifies a mechanism that favors formation of pre-electoral coalitions between parties on the same side of the median voter. This leads us to expect that bloc pre-electoral coalitions are more likely to form than median pre-electoral coalitions, even after accounting for the ideological distance between prospective coalition partners. The mechanism operates through electoral behavior and coalition bargaining; it does not require a mechanical seat bonus from running joint electoral lists.

We evaluate this expectation using comparative data on pre-electoral coalition formation across 22 democracies from 1946 to 2015. The data show that bloc pre-electoral coalitions are more frequent: approximately 60% of all pre-electoral coalitions in our dataset are formed as blocs. The empirical analysis further examines party dyads to estimate whether two parties are more likely to form a pre-electoral coali-

tion when they are located on the same side of the median voter. We find that parties located on the same side of the median voter almost double their chance to cooperate from 3.9% to 7%, even after accounting for ideological distance, party size, incumbency, and other relevant characteristics. This association also persists when accounting for election heterogeneity, accounting for network interdependence, using alternative categorizations of median and bloc pre-electoral coalitions, restricting the sample to two-party pre-electoral coalitions, and excluding particular countries. Overall, these findings support the expectation that parties' positions relative to the median voter help explain pre-electoral cooperation beyond the ideological distance between them.

Our argument and findings point to what we call a *dark self-correcting mechanism* of multiparty competition, with particular relevance for proportional representation. The paradox is that the very fragmentation that complicates electoral choice can also create incentives for parties to coordinate into ideological blocs. By anticipating how voters respond to coalition commitments, parties may find it advantageous to coordinate before elections to improve their expected policy outcomes. Such coordination need not reflect a concern with electoral accountability, but instead it may be an unintended consequence of parties' pursuit of their own policy goals. Yet, by making governing alternatives more clearly identifiable, it can also partly counteract the accountability problems commonly associated with fragmented party systems. Importantly, however, this corrective dynamic may also have a consequential ideological implication: by encouraging the formation of pre-electoral coalitions along ideological lines, it can shift electoral competition away from the median and toward more polarized governing alternatives. Indeed, this dynamic is particularly consequential when pre-electoral blocs emerge in circumstances in which, absent such agreements, a coalition closer to the ideological median would otherwise have formed. The mechanism is therefore dark in two related senses: the potential correction of accountability problems arises from parties' pursuit of their own policy goals rather than from an effort to improve democratic accountability, and it may do so at the cost of producing more ideologically polarized government outcomes. In this sense, the dark side of proportional representation contains the seeds of its own correction, but that correction may itself carry important democratic trade-offs.

2 Literature

In multiparty systems, where parties typically lack the legislative majority needed to govern alone, voters' choices shape the balance of power between parties, while negotiations among them determine which coalition takes office. Pre-electoral coalitions can make prospective governing alternatives more transparent before the election. Such coordination is particularly relevant under proportional representation, where diverse political preferences are represented by several parties, but it also occurs under other electoral rules. Whether pre-electoral coalitions clarify the choice between governing alternatives depends on which parties coordinate.

A substantial body of cross-national research examines pre-electoral coalitions (e.g., Carroll and Cox, 2007; Debus, 2007, 2009; Golder, 2005, 2006*a*,*b*; Ibenskas, 2016; Martin and Stevenson, 2001; Tillman, 2015). Although operational definitions vary, we follow Golder in treating a pre-electoral coalition as a public agreement between parties to coordinate before an election (Golder, 2006*b*, p.6). Such coordination may involve joint press conferences, common manifestos, public commitments to govern together after the election, joint candidate lists, or the nomination of common candidates, including candidates for prime minister (Golder, 2006*b*; Ibenskas and Zurita-Tapia, 2025).

Coalition signals encompass a broader set of statements about prospective cooperation. As Adendorf et al. (2026) emphasize, communication about cooperation can be positive, neutral, or negative and need not be reciprocal. A party may express a preference for a particular partner, keep several options open, or rule out cooperation without reaching an agreement with another party. A pre-electoral coalition involves mutual coordination, and an explicit governing commitment is a particularly strong coalition signal (Ibenskas and Zurita-Tapia, 2025). Within the broader category of pre-electoral coalitions, our theoretical argument focuses on public, reciprocal commitments to govern together if the partners secure a legislative majority. Both partners therefore endorse the same prospective government.

Previous research has identified several institutional factors and party characteristics associated with pre-electoral coalition formation. Golder (2005, 2006*a*,*b*) finds that pre-electoral coalitions are more likely to form between parties of similar size, with relatively small ideological differences, and when the prospective coalition is electorally viable. Pre-electoral coalition formation is also more likely in polarized party systems and under disproportional electoral rules. Ibenskas (2016) examines pre-electoral coalitions in

Central and Eastern Europe, focusing on joint candidate lists. He shows that such coalitions are particularly attractive to small parties that risk failing to pass electoral thresholds when competing independently. Institutional characteristics, including closed party lists, and a history of cooperation between parties also encourage coalition formation. More generally, electoral thresholds and the possibility of winning additional seats through joint electoral lists provide incentives to coordinate before elections. These explanations establish why electoral institutions, electoral viability, and ideological proximity matter for pre-electoral coordination. They leave open how parties' incentives depend on whether prospective partners are located on the same side or on opposite sides of the median voter, beyond the ideological distance between them.

These accounts of pre-electoral coalition formation connect to a substantial literature on voters' responses to anticipated electoral and coalition outcomes. Research on strategic voting demonstrates that voters do not necessarily vote for their most preferred party but also consider the anticipated consequences of their choices (for a review, see Gschwend and Meffert, 2017). If voters believe that their preferred party has little chance of winning representation, they may support another party to avoid wasting their vote. There is also evidence that coalition considerations can lead voters to support smaller coalition partners to improve their chances of obtaining representation (Cox, 1997; Gschwend, 2007; Fredén, 2014; Meffert and Gschwend, 2011).

Moreover, a growing body of research shows that voters in multiparty systems consider not only individual parties but also prospective coalition governments when deciding how to vote (Aldrich et al., 2005; Bahnsen, Gschwend and Stoetzer, 2020; Bargsted and Kedar, 2009; Blais et al., 2006; Duch, May and Armstrong, 2010; Kedar, 2012; Meffert and Gschwend, 2010, 2011). The literature on strategic coalition voting examines why voters may deviate from their most preferred party to influence which coalition governs after the election. Coalition signals can shape voters' expectations about prospective governments and thereby affect their electoral choices (Gschwend, Stoetzer and Zittlau, 2016; Gschwend, Meffert and Stoetzer, 2017; Bahnsen, Gschwend and Stoetzer, 2020). Parties announcing their intention to govern together may therefore induce voters to reconsider their choices, provided that voters regard these commitments as credible.[1] Bargsted and Kedar (2009) and Duch, May and Armstrong (2010) show how expectations about which

[1]Public commitments are not legally binding, but breaking them can carry electoral costs. Debus (2009) discusses historical examples of electoral setbacks following reversals of pre-electoral commitments, while Bowler, Karp and Donovan (2010) describe New Zealand First's decision to govern with National in 1996 after ruling out this partnership. The party lost about two-thirds of its support in the next election. More directly, Bahnsen and Stoetzer (2026) find that violating a coalition signal reduces party support in an Irish survey experiment, but the net electoral response depends on voters' preferences for the resulting coalition.

coalitions are likely to form can lead voters to desert their preferred party. Uncertainty about prospective coalition partnerships can itself reduce party support, even after accounting for voters' preferences over potential coalition governments (Bahnsen, Stoetzer and Gschwend, 2027). Parties therefore have an additional electoral incentive to clarify whom they intend to govern with.

Voters may also seek to influence the relative strength of parties within an expected coalition. Cox (1997) identifies this as a "portfolio strategy". When coalition partners' influence over government policy depends on their relative electoral strength, strategic vote switching can alter their bargaining weights and thereby the policy the coalition is expected to implement, even without changing which parties govern. Voters' expectations about coalition policy and assessments of parties' policy influence reflect relative party strength (Bowler, Gschwend and Indridason, 2020; Fortunato et al., 2021). Bargsted and Kedar (2009) show that voters who expect their preferred party to remain outside government may instead support a less preferred party expected to govern. Such switching can strengthen a more acceptable party within an otherwise less preferred coalition. Meffert and Gschwend (2010) report evidence consistent with a portfolio strategy in the 2006 Austrian election: Green Party supporters uncertain about a majority for their preferred coalition were more likely to intend to vote for the Social Democrats, potentially strengthening that party within an expected grand coalition. The distinction between influencing coalition membership and the relative strength of coalition partners is also discussed by Kedar (2012).

The consequences of pre-electoral coordination extend beyond electoral support to the distribution of power within government. Carroll and Cox (2007) examine its relationship to portfolio allocation, while Hortala-Vallve, Meriläinen and Tukiainen (2024) show that pre-electoral coalitions can improve smaller parties' access to leadership positions even when they entail electoral losses. Indriðason (2011) provides a formal foundation for connecting strategic voting to coalition bargaining. He demonstrates that strategic voting incentives under proportional representation depend on anticipated post-electoral coalition formation and the expected policy consequences of alternative coalitions. Building on this analysis, we examine how parties anticipate the consequences of strategic voting for coalition bargaining when deciding with whom to coordinate before an election. We distinguish between bloc pre-electoral coalitions, whose members are located on the same side of the median voter, and median pre-electoral coalitions, whose members are located on opposite sides. Shin (2019) explicitly incorporates strategic voters into a formal model of pre-electoral coalition formation. His model considers three candidates competing for a single office and

restricts coalition formation to two ideologically similar candidates located on the same side of the political spectrum. It therefore examines a configuration analogous to our Bloc pre-electoral coalitions but does not consider a choice between Bloc pre-electoral coalitions and median pre-electoral coalitions. Our four-party model allows parties to choose between these alternative configurations. Bandyopadhyay, Chatterjee and Sjöström (2011) consider a model in which three parties bargain over the terms of a pre-electoral coalition agreement, which determines the number of seats held by each party. Their model can be interpreted as permitting the formation of both bloc and median pre-electoral coalitions, although they do not explore that distinction. Their model assumes voters vote sincerely for parties, and that their behavior is not influenced by the formation of pre-electoral coalitions.

We bring these arguments together by examining how parties anticipate voters' responses when choosing between prospective coalition partners. The relevant consequences extend beyond a coalition's total electoral support: strategic voting can also change the relative bargaining weights of its members and thereby the policy they expect to implement. Our theoretical model identifies a mechanism that favors the formation of pre-electoral coalitions between parties located on the same side of the median voter. This leads us to expect that bloc pre-electoral coalitions are more likely to form than median pre-electoral coalitions, even after accounting for the ideological distance between prospective coalition partners. The following section develops this argument.

3 Theory

As noted above, the literature on pre-electoral coalitions often emphasizes the incentives that electoral institutions provide for pre-electoral coordination, e.g., in the form of electoral thresholds or super-additivity in the allocation of seats. While such institutional features undoubtedly factor into the decisions of parties to form pre-electoral coalitions or alliances, we are interested in exploring how the incentives to form pre-electoral coalitions are shaped by how pre-electoral coalitions influence voting behavior. To begin our exploration of the relationship between voting behavior and pre-electoral coalitions, we present a simple formal model to analyze under which conditions pre-electoral coalitions form and which parties form such coalitions.

We assume there are four parties, $P = \{P_1, P_2, P_3, P_4\}$, that compete in a policy space described

by the unit interval. The parties' policy preferences are denoted $p^i, \forall i \in P$. The parties' utilities are represented by the function $u_i(p_{jk}) = -|p^i - p_{jk}|$, where p_{jk} with $j, k \in \{1, 2, 3, 4\}$ is the policy of the two-party coalition that forms. We assume that if the parties receive the same payoff regardless of whether they form a pre-electoral coalition or not, they will opt not to form the pre-electoral coalition.

Voters have preferences over policies, and the profile of voter preferences is assumed to be single-peaked. We assume the voters' ideal policies are uniformly distributed across the unit interval.[2] The median voter is located at $p^m = .5$, and we assume throughout that $p^1 < p^2 < p^m < p^3 < p^4$, i.e., there are two parties to the left and to the right of the median voter; we assume that the median voter is located between P_2 and P_3. For convenience, we assume that P_2 is the median party when no pre-electoral coalition forms, i.e., $|p_2 - p^m| < |p_3 - p^m|$. We assume that voters are partitioned into sincere and strategic voters. Sincere voters simply vote for the party that offers the platform that is closest to the voter's preferred policy, while strategic voters seek to cast their vote to influence coalition policy, as we discuss further below. The share of strategic voters is α.

The sequence of actions in the game is the following. At the first stage, the parties simultaneously announce which of their ideologically adjacent parties, if any, they would like to form a coalition with, $c_i \in \{0, i-1, i+1\} \setminus \{5\}$, with $c_i = 0$ indicating that the party does not signal its interest in forming a coalition. If a pair of coalition signals are consistent and imply the same coalition proposal, e.g., $c_i = j$ and $c_j = i$, we assume that the coalition $\{i, j\}$ will form after the election if the parties win majority support in the legislature. Thus, within the model, we assume coalition signals are credible commitments. We let C^0 denote the coalition that forms in the absence of a pre-electoral coalition.

We refer to a pre-electoral coalition between P_1 or P_2 and P_3 or P_4 as a Median pre-electoral coalition, as the coalition parties straddle the median voter, while pre-electoral coalitions between P_1 or P_2 and P_3 or P_4 are referred to as Bloc pre-electoral coalitions, as they comprise parties on the same side of the median voter.

At the second stage, after observing whether coalitions have formed before the election, each voter votes for one of the four parties. In the absence of pre-electoral coalitions, we assume that all voters vote sincerely for one of the parties in the election. When no pre-electoral coalition has formed, the vote share

[2]Our main results do not depend on the assumption that voters are uniformly distributed, but it is adopted for expositional purposes. The statements of our propositions only use the uniform distribution when considering whether a given coalition has majority support.

of party i is denoted as v_i. If a pre-electoral coalition has formed, it is assumed to have a priming effect, i.e., it alerts strategic voters to the fact that some parties have committed to forming a coalition. Strategic voters may adapt their vote choice because supporting one of the prospective coalition partners can change the parties' bargaining weights and, therefore, the policy the coalition adopts. They may therefore vote for a party other than their most-preferred party to bring the expected coalition policy closer to their own most-preferred policy. For simplicity, we assume that all voters whose sincere vote is for one of the parties in the pre-electoral coalition continue to cast a sincere vote, i.e., only strategic voters whose most preferred party is not in the pre-electoral coalition cast a strategic vote for one of the parties in the pre-electoral coalition. However, if two pre-electoral coalitions form, i.e., $\{1, 2\}$ and $\{3, 4\}$, then we assume that only the voters whose preferred policy positions lie between those of parties 2 and 3 vote strategically.[3] Let $\hat{p}$ denote the policy preference of the voter who is indifferent between the left-wing ($\{1, 2\}$) and the right-wing ($\{3, 4\}$) pre-electoral coalitions.[4] Strategic voters thus make their decision based on how their vote might lead the coalition to adopt a policy that is closer to their most preferred policy and vote strategically for one of the prospective coalition parties. Party i's vote share, when in a pre-electoral coalition with party j, is denoted $\bar{v}_{ij}$ (with seats in the legislature being allocated proportionally).

At the final stage, a coalition forms. If parties that signaled their intention to form a coalition win a majority of the vote, we assume they will form a government coalition.[5] If no two parties send compatible coalition signals, or if they fail to win a majority of the vote, we assume that the party of the median legislator acts as a formateur. For simplicity, we assume that the formateur party will form a connected coalition.[6]

We assume that coalition signals affect the support of the coalition parties when two parties have

[3]The first assumption simplifies the analysis. If all the strategic voters are assumed to be primed by the formation of a pre-electoral coalition, then the voter indifferent between voting for, say, party 1 and party 2, is generally not the voter at the midpoint between p_1 and p_2. Pinning down the location of the indifferent voter, and thus the share of strategic votes for the parties, greatly complicates the analysis without affecting the substance of the analysis. The one exception is when both a left-wing and a right-wing pre-electoral coalition forms, in which case it implies that no one votes strategically. In this case, the assumption has more substantive implications, i.e., it effectively rules out the possibility of a right-wing bloc pre-electoral coalition (i.e., the coalition of 1 and 2 has a majority when everyone votes sincerely). Thus, to allow for competition between the two blocs, we assume that in the subgame where two pre-electoral coalitions form, the strategic voters whose preferred policies are in the $[p_2, p_3]$ interval vote strategically.

