Legislative Representation in Flexible-List Electoral Systems*

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Abstract

We develop a theory of legislative representation in open and flexible list proportional rule electoral systems (OFPR). Our framework highlights how representatives' desire to cultivate a *personal vote* may undermine or strengthen the pursuit of collective party goals. We show that whether collective and individual goals are in conflict depends on the flexibility of the list—the extent to which preference votes for individual candidates can overturn the ordering in the party list. While a more flexible list always lowers legislative cohesion, we unearth circumstances in which this may weaken a legislator's incentives to prioritize his constituents' interest over party interests ("*dyadic representation*"). We also show that legislative cohesion under flexible list systems may be higher than closed list systems, or lower than single-member plurality contexts, consistent with empirical evidence that has previously defied theoretical explanation.

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1. Introduction

About two thirds of the world's democratic legislatures are elected via list proportional representation. A large number of these legislatures (including Austria, Belgium, Brazil, Chile, Colombia, Denmark, Greece, Indonesia, Japan, Lebanon, Norway, Sweden, Switzerland, and since 2010, Iraq) employ flexible and open lists, in which votes cast for individual candidates influence the order in which seats awarded to each party list are filled.[1]

In spite of their widespread use, open- and flexible-list proportional representation (henceforth, OFPR) systems have received little attention from empirical scholars and almost none from theoretical scholars. In large part, this is due to the fact that these systems vary tremendously in their operation across countries, bedeviling attempts at classification and limiting scholarly efforts to the analysis of specific cases (e.g., Pasquino, 1972, on Italy).

Relative to both single-member plurality and closed-list PR systems, OFPR systems generate unique patterns of competition *between* and *within* parties (Katz, 1985; Marsh, 1985; Cheibub and Sin, 2014). Since they appear on the same party list, candidates compete as a team to win as many seats as possible. However, they also simultaneously compete with one another for seats in the frequent event that their list fails to elect all its candidates. The distinctive feature of OFPR systems is that *both* voters' *and* party leaders' choices directly shape these patterns of competition. In spite of extremely limited scholarly progress, understanding how these systems structure the interaction between voters, representatives and party leaders is crucial for the comparative study of legislative representation (Shugart, 2013).

This paper develops a theory of legislative representation under OFPR systems, encompassing both closed and fully open list as special cases. Building upon existing theoretical and empirical scholarship, we study how ballot structure shapes legislators' incentives to cultivate a personal reputation vis a' vis their constituency voters or curry favor with their party leadership.

Our main results highlight how these incentives influence legislative cohesion under OFPR, and the extent to which legislators advance the interests of their geographic constituency. First, a more flexible list may *reduce* legislators' incentive to advance the interests of their geographic constituency, despite weakening the control of party leaders over their prospects of reelection. Second, OFPR systems can span the full range of legislative cohesion: they

[1] According to the *Database of Political Institutions* (Cruz, Keefer and Scartascini (2016)), as of 2015 legislative elections in 94 out of 147 democracies employ proportional representation, of which 25 feature flexible or open lists.

can produce *more* cohesion than closed-list PR and *less* cohesion than single-member district plurality rule.

Flexible list systems. We highlight how OFPR links competition for seats *between* parties, and competition for seats *within* the same party.

First, the list ordering and the relative share of preference votes within a ticket only affect the electoral fate of two co-partisans when the electoral ticket's performance lies in an intermediate range. If the ticket's overall share of the vote is large enough, *both* candidates are awarded a seats irrespective of their relative list ordering. Conversely, if the ticket's vote share is low enough, neither candidate is awarded the seat. This creates an incentive for legislators to cultivate the party ticket's *collective reputation*.

Second, a preference vote for one candidate raises the *total* vote share of the candidate's ticket and thus its expected number of seats, but it also raises the *within-ticket* share of preference votes awarded to the candidate. This second feature raises her prospect of election *at the expense of her co-partisans'*. If the second effect is strong enough relative to the first, a candidate's prospects of re-election may fall when her co-partisan secures additional preference votes.

We study how the formal rules governing seat allocation between parties and candidates shape these incentives, and their implications for legislative representation.

Our Approach. Our theory builds upon two central ideas from the comparative politics literature. First, as elaborated in the seminal works by Hix (2002) and Carey (2007), representatives are simultaneously and distinctively accountable to two *competing principals*: their constituency voters and their legislative party leadership. Second, multi-member districts create a tension between the value of *individual* and *collective* reputation (Carey and Shugart, 1995; Shugart, 2005): actions that enhance an individual legislator's reputation can either advance or harm the ticket's collective reputation.

Building on these two ideas, our model features a continuum of local voters in a single constituency, represented by two Incumbent representatives facing two Opposition candidates, and a national party leadership who is trying to advance a broad policy agenda. Voters rely on their representatives to act in their interest by choosing when to toe the party line, and when instead to oppose it.

Voters face two key informational shortcomings. First, unlike their representatives, they cannot fully assess whether the party leadership's agenda benefits their local interests. Second, they are concerned about their representatives' intrinsic motivations (Crisp, Olivella, Malecki and Sher, 2013): they do not know whether each representative is *aligned*, i.e., values only policies that benefit her constituents, or *mis-aligned*, i.e., is willing to sacrifice constituency interests on the altar of her party's legislative accomplishments. Voters rely on legislators' voting records to inform their opinions about each of their representatives' alignment. Crucially, voters' inferences about a representative are shaped not only by her own behavior, but also by that of other representatives: supporting a bill that one's co-partisan opposes worsens voters' opinion of a candidate's alignment much more than supporting a bill that her co-partisan also supports.

Incentives. In an OFPR system, a preference vote for either incumbent candidate necessarily raises the performance of the electoral ticket; thus, incumbents individually benefit from any actions that raise voters' perception of the party. However, in the event that an incumbent has to compete with her co-partisan for a single seat, her individual prospect of reelection necessarily comes at the expense of her co-partisan's. In this event, a representative faces two possible channels of reelection: she may receive a favorable list assignment from party leaders, or instead hope to win a large share of preference votes to secure reelection. A representative's view of which channel is more likely to succeed shapes her trade-off between pursuing one channel or the other.

First, she may cultivate a "personal vote" (Carey and Shugart, 1995) by opposing her party's legislative agenda, in an attempt to convince voters of her alignment with their interests. Second, she may throw her support behind the party's agenda in order to curry favor with the party leadership and obtain a more favorable list assignment. Either strategy will change the collective reputation of the party's incumbent representatives, however, and thus the party's performance as a whole.

A key institutional feature of an OFPR system is the *flexibility* of the list. A very flexible list, i.e., approaching fully open PR, implies that a low-ranked candidate requires a relatively small share of preference votes within the party's ballot in order to secure reelection. A very inflexible list, i.e., approaching fully closed PR, implies that a low-ranked candidate requires a very large share of preference votes in order to secure reelection. Thus, we predict that legislative cohesion under OFPR decreases with the flexibility of the list: a greater influence of preference votes on seat allocation raises the value of cultivating a personal vote by more frequent dissent, and thus leads to less legislative cohesion.

Main Results. In addition to other results that relate partisan polarization and features of the electoral rule to representatives' behavior, we highlight two main findings.

First, we uncover a seemingly paradoxical relationship between list flexibility and representation: while a more flexible list weakens the control of party leaders over individual legislators, it may nonetheless also weaken the incentive of legislators to advocate for the interests of their constituents. The reason is that individual legislators may engage in excessive obstruction in order to boost their reputation with constituents—even voting against policies that would in fact benefit voters. A less flexible list transfers electoral control from voters to party leaders, reducing this incentive to pander. Under a set of qualified circumstances, this may actually better align representatives' incentives with their constituents' interests.

Second, we show that legislative cohesion under OFPR systems—defined as the propensity for legislators to support their party's legislative agenda—may be *either* lower than under single-member districts or *higher* than under fully closed-list systems. When the list is very flexible, competition for preference votes generates even more legislative obstruction than in single-member contexts, where politicians do not directly compete with their co-partisans for a seat. When the list is very inflexible, surprisingly, the electoral value of loyalty to party leaders is even higher than in a completely closed list, generating stronger incentives for cohesion.

Contribution. Existing evidence from Belgium (Bräuninger, Brunner and Däubler, 2012; Däubler, Bräuninger and Brunner, 2016), Slovakia (Crisp et al., 2013), Poland (Carroll and Nalepa, 2017) and Switzerland (Traber, Hug and Sciarini, 2014) supports the idea—central to our model—that incumbents in OFPR systems use important party roll-call votes to compete with co-partisans for the favor of party leaders and voters.

Our result that a more flexible list can worse dyadic representation is important because it contradicts a conventional wisdom that intra-party competition tends to improve legislators' attentiveness to local interests (Ames, 1995; Carey and Shugart, 1995; Crisp, Escobar-Lemmon, Jones, Jones and Taylor-Robinson, 2004; Hallerberg and Marier, 2004), and provides a counterpoint to the finding than open lists tend to produce candidates with better local ties (Shugart, Valdini and Suominen, 2005; Tavits, 2010).[2]

Our results that OFPR systems span the whole spectrum of legislative cohesion—higher than under closed list systems or even lower than under single member districts—rationalize empirical findings that have defied theoretical explanation: while Carey (2007) finds evidence of lower legislative cohesion in relatively more open list systems, in a sample of lower legislative chambers across nineteen countries, Sieberer (2006) finds that countries using OFPR systems achieved both the *lowest* (Finland) and *highest* (Denmark) measures of legislative co-

[2] Negri (forthcoming) explores how larger district magnitudes in flexible list systems may worsen minority representation.

hesion in a Western European sample.[3] This pattern is fully consistent with our model: while Finland mandates a completely open (i.e., maximally flexible) list, Denmark gives parties the option of using a much less flexible list (Elklit, 2005).

Organization of the Paper. Section 2 presents our model. In Section 3 we characterize the equilibrium. Section 4 studies the implications for legislative behavior. Section 5 compares flexible list to closed list and plurality rule. Section **??** describes how our insights are robust to a variety of extensions and generalize to richer settings. Section 6 concludes.

2. Model

Agents. We consider a two-date interaction between a unit mass of constituency voters, two incumbent co-partisan legislators representing the constituency (A and B, to whom we reserve the pronoun "she"), and their party leadership (L). The party leadership captures an individual or collective agent with legislative agenda-setting authority (e.g., the leader of the majority party, the head of the executive, or the cabinet). In addition to these players, there are two opposition politicians that may replace the incumbent legislators at the end of the first period. There are three types of voters: *Incumbent* loyalists, *Opposition* loyalists, and *responsive* voters. For simplicity, we assume that Incumbent loyalists and Opposition loyalists each constitute a fraction $\alpha < .5$ of the electorate, with responsive voters therefore constituting a fraction $1 - 2\alpha$. At each date, there is a *legislative interaction*, and between the first and second date there is an *election*.

Legislative Interaction. First, the leadership submits a policy agenda for approval by the legislative body (for example, a major public infrastructure program, a broad economic reform package, or an international agreement). While the leadership positively values the policy agenda, it is uncertain whether the constituency will also benefit from it. Specifically, the constituency payoff from the project is drawn from a random variable θ, uniformly distributed on $[-\kappa, \kappa]$. This value is privately learned by each representative, while the party leadership and the voters do not observe it.[4] If the policy is not implemented, all agents derive a status quo policy payoff that we normalize to zero.[5]

[3] The authors use the term "party unity", rather than "legislative cohesion" as in the present paper.

[4] The assumption that the leadership does not observe θ is unimportant: all our results hold when the leadership learns θ. The crucial feature is that the opacity of parliamentary negotiations and the inherent uncertainty associated with policy outcomes generates substantial uncertainty on the party of voters about the local consequences of legislation.

[5] This normalization is without loss of generality: one may interpret θ as the *relative* value to the constituency from the project, i.e., relative to the status quo.

Second, each representative simultaneously supports or opposes the policy agenda by choosing either *aye* (y) or *nay* (n). A *vote tally* $\mathsf{t} = (\mathsf{t}_i, \mathsf{t}_j) \in \{\mathsf{y}, \mathsf{n}\}^2$ determines the probability $q(\mathsf{t})$ that the agenda passes. For simplicity, we impose:

$$q(\mathsf{y}, \mathsf{y}) - q(\mathsf{n}, \mathsf{y}) = q(\mathsf{y}, \mathsf{n}) - q(\mathsf{n}, \mathsf{n}) \equiv \chi > 0,$$

which implies that the prospect that a bill passes is increasing in the number of votes in favor.[6]

Election. After the leadership and voters observe incumbents' vote tally (t), the party leadership L constructs the party *list* assignment, either $\{AB\}$ or $\{BA\}$ (we assume that when indifferent between the two, the leadership randomizes uniformly). The list partly determines which of the two incumbents will be returned to office in the event that the party's ticket wins only a single seat. If the party wins both seats, both representatives are re-elected regardless of their individual positions in the list.

After the leadership constructs its list, an election determines whether each incumbent representative $i \in \{A, B\}$ keeps her seat ($e(i) = 1$), or instead loses it ($e(i) = 0$). We let $e = \{e(A), e(B)\}$. Specifically, voters may vote for (i) a candidate on the Opposition ticket, or (ii) incumbent A, or (iii) incumbent B. In keeping with the terminology used in existing literature, we refer to a vote for either of A or B as a *preference vote*, and denote by v_A and v_B the number of preferences votes cast in favor of each incumbent representative. Thus, the total number of preference votes in favor of the opposition ticket is $1 - v_A - v_B$.

Allocation of Seats Between Parties. The total vote share of the party's ticket is $v_A + v_B$. The aggregate performance of the party's ticket is determined by the electoral rule, which we parameterize as a threshold $\pi^* \in (.5, 1)$, such that:

1. if $v_A + v_B \in [.5, \pi^*)$, the Incumbent ticket wins *one* seat.

2. if $v_A + v_B \in [\pi^*, 1]$, the Incumbent ticket wins *two* seats.

The parameter $\pi^* \geq 0$ is the electoral *quota*, and reflects the proportionality of the system. In real-world contexts, $\pi^* = \frac{2}{3}$ is called the *D'Hondt* method, and it is used (among others) in Brazil and Denmark. The variant with $\pi^* = \frac{3}{4}$ is called the *Sainte-Laguë* method, and it is used among others in Iraq, Sweden and Germany. A higher value of π^* increases the amount of excess support that one party has to gather over the other in order to claim the second seat.

[6] The assumption of constant marginal effect of a single 'yes' vote on the bill's probability of passage economizes on notation, but plays no role on our results.

Allocation of Seats Within Parties. If $v_A + v_B \in [.5, \pi^*)$, so that the Incumbent ticket wins a single seat, only one representative is reelected. Which representative depends on *both* the party leadership's list assignment, *and* the distribution of preference votes within the Incumbent ticket. Specifically, if the party wins only a single seat, and the Incumbent ticket $\{ij\}$ assigns priority to representative i, then i is reelected if and only if:

$$\frac{v_i}{v_i + v_j} \geq \eta,$$

where $\eta \in \left[0, \frac{1}{2}\right]$ reflects the *flexibility* of the list: if representative j is second-ranked, she is reelected if and only if her share of preference votes exceeds $1 - \eta$. The case $\eta = 0$ corresponds to a completely *closed list*, whereas $\eta = \frac{1}{2}$ corresponds to a completely open list.

Voting behavior. *Incumbent* loyalists vote for incumbent A with equal probability. Similarly, *Opposition* loyalists are equally likely to vote for either of the candidates listed on the Opposition ticket.[7] *Responsive* voters, by contrast, strategically choose whether to cast a vote in favor of the Opposition ticket, or to cast a preference vote for either incumbent representative, A or B. They do so comparing V_A, the value from casting a preference vote in favor of incumbent A, V_B, the value from casting a preference vote in favor of incumbent B, and V_O the value from voting for an Opposition candidate. Crucially, these values are derived from voters' conjectures about parties and other voters' behavior, and depend only indirectly on the electoral context. A responsive voter J casts a preference vote for representative A if and only if:

$$V_A \geq \max\{V_O + \xi + \sigma_J, V_B\}, \tag{1}$$

where $\xi \sim U[-\frac{1}{2\psi}, \frac{1}{2\psi}]$ is an aggregate preference shock in favor of the Opposition party, and $\sigma_J \sim U[-\frac{1}{2\phi}, \frac{1}{2\phi}]$ is an individual-level preference shock in favor of the Opposition party. We interpret σ_J as an individual's partisanship. On the other hand, ξ reflects factors that may influence all voters on polling say, such as a last-minute revelation of scandal or impropriety. Similarly, a responsive voter J casts a preference vote for representative B if and only if:

$$V_B \geq \max\{V_O + \xi + \sigma_J, V_A\}, \tag{2}$$

and casts a preference vote for an Opposition candidate if neither (1) nor (2) holds.

[7] As discussed in Section **??**, the model can accommodate the possibility that one of the incumbent candidates is relatively more popular amongst partisans (e.g., partisans vote for A with probability $p > 1/2$). However, in our baseline model we set $p = 1/2$ to avoid introducing asymmetries that are not directly related to the electoral setting.

Payoffs. A constituency voter's value from the policy agenda in each period is $q\theta$, where q denotes the probability that the date-2 agenda is implemented. Both incumbents and the leadership care about winning district-level elections and policy outcomes in both periods. The leadership's per period payoff is:

$$u_L(q, e) = qG + e(A) + e(B),$$

where $G > 0$ denotes the elite's relative value of the policy, and $e(i)$ is the incremental value of winning seats that does not directly relate to policy payoffs.[8]

Each politician values her own re-election, which yields a private office rent R. Politicians also care about policy outcomes. Each incumbent and opposition legislator may be *aligned* with her voters, or instead *mis-aligned* with her voters. We denote by μ the common prior that each incumbent is aligned, by $\hat{\mu}_i(\mathrm{t})$ the posterior conditional on vote tally t, and by μ_O the common prior that each opposition candidates is aligned.[9] To avoid the analysis of multiple cases in our main presentation, our benchmark setting focuses on contexts in which any imbalance in the initial reputation of legislators across parties is not too strongly skewed in favor of the Opposition.

Assumption 1.

$$\mu - \mu_O > \frac{1 - 2\mu_O}{3}$$

In the Appendix, we extend all of our results to contexts in which Assumption 1 does not hold.[10]

A politician's alignment determines her payoffs at each date associated with the outcome of the leadership's policy agenda:

$$u_i(q, e, \theta; \tau) = q(\theta + \tau) + Re(i)$$

For an aligned politician, $\tau = 0$: she shares her constituency's policy preferences. By contrast, a mis-aligned politician derives an additional value $\tau \in \{-b, b\}$ in the event that a policy is

[8] We assume that the elite's value from the policy, G, is unrelated to the district-specific valuation θ. This eases presentation, but is not needed for our results.

[9] As we clarify in the analysis, μ_O should be interpreted as the average reputation of the Opposition ticket. Whether each opposition legislator's perceived alignment is μ_O is not important.

[10] In that context, we obtain a unique symmetric mixed strategy equilibrium; when Assumption 1 is satisfied, we characterize a pure strategy equilibrium. In addition to providing the complete characterization in the Appendix, we also extend all of our welfare results in the case where Assumption 1 does not hold.

passed. For a mis-aligned incumbent, $\tau = b > 0$, reflecting that the incumbent intrinsically values passing the leadership's agenda regardless of its consequences for her constituents. By contrast, a mis-aligned opposition politician derives the value $\tau = -b$ if the policy passes, reflecting a primitive hostility to the governing party's legislative agenda.