[4]That is, $|\hat{p} - \bar{p}_{12|34}| = |\hat{p} - \bar{p}_{34|12}|$, where $\bar{p}_{12|34}$ is the coalition policy of $\{1, 2\}$ when both pre-electoral coalitions form.

[5]This assumption can be motivated by concerns that reneging on an agreement is costly. It seems reasonable, e.g., to think that reneging would render the party's future coalition signals non-credible.

[6]With only four parties, this assumption has limited impact on our main results. Effectively, this rules out situations where the median party is small, i.e., is squeezed in on both sides by its neighbors on the left and the right, which, empirically speaking, is not a common situation.

signaled an interest in forming a coalition with one another. Coalition policy is a function of the distribution of the parties' policy platforms, which determines the parties' vote shares and, subsequently, their influence on coalition policy. Let $p_{ij}(p;\alpha)$ denote the coalition policy when parties i and j form a coalition; it is a function of a vector of policy positions (p) and the share of the electorate that is strategic (α). When there are no credible commitments to form a post-electoral coalition, all voters cast their votes sincerely, and the parties' vote shares are denoted v_i.

It is, e.g., not uncommon to assume that the parties' influence on coalition policy is proportional to their size, e.g., when no pre-electoral coalition has formed:

$$p_{ij}(p;\alpha) \quad = \quad \frac{v_i}{v_i+v_j}p_i + \frac{v_j}{v_i+v_j}p_j$$

More generally, we let W_{ij} denote Party i's coalition weight in the coalition $\{i,j\}$. In the proofs, we occasionally need to consider party i's vote share and weight in a coalition with party j as well as coalition policy, when the other two parties have formed a pre-electoral coalition, which we denote $v_{ij|kl}$, $W_{ij|kl}$, and $p_{ij|kl}$. We assume that $\frac{\partial W_{ij}}{\partial v_i} > 0$ and $\frac{\partial W_{ij}}{\partial v_j} < 0$. As the sum of the coalition weights within a coalition must sum to one, $W_{ij} + W_{ji} = 1$. The coalition policy can then be rewritten:

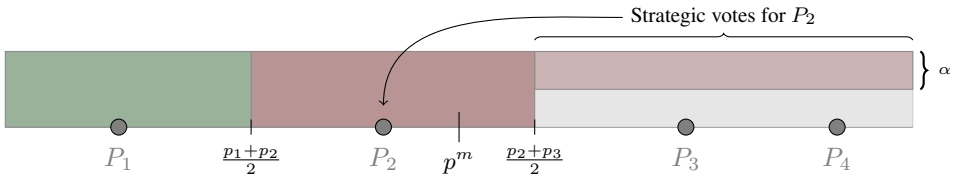
$$p_{ij}(p;\alpha) \quad = \quad W_{ij}\, p_i + W_{ji}\, p_j$$

For simplicity, we let p_{ij} denote the coalition policy when parties i and j form a coalition without having signaled their intentions, and $\bar{p}_{ij}$ when they signaled their intention to form a coalition. Similarly, W_{ij} and $\bar{W}_{ij}$ denote the parties' coalition weights with and without coalition signals between parties i and j.

Before turning to the formal statement of the equilibria, it may be useful to explore how the incentives to form bloc pre-electoral coalitions and median pre-electoral coalitions differ. Figure 1 focuses on party 2's incentives to form a bloc pre-electoral coalition with party 1 (top panel) and a median pre-electoral coalition with party 3 (bottom panel).

Consider the bloc pre-electoral coalition panel on the top first. The voters on the left with ideal policies to the left of the midpoint of P_1 and P_2 vote for party 1 (green area). Similarly, the voters between

(a) Bloc Pre-Electoral Coalition



(b) Median Pre-Electoral Coalition

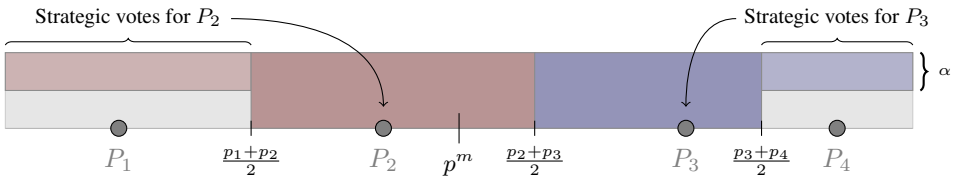


Figure 1: Strategic Voting under Bloc and Median Pre-Electoral Coalitions. The figure illustrates how pre-electoral coalition formation induces strategic voting and how the resulting redistribution of votes affects coalition partners' relative bargaining power and, consequently, the coalition policy.

$\frac{p_1+p_2}{2}$ and $\frac{p_2+p_3}{2}$ vote for party 2 (red area). If parties 1 and 2 were to form a coalition, the coalition policy would be close to the midpoint between the parties, as their vote shares are similar. If parties 1 and 2 form a pre-electoral coalition, the strategic voting benefits party 2. That is, a share (α) of the voters that would cast their votes for parties 3 and 4 if no pre-electoral coalition forms, now vote strategically for party 2 to edge the coalition policy further to the right (light red area). Thus, party 2's greater vote share implies party 2 has greater weight within the coalition, which results in a more favorable policy outcome for party 2.

The bottom panel similarly considers the effects of strategic voting when parties 2 and 3 form a median pre-electoral coalition. In this context, party 2 wins some strategic votes from the supporters of party 1, while party 3 gains votes from party 4. It is immediately clear that party 2 is less advantaged by the pre-electoral coalition with party 3 than with party 1 in the panel above. First, both coalition partners gain votes; i.e., effectively we can think of it as some of the gains being canceled out. Second, while party 2 still has an advantage in this example, as it gains more strategic votes than party 3 does, what matters for the coalition weight is not the number of votes gained, but the gain in proportion to the parties' vote share in the absence of a pre-electoral coalition. Thus, in this example, the parties gain about the same number of votes in terms of proportion, which implies that parties' coalition weights, and thus the resulting coalition policy, are barely affected.[7]

[7]The assumption that voters are uniformly distributed is arguably empirically inaccurate as, typically, there are more voters in

Thus, the underlying incentives in the model are apparent; the center parties always gain coalition weight when they form a bloc pre-electoral coalition, providing a strong incentive. The incentives are more ambiguous when it comes to a pre-electoral coalition between the two centrist parties; either party may end up being disadvantaged by strategic voting even though their vote share may increase, i.e., in terms of affecting the policy outcome, the question is whether the party gains proportionally more votes than its coalition partner. This might be taken to imply that median pre-electoral coalitions are impossible, as one of the parties will be worse off than if the same coalition formed only as a post-electoral coalition. That is, however, not the case because a party may be excluded from the post-electoral coalition. Thus, joining a pre-electoral coalition, even if it implies less weight within the coalition, can be worth it, because being in a coalition is generally better than being in the opposition.

Our first result is closely related to this consideration. The formation of any pre-electoral coalition will disadvantage one of the parties relative to how it would have done in the same coalition without forming a pre-electoral coalition.[8] Consider the parties in the coalition that forms in equilibrium (i.e., in the subgame) where no pre-electoral coalition has formed. As both parties know their coalition membership does not hinge on them forming a pre-electoral coalition together, each party essentially has a veto over the formation of the pre-electoral coalition — and since one of the parties is disadvantaged, the parties will never form a pre-electoral coalition. Lemma 1 proves formally that parties in coalitions that form in the absence of pre-electoral agreement never form pre-electoral coalitions.

Lemma 1. *If* $C^0 = \{i, j\}$ *then* $c_i^* \neq j$ *or* $c_j^* \neq i$.

Proof. Suppose $C^0 = \{i, j\}$ and $i < j$. As the coalition policy is a weighted average of p_i and p_j, $p_i < p_{ij} < p_j$. Now suppose $c_i = j$ or $c_j = i$ and that party j's coalition weight increases as a result, $\bar{W}_{ij} > W_{ij}$. Then $\bar{p}_{ij} > p_{ij}$ and $u_i(\bar{p}_{ij}) < u_i(p_{ij})$. Thus $c_i = j$ is not optimal. The same applies if party i's weight increases. If the parties' weights remain unchanged when they form a pre-electoral coalition, then by assumption the parties prefer not to form a pre-electoral coalition. □

the center of the ideological spectrum than at the extremes. It is, however, straightforward to infer from the figure what the effect of assuming a more 'realistic' distribution of voter preferences — the incentives to form a median pre-electoral coalition are even further reduced, as there are fewer voters at the extremes, but those are the voters casting strategic votes when median pre-electoral coalitions form.

[8] There is, of course, the knife-edge case where the parties' gains from strategic voting balance out, and the coalition weights are unchanged.

The lemma provides a couple of useful insights. First, it suggests that parties don't form pre-electoral coalitions unless they have to, which makes intuitive sense, i.e., why would we form a pre-electoral coalition if we anticipate forming the coalition after the election anyway?[9] Second, as we know, ideological proximity increases the likelihood of a coalition forming. The lemma suggests that ideological proximity may play less of a role. It is, naturally, still important, but its effects will be muted, as while greater ideological proximity makes it clear that the parties' interests are more aligned, it also means that they are more likely to form a coalition post-election without forming a pre-electoral coalition first.

As our discussion above indicates, our main interest is in exploring how pre-electoral coalitions affect political competition, i.e., whether pre-electoral coalitions tend to form within the left or the right, which can be interpreted as interesting polarization within the system, or whether pre-electoral coalitions tend to span the median, which can be interpreted as facilitating more moderate political competition. In our model, three types of pre-electoral coalitions can form, i.e., two bloc pre-electoral coalitions ($\{1,2\}$ and $\{3,4\}$), and one median pre-electoral coalition ($\{2,3\}$). We consider the conditions for each of the pre-electoral coalitions in turn.

3.1 Bloc Pre-Electoral Coalitions

Bloc pre-electoral coalitions can form on the left or on the right. The conditions for a left-wing pre-electoral coalition and a right-wing pre-electoral coalition differ, but it is important to keep in mind that these differences are only due to the assumption that party 2 is closer to the median voter than party. Thus, the conditions for a left-wing pre-electoral coalition should be interpreted as the condition for the side of the ideological spectrum whose 'moderate' party is closer to the median voter (or is more moderate). Our labeling of parties as 'left' and 'right' parties is only used for convenience, i.e., referring to the left and the right is easier than referring to the side of the ideological spectrum whose more moderate party is more moderate.

[9] However, Carroll and Cox (2007) suggest one reason parties might want to do so, i.e., to maximize campaign effort from the parties.

Left-wing Bloc

We begin by considering the conditions for formation of a left-wing pre-electoral coalition. For a left-wing pre-electoral coalition to form, a few conditions need to be met. First, by Lemma 1, party 2 must prefer a coalition with party 3 in the absence of a pre-electoral coalition. Second, party 2's gains from strategic voting must be sufficiently large to make the left-wing coalition a better option than forming a median coalition. Third, the median voters cannot prefer a pre-electoral coalition of parties 3 and 4. Although party 2 is the median party, the formation of a right-wing coalition means strategic voters now compare the coalition policies rather than the party's policy platforms. The following proposition formalizes these conditions and characterizes when a left-wing pre-electoral coalition of parties 1 and 2 can form in equilibrium.

Proposition 1. *A Nash equilibrium exist where* $c = (2, 1, c_3, c_4)$ *where* $c_3 \neq 4$ *or* $c_4 \neq 3$*, and pre-electoral coalition* $\{1, 2\}$ *forms if:*

$$\begin{aligned} W_{21} < \frac{W_{23}(p_3 - p_2) + 2p_2 - p_1 - p_3}{p_2 - p_1} &\leq \bar{W}_{21}, \text{ and} \\ v_{12|34} + v_{21|34} = \frac{p_2 + p_3}{2} + \alpha\left(\hat{p} - \frac{p_2 + p_3}{2}\right) &> \frac{1}{2} \end{aligned} \tag{1}$$

Proof. Suppose $c_1 = 2$ and $c_2 = 1$. By Lemma 1, we know that the parties form a pre-electoral coalition only if they wouldn't form a coalition together without such an agreement. Since party 2 is the median party, we know that $v_3 + v_4 < \frac{1}{2}$, and that the coalition that forms in the absence of signals is $\{2, 3\}$. For that to be the case, party 2 must prefer coalition $\{2, 3\}$ to coalition $\{1, 2\}$ when there are no coalition signals:

$$p_2 - W_{12}p_1 - W_{21}p_2 > W_{23}p_2 + W_{32}p_3 - p_2 \tag{2}$$

Party 1's weakly dominant strategy is to signal willingness to form a coalition with party 2, i.e., without one, party 1 will be in the opposition with a policy outcome $p_{23} \in [p_2, p_3]$. Party 2's willingness to form a coalition with party 1, implies that the resulting policy is $\bar{p}_{12} \in [p_1, p_2]$ is preferred to p_{23}, i.e.:

$$\begin{aligned} p_2 - (1 - \bar{W}_{21})p_1 - \bar{W}_{21}p_2 &< W_{23}p_2 + (1 - W_{23})p_3 - p_2 \\ \bar{W}_{21} &> \frac{W_{23}(p_3 - p_2) + 2p_2 - p_1 - p_3}{p_2 - p_1} \end{aligned} \tag{3}$$

Solving the two inequalities for the weights W_{21} and $\bar{W}_{21}$:

$$W_{21} \quad < \quad \frac{W_{23}(p_3 - p_2) + 2p_2 - p_1 - p_3}{p_2 - p_1} \leq \bar{W}_{21} \tag{4}$$

For parties 3 and 4, the actions $c_3 = 4$ and $c_4 = 3$ are weakly dominated if forming a pre-electoral coalition is not sufficient to win a majority of the vote. Suppose both a left-wing and a right-wing bloc pre-electoral coalitions form. Let $\tilde{p}$ denote the preferred policy of a voter who is indifferent between $p_{12|34}$ and $p_{34|12}$, i.e., $\tilde{p}$ separates the voters who vote strategically for party 2 and those who vote strategically for party 3.

$$\begin{aligned} -\left|p_{12|34} - \tilde{p}\right| &= -\left|\bar{p}_{34|12} - \tilde{p}\right| \\ \tilde{p} - (1 - \bar{W}_{21|34})p_1 - \bar{W}_{21|34}p_2 &= \bar{W}_{34|12}p_3 + (1 - \bar{W}_{34|12})p_4 - \tilde{p} \end{aligned} \tag{5}$$

Only voters in the interval $[p_2, p_3]$ vote strategically for one of the coalition parties or the other. Let $\hat{p} = \tilde{p}$ if $\tilde{p} \in [p_2, p_3]$, $\hat{p} = p_2$ if $\tilde{p} < p_2$, and $\hat{p} = p_3$ if $\tilde{p} > p_3$. Thus, $\hat{p}$ determines the share of strategic votes, with $\alpha\left(\hat{p} - \frac{p_2+p_3}{2}\right)$ being party 2's gain (or party 3's loss). Thus, the $\{3, 4\}$ right-wing pre-electoral coalition fails to win majority if:

$$v_{12|34} + v_{21|34} = \frac{p_2 + p_3}{2} + \alpha\left(\hat{p} - \frac{p_2 + p_3}{2}\right) \quad > \quad \frac{1}{2} \tag{6}$$

If parties 3 and 4 cannot form a majority-winning pre-electoral coalition, then forming one can only hurt them as $\bar{W}_{21|34} < \bar{W}_{21}$, implying that $\bar{p}_{12|34} < \bar{p}_{12}$. □

The proposition and the proof establish that such an equilibrium exists when party 2's gains from strategic voting are sufficiently large to outweigh its preference for the coalition that would otherwise form, while a right-wing pre-electoral coalition cannot attract a majority of voters.