In addition to her direct payoffs from the implementation of the party's primary legislative agenda, each voter derives a per-capita incremental payoff $S > 0$ from having an aligned representative rather than a mis-aligned representative. Thus, a voter's per period payoff when representatives i and j are in office is given by:

$$u(q, \theta, \tau_i, \tau_j) = \begin{cases} 2S + q\theta & \text{if both representatives are aligned} \\ S + q\theta & \text{if one representative is aligned} \\ q\theta & \text{if neither representative is aligned.} \end{cases} \tag{3}$$

S captures the myriad ways in which aligned representative can champion constituency interests beyond voting on the policy agenda. Examples include inserting favorable amendments into secondary bills, using gate-keeping powers in committee to promote certain bills and forestall progress on others, and delivering government contracts and grants to local firms. It may also reflect private member bill sponsorship, which Bräuninger, Brunner and Däubler (2012) show is positively related to the personal vote in Belgium.

Equilibrium. We study symmetric sequential equilibria. Note that the symmetry is with respect to the labeling of the incumbent politicians, *not* their alignment. Symmetry ensures that all sources of equilibrium asymmetry that arise in the behavior of different politicians is solely a consequence of the different incentives of aligned and mis-aligned politicians in different electoral contexts. When multiple equilibria arise, we select the one that maximizes the differences in behavior across types—we refer to this type of equilibria as "separating."

Discussion. Our framework accounts for both legislative interaction and electoral politics as distinct sources of legislative incentives, as in Snyder and Ting (2003, 2005); Eguia and Shepsle (2015); Polborn and Krasa (2017). However, voters' induced preferences over candidates take into account that policy outcomes result from the interaction between many representatives—most of them from other constituencies—as in Austen-Smith (1984, 1986); Polborn and Snyder (2017). In contrast with these contributions, we compare different types of multi-member districts, as opposed to solely focusing on single-district contexts. Morelli (2004) and Kselman (2017) also study legislative behavior in multi-member systems, but focus respectively on party party formation and public finance outcomes.

In our framework, party leaders discipline incumbent politicians via their list assignment. Of course, party leaders have other tools for enforcing discipline, such as endorsement of primary challengers or recruitment strategies aimed at selecting a more ideologically homogeneous candidate pool (Carroll and Nalepa, 2016). In a Supplemental Appendix, we consider one such tool: removing a representative from the electoral ticket, rather than simply demoting her to a lower rank.

We focus on roll-call voting as a means for politicians to cultivate a personal vote. In practice, politicians have a wider behavioral repertoire to build a reputation for constituency alignment: Samuels (1999) shows how Brazilian politicians design pork-barrel projects in a multi-member context to cultivate personal reputations, and similar patterns are uncovered by Golden and Picci (2008) in post-war Italy and Crisp and Desposato (2004) in Colombia. Bräuninger, Brunner and Däubler (2012) and Däubler, Bräuninger and Brunner (2016) show that bill initiation—not just voting—plays an important role for reputation building: incumbents prefer not to co-sponsor bills with co-partisans from the same district—presumably to avoid diluting their ability to claim credit amongst their constituents. We view these important channels as complementary to our own, and their value could be reflected in the term S—the incremental payoff from having an aligned representative independently of to their roll-call voting.

3. Analysis

Second Period. We begin by deriving the behavior of elected representatives at the second (i.e., terminal) date. An aligned representative values the party agenda only inasmuch as it generates a positive surplus for her constituents, i.e., if $\theta > 0$. By contrast, a mis-aligned representative derives an value $\tau \in \{-b, b\}$ from the party agenda: whenever the agenda is passed, a mis-aligned Incumbent derives a value $\theta + b$ and a mis-aligned Opposition legislator derives a value $\theta - b$.[11] We therefore obtain:

Lemma 1. *In the second period:*
(i) an aligned *representative votes* aye *on the party agenda if and only if* $\theta > 0$*;*
(ii) a mis-aligned *representative from the Incumbent party votes in favor if and only if* $\theta > -b$*;*
(iii) a mis-aligned *representative from the Opposition party votes in favor if and only if* $\theta > b$*.*

Lemma 1 implies that constituency voters and the party leadership have directly conflicting preferences over the representatives' types. Constituency voters prefer an aligned repre-

[11] The symmetry of the mis-aligned representatives' biases across parties does not play an important qualitative role in our analysis.

sentative. The opposite holds for the Incumbent party leadership. The reason is that the policy agenda in the second period is more likely to succeed when Incumbent legislators are mis-aligned: whenever $\theta \in [-b, 0]$ only a mis-aligned Incumbent representative would support it.

We then turn to the equilibrium choices of voters, party leaders, and incumbent representatives in the first date, with a focus on the key trade-off that shapes their decision to support their party's agenda.

Electoral Outcomes. After observing first-period policy outcomes but prior to the election, the party leadership L constructs the party *list* assignment: either $\{AB\}$ or $\{BA\}$. To study this choice, we need to first study how voters cast preference votes, and then, in light of this, how list assignment shapes representatives' behavior.

Probability of reelection. Using the voting calculus developed in expressions (1) and (2), we obtain the total preference votes accruing to the Incumbent ticket as a function of the aggregate popularity shock:

$$v_A + v_B = \alpha + (1 - 2\alpha)\left(\frac{1}{2} + \phi[\max\{V_A, V_B\} - V_O - \xi]\right).$$

In light of this, there exist threshold values ξ_1 and ξ_2—with $\xi_1 > \xi_2$—such that the Incumbent ticket wins (a) both seats whenever the aggregate shock in favor of the Opposition (ξ) is sufficiently small (i.e., $v_A + v_B \geq \pi^*$ if and only if $\xi \leq \xi_2$), (b) neither seat whenever this aggregate shock is sufficiently large (i.e., $v_A + v_B < 1 - \pi^*$ if and only if $\xi > \xi_1$), and (c) only one seat when the aggregate shock does not disproportionately favor either ticket:

$$\Pr(\textbf{both incumbents reelected}) = \Pr(v_A + v_B \geq \pi^*) = \Pr(\xi \leq \xi_2) \tag{4}$$

$$\Pr(\textbf{one incumbent reelected}) = \Pr(\pi^* > v_A + v_B \geq 1 - \pi^*) = \Pr(\xi_2 < \xi \leq \xi_1) \tag{5}$$

$$\Pr(\textbf{neither incumbent reelected}) = \Pr(v_A + v_B < 1 - \pi^*) = \Pr(\xi > \xi_1) \tag{6}$$

Notice that when the Incumbent ticket wins zero seats or both seats, neither the within-ticket share of preference votes nor the list assignment matter. When, instead, the Incumbent ticket wins only a single seat, i.e., $\xi_2 < \xi \leq \xi_1$, the list assignment and the distribution of preference votes within the ticket jointly determine to whom this seat is awarded.

Suppose that the list assignment is $\{ij\}$, and that responsive voters prefer to vote for first-ranked incumbent i, rather than second-ranked incumbent j. Since she is *both* first-ranked by the party leadership *and* awarded a majority of the preference votes within the ticket, incumbent i is reelected whenever the ticket secures at least one seat, while incumbent j us reelected only if the ticket secures both seats. Letting $p_i(\{ij\}|V_i \geq V_j)$ denote the total probability that incumbent i wins under list $\{ij\}$ and given her relative popularity amongst responsive voters, i.e., $V_i \geq V_j$, i's prospect of reelection is

$$p_i(\{ij\}|V_i \geq V_j) = \Pr(v_A + v_B > 1 - \pi^*) = \Pr(\xi \leq \xi_1),$$

and the second-ranked j's prospect of reelection is

$$p_j(\{ij\}|V_i \geq V_j) = \Pr(v_A + v_B > \pi^*) = \Pr(\xi \leq \xi_2).$$

Suppose, instead, that responsive voters prefer to vote for second-ranked incumbent j, rather than first-ranked incumbent i. This implies that every responsive voter who chooses the Incumbent ticket not only increases the ticket's total performance, i.e., v_A+v_B, but also raises the *relative* share of preference votes that go to candidate j, i.e., $\frac{v_j}{v_i+v_j}$. Recall that if $\frac{v_j}{v_i+v_j} > \eta$, the second-ranked candidate is elected despite candidate i being first-ranked on the list. Thus, candidate i is reelected only if this conditions *fails*:

$$\left.\frac{v_j}{v_i + v_j} \leq \eta \right| V_i < V_j \iff \xi \geq \xi_\eta \tag{7}$$

where ξ_η is a threshold value of the popularity shock in favor of the Opposition. In words: if the Incumbent ticket wins a single seat, a relatively unpopular (amongst responsive voters) first-ranked incumbent i is awarded the seat only if she does not receive too few preference votes compared to the more popular j. But this can only happen if the Incumbent ticket as a whole does not perform too *well* among the responsive voters, which requires the Opposition preference shock to be *large enough*.

The total prospect that the first-ranked Incumbent i is awarded a seat is then

$$p_i(\{ij\}|V_i < V_j) = \Pr(\xi \leq \xi_2) + \Pr(\max\{\xi_\eta, \xi_2\} \leq \xi \leq \xi_1), \tag{8}$$

Paradoxically, a relatively unpopular first-ranked incumbent candidate therefore prefers the Incumbent ticket as a whole either to do very well—so that it wins both seats—or *barely* well enough to clinch a single seat without the second-ranked candidate displacing her.

The corresponding prospect that the second-ranked Incumbent is awarded a seat is

$$p_j(\{ij\}|V_i < V_j) = \Pr(\xi \leq \xi_2) + \Pr(\xi_2 < \xi \leq \min\{\xi_\eta, \xi_1\}). \tag{9}$$

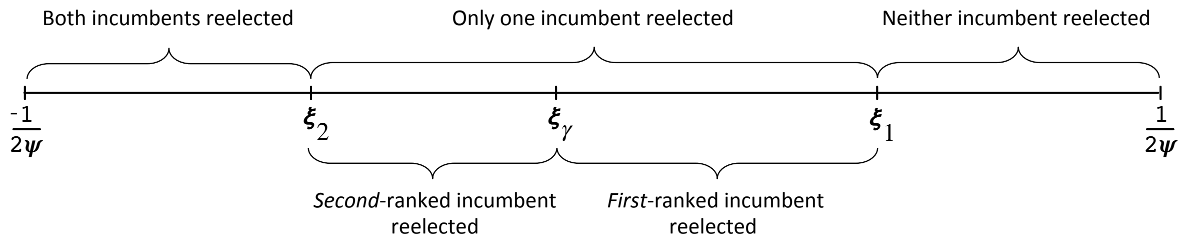

Figure 1 – Incumbent ticket's electoral support and the prospects of reelection of a relative unpopular first-ranked and relatively popular second-ranked incumbent.

Figure 1 illustrates the thresholds on Opposition support derived above, highlighting the non-monotonicity in the unpopular first-ranked incumbent's reelection prospects.

In the Appendix, we show that when η lies in an intermediate range $(\underline{\eta}, \overline{\eta})$, the threshold ξ_η lies between ξ_2 and ξ_1, as depicted in Figure 1. Intuitively, if the list is sufficiently inflexible ($\eta \leq \underline{\eta}$), the second-ranked incumbent can never displace the first-ranked incumbent. In that case, our environment is strategically equivalent to a pure closed list. If instead the list is sufficiently flexible ($\eta \geq \overline{\eta}$), whichever incumbent candidate receives the most preference votes is reelected, regardless of her list ranking, whenever the party wins only one seat. In that case, our environment is strategically equivalent to a fully open list. It is thus without loss of generality that we assume:

Assumption 2. $\underline{\eta} < \eta < \overline{\eta}$.

Under Assumption 2, the probabilities that the incumbents are re-elected, given the list assignment $\{ij\}$ and relative popularity $V_i < V_j$ are then:

$$p_i(\{ij\}|V_i < V_j) = \frac{1}{2} + \psi(V_j - V_O) - \frac{\psi}{2\phi(1-2\alpha)}\left(1 - \frac{\alpha}{\eta}\right), \tag{10}$$

$$p_j(\{ij\}|V_i < V_j) = \frac{1}{2} + \psi(V_j - V_O) + \frac{\psi}{2\phi(1-2\alpha)}\left(1 - \frac{\alpha}{\eta}\right). \tag{11}$$

Notice that greater flexibility necessarily hurts a relatively unpopular first-ranked incumbent, since it raises the risk that she is displaced by her more popular but lower-ranked copartisan.[12] In fact:

Corollary 1. *When the list is flexible enough ($\eta > \alpha$), a popular second-ranked incumbent is more likely to be reelected than an unpopular first-ranked incumbent.*

[12] Each individual incumbent's prospect of reelection is independent of the electoral system proportionality, ρ. Of course, this is conditional on Assumption 1, which implicitly links list flexibility η and electoral system proportionality ρ.

Assumption 1 ensures that a sufficiently second-ranked incumbent can nudge out a first-ranked incumbent to win a single seat. Expressions (10) and (11) reveal that this is more than a possibility: it may be the most likely scenario. Whenever the party list is sufficiently flexible relative to the share of loyalist voters ($\eta > \alpha$), a first-ranked unpopular incumbent faces a *lower* prospect of winning reelection than her more popular but second-ranked co-partisan.[13]

Voting Decisions. Given an incumbent list order $\{ij\}$, voters decide whether to cast a preference vote for one of the Incumbent candidates A or B, or instead for one of the Opposition candidates. If there were only a single representative (i.e., a single-member system), a voter acknowledges that the election outcome turns on a single event: one candidate winning a majority of the votes. In a multi-member context, however, the consequences of a preference vote for either Incumbent representative depend on how other voters in the same district cast their ballot. To see this, notice that a voter's choice could be decisive for the *inter-party* contest, by changing the number of seats awarded to each party (when $\xi = \xi_1$ or $\xi = \xi_2$), or for the *intra-party* contest, by determining whether the first- or second-ranked Incumbent wins the single seat awarded to this ticket (when $\xi = \xi_\eta$ and $V_J > V_i$). Thus, the same preference vote could result in different election outcomes, depending on how other voters cast their ballots. In particular, an instrumental voter's decision must take into account her conjectures about the voting behavior of others.[14]

A voter recognizes that there may be at most three contexts in which her preference vote makes a difference; these three events are associated with critical realizations of ξ, the preference shock in favor of the Opponent. Voters formulate values from supporting either of the Incumbent $\max\{V_A, V_B\}$ or Opposition candidates (V_O) by asking: *if* I were decisive, what is the relative prospect that I would be decisive for

1. whether the Incumbent ticket wins the second seat ($\xi = \xi_2$),

2. whether the Incumbent ticket wins the first seat ($\xi = \xi_1$), or

3. whether the first- or second-ranked incumbent is reelected, conditional on the Incumbent ticket winning only one seat ($\xi = \xi_\eta$).

[13] To understand this condition, recall that the Incumbent ticket wins a single seat if and only if the aggregate shock ξ takes an intermediate value ($\xi \in (\xi_2, \xi_1)$). In this case, the seat goes to the second-ranked but more popular incumbent if and only if $\xi \in (\xi_\eta, \xi_1)$. Under uniform preference shocks, the relative advantage of being first-ranked on the ticket can therefore be captured by the size of the interval $[\xi_2, \xi_\eta]$ relative to $[\xi_\eta, \xi_1]$. We find that $\xi_1 - \xi_\eta \geq \xi_\eta - \xi_2 \iff \eta \leq \alpha$.

[14] This is why the concept of a 'sincere vote' in a multi-member context is not well-defined.

With uniform preference shocks, the likelihood of each critical realization is—conditional on being positive—the same.[15] In the Appendix, we show that, as a consequence, the continuation payoffs weigh these pivotal events equally. Amongst Incumbent candidates, voters always prefer the candidate with the highest reputation for alignment; and when choosing between supporting this candidate or an Opposition candidate, the difference in payoff is to a first approximation proportional to the difference between the tickets' average reputation.

Lemma 2. $\lim_{\kappa\to\infty} \max\{V_i(\mathsf{t},\{ij\}), V_j(\mathsf{t},\{ij\})\} - V_O = \mu_i + \mu_j - 2\mu_O$.

As a consequence, the list ordering does not affect the overall popularity of the Incumbent ticket.

Leadership choice. We can now study the leadership's list assignment as a function of the vote tally, $\mathsf{t} \in \{\mathsf{y},\mathsf{n}\}^2$. Given the assumptions, if both representatives have the same posterior alignment with their constituents, the leadership resolves its indifference by a fair coin toss.

Lemma 3. *The leadership ranks first the representative with the lower posterior alignment (i.e., the one who is more likely to support the agenda in the second period):*

$$l = \begin{cases} \{AB\} & \textit{if} \quad \hat{\mu}_A(\mathsf{t}) < \hat{\mu}_B(\mathsf{t}) \\ \{BA\} & \textit{if} \quad \hat{\mu}_B(\mathsf{t}) > \hat{\mu}_A(\mathsf{t}) \end{cases}$$

Lemma 3 follows from two observations: first, a representative who is less likely to prioritize constituents' needs over party goals is more valuable to the party leadership in the second period. Second, placing this more valuable representative at the top of the list does not weaken the party's electoral appeal.[16]

When $\eta > \alpha$ and $\hat{\mu}_i(\mathsf{t}) < \hat{\mu}_j(\mathsf{t})$ (that is, i is less likely to be aligned than j), the leadership anticipates that the first-ranked but least popular incumbent i has a lower reelection prospect than the more popular but second-ranked j. However, placing the more popular candidate j first can only make things worse. The reason is that regardless of the list assignment, j wins the preference votes of all responsive voters, who expect better representation from her than

[15] Observe that when the perceived alignment of the first-ranked candidate exceeds the second candidate's, no voter can be pivotal for the intra-party contest.

[16] Under a non-uniform aggregate shock, this is not always true. Using a similar model, Buisseret and Prato (2017) and Buisseret, Folke, Prato and Rickne (2017) explore the possibility of ballot order effects with a monotonic density. That paper shows that if the Incumbent party is less likely to be favored by the aggregate shock, awarding electoral priority to the candidate with lower perceived alignment maximizes the expected number of seats for the party.

from j. As such, placing j first would further increase her reelection prospect at the expenses of the less popular i—who by virtue of its lower likelihood of being aligned is nonetheless preferred by the leadership.[17]

Our results are in line with Crisp et al. (2013), who show that incumbents who vote more frequently with their party receive less personal votes. They are also consistent with Depauw and Martin (2009) and Crisp et al. (2013)'s finding that voting in line with the party and obtaining more preference votes in the previous election are correlated with better list assignments.[18]

Lemma 3 implies that developing a reputation of alignment with one's district can come at the cost of a worse list assignment. This cost is at the heart of the trade-off that Incumbent legislators face, to which we now turn.

First Period Policy Outcomes

In the Appendix, we show that if κ is not too small there is a unique separating symmetric equilibrium. Recall our Assumption 1:

$$\mu - \mu_O > \frac{1-2\mu_O}{3} \iff \mu \geq \frac{1+\mu_O}{3} \equiv \underline{\mu}.$$

We show that the unique separating symmetric equilibrium takes a simple threshold form: each type votes *aye* if and only if θ exceeds a critical value $\theta^*_\tau(\kappa,\gamma)$, with $\theta^*_b(\kappa,\gamma) < \theta^*_0(\kappa,\gamma)$. Furthermore, as κ becomes large, the equilibrium thresholds (θ^*_b, θ^*_0) converge to quantities that can be characterized analytically.

Proposition 1. *For κ not too small, there exists a unique separating symmetric equilibrium. In this equilibrium, an aligned representative votes* aye *if and only if $\theta \geq \theta^*(\kappa,\gamma)$, and a misaligned representative votes* aye *if and only if $\theta \geq \theta^*(\kappa,\gamma) - b$, where*

$$\lim_{\kappa\to\infty} \theta^*(\kappa,\gamma) = \frac{RS\psi}{\chi}\left[(2\mu-1)(\mu-\underline{\mu}) + \frac{1}{2\phi S(1-2\alpha)}\left(1-\frac{\alpha}{\eta}\right)\right]$$

To construct the equilibrium, consider the problem facing a representative $i \in \{A, B\}$ of

[17] Formally: since $\eta > \underline{\eta}$, $p_i(\{ij\}|V_i < V_j)$ defined in (10) is strictly larger than $p_i(\{ji\}|V_i < V_j)$.