Right-wing bloc

Considering a bloc pre-electoral coalition between parties 3 and 4 brings in an additional consideration. That is, without a pre-electoral coalition, the parties will not win a majority in the legislatures. Thus, for the parties to send signals indicating their intentions to form a coalition together, their pre-electoral coalition must result in a legislative majority for the parties, i.e., $\bar{v}_3 + \bar{v}_4 > \frac{1}{2}$. If parties 1 and 2 form a coalition in the absence of a coalition agreement, then party 3 must prefer the right-wing coalition to the $\{1, 2\}$ coalition as

well as a coalition with party 2. Similar considerations come into play when coalition $\{2,3\}$ forms in the absence of a pre-electoral coalition. The following proposition characterizes the conditions under which parties 3 and 4 form a right-wing pre-electoral coalition in equilibrium.

Proposition 2. *A Nash equilibrium exist where* $c = (c_1, c_2, 4, 3)$ *and either* $c_1 \neq 2$ *or* $c_2 \neq 1$*, and pre-electoral coalition* $\{3,4\}$ *forms if:*

$$v_{12|34} + v_{21|34} = \frac{p_2 + p_3}{2} + \alpha\left(\hat{p} - \frac{p_2 + p_3}{2}\right) \quad < \quad \frac{1}{2}$$

and either

$$i) \quad \bar{W}_{34} > \frac{p_4 - 2p_3 + p_2 + \bar{W}_{32}(p_3 - p_2)}{p_4 - p_3}, \tag{7}$$

or

$$\begin{aligned} ii) \quad W_{21} \quad &< \quad \frac{2p_2 - p_1 - W_{23}p_2 - (1 - W_{23})p_3}{p_2 - p_1} = \frac{2p_2 - p_1 - p_{23}}{p_2 - p_1} \quad \textit{and} \\ \bar{W}_{34} \quad &> \quad \frac{p_4 + (1 - W_{32})p_2 + W_{32}p_3 - 2p_3}{p_4 - p_3} = \frac{p_4 + p_{23} - 2p_3}{p_4 - p_3}. \end{aligned} \tag{8}$$

Proof. Suppose $c_3 = 4$ and $c_4 = 3$. Considering party 3's strategy, there are two situations to consider: i) $C^0 = \{1,2\}$, and ii) $C^0 = \{2,3\}$. Consider each in turn.

i) Suppose $C^0 = \{1,2\}$. $C^0 = \{1,2\}$ implies that:

$$p_2 - (1 - W_{21})p_1 - W_{21}p_2 < W_{23}p_2 + (1 - W_{23})p_3 - p_2. \tag{9}$$

Since the right bloc pre-electoral coalition has a majority, party 2 can only hope to form a pre-electoral coalition with party 3, i.e., $c_2^* = 3$. Note that $c_2 = 1$ can not be optimal as $\bar{W}_{34|12} < \bar{W}_{34}$, implying that $\bar{p}_{34|12} > \bar{p}_{34}$, which makes party 2 worse off. Then $c_3 = 4$ can then only be optimal if a) the party prefers $\{3,4\}$ to not forming a pre-electoral coalition at all:

$$p_3 - (1 - W_{21})p_1 - W_{21}p_2 > \bar{W}_{34}p_3 + (1 - \bar{W}_{34})p_4 - p_3, \tag{10}$$

and b) if it prefers a pre-electoral coalition with party 4 to one with party 2:

$$p_3 - (1 - \bar{W}_{32})p_2 - \bar{W}_{32}p_3 > \bar{W}_{34}p_3 + (1 - \bar{W}_{34})p_4 - p_3. \tag{11}$$

as the LHS of 11 is smaller than the LHS of 10, the latter condition is binding.

ii) Suppose $C^0 = \{2, 3\}$. This implies:

$$p_2 - (1 - W_{21})p_1 - W_{21}p_2 > W_{23}p_2 + (1 - W_{23})p_3 - p_2. \tag{12}$$

Then $c_3 = 4$ is optimal if:

$$p_3 - (1 - W_{32})p_2 - W_{32}p_3 > \bar{W}_{34}p_3 + (1 - \bar{W}_{34})p_4 - p_3. \tag{13}$$

Lemma 1 ensures that either $c_3^* \neq 2$ or $c_2^* \neq 3$ (in which case $c_3^* \neq 2$). □

The proposition and the proof, hence, show that the formation of a right-wing pre-electoral coalition requires both a legislative majority and sufficient incentives for party 3 to coordinate with party 4 rather than pursue an alternative coalition. The relevant comparison depends on which coalition would form in the absence of pre-electoral agreements.

3.2 Median Pre-Electoral Coalitions

The other type of pre-electoral coalition that can form is a median pre-electoral coalition, i.e., an alliance involving parties on opposite sides of the median voter. The first condition for a median pre-electoral coalition follows from Lemma 1, which tells us that such a pre-electoral coalition can form only if it is not expected to form in the absence of pre-electoral coalitions. If that condition is fulfilled, then it is only a question of whether party 2 considers itself better off in a pre-electoral coalition with party 3 than in a coalition formed after the election with party 1. Party 3's preferences play a fairly limited role here; its alternative to forming a pre-electoral coalition with party 2 is to accept a coalition of parties 1 and 2, which will clearly make party 3 worse off.

In short, the formation of a median pre-electoral coalition primarily depends on party 2's preferences, and how its coalition weight changes as a result of strategic voting. But as strategic voting can both advantage and disadvantage party 2, because both parties 2 and 3 gain from strategic voters (see example in Figure 1), there will be situations where party 2 will not have an incentive to form a median pre-electoral coalition. The following proposition establishes this.

Proposition 3. *A Nash equilibrium where* $c = (c_1, 3, 2, 3)$ *and pre-electoral coalition* $\{2, 3\}$ *forms if:*

$$i) \quad W_{23} < \frac{W_{21}(p_1 - p_2) + 2p_2 - p_1 - p_3}{p_2 - p_3} \leq \bar{W}_{23}, \text{ and} \tag{14}$$

$$
\begin{aligned}
ii) \quad \bar{W}_{23} &< \frac{\bar{W}_{43}(p_4 - p_3)}{p_3 - p_2} \quad \textit{or} \\
\alpha &< \frac{p_2 + p_3 - 1}{2(\frac{p_2+p_3}{2} - \hat{p})} \\
iii) \quad \bar{v}_{23} + \bar{v}_{32} &> \frac{1}{2}
\end{aligned}
$$

Proof. Suppose $c_2 = 3$ and $c_3 = 2$. Then, by Lemma 1, $C^0 \neq \{2, 3\}$, which implies:

$$p_2 - (1 - W_{21})p_1 - W_{21}p_2 < W_{23}p_2 + (1 - W_{23})p_3 - p_2. \tag{15}$$

As coalition $\{1, 2\}$ forms if no coalitions are sent, the weakly dominant strategy for party 3 is to signal an interest in forming a coalition with party 2 as $p_{12} < p_2 \leq \bar{p}_{23}$. For party 2 to signal $c_2 = 3$, party 2 must prefer $\bar{p}_{23}$ to p_{12}, or:

$$p_2 - (1 - W_{21})p_1 - W_{21}p_2 > \bar{W}_{23}p_2 + (1 - \bar{W}_{23})p_3 - p_2 \tag{16}$$

Rearranging, the condition for a pre-electoral coalition between parties 2 and 3 is:

$$W_{23} < \frac{W_{21}(p_1 - p_2) + 2p_2 - p_1 - p_3}{p_2 - p_3} \leq \bar{W}_{23} \tag{17}$$

Party 3 must either a) prefer a pre-electoral coalition with party 2 to a pre-electoral coalition with party 4:

$$
\begin{aligned}
p_3 - \bar{W}_{23}p_2 - (1 - \bar{W}_{23})p_3 &< \bar{W}_{34}p_3 + (1 - \bar{W}_{34})p_4 - p_3, \text{ or} \\
\text{for } \bar{W}_{23} &< \frac{\bar{W}_{43}(p_4 - p_3)}{p_3 - p_2}
\end{aligned}
$$

or b) a pre-electoral coalition between parties 3 and 4 fails to win a majority:

$$
\begin{aligned}
1 - \frac{p_2 + p_3}{2} + \alpha\left(\frac{p_2 + p_3}{2} - \hat{p}\right) &< \frac{1}{2}, \text{or} \\
\alpha &< \frac{p_2 + p_3 - 1}{2(\frac{p_2+p_3}{2} - \hat{p})}
\end{aligned}
$$

Finally, $c_4 = 3$ is a weakly dominant strategy for party 4, as it is always better off in a pre-electoral coalition with party 3 than in a coalition $\{2, 3\}$ forming. □

The proposition and the proof reveal that a median pre-electoral coalition forms when party 2 has sufficient incentives to coordinate with party 3, party 3 prefers this agreement to the available alternatives (or a right-wing coalition cannot secure a majority), and the coalition itself commands a legislative majority.

3.3 Comparison between Median and Bloc Pre-Electoral Coalition

The conditions for median pre-electoral coalitions (Proposition 3) look structurally similar to those for bloc pre-electoral coalitions (Proposition 2 & 1). In both cases, coalition formation depends on the parties' preferences over the available coalition alternatives, the effect of strategic voting on their relative bargaining weights, and whether the proposed coalition can secure a legislative majority. There are, however, two important differences. First, for a median pre-electoral coalition of parties 2 and 3 to form, both parties must be willing to form the coalition, whereas with the bloc pre-electoral coalitions, the more radical parties' choices are more constrained, i.e., their choice is generally to accept joining a pre-electoral coalition if one is on offer, as failing to do so ensures that they are excluded from the governing coalition.

Second, forming a bloc pre-electoral coalition increases the vote share of party 2, i.e., $v_2 < \bar{v}^{21}$, and its coalition weight $W_{21} < \bar{W}_{21}$.[10] In contrast, while forming a median pre-electoral coalition always increases the vote share of party 2, i.e., $v_2 < \bar{v}^{23}$, it does not follow that $W_{23} < \bar{W}_{23}$. To see why, consider party 2's incentive to form a bloc pre-electoral coalition. Its vote share without a pre-electoral coalition will equal $\bar{v}_2^{12} = \frac{p_3 - p_1}{2}$, whereas after forming the pre-electoral coalition it will be $\bar{v}_2^{12} = \frac{p_3 - p1}{2} + \alpha(1 - \frac{p_2+p_3}{2})$. Thus, $W_{12} < \bar{W}_{12}$ as $\alpha(1 - \frac{p_2+p_3}{2}) > 0$ as $v_1^{12} = \bar{v}_1^{12}$.

Compare that with party 2's incentive to form a median pre-electoral coalition. Party 2's vote share when no pre-electoral coalition forms is $v_2 = \frac{p_3 - p_1}{2}$; if parties 2 and 3 form a pre-electoral coalition, then $v_2^{12} = \frac{p_3 - p_1}{2} + \alpha\frac{p_1+p_2}{2}$. However, party 3's vote share also increases from $v_3 = \frac{p_4 - p_2}{2}$ to $v_3^{23} = \frac{p_4 - p_2}{2} + \alpha\left(1 - \frac{p_3+p_4}{2}\right)$. The voting weight, W_{23}, remains unchanged if the change in the parties' vote shares that results from forming a pre-electoral coalition is proportional to their vote share without a pre-electoral coalition. To see that, let $\delta_2 = \alpha\frac{p_1+p_2}{2}$ and $\delta_3 = \alpha\left(1 - \frac{p_3+p_4}{2}\right)$ denote vote gain as a result of a coalition agreement. Party 2's vote weight remains unchanged if $\frac{v_2}{v_2+v_3} = \frac{v_2+\delta_2}{v_2+\delta_2+v_3+\delta_3}$. Simplifying, we get $v_3\delta_2 = v_2\delta_3$ or $\delta_2 = \delta_3\frac{v_2}{v_3}$. It follows that if $\delta_2 < \delta_3\frac{v_2}{v_3}$, then $\bar{W}_{23} < W_{23}$. That is, even if a median pre-electoral coalition forms and party 2's vote share increases as a result, party 2's coalition weight will decline unless its vote share increase is proportionally as big, or larger, than the vote share gain of party 3.

To summarize, the model identifies a mechanism that, in general, provides parties with a greater incentive to form bloc pre-electoral coalitions than median pre-electoral coalitions. The mechanism relies

[10] The same applies to party 3.

on some voters engaging in coalition voting, i.e., when observing a pre-electoral coalition and anticipating that the coalition will govern after the election, the voters seek to influence the coalition's policy by voting for the member of the coalition whose policies they find more palatable. The parties that stand to gain from strategic coalition voting thus have an incentive to form a pre-electoral coalition. However, their prospective coalition partners' motives are to avoid being excluded from the governing coalition.

How many votes parties can gain and how much it influences their weight within the coalition depends on whether they form a bloc or a median pre-electoral coalition. In a bloc pre-electoral coalition, only the more moderate party in the coalition benefits from forming the pre-electoral coalition. Moderate parties thus always benefit in a bloc pre-electoral coalition, which implies that their more extreme partner is worse off. The extreme party in the coalition would, therefore, rather not form a pre-electoral coalition but is forced to do so if the moderate party can credibly claim to otherwise form a coalition with some other party.

The incentives to form a median pre-electoral coalition are more muted, as both parties stand to gain votes from forming the coalition: the left moderate gains votes from the more extreme left party, while the right moderate gains votes on the right. While vote shares of both parties increase, only one party improves its coalition weight. Thus, while a median pre-electoral coalition may result in just as many voters casting a strategic vote for one of the parties in the coalition, the strategic votes for each party will tend to cancel one another out and reduce the potential benefit.

It is challenging to tease out general insights from the equilibrium conditions about what makes a median pre-electoral likely, because they depend on the full set of the parties' policy positions. Consider, for example, how party 1's policy position matters. If party 1 is very far to the left, then the party is not an attractive coalition partner to party 2. This might seem to favor formation of a pre-electoral coalition between parties 2 and 3, but that is not the case. If party 1 is unattractive as a coalition partner, then party 2 will form a government coalition with party 3 regardless of whether a pre-electoral coalition agreement is made. But if that is the case, then either party 2 or party 3 will be worse off with a pre-electoral coalition than without one. This does, however, not imply that the prospects of a pre-electoral coalition improve the more moderate party 1 is. The more moderate party 1 is, the more attractive party 1 is as a coalition partner and, thus, the higher the bar for a pre-electoral coalition between parties 2 and 3. Thus, the policy position of party 1 that is most favorable to the formation of a pre-electoral coalition between parties 2 and 3 is when

party 1 is neither too extreme nor too moderate (or not too similar to party 2).

3.4 Frequency of Bloc and Median Pre-Electoral Coalitions: Simulation

The main purpose of the model above is to demonstrate that pre-electoral coalitions are more likely to be formed by parties on the same side of the ideological spectrum than by parties that span the median of the voter distribution. While the model highlights how strategic coalition voting tends to provide stronger incentives for the formation of bloc pre-electoral coalitions, whether a median or a pre-electoral coalition forms depends on the policy preferences of all the parties (p_1, p_2, p_3, and p_4). It is, therefore, conceivable that the necessary condition on the models' parameters that makes a bloc pre-electoral coalition may never be satisfied in the real world. Thus, providing a conclusive answer about whether bloc or median pre-electoral coalitions should be observed more often is not possible.

To provide a sense of whether that is likely, we consider a simulation where we examine the equilibrium conditions for bloc and median pre-electoral coalitions for randomly selected party systems. To create each party system, we randomly draw the parties' positions from a uniform distribution, with the restriction that two parties with preferred policies are to the left of the midpoint of the distribution $\left(\frac{1}{2}\right)$ and two preferring policies on the right. To ensure that party 2 is always the median party, we rotate the party positions about the midpoint if party 2 is not the median party. Checking whether the equilibrium conditions are satisfied requires finding the preferred policy position ($\hat{p}$) of voters that are indifferent between pre-electoral coalitions $\{1, 2\}$ and $\{3, 4\}$. Since it is difficult to obtain an analytical solution for $\hat{p}$, we solve for it numerically by finding the roots of the corresponding polynomial equation. If the resulting root lies outside the interval $[p_2, p_3]$, we set $\hat{p}$ equal to the nearest boundary of the interval. For each value of α we consider, we simulate 1000 party systems and track how many bloc pre-electoral coalitions form, how many median pre-electoral coalitions form, and how often no pre-electoral coalition forms.

Figure 2 graphs the number of median and bloc pre-electoral coalitions while varying the share of strategic voters. There are two things to note here. First, as one would expect, the incentive to form pre-electoral coalitions increases as the share of strategic voters increases. However, the effect is far more pronounced for bloc pre-electoral coalitions. Second, the simulation shows that equilibria where pre-electoral coalitions form are far more common in the simulation. Even when we assume all the voters are strategic,

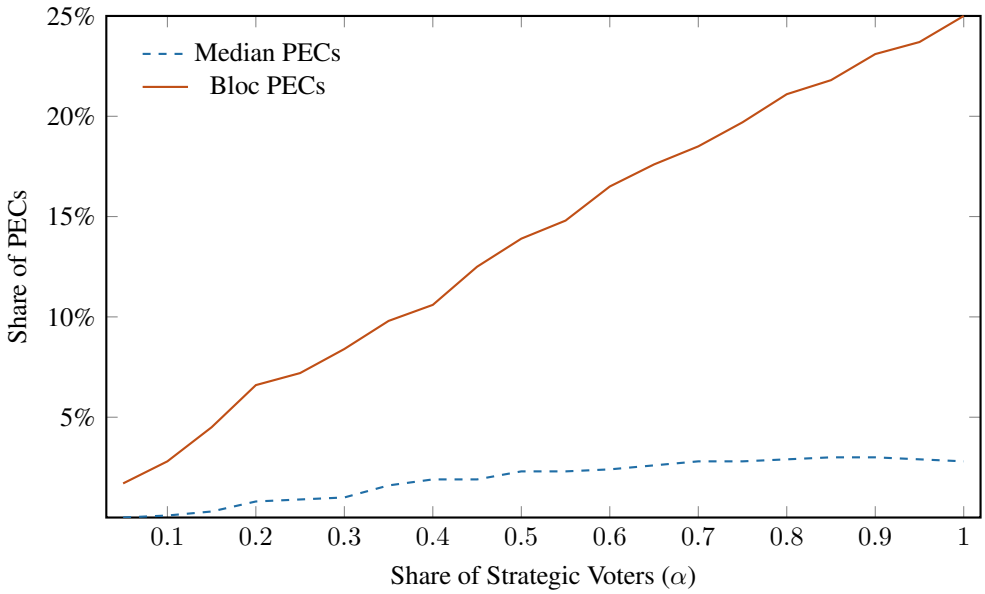


Figure 2: Results from a simulation of the occurrence of Median- and Bloc pre-electoral coalitions (PECs) in the model. Based on 1000 simulations with varying share of strategic voters (α).

median pre-electoral coalitions hardly ever form, whereas bloc pre-electoral coalitions form in over 25% of the simulated party systems.

4 Empirics

Our model and the simulations suggest that pre-electoral coalitions form more easily within ideological blocs that find themselves on the same side of the median voter, compared to pre-electoral coalitions that straddle the median. We evaluate this expectation in this section using a database on pre-electoral coalitions.

4.1 Data

Our analysis relies on a harmonized database of pre-electoral coalitions in 420 legislative elections in 22 advanced industrialized democratic countries from 1946 to 2015.[11] The database builds on the classification of pre-electoral coalitions by Golder (2006*b*), which covers elections until 2002, extended by Tillman (2015) for the elections between 2003 and 2011, and further by Eppner and Ganghof (2017) for the elections from 2012 to 2015. These sources all rely on Golder (2006*b*) definitions of pre-electoral coalitions,

[11]The countries included are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, and the United Kingdom.

which is also our working definition, and makes it feasible to combine the data. Parties and elections in these datasets include identifiers that link them to the ParlGov database (Döring and Manow, 2024) and to the Manifesto Project data (Lehmann et al., 2026), from which we take the party positions, vote shares, and other information.

Our key independent variable requires measurements of party positions and the position of the median voter. The Manifesto Research Project provides data on general left-right positions for parties. We use the log-rile index described in Lowe et al. (2011) to measure parties' positions: the logarithm of the ratio of right-to-left statements in the manifesto. To calculate the position of the median voter in a given election, we rely on the method by Kim and Fording (2003), who calculate it based on the party positions and the election vote share results of the political parties. We apply it to the log-rile of all parties with a manifesto in the election. As the measurement relies only on the party positions, the resulting measure is on the same scale, which makes the median voter directly comparable to our party position measure. We then classify each pre-electoral coalition (PEC) according to its position relative to the median voter. A *bloc pre-electoral coalition* (Bloc-PEC) consists of parties that are all located on the same side of the median voter, while a *median pre-electoral coalition* (Median-PEC) comprises parties on both sides of the median voter. For 17 of the 169 pre-electoral coalitions, we cannot make this classification because a party in the coalition has no position in the manifesto data, and the remaining parties are all on one side of the median voter. Table SM5 in the Supplementary Material lists all 169 pre-electoral coalitions.

For the statistical analysis of pre-electoral coalitions, the database is also represented in a dyadic format (Golder, 2005, 2006*a*,*b*; Ibenskas, 2016). The dyadic format is a useful representation of the coalition data for our statistical analysis, as it resembles the format of choice in international relations and policy diffusion that studies alliance behavior and connections as networks. The resulting dataset has 14,404 observations with potential pre-electoral coalitions. 4% of those two-party dyads are coded as a pre-electoral coalition with a value of one, and the rest as zero.

4.2 Descriptive Overview

The first aspect we confirm is that pre-electoral coalitions are not a rare phenomenon. In 135 of the 420 elections (32%) at least one pre-electoral coalition is present, and in total our database identifies 169 pre-electoral coalitions. These numbers closely align with Golder's original description of her data and accen-

tuate the importance for electoral competition. Most of them are coalitions of two parties (56%), but larger coalitions also occur. Table SM1 in the Supplementary Material summarizes the sample, and Figure SM1 in the Supplementary Material shows all elections that are coded, together with the elections in which at least one pre-electoral coalition is present.

It is important to highlight that pre-electoral coalitions are concentrated in some countries. Table SM3 in the Supplementary Material lists the number of elections with a pre-electoral coalition by country. In Australia, the coalition of the Liberal and the National parties is a pre-electoral coalition in all 26 elections, and pre-electoral coalitions are also frequent in France (13 of 17 elections), Norway (11 of 17), Austria and Germany (about half of the elections). In contrast, they are rare in Denmark, the United Kingdom, Finland, New Zealand, Japan, and Iceland, and we do not observe a single pre-electoral coalition in Canada, Greece, and Israel.[12] The country variation makes it clear that institutional explanations for pre-electoral coalition potentially contribute to our understanding of why they are more likely in some contexts than in others. However, our explanation concerns the ideological composition of these pre-electoral coalitions within an institutional context.

Figure 3, therefore, classifies the elections and the pre-electoral coalitions by their position relative to the median voter. Among the 135 elections with a pre-electoral coalition, 76 elections have only Bloc pre-electoral coalitions and 51 only Median pre-electoral coalitions. In four elections both types are present, and in four elections the type cannot be determined (Panel A). Of the 152 pre-electoral coalitions that we can classify, 91 (60%) are Bloc pre-electoral coalitions, and 61 (40%) are Median pre-electoral coalitions. The share of Bloc pre-electoral coalitions is higher among the two-party pre-electoral coalitions (64%), while it is 54% among the larger coalitions (Panel B). Figure SM2 in the Supplementary Material shows that Bloc pre-electoral coalitions prevail in Australia, France, and Spain, whereas all classifiable pre-electoral coalitions in Austria and seven of eight in Denmark are Median pre-electoral coalitions.[13] Of course, the relationship could be spurious. For example, there might be more ideologically connected constellations among Bloc-dyads, which could influence their propensity to cooperate during electoral campaigns.

[12]The absence of pre-electoral coalitions in Israel should not be read as an absence of bloc politics. The codings treat joint electoral lists as single parties, which appears to be the reason why the frequent joint lists in Israel do not show up as PECs, whereas ParlGov records joint lists in 13 of the 20 Israeli elections in our sample. The same may hold in Greece.

[13]Many Median pre-electoral coalitions are formed by parties that were all part of the government before the election, for example, the grand coalition of the Social Democrats and the People's Party in Austria. This is the case for 28 of the 61 Median

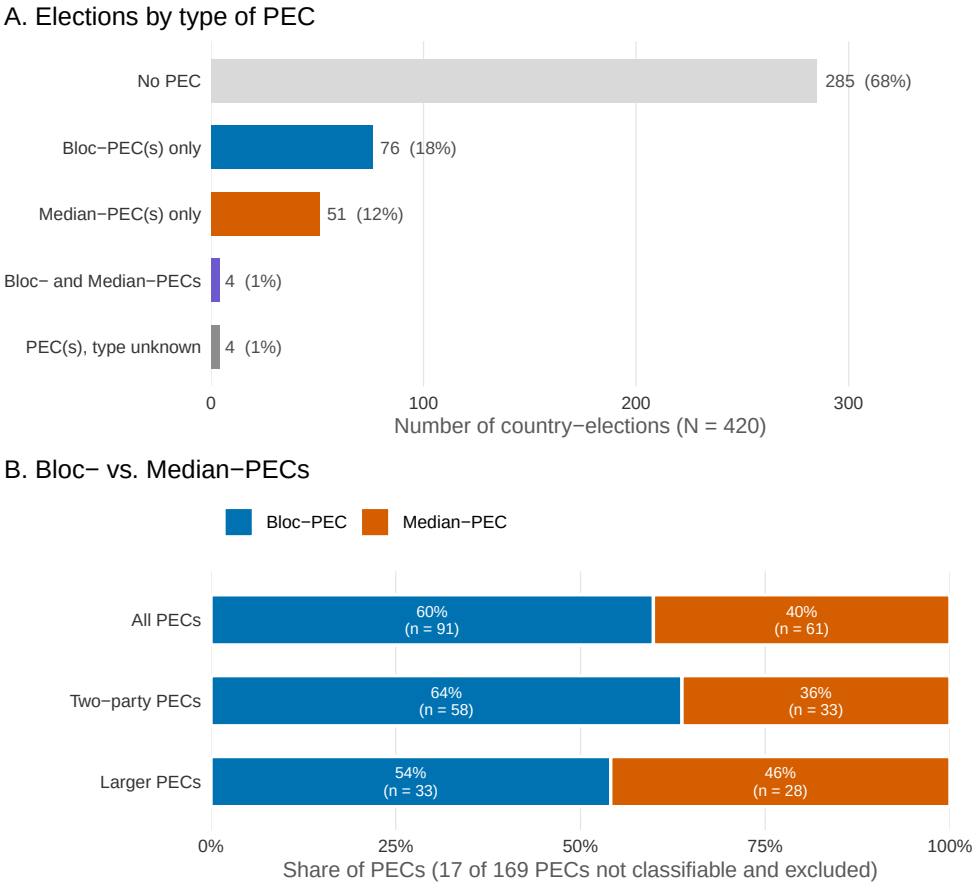


Figure 3: Elections by type of pre-electoral coalition (PEC) and share of Bloc- and Median pre-electoral coalitions. Bloc-PECs comprise parties on the same side of the estimated median voter; Median-PECs comprise parties on both sides. Party positions and the median voter are measured on the log-rile scale.

Figure 4 illustrates the classification with three elections. In the German election of 1976, the Social Democrats (SPD) and the Liberals (FDP) form a Bloc pre-electoral coalition, as both parties are located to the left of the median voter. In 1998 in the Netherlands, the Labour Party (PvdA), D66 and the Liberals (VVD) form a Median pre-electoral coalition: the PvdA and D66 are located to the left and the VVD to the right of the median voter. In New Zealand in 1966, there were three parties and no pre-electoral coalition.

4.3 Empirical Strategy

We represent each election as a network in which parties are nodes and a tie indicates that two parties are members of the same pre-electoral coalition. The data of all elections form one block-diagonal network,

pre-electoral coalitions, compared to 29 of the 91 Bloc pre-electoral coalitions. We return to this in the robustness checks.

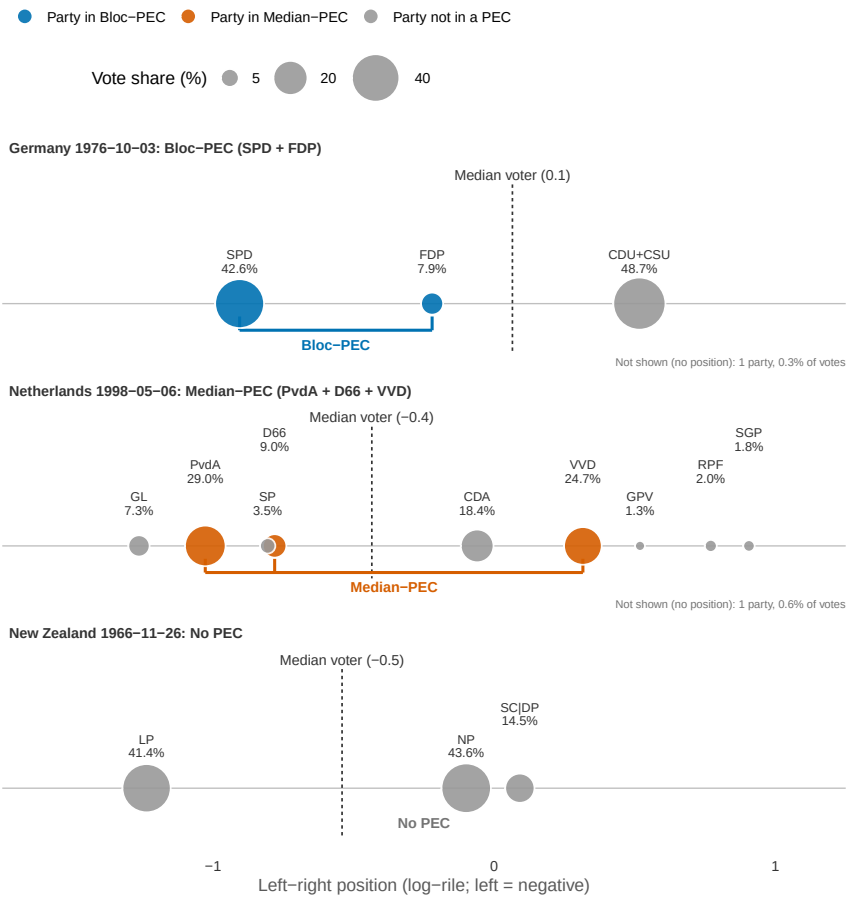


Figure 4: Examples of a Bloc pre-electoral coalition (Bloc-PEC) in Germany 1976, a Median pre-electoral coalition (Median-PEC) in the Netherlands 1998, and an election without a pre-electoral coalition (PEC) in New Zealand 1966. Circles indicate parties' left–right positions on the log-rile scale, with circle areas proportional to vote shares. Dashed vertical lines mark the estimated median voter; brackets identify PEC members. Parties without a manifesto position are omitted.

as ties can only occur between parties competing in the same election. This dyadic representation of the data follows Golder (2006*a*), who analyzes all potential pre-electoral coalition dyads, and it is a special case of an exponential random graph model (ERGM; Cranmer and Desmarais, 2011; Lusher, Koskinen and Robins, 2013). In an ERGM, the probability of a tie is modeled as a logistic function of the change in network statistics that the tie induces. When these statistics are dyad-independent, as in our case, where they capture dyad-specific characteristics such as whether two parties are on the same side of the median voter (Bloc-dyad), their ideological distance, and their combined size, the likelihood factorizes over dyads, and the model reduces to a logistic regression on all party pairs. We use this as our baseline specification. To

further account for unobserved heterogeneity between elections, we extend it with election-specific random intercepts, and cluster standard errors by election, in line with the random-effects logit models of Ibenskas (2016). The two baseline models treat ties as independent conditional on the covariates, which is unlikely to hold exactly: a coalition of three parties produces three tied dyads, and since a party belongs to at most one pre-electoral coalition, ties are transitive within coalitions. We therefore also estimate the ERGM including a transitivity term that captures this clique structure, and compare the Bloc-dyad coefficient and its uncertainty with the baseline.[14]

Our hypothesis is that two parties are more likely to be part of a pre-electoral coalition if they are located on the same side of the median voter. The theoretical discussion points to several factors that may affect this relationship, and we account for them in the specification. The first set of variables concerns the *ideological configuration* of the dyad. Parties that are very similar may form a government after the election anyway, so - at least in our model - a pre-electoral coalition adds little for them. We therefore control for the absolute *ideological distance* between the two parties, measured on the log-rile index, and its square. Bloc-dyads can also lie closer to or further from the median voter, which may affect their propensity to form a PEC. We therefore include the *distance to the median voter*, defined as the distance between the seat-share-weighted position of the dyad and the median voter. Because the median party may play a special role, we add an indicator for dyads that contain the median party (*dyad contains median party*). At the election level, we further control for party system *polarization*, calculated following Dalton (2008).