[18] To see why Lemma 3 is not in contrast with the latter result, notice that the party leadership's rank assignment decision is between two incumbents *with the same initial reputation*. It does not imply a negative correlation between higher *initial reputation* and higher list assignment. While we do not explore this formally, incumbents with higher initial reputation have a stronger incentive to cultivate a positive reputation vis a vis their party leader during the legislative term, and thus more likely to vote in line with the party—which translates into a higher likelihood of a favorable list assignment.

type τ, who learns the constituency value of the policy θ, and does not know the behavior of her co-partisan (denoted by t_j).

The representative anticipates that if both representatives support their party's agenda (vote *aye*)—they will subsequently share the same posterior perceived alignment, i.e., $\hat{\mu}(\mathsf{y},\mathsf{y})$, so that (for κ large enough) responsive voters' relative value of voting for either incumbent $i \in \{A, B\}$ is

$$V_i(\mathsf{y},\mathsf{y}) - V_O \propto \frac{1}{2}S(\hat{\mu}(\mathsf{y},\mathsf{y}) - \mu_O) + \frac{1}{2}S(\hat{\mu}(\mathsf{y},\mathsf{y}) - \mu_O) = S(\hat{\mu}(\mathsf{y},\mathsf{y}) - \mu_O), \tag{12}$$

since a voter assesses an equal relative prospect that her preference vote in favor of i will make the difference between (a) the first-ranked incumbent (with perceived alignment $\hat{\mu}(\mathsf{y},\mathsf{y})$) or (b) the second-ranked incumbent (also with perceived alignment $\hat{\mu}(\mathsf{y},\mathsf{y})$) and the first-ranked opposition candidate (with perceived alignment μ_O).

Likewise, if both representatives support their party's agenda (vote *nay*), they will subsequently share the same posterior perceived alignment, i.e., $\hat{\mu}(\mathsf{n},\mathsf{n})$, so that (for κ large enough) responsive voters' relative value of voting for either incumbent $i \in \{A, B\}$ is

$$V_i(\mathsf{y},\mathsf{y}) - V_O \propto \frac{1}{2}S(\hat{\mu}(\mathsf{n},\mathsf{n}) - \mu_O) + \frac{1}{2}S(\hat{\mu}(\mathsf{n},\mathsf{n}) - \mu_O) = S(\hat{\mu}(\mathsf{n},\mathsf{n}) - \mu_O).$$

In the Appendix, we show that as κ tends to infinity, a unified vote tally becomes virtually uninformative, so $\hat{\mu}(\mathsf{y},\mathsf{y})$ and $\hat{\mu}(\mathsf{n},\mathsf{n})$ approach μ.

If instead the representative i votes against the policy, but her co-partisan supports the policy, the party leadership and voters conclude that i is aligned with probability one and j is aligned with probability zero. The split record (n,y) ensures that the leadership assigns her the lowest rank in the list, i.e., chooses the ballot order $\{ji\}$, but also that responsive voters, conditional on voting for the Incumbent ticket, cast their preference votes for her. Responsive voters' value of doing so, is

$$V_i(\mathsf{n},\mathsf{y}) - V_O \propto \frac{1}{3}\underbrace{S(0-\mu_O)}_{\xi=\xi_1} + \frac{1}{3}\underbrace{S(1-0)}_{\xi=\xi_\eta} + \frac{1}{3}S\underbrace{(0-\mu_O)}_{\xi=\xi_2} = S\frac{1-2\mu_O}{3}. \tag{13}$$

To understand this expression, recall that in the case where the relatively popular incumbent candidate is second-ranked, a responsive voter may be decisive in three ways. *First*, she could be decisive for awarding the Incumbent ticket the first seat ($\xi = \xi_1$), in which case the top-ranked incumbent—who is believed to be aligned with probability zero—is elected instead of an Opposition candidate (who is aligned with probability μ_O. *Second*, she could be decisive for the single Incumbent seat to be awarded to the second-ranked incumbent i—who is believed to be aligned with probability one—at the expense of the first-ranked incumbent ($\xi = \xi_\eta$). *Third*, she could be decisive for awarding the second seat to the Incumbent ticket, in which case she changes the expected alignment of her date-2 politicians from $1 + \mu_O$ to $1 + 0$, since both incumbents are retained ($\xi = \xi_2$).

The final consideration for the incumbent i is how her vote affects his list position: if he votes against a policy that he expects his co-partisan to support, he is demoted to the second rank on the list, which generates a fall in the probability of election by:

$$-\frac{1}{2\phi(1-2\alpha)}\left(1-\frac{\alpha}{\eta}\right). \tag{14}$$

Thus, an approximation of the relative change in representative i's probability of reelection from supporting the policy—when she expects her co-partisan j to do the same—can be obtained as the difference of (12) and the sum of (13) and 14:

$$\underbrace{S\left(\mu-\underline{\mu}\right)}_{\text{inter-party}}+\underbrace{\frac{1}{2\phi(1-2\alpha)}\left(1-\frac{\alpha}{\eta}\right)}_{\text{intra-party}}. \tag{15}$$

Reputational considerations enter this expression through both the inter-party and the intra-party contests.

Inter-party contest. Suppose that a representative anticipates that her co-partisan will support the party's agenda. If she, too, votes in favor, voters assess that each incumbent is aligned with probability $\mu(\mathsf{y},\mathsf{y}) \xrightarrow[\kappa\to\infty]{} \mu$. If, instead, she opposes the agenda when she anticipates that her co-partisan will support, voters believe that she is aligned with probability one, and that her colleague is aligned with probability zero. Yet, in spite of improving her *personal reputation*, the net consequence for the *collective reputation* of the party is negative. Since both politicians appear on the same ballot, and voters evaluate incumbents on the list collectively—not merely individually, individual reputation-building at the expense of other team members may come at too great a cost.

Intra-party contest. Suppose that a representative anticipates that her co-partisan will support the party's agenda. If she votes against, there are two consequences. First, the party leadership punishes her by demoting her to the lower rank on the party's list. Second, voters infer that she is aligned and responsive voters will cast their preference votes in her favor. The first force encourages her to support the party line, while the second force encourages her to oppose it. The net consequence depends on the degree of list flexibility: if the list is sufficiently flexible ($\eta > \alpha$), intra-party considerations push a representative to oppose; if the list is instead relatively inflexible ($\eta < \alpha$), intra-party considerations further discipline incumbents against pandering to voters. The reason is that list flexibility and the relative value of being first-ranked push in opposite directions: as the value of the priority list assignment increases, so too does the value of cultivating the favor of party leaders.

Comparative Statics. We now explore how changes in primitives shape legislative behavior. As empirically documented in Carey (2007), the next Corollary 2 predicts that legislative cohesion will be lower in countries with more flexible lists.

Corollary 2. *A representative is more likely to support the party's agenda when*

i list flexibility η decreases, or

ii the fraction of incumbent partisans α increases.

Incumbents value the top slot on the party list more as the list becomes less flexible, since the marginal value of preference votes declines; in turn, they are more prone to toe the party line instead of cultivate a personal vote through obstruction. Similarly, a larger share of partisan voters dilutes the pool of responsive voters, diminishing their relative influence amongst the set of voters that support the Incumbent ticket.

We also highlight the conditional consequences of greater polarization (i.e., a lower value of the density of the preference shock ϕ) amongst responsive voters, which depends both on list flexibility η and the proportion of responsive voters, $1 - \alpha$.

Corollary 3. *Greater polarization amongst responsive voters (i.e.,* lower *ϕ)*

i. raises *legislative cohesion if the list is sufficiently inflexible $\eta < \alpha$,*

ii. lowers *legislative cohesion if the list is sufficiently flexible $\eta > \alpha$.*

A more polarized electorate shifts the locus of electoral competition from *between* parties to *within* parties. The reason is that responsive voters increasingly choose their preferred party on the basis of factors (which are captured by the preference shock σ) that are unrelated to perceptions of alignment. It also reduces the prospect that either party wins a vote share in excess of π^*, so long as partisanship is evenly distributed across responsive voters. Incumbents therefore anticipate that their party is likely to win exactly one seat, and weigh more heavily the intra-party contest.

The consequences for legislative behavior depend on list flexibility. If the list is not too flexible, more intra-party competition translates into more competition for the favor of the party leadership, encouraging representatives to toe the party line. If the list is sufficiently flexible, more intra-party competition translates into more competition for preference votes, encouraging representatives to cultivate preference votes by opposing the party line.

4. Flexible List PR and Dyadic Representation

We now study the relationship between elected representatives and their local constituents under flexible list PR. In particular, we ask: *to what extent do different forms of OFPR induce incumbents to act as agents for their constituency on legislative decisions*? Following Miller and Stokes (1963) and Ansolabehere and Jones (2011), we refer to this as *dyadic representation*.

The quality of dyadic representation is captured in our framework by voters' expected first-period policy payoffs. Notice that our equilibrium suggests two possible detriments to effective dyadic representation:

1. *obstructionism*—pandering to voters by opposing projects that would nonetheless benefit them, in the hope that voters mistakenly attribute obstruction to a representative's alignment with local interests, to be rewarded with preference votes.
2. *rubber-stamping*—pandering to party leaders by supporting projects that would hurt constituency interests, in the hopes that party leaders interpret this loyalty as a willingness to toe the party line in the future, to be rewarded with a favorable list assignment.

We show that flexibility can *worsen* dyadic representation, contrary to common wisdom (Ames, 1995; Carey and Shugart, 1995; Crisp et al., 2004; Hallerberg and Marier, 2004). Starting from a closed list ($\eta \geq \underline{\eta}$), there exists a range of parameters in which the quality of geographic representation decreases in the flexibility of the list.