The second set of controls is related to the *size* of the dyad. A pre-electoral coalition is of limited relevance if it cannot win a majority. We therefore control for *coalition size*, the combined seat share of the two parties after the last election, which proxies for their expectation of winning a majority and entering government. We also include its square, because minimal winning coalitions are attractive while oversized coalitions carry distinct costs (but see Eppner and Ganghof, 2017). Following Golder (2006*a*), the asymmetric strength of the two parties may condition the effect of coalition size. We measure *asymmetry* as the absolute difference in the two parties' seat shares (range 0 to 1), and include it together with its interaction with coalition size.

Finally, as the descriptive overview already discussed, it is sensible to control for the *government*

[14]Maximum likelihood estimation of this model does not converge, as the simulated networks degenerate into large cliques. We therefore estimate it by maximum pseudolikelihood, which gives the log-odds of a tie conditional on the rest of the network, and obtain standard errors from a bootstrap that resamples whole elections.

status. Pre-electoral coalitions may be more likely simply because the same parties are likely to govern together, and government coalitions often campaign jointly for re-election. We therefore include an *both in government* dummy, coded one if both parties of the dyad were part of the incumbent government and zero otherwise.

Table SM2 in the Supplementary Material provides summary statistics of the variables included in the analysis. It is relevant to note that due to missing values the number of dyads on which we can perform the analysis reduces to 5,850 in 410 elections, with 315 pre-electoral coalition dyads. In most of the dropped dyads (6,615 of 8,554) at least one party has no position in the Manifesto data, which is mostly due to small parties: in 80% of the dropped dyads the smaller party has a vote share below 3%, and in 90% below 5%. The others lack the seat share of the previous election.

4.4 Results

The results point out that Bloc-dyads are more likely to join a pre-electoral coalition than Median-dyads. Table 1 summarizes the estimation results from three model specifications. In all of them, the dependent variable is whether a dyad is part of a PEC, with two, three, or more parties. The first model is a logit model with standard errors clustered by election; the second is a logit model with random intercepts for each of the 410 elections in the estimation sample. The third model is the ERGM with a transitivity term, with standard errors from a bootstrap over elections. The random intercepts capture that pre-electoral coalitions are concentrated in some elections: the estimated variance of the intercept is large, and the fit of the second model is considerably better, making this our preferred specification. The ERGM addresses a different concern, namely that the ties between parties are not independent: parties in a pre-electoral coalition with three or more members are tied to each other by construction.

In all three specifications, we find a positive effect of the *Bloc-dyad* variable, which implies that parties with positions on the same side of the median voter are more likely to join together in a pre-electoral coalition compared to parties that hold ideological positions to the left and the right of the median voter. The coefficient is 0.67 (standard error 0.24) in the first model, 0.85 (0.22) in the random intercept model, and 0.79 (0.29) in the ERGM, which corresponds to odds of forming a pre-electoral coalition that are about two to two and a half times as high for Bloc-dyads. We can reject the null hypothesis of no effect in all

	Logit	Random int.	ERGM
Intercept	-3.97^{***}	-7.11^{***}	-7.20^{***}
	(0.42)	(0.81)	(0.78)
Bloc-dyad	0.67^{**}	0.85^{***}	0.79^{**}
	(0.24)	(0.22)	(0.29)
Ideological distance	-0.68	-0.93^{**}	-0.79^{*}
	(0.41)	(0.28)	(0.34)
Ideological distance^2	0.03	0.06	0.10
	(0.09)	(0.09)	(0.12)
Distance to median voter	0.07	0.43^{*}	0.36
	(0.18)	(0.22)	(0.23)
Coalition size	2.18	5.35^{**}	7.57^{*}
	(2.67)	(1.88)	(3.03)
Coalition size^2	-1.14	-5.09^{*}	-2.38
	(2.83)	(2.30)	(2.79)
Asymmetry	-2.05	-4.07	0.93
	(2.14)	(2.43)	(2.52)
Asymmetry $\times$ coalition size	-0.54	-1.45	-2.99
	(4.18)	(4.64)	(4.20)
Both in government	1.69^{***}	3.63^{***}	1.90^{***}
	(0.26)	(0.30)	(0.27)
Polarization	0.43	0.28	0.23
	(0.23)	(0.32)	(0.16)
Dyad contains median party	-0.06	-0.11	-0.42
	(0.18)	(0.20)	(0.29)
Transitivity (GWESP)			23.34^{***}
			(0.59)
Num. obs.	5850	5850	5850
Elections	410	410	410
PEC dyads	315	315	315
Log Lik.	-1058.48	-782.10	
Var. election intercept		13.85	

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table 1: Dyadic models of pre-electoral coalition formation. The dependent variable is whether the dyad is part of a PEC. Standard errors in parentheses: clustered by election in the pooled logit model, model-based in the random-intercept model, and from a bootstrap over elections in the ERGM, which adds a transitivity term (GWESP) and is estimated by maximum pseudolikelihood.

three specifications. [15]

To analyze the effect size, we simulate the predicted probability that a dyad forms a pre-electoral coalition (King, Tomz and Wittenberg, 2000). For each of 5,000 draws from the approximated sampling distribution of the coefficients of the models, we set the Bloc-dyad indicator to one and to zero for all dyads

[15]The ERGM coefficient of the Bloc-dyad is conditional on the rest of the network, and it is close to the one from the random-intercept model, so accounting for dependence between ties does not weaken the result. We do not interpret the size of the transitivity term (23.3): all parties within a pre-electoral coalition are tied by construction, so a pair with a shared partner is almost always tied itself. We include the term only to check the Bloc-dyad effect.

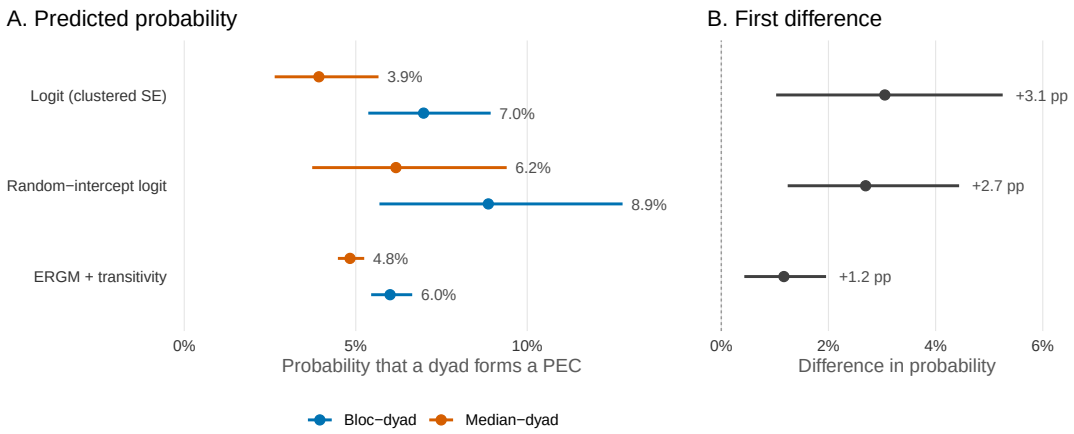


Figure 5: Simulated probability that a party dyad forms a pre-electoral coalition (PEC) for Bloc-dyads and Median-dyads (Panel A), and first difference between both (Panel B). Predicted probabilities are averaged over all dyads in the sample, with the Bloc-dyad indicator set to one or zero (model 1). Bars show 95% intervals from 5,000 simulated draws of the coefficients, using election-clustered standard errors.

in the sample, keep all other covariates at their observed values, and average the predicted probabilities (the observed-value approach; Hanmer and Kalkan, 2013). Figure 5 shows the result for the three model specifications. In the logit model, the probability that a dyad is part of the same pre-electoral coalition is 3.9% for a Median-dyad and 7.0% for a Bloc-dyad. The first difference is 3.1 percentage points, with a 95% interval from 1.0 to 5.3 percentage points, i.e., the probability is about 1.8 times as high. The random-intercept logit model gives a similar result, with 6.2% for a Median-dyad and 8.9% for a Bloc-dyad, a first difference of 2.7 percentage points (95% interval: 1.2 to 4.4). In the ERGM with the transitivity term, the predicted probabilities are 4.8% and 6.0%, and the first difference is 1.2 percentage points (95% interval: 0.4 to 2.0). This estimate is smaller because it is conditional on the other ties in the network.

The control variables, which capture the ideological configuration, the size of the parties, and their government status, show the following. Ideologically more distant dyads are less likely to form a pre-electoral coalition in the random-intercept model and the ERGM, which suggests that pre-electoral coalitions are mostly ideologically cohesive partnerships and counters the argumentation above; the squared distance has no effect. *Coalition size* is positive in these two models, and in the random-intercept model its squared term implies that the effect is strongest at a seat share of about 50%, which is in line with Golder (2006*b*). In the ERGM the squared term is not distinguishable from zero, and in the pooled logit neither

term is significant. *Asymmetry*, alone or interacted with coalition size, is not significant in any model, and neither is *polarization*. The distance of the dyad to the median voter has a positive effect in the random-intercept model only, and the indicator for dyads containing the median party has no statistically significant effect. The strongest and most stable predictor is *both in government*: two parties are substantially more likely to form a pre-electoral coalition if both are part of the incumbent government.

4.5 Robustness Checks

The main results support the idea that pre-electoral coalitions are more likely to form in blocs. Our findings may, however, rest on a set of decisions about the measurement of Bloc- and Median-dyads, particular parties, and the sample. We investigate these in the following. Each check changes one element of the main specification and leaves the rest as in Table 1. We estimate every check for the logit model and the random-intercept logit model. Table SM4 in the Supplementary Material reports the Bloc-dyad coefficients of both models, and Figures SM3 and SM4 the predicted probabilities and first differences for the logit and the random-intercept specification. The coefficients cited below are from the random-intercept model.

We first use a set of alternative measurement strategies to categorize Bloc- and Median-dyads. Classifying dyads with the additive rile index instead of the log-rile leaves the result unchanged (a coefficient of 0.93 and a first difference of 2.9 percentage points). We also replace the manifesto-based party positions by the expert placements of ParlGov, and recompute the median voter on that scale, so that the classification does not depend on the manifesto coding. The effect is somewhat smaller (0.65, a first difference of 1.6 percentage points), and while it is significant in the random-intercept model, it is not significant in the pooled logit model. The finding is still not a pure artifact of the manifesto data, but its size depends on the source of the positions.

Another concern is that the logic of Bloc pre-electoral coalitions is primarily driven by existing government parties. If these coalition parties are located on the same side of the median voter, and pre-electoral coalitions are more likely to form among parties that already govern together, we would observe a Bloc-dyad effect without any anticipation of the post-electoral bargaining. In 58 of the 169 pre-electoral coalitions, all members were in government before the election. In contrast to the concern, the effect remains when we drop the dyads of these pre-electoral coalitions (coefficient 0.91), or all dyads in which both parties governed (1.03), and the coefficients are, if anything, larger than in the main specification

(0.85). The first differences are 2.1 and 2.4 percentage points.

Finally, the result might also be due to the particulars of the sample. First, we vary the source of our sample. Using only the elections coded by Golder (2006*b*), i.e., dropping the elections from Tillman and from Eppner and Ganghof, gives a coefficient of 1.10 (a first difference of 3.8 percentage points), and adding the elections coded by Tillman (2015) gives 0.89 (3.0 percentage points). The full sample, which adds the 22 elections from Eppner and Ganghof, gives 0.85. The result is, therefore, not due to the inclusion of the more recent data or differences in how the different data were coded. Second, our theory focuses on two-party pre-electoral coalitions. If we restrict the outcome to two-party pre-electoral coalitions and drop the dyads of larger pre-electoral coalitions, the effect remains (0.91). Third, Israel is a particular case, as the coded data contains no pre-electoral coalitions there. We also drop all countries in which joint lists are common (Israel, Greece, Denmark, the United Kingdom, and Iceland). Joint lists are coded as single parties and cannot appear as pre-electoral coalitions, which is not necessarily in line with our argument. The effect is not weaker without Israel (0.87), and it is larger without all of these countries (1.08). To make this more consistent, we also drop one country at a time (Figure SM5 in the Supplementary Material). The coefficient then lies between 0.57 (without Italy) and 1.15 (without Denmark) and is significant at the 5% level in all 22 cases. Fourth, one implication of the theory is that Bloc pre-electoral coalitions are particularly likely to be created if the parties expect to win the election. We check this by restricting the sample to dyads with a combined vote share of more than 40%. This limits the sample to 1,512 dyads with 75 pre-electoral coalition dyads. The coefficient in the logit model is 0.62 (standard error 0.36) and not significant at the 5% level, and the random-intercept model cannot be estimated reliably with so few pre-electoral coalitions. This points out that the logic of Bloc pre-electoral coalitions may not run only via winning elections, although the small number of pre-electoral coalitions in this test calls for caution.

5 Conclusion

Pre-electoral coalitions connect parties' competition for votes to their competition over government policy. This paper explains why that connection can favor cooperation within ideological blocs. We argue that a coalition commitment can attract strategic votes to a moderate party from voters that otherwise might not cast a vote for the party. By increasing that party's relative bargaining weight, these votes make cooperation

with a partner on the same side of the median voter more attractive. Because both parties can gain electorally in a median pre-electoral coalition, the effects of their vote gain on their bargaining power are offset. A simulation from our model confirms that this makes Bloc pre-electoral coalitions more frequent than Median pre-electoral coalitions, especially with high shares of strategic voters. Our comparative analysis supports the expectation that parties on the same side of the median voter are more likely to cooperate, even after accounting for ideological distance.

Our contribution is to show how parties' anticipation of strategic voting can help explain their choice of coalition partners before the election. Electoral rules and ideological proximity remain important, but they do not exhaust the incentives for pre-electoral cooperation. Parties also care about how an agreement changes their influence over the policy a coalition would implement. The relevant calculation, therefore, concerns the distribution of electoral support within a prospective government as well as the coalition's aggregate support. This logic is relevant to multiparty systems in which parties depend on partners to govern, including those operating under nonproportional electoral rules.

For proportional representation, the argument points to a dark self-correcting mechanism. The fragmentation that makes the relationship between votes and governments difficult to anticipate can also create incentives for parties to coordinate before an election. Parties pursuing their own policy goals may thereby offer voters more identifiable governing alternatives. The potential correction is unintended: it follows from strategic competition rather than a shared commitment to improving electoral accountability. This interpretation fits a broader point in the analysis of electoral institutions. As Flis, Grofman and Kaminski (2025, p. 4) emphasize, strategic voting need not have undesirable consequences. Our argument identifies a related possibility in multiparty competition: parties' anticipation of strategic voting can encourage cooperation that makes the alternatives facing voters clearer.

Clearer alternatives can strengthen the connection between electoral choice and government formation. When parties publicly commit to govern together, voters can evaluate a prospective government before it takes office and consider an alternative to an incumbent coalition (Powell, 2000). The distinction between Bloc- and Median pre-electoral coalitions concerns how these alternatives are organized, rather than whether only one type can communicate its intentions clearly. Cooperation within ideological blocs can make competing policy directions more visible, while parties retain separate identities and voters can influence their relative strength. Whether this translates into more effective electoral accountability remains

a further empirical question; our evidence concerns the formation of pre-electoral coalitions.

A further dark implication concerns polarization. Although coordination into ideological blocs can make governing alternatives more identifiable, it may also encourage parties to organize competition along sharper ideological lines. In particular, strategic incentives to form bloc pre-electoral coalitions may strengthen the distinction between competing ideological camps and make more moderate governing alternatives less viable. Thus, the same mechanism that can improve the clarity of electoral alternatives may also contribute to political polarization. The implications of pre-electoral coordination therefore depend not only on whether it makes government formation more predictable, but also on the ideological distance between the alternatives it creates.

Two extensions follow directly from our argument. First, distinguishing explicit governing commitments from other electoral alliances would allow a closer test of the role of voters' expectations, including how the credibility of commitments conditions their responses. Second, coalition formation on one side of the political spectrum may change parties' incentives on the other. Examining these responses would help establish when individual agreements develop into competition between identifiable, but also polarized, governing blocs. The broader implication is that the organization of multiparty competition is partly endogenous to the same strategic calculations that make coalition government complex.

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Supplementary Material

Bloc Pre-Electoral Coalitions in Proportional Representation

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SM1 Empirics

SM1.1 Sample and Descriptive Statistics

Quantity	Value
Countries	22
Legislative elections (country-elections)	420
First / last election	1946 / 2015
Elections with at least one PEC	135
share of elections (%)	32.1
elections with Bloc-PEC(s) only	76
elections with Median-PEC(s) only	51
elections with both Bloc- and Median-PECs	4
elections with PEC(s) of unknown type	4
PECs (groups of two or more parties)	169
two-party PECs (% of PECs)	56.2
Bloc-PECs (% of classifiable PECs)	59.9
Median-PECs (% of classifiable PECs)	40.1
PECs not classifiable (no party position)	17

Table SM1: Sample of harmonized pre-electoral coalition (PEC) data (Golder 2006; Tillman 2015; Eppner and Ganghof 2017 for elections not coded by them). A Bloc-PEC has all member parties on one side of the median voter, a Median-PEC has members on both sides; positions and median voter are on the log-rile scale (Lowe et al. 2011; Kim-Fording median).

Variable	N	Mean	SD	Min	Max
PEC dyad	5,850	0.05	0.23	0.00	1.00
Bloc-dyad	5,850	0.46	0.50	0.00	1.00
Ideological distance	5,850	1.20	1.04	0.00	9.19
Distance to median voter	5,850	0.59	0.57	0.00	5.35
Coalition size	5,850	0.29	0.21	0.00	1.00
Asymmetry	5,850	0.16	0.15	0.00	0.78
Both in government	5,850	0.09	0.29	0.00	1.00
Polarization	5,850	1.78	0.77	0.23	4.41
Dyad contains median party	5,850	0.29	0.45	0.00	1.00

Table SM2: Summary statistics of the variables in the dyadic models. Unit of observation is the party dyad within an election; the sample consists of the 5,850 dyads in 410 elections with complete information on all variables. Positions and distances are on the log-rile scale; coalition size and asymmetry are seat shares at the previous election.

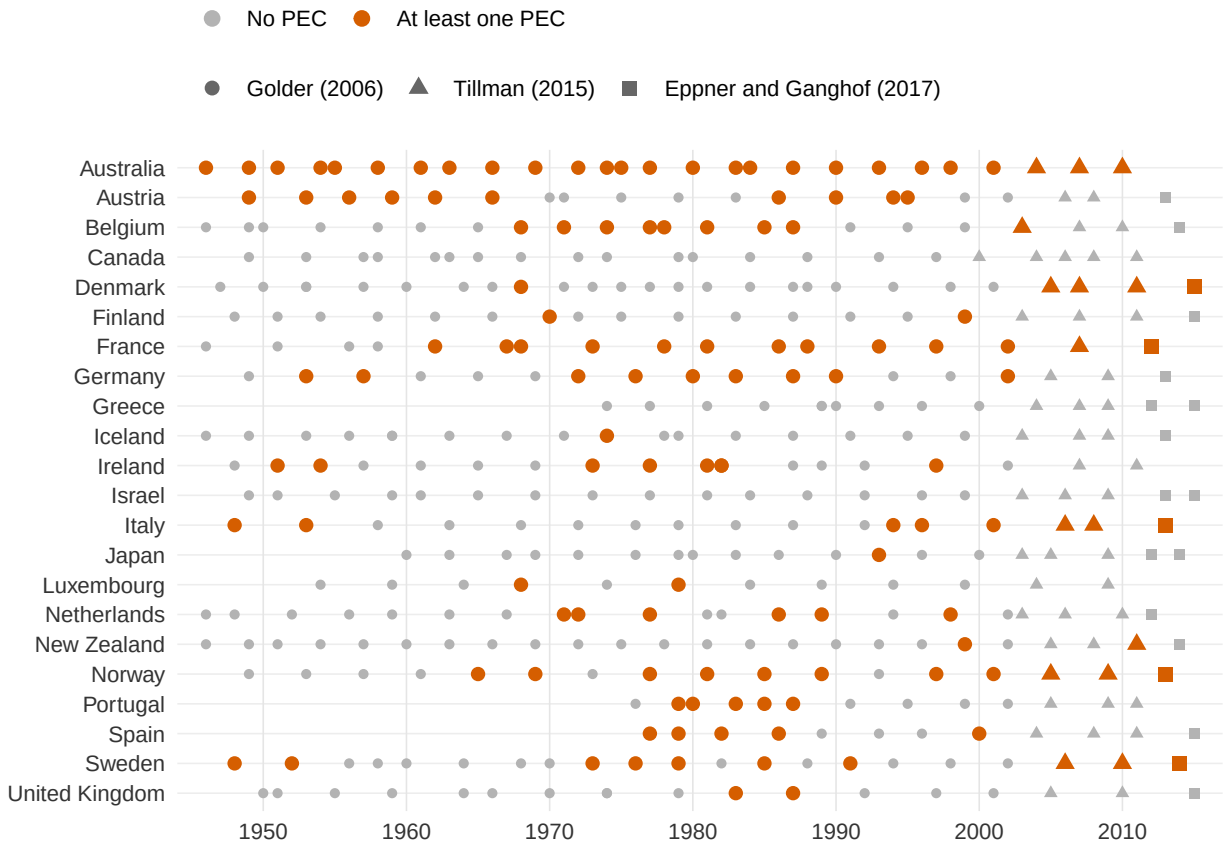


Figure SM1: All 420 elections in the sample, by country and year and by the source of the coding (Golder, 2006*b*, Tillman, 2015, Eppner and Ganghof, 2017). Orange dots mark the 135 elections with at least one pre-electoral coalition (PEC), grey dots elections without a PEC.

SM1.2 Pre-Electoral Coalitions by Country

Country	Period	Elections	With PEC	% with PEC	PECs	Bloc	Median	n/a
Australia	1946–2010	26	26	100	26	23	3	0
France	1946–2012	17	13	76	24	18	1	5
Norway	1949–2013	17	11	65	13	7	5	1
Austria	1949–2013	20	10	50	11	0	11	0
Germany	1949–2013	18	9	50	10	4	5	1
Sweden	1948–2014	21	10	48	11	7	4	0
Italy	1948–2013	17	8	47	16	4	5	7
Ireland	1948–2011	19	8	42	9	4	5	0
Spain	1977–2015	12	5	42	5	5	0	0
Belgium	1946–2014	22	9	41	10	5	5	0
Portugal	1976–2011	13	5	38	8	6	2	0
Netherlands	1946–2012	21	6	29	6	2	4	0
Denmark	1947–2015	26	5	19	9	1	7	1
Luxembourg	1954–2009	12	2	17	2	0	1	1
Finland	1948–2015	19	2	11	2	1	1	0
United Kingdom	1950–2015	18	2	11	2	2	0	0
New Zealand	1946–2014	24	2	8	2	1	1	0
Iceland	1946–2013	21	1	5	1	0	1	0
Japan	1960–2014	19	1	5	2	1	0	1
Canada	1949–2011	21	0	0	0	0	0	0
Greece	1974–2015	17	0	0	0	0	0	0
Israel	1949–2015	20	0	0	0	0	0	0
Total	1946–2015	420	135	32	169	91	61	17

Table SM3: Coverage and PEC incidence by country (harmonized data: Golder, Tillman, Eppner and Ganghof). PECs are groups of two or more parties; Bloc/Median give the number of PECs of each type (n/a: no log-rile position available to classify the PEC).

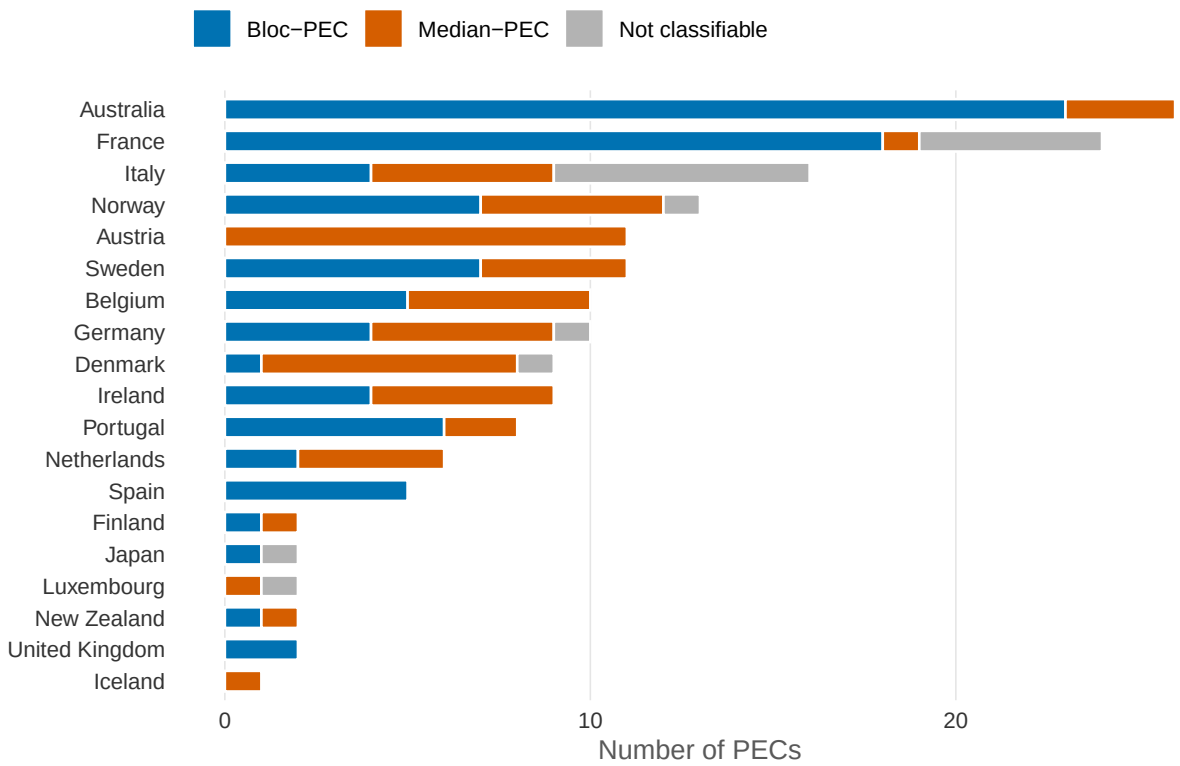


Figure SM2: Number of Bloc- and Median-PECs by country. A Bloc-PEC consists of parties on the same side of the median voter, a Median-PEC of parties on both sides (log-rile).

Check	Logit	Random int.	Dyads	Elections	PEC dyads
Main specification	0.67** (0.24)	0.85*** (0.22)	5,850	410	315
Measurement					
Rile instead of log-rile	0.68** (0.23)	0.93*** (0.22)	5,850	410	315
ParlGov positions, median voter	0.36 (0.24)	0.65** (0.23)	7,946	412	359
Governing parties					
Drops PECs of governing parties	0.60 (0.31)	0.91*** (0.26)	5,746	409	211
Drops dyads of governing parties	0.73* (0.31)	1.03*** (0.27)	5,320	408	200
Sample					
Golder only (to 2002)	0.94*** (0.26)	1.10*** (0.27)	4,359	334	211
Golder and Tillman only (to 2011)	0.67** (0.25)	0.89*** (0.23)	5,476	392	303
Two-party PECs only	0.88** (0.33)	0.91* (0.36)	5,616	410	81
Without Israel	0.73** (0.24)	0.87*** (0.22)	5,374	391	315
Without joint-list countries	0.83** (0.27)	1.08*** (0.25)	4,239	311	276
Combined vote share $> 40\%$	0.62 (0.36)	n/a†	1,512	388	75

Table SM4: Robustness checks: coefficient of the Bloc-dyad indicator in the logit and the random-intercept logit model of Table 1. Each check changes one element of the main specification (first row) and leaves everything else as in Table 1. Standard errors in parentheses: clustered by election (logit), model-based (random intercept). The ERGM is estimated for the main specification only (Table 1). † The random-intercept model is not identified in this sample (75 PEC dyads): the estimates depend on the optimizer. $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$.

SM1.3 Robustness Checks

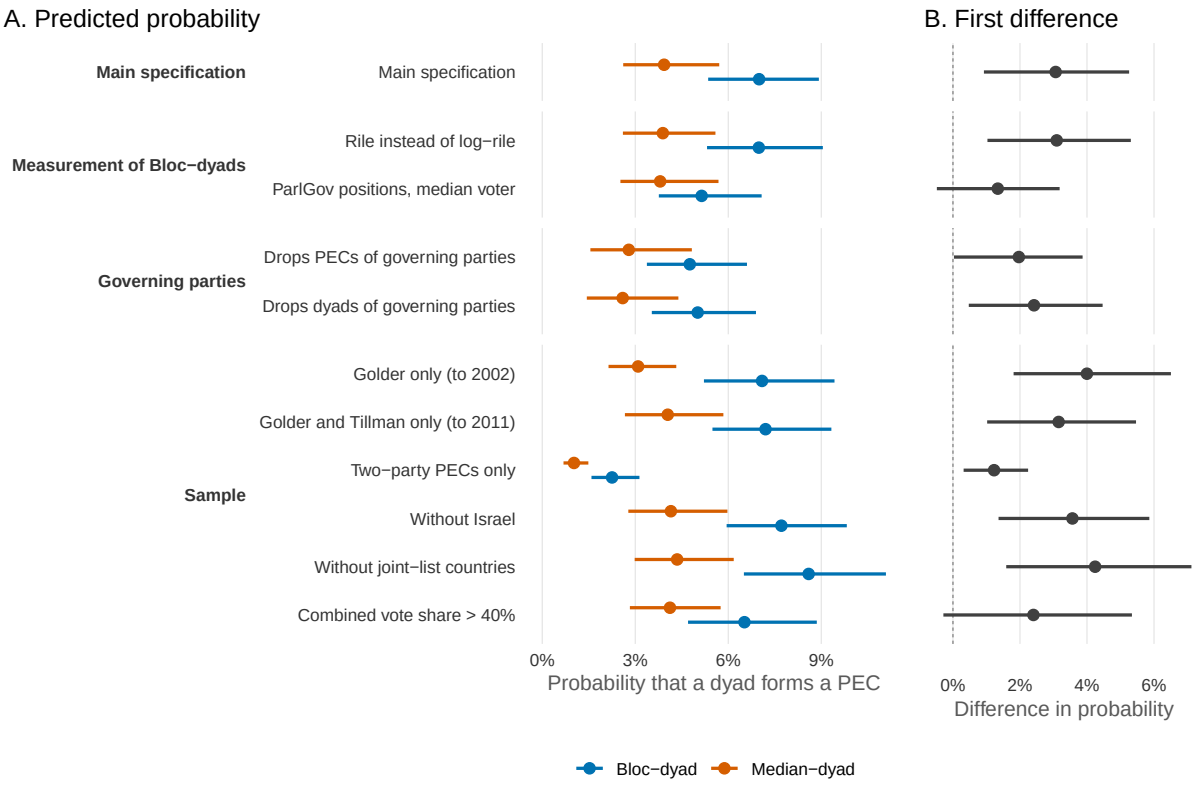


Figure SM3: Simulated probability that a party dyad forms a pre-electoral coalition (PEC) for Bloc-dyads and Median-dyads (Panel A), and first difference between both (Panel B), for the main specification and the robustness checks of Table SM4. Probabilities are averages over all dyads in the sample, with the Bloc-dyad indicator set to one or zero and all other covariates at their observed values. Estimated with the logit model with election-clustered standard errors. Bars show 95% intervals from 5,000 simulated draws of the coefficients.