Proposition 2. *There exists a threshold $\eta^*(\alpha)$, decreasing in α, such that a more flexible list worsens dyadic representation whenever $\eta \geq \eta^*(\alpha)$.*

A more flexible list *always* loosens the grip of party leaders on the reelection incentives of incumbent legislators. If this loss of control represented a transfer of value from parties to voters, the common wisdom that a more flexible list improves dyadic representation would be correct. Proposition 2 states that this intuition is incomplete. A more flexible list liberates representatives to reduce their rubber-stamping by opposing policies that would harm constituents. But, it also escalates their incentives to pander for preference votes—implying that they may attempt to block good policies in order to convince voters of their alignment.

Starting from a completely closed list, the first-order effect may be to reduce rubber-stamping, in which case dyadic representation improves with a flexible list. But, eventually, more list flexibility aggravates pandering incentives to such an extent that voters and party leaders alike suffer as a consequence. Thus, an implication of Proposition 2 is that voters partially value delegating the control of electoral incentives to an agent—i.e., party leaders—whose preferences over representatives—i.e., aligned versus mis-aligned—are completely opposed to their own.

The interval $[\eta^*(\alpha), \overline{\eta}]$ in which dyadic representation deteriorates with a more flexible list expands as the fraction of partisan voters α increases. As a consequence, our theory predicts that the effect of increasing the flexibility of the list (e.g., moving from closed to fully open) for the representation of local interests depends on country-specific circumstances—in particular, the extent of voters' partisanship. Our framework cautions that such a reform is especially likely to backfire in highly partisan contexts where, under very flexible list settings, the intra-party contest is dominated by a scrabble for preference votes. Thus, any factor that heightens the relative salience of the intra-party contest, versus inter-party contest, encourages representatives to obstruct more brazenly. More partisanship in the electorate make the vote share *across* parties less sensitive to individual politicians' behavior, thus projecting the locus of competition inside parties.

5. Comparison with Closed List and Single-Member Districts

Our framework facilitates the comparison not only of different varieties of flexible list proportional representation (OFPR), but also of OFPR systems with *closed list* proportional representation (CLPR), as well as single-member district (SMD) contexts in which only one incumbent appears on the ballot.

A closed list system (CLPR) differs from our flexible list setting in the following way: voters may cast a vote for a party list but they cannot cast a vote for a particular candidate within the list. In our framework, this is a system with $\eta = 0$.[19] As a consequence, under CLPR the party's rank-order is never overturned:whenever the party wins a single seat, that seat must be awarded to the first-ranked candidate.

In a single-member context (SMD), the Incumbent ticket is a single candidate. While, in practice, the leadership may play an active role in candidate selection and recruitment, there

[19] In fact, in our framework CLPR can be represented by any system such that $\eta \in [0, \underline{\eta}]$, recalling Assumption 2.

is no prospect of moving a candidate up or down the list: the party either wins the single seat or it wins no seats.[20]

Our next result compares legislative cohesion—defined as the propensity of representatives to vote in line with their party leaders—across different electoral contexts. From Corollary 2, it would be tempting to conclude that since cohesion is decreasing in flexibility when $\eta \in (\underline{\eta}, \overline{\eta})$, a closed list must necessary induce more cohesion than any flexible list variant. Relatedly, one might conclude that owing to the importance of collective reputation, the incentive to build a personal reputation with constituents through legislative obstruction must be lower under OFPR than under single-member settings. Surprisingly, neither conclusion is correct.

Proposition 3. *There exist threshold levels of list flexibility η^C and η^S such that legislative cohesion is*

(i) strictly lower *under OFPR than under SMD if and only if $\eta > \eta^S$;*

(ii) strictly higher *under OFPR than under CLPR if and only if $\eta < \eta^C$.*

Consider a single-member setting (SMD). When a politician in district A panders by obstructing his party's agenda, his actions *indirectly* affect how his co-partisan from another district (B) is assessed by his own voters—just as in the multi-member context. The difference, however, is that the representatives are accountable to distinct sets of voters: the representative in A does not *directly* care about his co-partisan's reputation—whether he is reelected or not depends solely on how he is evaluated, relative to the challenger in his own district. This is a force that—relative to OFPR—raises the relative value of pandering through obstructing in single-member contexts, since it eliminates a penalty that she would incur in the multi-member setting, where voters assess politicians as a team.

There is, however, a second channel that encourages obstruction under OFPR: in the event that the ticket wins only one of the two seats, one incumbent's reelection necessarily comes at the other's cost. In this case—unlike in SMD—the representatives are implicitly competing directly with one another for the single seat.

In summary, relative to SMD, a flexible list system generates a penalty to collective reputation that diminishes incentives to cultivate a personal vote, but it also creates a form of direct competition amongst co-partisans that—in sufficiently flexible list contexts, i.e., η sufficiently large—may net *lower* legislative cohesion.

[20] To ensure a proper comparison, we divide the constituency in two identical districts and appropriately scale payoffs.

We next provide a partial intuition for the comparison between flexible and closed lists, relegating a full discussion to the Appendix. Recall that, under OFPR, a responsive voter's relative value from supporting the Incumbent ticket after observing a split vote—by voting for the representative i that opposed the agenda—is:

$$V_i(\mathsf{n},\mathsf{y}) - V_O \propto \frac{1}{3}\underbrace{S(0+\mu_O-(\mu_O+\mu_O))}_{\text{decisive for mis-aligned }(\xi_1)} + \frac{1}{3}\underbrace{S(1+\mu_O-(0+\mu_O))}_{\text{decisive for }\textbf{aligned }(\xi_\eta)} + \frac{1}{3}\underbrace{S(1+0-(1+\mu_O))}_{\text{decisive for mis-aligned }(\xi_2)}. \tag{16}$$

After a split vote, everyone infers that representative i is *aligned*, and her co-partisan is *mis-aligned*. The party leadership therefore assigns the (aligned) representative that voted against the agenda to the bottom rank.

Expression (16) highlights that a vote for the (aligned) representative i could affect election outcomes in one of three possible ways: it could award the first seat to the Incumbent ticket, electing the first-ranked (mis-aligned) candidate ($\xi = \xi_1$); it could allow the second-ranked (aligned candidate) to retain office, conditional on the party winning only a single seat ($\xi = \xi_\eta$); or, it could award the second seat to the Incumbent ticket, electing the (mis-aligned) first-ranked candidate in addition to the (aligned) second-ranked candidate ($\xi = \xi_2$).

Notice that the total probability of being decisive for the aligned representative's reelection is $\Pr(\xi = \xi_\eta) = \frac{1}{3}$, while the probability of being decisive for the mis-aligned legislator's re-election is $\Pr(\xi \in \{\xi_1, \xi_2\}) = \frac{2}{3}$. Thus, in spite of responsive voters' ability to cast a preference vote for the aligned representative under OFPR, these voters anticipate that—conditional on making a difference to the election outcome—they are more likely to trigger the reelection of the mis-aligned incumbent.

Consider instead a closed-list setting (CLPR), and suppose again that representative i supported the party's agenda, but representative j voted against. Just as in OFPR, we show that in equilibrium, voters infer that i is *aligned* and her co-partisan j is *mis-aligned* and the party leadership consigns i to the bottom rank on the party's ticket.

In a closed list setting, voters cannot overturn the leader's priority assignment. Thus, a vote for the Incumbent ticket could affect election outcomes in one of only two possible ways: it could award the first seat to the Incumbent ticket, electing the first-ranked (mis-aligned) candidate; or, it could award the second seat to the Incumbent ticket, electing the (aligned) second-ranked candidate. Relative to voting in favor of the Opposition ticket, we show that a voter's value from supporting the Incumbent ticket under CLPR can be approximated (for large enough κ) by:

$$\frac{1}{2}\underbrace{S(0+\mu_O-(\mu_O+\mu_O))}_{\text{decisive for mis-aligned}}+\frac{1}{2}\underbrace{S(0+1-(0+\mu_O))}_{\text{decisive for }\textbf{aligned}}, \tag{17}$$

The total probability of being decisive for the aligned representative's reelection under CLPR ($\frac{1}{2}$) is thus higher than under FLPR ($\frac{1}{3}$): conditional on making a difference to the election outcome, voters anticipate that they are more likely to facilitate the reelection of the aligned versus the mis-aligned incumbent when the list if fully closed.

The probability that an aligned incumbent is reelected in either system after a split vote is positively related to (1) the relative value that voters derive from supporting the incumbent (recall expression (10)) and (2) whether that incumbent is assigned the priority spot on the party's ticket. As list flexibility η diminishes, the second consideration under both OFPR and CLPR converges. However, comparison of expressions (16) and (17) reveals that first consideration does *not*: the wedge in voters' ballot assessments persists, since voters perceive different relative prospects of securing reelection of the aligned representative under each system. Paradoxically, voters are less able to reward an aligned representative under OFPR, in spite of their ability to target preference votes, lowering the aligned representative's incentive to oppose the party line for electoral advantage.

Proposition 3 accounts for a variety of equivocal empirical findings on the relationship between electoral institutions and legislative cohesion (party unity). For example, Sieberer (2006) studies lower legislative chambers across nineteen countries and highlights that countries using OFPR systems achieved both the *lowest* and *highest* measures of party unity in legislative voting—in a sample that includes both SMD and CLPR contexts. Also consistent with our comparative statics—in particular Corollary 2—he finds that the country with lowest level of cohesion (Finland) mandates a completely open (i.e., maximally flexible) list, while Denmark, which displays the highest level of cohesion, has an almost fully closed list (Elklit, 2005). Similarly,

6. Conclusion

We develop a new framework to study legislative representation under open and flexible list proportional representation. Our results show that variation in the operation of flexible list systems has first-order consequences for legislative representation and highlights the role of two distinct contests that legislators face: an *inter-party* contest and an *intra-party* contest.