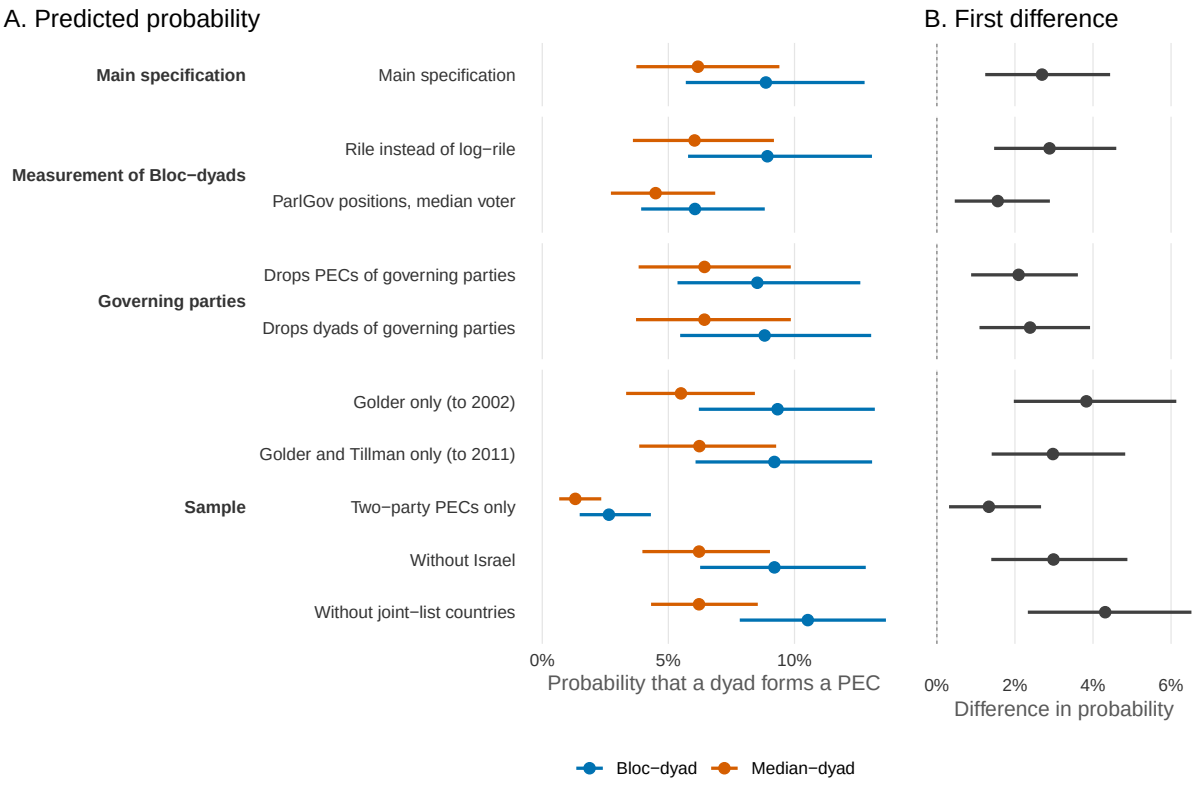


Figure SM4: Simulated probability that a party dyad forms a pre-electoral coalition (PEC) for Bloc-dyads and Median-dyads (Panel A), and first difference between both (Panel B), for the main specification and the robustness checks of Table SM4. Probabilities are averages over all dyads in the sample, with the Bloc-dyad indicator set to one or zero and all other covariates at their observed values. Estimated with the random-intercept logit model. Probabilities are averaged over the distribution of the election intercept, which is why they are higher than in the logit model. Bars show 95% intervals from 5,000 simulated draws of the coefficients.

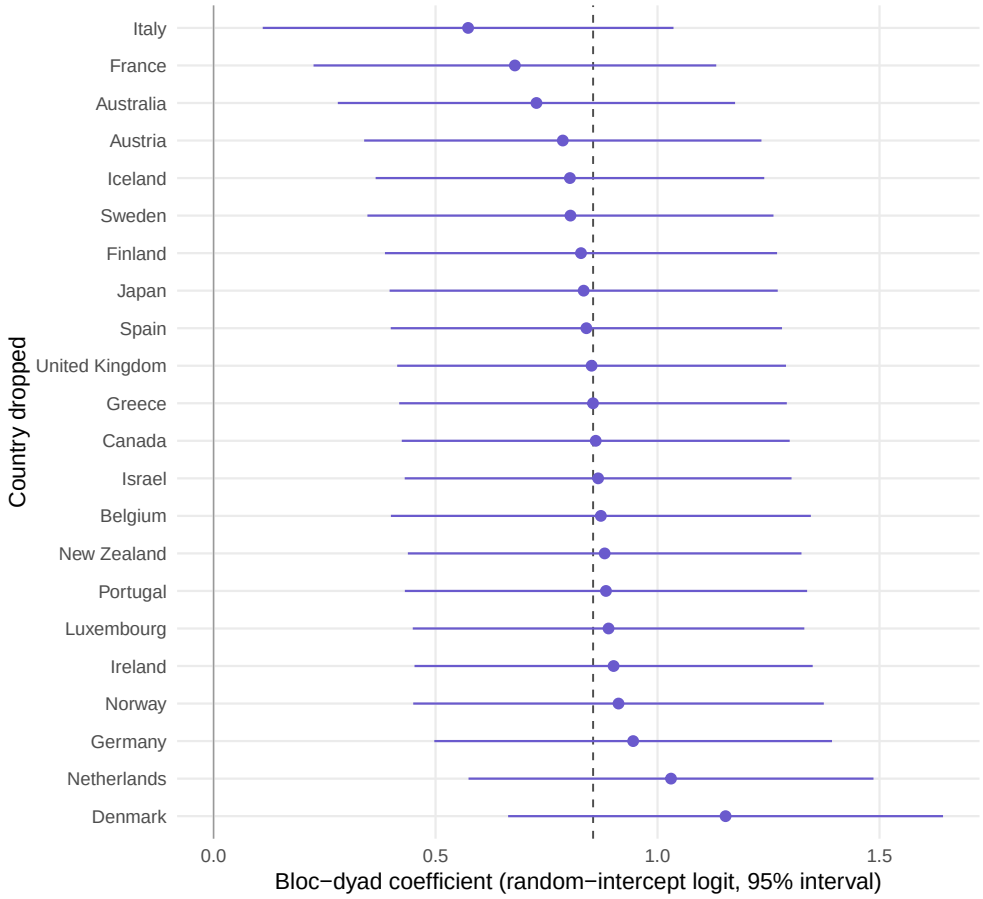


Figure SM5: Bloc-dyad coefficient of the random-intercept logit model of Table 1 when dropping one country at a time. Dots show the coefficient, bars the 95% intervals; the dashed line is the coefficient in the full sample.

SM1.4 List of Pre-Electoral Coalitions

Table SM5: All pre-electoral coalitions (PECs) in the sample. The coalition is named by its parties (ParlGov short names): by all members up to three parties, otherwise by the three members with the largest vote share and the number of further members. Parties are listed with their official English name (ParlGov) and, in brackets, their Manifesto Project party code (n/a: no code).

Country	Year	Coalition	Parties [Manifesto code]
Australia	1946	LPA / NCP	Liberal Party of Australia [63620]; National (Country) Party [63810]
Australia	1949	LPA / NCP	Liberal Party of Australia [63620]; National (Country) Party [63810]
Australia	1951	LPA / NCP	Liberal Party of Australia [63620]; National (Country) Party [63810]
Australia	1954	LPA / NCP	Liberal Party of Australia [63620]; National (Country) Party [63810]
Australia	1955	LPA / NCP	Liberal Party of Australia [63620]; National (Country) Party [63810]
Australia	1958	LPA / NCP	Liberal Party of Australia [63620]; National (Country) Party [63810]
Australia	1961	LPA / NCP	Liberal Party of Australia [63620]; National (Country) Party [63810]
Australia	1963	LPA / NCP	Liberal Party of Australia [63620]; National (Country) Party [63810]
Australia	1966	LPA / NCP	Liberal Party of Australia [63620]; National (Country) Party [63810]
Australia	1969	LPA / NCP	Liberal Party of Australia [63620]; National (Country) Party [63810]
Australia	1972	LPA / NCP	Liberal Party of Australia [63620]; National (Country) Party [63810]
Australia	1974	LPA / NCP	Liberal Party of Australia [63620]; National (Country) Party [63810]
Australia	1975	LPA / NCP	Liberal Party of Australia [63620]; National (Country) Party [63810]
Australia	1977	LPA / NCP	Liberal Party of Australia [63620]; National (Country) Party [63810]
Australia	1980	LPA / NCP	Liberal Party of Australia [63620]; National (Country) Party [63810]
Australia	1983	LPA / NCP	Liberal Party of Australia [63620]; National (Country) Party [63810]
Australia	1984	LPA / NCP	Liberal Party of Australia [63620]; National (Country) Party [63810]
Australia	1987	LPA / NCP	Liberal Party of Australia [63620]; National (Country) Party [63810]
Australia	1990	LPA / NCP	Liberal Party of Australia [63620]; National (Country) Party [63810]
Australia	1993	LPA / NCP	Liberal Party of Australia [63620]; National (Country) Party [63810]
Australia	1996	LPA / NCP	Liberal Party of Australia [63620]; National (Country) Party [63810]
Australia	1998	LPA / NCP	Liberal Party of Australia [63620]; National (Country) Party [63810]
Australia	2001	LPA / NCP	Liberal Party of Australia [63620]; National (Country) Party [63810]

Table SM5 continued

Country	Year	Coalition	Parties [Manifesto code]
Australia	2004	LPA / NCP	Liberal Party of Australia [63620]; National (Country) Party [63810]
Australia	2007	LPA / NCP	Liberal Party of Australia [63620]; National (Country) Party [63810]
Australia	2010	LPA / LNPQ / NCP	Liberal Party of Australia [63620]; Liberal National Party of Queensland [63621]; National (Country) Party [63810]
Austria	1949	OVP / SPO	Austrian People's Party [42520]; Social Democratic Party of Austria [42320]
Austria	1953	SPO / OVP	Social Democratic Party of Austria [42320]; Austrian People's Party [42520]
Austria	1956	OVP / SPO	Austrian People's Party [42520]; Social Democratic Party of Austria [42320]
Austria	1959	SPO / OVP	Social Democratic Party of Austria [42320]; Austrian People's Party [42520]
Austria	1962	OVP / SPO	Austrian People's Party [42520]; Social Democratic Party of Austria [42320]
Austria	1966	OVP / SPO	Austrian People's Party [42520]; Social Democratic Party of Austria [42320]
Austria	1986	SPO / OVP	Social Democratic Party of Austria [42320]; Austrian People's Party [42520]
Austria	1990	SPO / OVP	Social Democratic Party of Austria [42320]; Austrian People's Party [42520]
Austria	1994	SPO / OVP	Social Democratic Party of Austria [42320]; Austrian People's Party [42520]
Austria	1995	LIF / Gruene	Liberal Forum [42421]; The Greens – The Green Alternative [42110]
Austria	1995	SPO / OVP	Social Democratic Party of Austria [42320]; Austrian People's Party [42520]
Belgium	1968	RW / FDF	Walloon Rally [21911]; Francophone Democratic Front [21912]
Belgium	1971	RW / FDF	Walloon Rally [21911]; Francophone Democratic Front [21912]
Belgium	1974	RW / FDF / PL(B)	Walloon Rally [21911]; Francophone Democratic Front [21912]; Liberal Party [Brussels Region] [21424]
Belgium	1977	FDF / RW	Francophone Democratic Front [21912]; Walloon Rally [21911]
Belgium	1978	FDF / RW	Francophone Democratic Front [21912]; Walloon Rally [21911]
Belgium	1981	Ecolo / AGL-Gr	Confederated ecologists for the organisation of original struggles [21111]; Agalev – Green [21112]
Belgium	1981	FDF / RW	Francophone Democratic Front [21912]; Walloon Rally [21911]
Belgium	1985	CVP / PVV / PRL and 1 other	Flemish Christian Peoples Party [21521]; Party of Liberty and Progress [21421]; Liberal Reformist Party [21422]; Francophone Christian Social Party – Humanist Democratic Centre [21522]
Belgium	1987	PRL / PSC-CDH	Liberal Reformist Party [21422]; Francophone Christian Social Party – Humanist Democratic Centre [21522]
Belgium	2003	PVV / SPa+Spi / PS and 1 other	Party of Liberty and Progress [21421]; Socialist Party Different / Social Liberal Party [21221]; Socialist Party [Francophone] [21322]; Agalev – Green [21112]
Denmark	1968	KF / V / RV	Conservatives [13620]; Liberal Party [13420]; Danish Social Liberal Party [13410]
Denmark	2005	Sd / RV / SF and 2 others	Social Democrats [13320]; Danish Social Liberal Party [13410]; Socialist Peoples Party [13230]; Red-Green Alliance [13229]; Christian People's Party [13520]
Denmark	2005	V / DF / KF	Liberal Party [13420]; Danish People's Party [13720]; Conservatives [13620]

Table SM5 continued

Country	Year	Coalition	Parties [Manifesto code]
Denmark	2007	Sd / SF / RV and 2 others	Social Democrats [13320]; Socialist Peoples Party [13230]; Danish Social Liberal Party [13410]; Red-Green Alliance [13229]; Christian People's Party [13520]
Denmark	2007	V / DF / KF and 1 other	Liberal Party [13420]; Danish People's Party [13720]; Conservatives [13620]; New-Liberal Alliance [13001]
Denmark	2011	Sd / RV / SF and 1 other	Social Democrats [13320]; Danish Social Liberal Party [13410]; Socialist Peoples Party [13230]; Red-Green Alliance [13229]
Denmark	2011	V / DF / NLA and 2 others	Liberal Party [13420]; Danish People's Party [13720]; New-Liberal Alliance [13001]; Conservatives [13620]; Christian People's Party [13520]
Denmark	2015	DF / V / KF and 1 other	Danish People's Party [13720]; Liberal Party [13420]; Conservatives [13620]; Christian People's Party [13520]
Denmark	2015	Sd / En-O / A and 2 others	Social Democrats [13320]; Red-Green Alliance [13229]; The Alternative [13110]; Danish Social Liberal Party [13410]; Socialist Peoples Party [13230]
Finland	1970	KESK / KD	Centre Party [14810]; Christian Democrats [14520]
Finland	1999	SSDP / KOK / DL and 2 others	Social Democratic Party of Finland [14320]; National Coalition Party [14620]; Democratic Union [14223]; Green League [14110]; Swedish People's Party [14901]
France	1962	G / CNIP	Gaullists [31621]; National Centre of Independents and Peasants [Conservatives] [31622]
France	1962	PCF / PS / PR	French Communist Party [31220]; Socialist Party [31320]; Radical Socialist Party [31421]
France	1967	G / CD / CNIP	Gaullists [31621]; Democratic Centre [31522]; National Centre of Independents and Peasants [Conservatives] [31622]
France	1967	PCF / PS / PSU and 1 other	French Communist Party [31220]; Socialist Party [31320]; Unified Socialist Party [n/a]; Radical Socialist Party [31421]
France	1968	G / CD / CNIP	Gaullists [31621]; Democratic Centre [31522]; National Centre of Independents and Peasants [Conservatives] [31622]
France	1968	PCF / PS / PR	French Communist Party [31220]; Socialist Party [31320]; Radical Socialist Party [31421]
France	1973	G / MR / CDP and 1 other	Gaullists [31621]; Reformers Movement [31529]; Centre Democracy and Progress [31523]; National Centre of Independents and Peasants [Conservatives] [31622]
France	1973	PCF / PS / PSU and 1 other	French Communist Party [31220]; Socialist Party [31320]; Unified Socialist Party [n/a]; Radical Party of the Left [31230]
France	1978	PS / PCF	Socialist Party [31320]; French Communist Party [31220]
France	1978	RPR / CNIP / UDF	Rally for the Republic [31621]; National Centre of Independents and Peasants [Conservatives] [31622]; Union for French Democracy [31624]
France	1981	PS / PCF	Socialist Party [31320]; French Communist Party [31220]
France	1986	RPR / UDF	Rally for the Republic [31621]; Union for French Democracy [31624]
France	1988	PS / PCF	Socialist Party [31320]; French Communist Party [31220]
France	1988	RPR / UDF	Rally for the Republic [31621]; Union for French Democracy [31624]
France	1993	PS / PCF	Socialist Party [31320]; French Communist Party [31220]
France	1993	RPR / UDF	Rally for the Republic [31625]; Union for French Democracy [31624]
France	1997	PS / PCF / V	Socialist Party [31320]; French Communist Party [31220]; Greens [31110]
France	1997	RPR / UDF	Rally for the Republic [31621]; Union for French Democracy [31624]

Table SM5 continued

Country	Year	Coalition	Parties [Manifesto code]
France	2002	PS / PCF / V	Socialist Party [31320]; French Communist Party [31220]; Greens [31110]
France	2002	UMP / UDF	Union for a Popular Movement [31626]; Union for French Democracy [31624]
France	2007	PS / PCF / V and 1 other	Socialist Party [31320]; French Communist Party [31220]; Greens [31110]; Radical Party of the Left [31230]
France	2007	UMP / NC / MF	Union for a Popular Movement [31626]; New Centre [31630]; Movement for France [n/a]
France	2012	PS / V / PRG	Socialist Party [31320]; Greens [31110]; Radical Party of the Left [31230]
France	2012	UMP / NC / PR and 1 other	Union for a Popular Movement [31626]; New Centre [31630]; Radical Socialist Party [31421]; Centrist Alliance [31631]
Germany	1953	DP / CDU+CSU	German Party [41620]; Christian Democratic Union / Christian Social Union [41521]
Germany	1957	DP / CDU+CSU	German Party [41620]; Christian Democratic Union / Christian Social Union [41521]
Germany	1972	SPD / FDP	Social Democratic Party of Germany [41320]; Free Democratic Party [41420]
Germany	1976	SPD / FDP	Social Democratic Party of Germany [41320]; Free Democratic Party [41420]
Germany	1980	SPD / FDP	Social Democratic Party of Germany [41320]; Free Democratic Party [41420]
Germany	1983	FDP / CDU+CSU	Free Democratic Party [41420]; Christian Democratic Union / Christian Social Union [41521]
Germany	1987	FDP / CDU+CSU	Free Democratic Party [41420]; Christian Democratic Union / Christian Social Union [41521]
Germany	1990	B90/Gru / B90/Gr	Alliance 90 / Greens [41113]; Alliance 90 / Greens – Citizens' Movement [41112]
Germany	1990	FDP / CDU+CSU	Free Democratic Party [41420]; Christian Democratic Union / Christian Social Union [41521]
Germany	2002	SPD / B90/Gru	Social Democratic Party of Germany [41320]; Alliance 90 / Greens [41113]
Iceland	1974	F / Sfvm	Progressive Party [15810]; Union of Liberals and Leftist [15322]
Ireland	1951	FG / Lab / CnP and 1 other	Fine Gael (Family of the Irish) [53520]; Labour Party [53320]; Republican Party [53714]; Party of the Land [53810]
Ireland	1954	FG / Lab / CnP	Fine Gael (Family of the Irish) [53520]; Labour Party [53320]; Republican Party [53714]
Ireland	1973	FG / Lab	Fine Gael (Family of the Irish) [53520]; Labour Party [53320]
Ireland	1977	FG / Lab	Fine Gael (Family of the Irish) [53520]; Labour Party [53320]
Ireland	1981	FG / Lab	Fine Gael (Family of the Irish) [53520]; Labour Party [53320]
Ireland	1982	FG / Lab	Fine Gael (Family of the Irish) [53520]; Labour Party [53320]
Ireland	1982	FG / Lab	Fine Gael (Family of the Irish) [53520]; Labour Party [53320]
Ireland	1997	FF / PD	Fianna Fail [53620]; Progressive Democrats [53420]
Ireland	1997	FG / Lab / DLP	Fine Gael (Family of the Irish) [53520]; Labour Party [53320]; Democratic Left [53221]
Italy	1948	PCI / PSI	Communist Party [32220]; Italian Socialist Party [32320]
Italy	1953	PCI / PSI	Communist Party [32220]; Italian Socialist Party [32320]
Italy	1994	AD / CS / DS and 4 others	Democratic Alliance [32529]; Social Christians [n/a]; Democrats of the Left [32220]; Federation of the Greens [32110]; Communist Refoundation Party [32212]; Italian Socialist Party [32320]; Movement for Democracy – The Net [32951]

Table SM5 continued

Country	Year	Coalition	Parties [Manifesto code]
Italy	1994	AN / CCD / FI-PdL and 4 others	National Alliance [32710]; Christian Democratic Centre [32521]; Go Italy – The People of Freedom [32610]; North League [32720]; Liberal Democratic Pole [n/a]; Radicals [32310]; Democratic Union of the Centre [n/a]
Italy	1994	PPI / PS	Italian People's Party [32520]; Segni Pact [n/a]
Italy	1996	AN / CCD / CCD+CDU and 1 other	National Alliance [32710]; Christian Democratic Centre [32521]; Christian Democratic Centre / United Christian Democrats [32529]; Go Italy – The People of Freedom [32610]
Italy	1996	PRC / DINI-RI / DS and 2 others	Communist Refoundation Party [32212]; Dini List – Italian Renewal [32321]; Democrats of the Left [32220]; Federation of the Greens [32110]; Popular Party for Prodi [n/a]
Italy	2001	DS / FdV / DINI-RI and 4 others	Democrats of the Left [32220]; Federation of the Greens [32111]; Dini List – Italian Renewal [32321]; Democracy [n/a]; Italian Democratic Socialists [n/a]; Italian People's Party [32520]; Union of Democrats for Europe [n/a]
Italy	2001	FI-PdL / AN / LN and 2 others	Go Italy – The People of Freedom [32610]; National Alliance [32710]; North League [32720]; Christian Democratic Centre / United Christian Democrats [32522]; New PSI [32611]
Italy	2006	CeS / PRC / R and 11 others	Centre Left [32329]; Communist Refoundation Party [32212]; Radicals [32221]; Italy of Values [32902]; Party of the Italian Communists [32213]; Federation of the Greens [32110]; Union of Democrats for Europe [32953]; The Union-Prodi [32955]; South Tyrol Peoples Party [32904]; Democracy is Freedom – The Daisy [32421]; Democrats of the Left [32220]; European Republicans Movement [n/a]; Italian Democratic Socialists [n/a]; Pensioners' Party [n/a]
Italy	2006	FI-PdL / AN / UC and 2 others	Go Italy – The People of Freedom [32610]; National Alliance [32710]; Union / Centre [32530]; North League [32720]; Fiamma Tricolore [n/a]
Italy	2008	FI-PdL / LN / MpA	Go Italy – The People of Freedom [32610]; North League [32720]; Movement for Autonomy [n/a]
Italy	2008	PD / IdV	Democratic Party [32440]; Italy of Values [32902]
Italy	2013	FI-PdL / LN / FdI	Go Italy – The People of Freedom [32061]; North League [32720]; Brothers of Italy [32630]
Italy	2013	PD / S / CD and 2 others	Democratic Party [32440]; Left [32230]; Democratic Centre [32450]; South Tyrol Peoples Party [32904]; Italian Democratic Socialists [n/a]
Italy	2013	SC / UC / FLI	Civic Choice [32460]; Union / Centre [32530]; Future and Freedom for Italy [n/a]
Japan	1993	JNP / NPS	Japan New Party [71952]; New Party Sakigake [71951]
Japan	1993	JSP / JRP / K and 2 others	Japan Socialist Party [71320]; Japan Renewal Party [71622]; Komeito Party [71530]; Democratic Socialist Party [71321]; Socialist Democratic Federation [71322]
Luxembourg	1968	CSV / KPL	Christian Social People's Party [23520]; Communist Party of Luxembourg [23220]
Luxembourg	1979	Z-EF / SI	Coerced Conscripts [n/a]; Jean Gremling List – Independent Socialists [n/a]
Netherlands	1971	PvdA / D66 / PPR	Labour Party [22320]; Democrats 66 [22330]; Radical Political Party [22310]
Netherlands	1972	PvdA / KVP / CHU	Labour Party [22320]; Catholic Peoples Party [22522]; Christian Historical Union [22525]
Netherlands	1977	PvdA / PPR	Labour Party [22320]; Radical Political Party [22310]
Netherlands	1986	CDA / VVD	Christian Democratic Appeal [22521]; People's Party for Freedom and Democracy [22420]

Table SM5 continued

Country	Year	Coalition	Parties [Manifesto code]
Netherlands	1989	CDA / PvdA	Christian Democratic Appeal [22521]; Labour Party [22320]
Netherlands	1998	PvdA / VVD / D66	Labour Party [22320]; People's Party for Freedom and Democracy [22420]; Democrats 66 [22330]
New Zealand	1999	LP / A	Labour Party [64320]; Alliance [64321]
New Zealand	2011	NP / UFNZ	National Party [64620]; United Future New Zealand [64421]
Norway	1965	H / V / Sp and 1 other	Conservative Party [12620]; Liberal Party of Norway [12420]; Centre Party [12810]; Christian Democratic Party [12520]
Norway	1969	H / V / Sp and 1 other	Conservative Party [12620]; Liberal Party of Norway [12420]; Centre Party [12810]; Christian Democratic Party [12520]
Norway	1977	H / KrF / Sp	Conservative Party [12620]; Christian Democratic Party [12520]; Centre Party [12810]
Norway	1981	H / KrF / Sp	Conservative Party [12620]; Christian Democratic Party [12520]; Centre Party [12810]
Norway	1985	H / KrF / Sp	Conservative Party [12620]; Christian Democratic Party [12520]; Centre Party [12810]
Norway	1989	H / KrF / Sp	Conservative Party [12620]; Christian Democratic Party [12520]; Centre Party [12810]
Norway	1997	KrF / Sp / V	Christian Democratic Party [12520]; Centre Party [12810]; Liberal Party of Norway [12420]
Norway	2001	KrF / Sp / V	Christian Democratic Party [12520]; Centre Party [12810]; Liberal Party of Norway [12420]
Norway	2005	DNA / SV / Sp	Norwegian Labour Party [12320]; Socialist Left Party [12221]; Centre Party [12810]
Norway	2005	H / KrF / V	Conservative Party [12620]; Christian Democratic Party [12520]; Liberal Party of Norway [12420]
Norway	2009	DNA / Sp / SV	Norwegian Labour Party [12320]; Centre Party [12810]; Socialist Left Party [12221]
Norway	2013	DNA / Sp / SV	Norwegian Labour Party [12320]; Centre Party [12810]; Socialist Left Party [12221]
Norway	2013	H / Fr / KrF and 1 other	Conservative Party [12620]; Progress Party [12951]; Christian Democratic Party [12520]; Liberal Party of Norway [12420]
Portugal	1979	CDS-PP / PPM / PSD	Democratic and Social Centre – People's Party [35520]; Popular Monarchist Party [35710]; Social Democratic Party [35313]
Portugal	1979	MDP / PCP	Democratic Movement [35310]; Portuguese Communist Party [35220]
Portugal	1980	CDS-PP / PPM / PSD	Democratic and Social Centre – People's Party [35520]; Popular Monarchist Party [35710]; Social Democratic Party [35313]
Portugal	1980	MDP / PCP	Democratic Movement [35310]; Portuguese Communist Party [35220]
Portugal	1980	PS / ASDI / UEDS	Socialist Party [35311]; Independent Social Democrats [35316]; Leftwing Union for the Socialist Democracy [35317]
Portugal	1983	MDP / PCP / PEV	Democratic Movement [35310]; Portuguese Communist Party [35220]; Ecology Party – Greens [35110]
Portugal	1985	MDP / PCP / PEV	Democratic Movement [35310]; Portuguese Communist Party [35220]; Ecology Party – Greens [35110]
Portugal	1987	PCP / PEV	Portuguese Communist Party [35220]; Ecology Party – Greens [35110]
Spain	1977	PCE / ERC	Communist Party [33220]; Republican Left of Catalonia [33905]
Spain	1979	PCE / ERC	Communist Party [33220]; Republican Left of Catalonia [33905]
Spain	1982	AP-P / PDP	People's Alliance-Party [33610]; Popular Democratic Party [33438]
Spain	1986	AP-P / PDP / PL	People's Alliance-Party [33610]; Popular Democratic Party [33438]; Liberal Party [33439]

Table SM5 continued

Country	Year	Coalition	Parties [Manifesto code]
Spain	2000	PSOE / PCE	Spanish Socialist Workers Party [33320]; Communist Party [33220]
Sweden	1948	FP / C / M	People's Party [11420]; Centre Party [11810]; Moderate Party [11620]
Sweden	1952	SAP / C	Social Democrats [11320]; Centre Party [11810]
Sweden	1973	C / M / FP	Centre Party [11810]; Moderate Party [11620]; People's Party [11420]
Sweden	1976	C / M / FP	Centre Party [11810]; Moderate Party [11620]; People's Party [11420]
Sweden	1979	M / C / FP	Moderate Party [11620]; Centre Party [11810]; People's Party [11420]
Sweden	1985	C / KD	Centre Party [11810]; Christian Democrats [11520]
Sweden	1991	M / FP	Moderate Party [11620]; People's Party [11420]
Sweden	2006	M / C / FP and 1 other	Moderate Party [11620]; Centre Party [11810]; People's Party [11420]; Christian Democrats [11520]
Sweden	2010	M / FP / C and 1 other	Moderate Party [11620]; People's Party [11420]; Centre Party [11810]; Christian Democrats [11520]
Sweden	2010	SAP / MP / V	Social Democrats [11320]; Greens [11110]; Left Party (Communists) [11220]
Sweden	2014	M / C / FP and 1 other	Moderate Party [11620]; Centre Party [11810]; People's Party [11420]; Christian Democrats [11520]
United Kingdom	1983	Lib / SDP	Liberals [51420]; Social Democratic Party [51330]
United Kingdom	1987	Lib / SDP	Liberals [51420]; Social Democratic Party [51330]