Either contest may encourage a legislator to cultivate a personal reputation vis a' vis the electorate; however, whether this encourages her to vote *with* or *against* her party depends crucially on (i) the flexibility of the list, and (ii) the competitive environment, as captured by the initial popularity of the incumbent team and the intensity of voters' partisan loyalties. In particular, if the list is sufficiently flexible, competition within the party—i.e., between co-partisan legislators—for preference votes generates strong incentive to oppose the party's leadership agenda, sometimes even at the expense of the interest of local voters. Conversely, a very inflexible list make intra-party competition a powerful instrument of party discipline, which, surprisingly, can be be even lower than under fully closed lists)

Scholars have argued that differences in electoral rules—in particular, majoritarian versus proportional—may account for cross-country variation in patterns of government formation, redistribution, party systems and turnout. Yet the majoritarian-proportional dichotomy misses tremendous cross-variation in the operation of proportional rule systems. We hope that this framework will inform future empirical scholarship, and provide an basis for internally consistent reflection about electoral system reform. One especially promising area of future study is mixed-member systems, in which a portion of legislative MPs are elected through single-member districts and others are elected through party lists (e.g., Scotland, Germany, New Zealand, as well as Italy from 1994 to 2006). Recent empirical work by Raffler (2016) suggests that legislators elected through these distinct paths behave quite differently in office. More broadly, we hope that extensions of our framework will facilitate debates about the implications of electoral rule reforms, and their desirability.

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Appendix

A. Equilibrium Analysis

Consider the problem facing a type τ representative $i \in \{A, B\}$, who learns the constituency value of the policy θ, and does not know the alignment of her co-partisan. Her expected relative value of voting in favor of the policy (i.e., voting y) is given by:[21]

$$R\,\mathbb{E}\left\{\begin{array}{l} l_i(\mathsf{y},\mathsf{t}_j)p_i(\mathsf{y},\mathsf{t}_j,\{ij\}) + (1-l_i(\mathsf{y},\mathsf{t}_j))p_i(\mathsf{y},\mathsf{t}_j,\{ji\}) + \\ -l_i(\mathsf{n},\mathsf{t}_j)p_i(\mathsf{n},\mathsf{t}_j,\{ij\}) - (1-l_i(\mathsf{n},\mathsf{t}_j))p_i(\mathsf{n},\mathsf{t}_j,\{ji\}) \end{array}\right\} + \chi(\theta+\tau), \tag{18}$$

where the expectation is taken with respect to the strategy of the leader and the type and action of the other legislator, $p_i(\mathsf{t}, l)$ is legislator i's winning probability as a function of list and vote tally and $l_i(\mathsf{t}) = \mathbb{I}\{l(\mathsf{t}) = \{ij\}\}$.

Proof of Lemma 3. Let $\mathsf{t}_\tau(\theta)$ be the strategy of type τ of legislator j. Equation 18 implies that $\mathsf{t}_0(\theta) = \mathsf{y} \Rightarrow \mathsf{t}_b(\theta) = \mathsf{y}$. This, in turn, implies that if there exists a symmetric equilibrium, we must have $\Pr\{l_i(\mathsf{y},\mathsf{y}) = 1\} = 1/2$ and $\Pr\{l_i(\mathsf{y},\mathsf{n}) = 1\} = 1$. $\square$

Consider now the problem of politician i. Let:

$$\delta_p(\mathsf{y}) = \frac{1}{2}\Big(p_i(\mathsf{y},\mathsf{y},\{ij\}) + p_i(\mathsf{y},\mathsf{y},\{ji\})\Big) - p_i(\mathsf{n},\mathsf{y},\{ji\})$$
$$\delta_p(\mathsf{n}) = p_i(\mathsf{y},\mathsf{n},\{ij\}) - \frac{1}{2}\Big(p_i(\mathsf{n},\mathsf{n},\{ij\}) + p_i(\mathsf{n},\mathsf{n},\{ji\})\Big)$$

Using the voting calculus developed in expressions (1) and (2), we obtain the total preference votes accruing to the Incumbent ticket:

$$v_A + v_B = \alpha + (1-2\alpha)\left(\frac{1}{2} + \phi[\max\{V_A, V_B\} - V_O - \xi]\right),$$

so that the probability with which the Incumbent ticket wins both seats is:

$$\Pr\left(v_A + v_B \geq \frac{1+\rho}{2+\rho}\right) = \Pr\left(\xi \leq \max\{V_A, V_B\} - V_O - \frac{1}{(1-2\alpha)\phi}\frac{\rho}{2+\rho} \equiv \xi_2\right). \tag{19}$$

[21] For simplicity of exposition, we set aside the continuation values associated with second period expected policy outcomes. As the rest of the analysis clarifies, under our analytic approximation these continuation values will have no bearing on our results.

Likewise, the probability with which the Incumbent ticket wins a single seat is:

$$\Pr\left(\frac{1+\rho}{2+\rho} > v_A + v_B \geq \frac{1}{2+\rho}\right) = \Pr\left(\xi_2 < \xi \leq \max\{V_A, V_B\} - V_O + \frac{1}{(1-2\alpha)\phi}\frac{\rho}{2+\rho} \equiv \xi_1\right). \tag{20}$$

Given a list assignment $\{ij\}$, suppose, first, that $V_i \geq V_j$. In that case, incumbent i wins not only the support of half of the Incumbent partisans, but also the support of any responsive voter that prefers to vote for the Incumbent ticket rather than the Opposition ticket. Letting $p_i(\{ij\}|V_i \geq V_j)$ denote the total probability that incumbent i wins under list $\{ij\}$ and given her relative popularity $V_i \geq V_j$, we obtain:

$$p_i(\{ij\}|V_i \geq V_j) = \Pr(\xi \leq \xi_1) = \frac{1}{2} + \psi(V_i - V_O) + \frac{\psi}{2\phi(1-2\alpha)}\frac{\rho}{2+\rho}. \tag{21}$$

Likewise, the second-ranked and relatively less popular incumbent j's prospect of winning reelection is:

$$p_j(\{ij\}|V_i \geq V_j) = \Pr(\xi \leq \xi_2) = \frac{1}{2} + \psi(V_i - V_O) - \frac{\psi}{2\phi(1-2\alpha)}\frac{\rho}{2+\rho}, \tag{22}$$

i.e., the probability that the Incumbent ticket wins *both* seats.

Suppose, instead, that in spite of the list assignment $\{ij\}$, $V_i < V_j$. In this case conditional on the Incumbent ticket winning a single seat, first-ranked incumbent i is awarded the seat only if she does not receive too few preference votes relative to the more popular j:

$$\Pr\left(\frac{v_i}{v_i + v_j} \leq \eta \middle| V_i < V_j\right) = \Pr\left(\xi \geq \frac{1}{2\phi} + V_j - V_O - \frac{\alpha}{2\phi(1-2\alpha)}\left(\frac{1}{\eta} - 2\right) \equiv \xi_\eta\right). \tag{23}$$

Thus, the total prospect that the first-ranked Incumbent i is awarded a seat is:

$$p_i(\{ij\}|V_i < V_j) = \Pr(\xi \leq \xi_2) + \Pr(\max\{\xi_\eta, \xi_2\} \leq \xi \leq \xi_1), \tag{24}$$

while the corresponding prospect that the Incumbent ticket wins a single seat *and* that this is awarded to Incumbent j is:

$$p_j(\{ij\}|V_i < V_j) = \Pr(\xi \leq \xi_2) + \Pr(\xi_2 < \xi \leq \min\{\xi_\eta, \xi_1\}). \tag{25}$$

To ensure that $\xi_\eta \in (\xi_2, \xi)$, we need:

$$\xi_2 < \xi_\eta < \xi_1 \iff \frac{\alpha}{2(1+\rho)}(2+\rho) \equiv \underline{\eta} < \eta < \frac{\alpha}{2}(2+\rho) \equiv \overline{\eta}. \tag{26}$$

For our benchmark analysis, we assume that $\eta \in (\underline{\eta}, \overline{\eta})$.

We therefore obtain the probability that each of the incumbents is re-elected, given the list assignment $\{ij\}$ and relative popularity $V_i < V_j$:

$$p_i(\{ij\}|V_i < V_j) = \frac{1}{2} + \psi(V_j - V_O) - \frac{\psi}{2\phi(1-2\alpha)}\frac{\eta - \alpha}{\eta}, \tag{27}$$

and

$$p_j(\{ij\}|V_i < V_j) = \frac{1}{2} + \psi(V_j - V_O) + \frac{\psi}{2\phi(1-2\alpha)}\frac{\eta - \alpha}{\eta}. \tag{28}$$

Lemma A.1. *We have*

$$\max\{V_i, V_j\} - V_O \propto \hat{\mu}_i(\mathsf{t}) + \hat{\mu}_j(\mathsf{t}) - 2\mu_O + \mathcal{O}(1/\kappa).$$

Proof. Let $Q_{[x',x'']}(\cdot) \in [0,1]$ be the probability of passage of a policy agenda whose value is in $[x', x'']$. When $\theta \in [0, b]$, there is no uncertainty about the behavior of an incumbent, so the only relevant belief is the one about the opposition challenger (μ_O); when $\theta \in [-b, 0]$, there is no uncertainty about the behavior of an opposition challenger, so the relevant beliefs are the ones about incumbents i and j. We now derive $V_i(\mathsf{t}, \{ij\})$, $V_j(\mathsf{t}, \{ij\})$ and $V_O(\mathsf{t}, \{ij\})$.

There are three possible pivotal events: (i) the incumbent ticket gets just enough votes to secure one seat—which under the assumptions goes to the first-ranked i ($\xi = \xi_1$), (ii) if $V_i < V_J$ the incumbent ticket gets one seat and the second-ranked j gets just enough preference votes to achieve the quota ($\xi = \xi_\eta$), and (iii) the incumbent ticket gets just enough votes to secure two seats ($\xi = \xi_2$).

Let $\Pr(pivot) = Pr(\xi = \xi_2) + Pr(\xi = \xi_\eta)\mathbb{I}_{\{V_i < V_J\}} + Pr(\xi = \xi_1)$; V_i can be written as:

$$\begin{aligned}
V_i =& \frac{\Pr(\xi = \xi_2)}{\Pr(pivot)} \left\{ \begin{array}{c} (\hat{\mu}_i(\mathsf{t}) + \hat{\mu}_j(\mathsf{t}))S + \mathbb{E}[\theta \leq -b]q(\mathsf{n},\mathsf{n}) + \mathbb{E}[\theta \geq b]q(\mathsf{y},\mathsf{y}) \\ +\mathbb{E}[-b \leq \theta \leq 0]Q_{[-b,0]}(\hat{\mu}_i(\mathsf{t}), \hat{\mu}_j(\mathsf{t})) + \mathbb{E}[0 \leq \theta \leq b]q(\mathsf{y},\mathsf{y}) \end{array} \right\} \\
&+ \frac{\Pr(\xi = \xi_\eta)\mathbb{I}_{\{V_i < V_J\}}}{\Pr(pivot)} \left\{ \begin{array}{c} (\hat{\mu}_i(\mathsf{t}) + \mu_O)S + \mathbb{E}[\theta \leq -b]q(\mathsf{n},\mathsf{n}) + \mathbb{E}[\theta \geq b]q(\mathsf{y},\mathsf{y}) \\ +\mathbb{E}[-b \leq \theta \leq 0]Q_{[-b,0]}(\hat{\mu}_i(\mathsf{t})) + \mathbb{E}[0 \leq \theta \leq b]Q_{[0,b]}(\mu_O) \end{array} \right\} \\
&+ \frac{\Pr(\xi = \xi_1)}{\Pr(pivot)} \left\{ \begin{array}{c} (\hat{\mu}_i(\mathsf{t}) + \mu_O)S + \mathbb{E}[\theta \leq -b]q(\mathsf{n},\mathsf{n}) + \mathbb{E}[\theta \geq b]q(\mathsf{y},\mathsf{y}) \\ +\mathbb{E}[-b \leq \theta \leq 0]Q_{[-b,0]}(\hat{\mu}_i(\mathsf{t})) + \mathbb{E}[0 \leq \theta \leq b]Q_{[0,b]}(\mu_O) \end{array} \right\}
\end{aligned}$$

Similarly, we have

$$V_j = \frac{\Pr(\xi=\xi_2)}{\Pr(pivot)} \left\{ \begin{array}{c} (\hat{\mu}_i(\mathsf{t})+\hat{\mu}_j(\mathsf{t}))S + \mathbb{E}[\theta \le -b]q(\mathsf{n},\mathsf{n}) + \mathbb{E}[\theta \ge b]q(\mathsf{y},\mathsf{y}) \\ +\mathbb{E}[-b \le \theta \le 0]Q_{[-b,0]}(\hat{\mu}_i(\mathsf{t}),\hat{\mu}_j(\mathsf{t})) + \mathbb{E}[0 \le \theta \le b]q(\mathsf{y},\mathsf{y}) \end{array} \right\}$$
$$+ \frac{\Pr(\xi=\xi_\eta)\mathbb{I}_{\{V_i<V_J\}}}{\Pr(pivot)} \left\{ \begin{array}{c} (\hat{\mu}_j(\mathsf{t})+\mu_O)S + \mathbb{E}[\theta \le -b]q(\mathsf{n},\mathsf{n}) + \mathbb{E}[\theta \ge b]q(\mathsf{y},\mathsf{y}) \\ +\mathbb{E}[-b \le \theta \le 0]Q_{[-b,0]}(\hat{\mu}_j(\mathsf{t})) + \mathbb{E}[0 \le \theta \le b]Q_{[0,b]}(\mu_O) \end{array} \right\}$$
$$+ \frac{\Pr(\xi=\xi_1)}{\Pr(pivot)} \left\{ \begin{array}{c} (\hat{\mu}_i(\mathsf{t})+\mu_O)S + \mathbb{E}[\theta \le -b]q(\mathsf{n},\mathsf{n}) + \mathbb{E}[\theta \ge b]q(\mathsf{y},\mathsf{y}) \\ +\mathbb{E}[-b \le \theta \le 0]Q_{[-b,0]}(\hat{\mu}_i(\mathsf{t})) + \mathbb{E}[0 \le \theta \le b]Q_{[0,b]}(\mu_O) \end{array} \right\}$$

and

$$V_O = \frac{\Pr(\xi=\xi_2)}{\Pr(pivot)} \left\{ \begin{array}{c} (\hat{\mu}_i(\mathsf{t})\mathbb{I}_{\{V_i \ge V_J\}} + \hat{\mu}_j(\mathsf{t})\mathbb{I}_{\{V_i<V_J\}} + \mu_O)S + \mathbb{E}[\theta \le -b]q(\mathsf{n},\mathsf{n}) + \mathbb{E}[\theta \ge b]q(\mathsf{y},\mathsf{y}) \\ +\mathbb{E}[-b \le \theta \le 0]Q_{[-b,0]}(\hat{\mu}_i(\mathsf{t})) + \mathbb{E}[0 \le \theta \le b]Q_{[0,b]}(\mu_O) \end{array} \right\}$$
$$+ \frac{\Pr(\xi=\xi_\eta)\mathbb{I}_{\{V_i<V_J\}}}{\Pr(pivot)} \left\{ \begin{array}{c} (\hat{\mu}_i(\mathsf{t})+\mu_O)S + \mathbb{E}[\theta \le -b]q(\mathsf{n},\mathsf{n}) + \mathbb{E}[\theta \ge b]q(\mathsf{y},\mathsf{y}) \\ +\mathbb{E}[-b \le \theta \le 0]Q_{[-b,0]}(\hat{\mu}_i(\mathsf{t})) + \mathbb{E}[0 \le \theta \le b]Q_{[0,b]}(\mu_O) \end{array} \right\}$$
$$+ \frac{\Pr(\xi=\xi_1)}{\Pr(pivot)} \left\{ \begin{array}{c} 2\mu_O S + \mathbb{E}[\theta \le -b]q(\mathsf{n},\mathsf{n}) + \mathbb{E}[\theta \ge b]q(\mathsf{y},\mathsf{y}) \\ +\mathbb{E}[-b \le \theta \le 0]q(\mathsf{n},\mathsf{n}) + \mathbb{E}[0 \le \theta \le b]Q_{[0,b]}(\mu_O,\mu_O) \end{array} \right\}$$

By inspection of V_i and V_j, we obtain that $V_i \ge V_j \Leftrightarrow \hat{\mu}_i(\mathsf{t}) \ge \hat{\mu}_j(\mathsf{t})$. Moreover, as κ approaches infinity, we have that $\mathbb{E}[-b \le \theta \le 0]$ and $\mathbb{E}[0 \le \theta \le b]$ approach zero (and thus can be written as $\mathcal{O}(1/\kappa)$). Moreover, since ξ is drawn from a uniform, when $V_i < V_j$, $\frac{\Pr(\xi=\xi_2)}{\Pr(pivot)} = \frac{\Pr(\xi=\xi_\eta)}{\Pr(pivot)} = \frac{\Pr(\xi=\xi_1)}{\Pr(pivot)} = \frac{1}{3}$ and when $V_i \ge V_j$, $\frac{\Pr(\xi=\xi_2)}{\Pr(pivot)} = \frac{\Pr(\xi=\xi_1)}{\Pr(pivot)} = \frac{1}{2}$.

Hence, when $\hat{\mu}_i(\mathsf{t}) \ge \hat{\mu}_j(\mathsf{t})$,

$$\max\{V_i, V_j\} - V_O = \frac{S}{2}\big(\hat{\mu}_i(\mathsf{t}) + \hat{\mu}_j(\mathsf{t}) - 2\mu_O\big) + \mathcal{O}(1/\kappa)$$

while when $\hat{\mu}_i(\mathsf{t}) < \hat{\mu}_j(\mathsf{t})$,

$$\max\{V_i, V_j\} - V_O = \frac{S}{3}\big(\hat{\mu}_i(\mathsf{t}) + \hat{\mu}_j(\mathsf{t}) - 2\mu_O\big) + \mathcal{O}(1/\kappa),$$

which implies that the electoral attractiveness of the ticket is independent of the list order. □

Proof of Lemma 2. Follows directly from Lemma A.1. □

In light of the results above, we can write the following:

$$p_i(\mathsf{y},\mathsf{y},\{ij\}) + p_i(\mathsf{y},\mathsf{y},\{ji\}) = 1 + 2\psi S\big(\hat{\mu}(\mathsf{y},\mathsf{y}) - \mu_O\big) + \mathcal{O}(1/\kappa) \tag{29}$$

$$p_i(\mathsf{n},\mathsf{y},\{ji\}) = \frac{1}{2} + \psi\frac{S}{3}\big(1 - 2\mu_O\big) + \psi S\zeta(\alpha,\gamma,\phi) + \mathcal{O}(1/\kappa) \tag{30}$$

$$p_i(\mathsf{y},\mathsf{n},\{ij\}) = \frac{1}{2} + \psi\frac{S}{3}\big(1 - 2\mu_O\big) - \psi S\zeta(\alpha,\gamma,\phi) + \mathcal{O}(1/\kappa) \tag{31}$$

$$p_i(\mathsf{n},\mathsf{n},\{ij\}) + p_i(\mathsf{n},\mathsf{n},\{ji\}) = 1 + 2\psi S\big(\hat{\mu}(\mathsf{n},\mathsf{n}) - \mu_O\big) + \mathcal{O}(1/\kappa), \tag{32}$$

where

$$\zeta(\alpha,\gamma,\phi) = \frac{1}{2\phi S}\frac{\eta - \alpha}{\eta(1-2\alpha)}$$

As κ approaches infinity, we have that

$$\delta_p(\mathsf{y}) \propto \mu - \frac{1+\mu_O}{3} - \zeta$$
$$\delta_p(\mathsf{n}) \propto \frac{1+\mu_O}{3} - \mu - \zeta$$

We define

$$\underline{\mu}(\mu_O) \equiv \frac{1+\mu_O}{3}$$

Let $D_\tau(\theta;\mathsf{t}_0(\theta),\mathsf{t}_b(\theta))$ be the net value of supporting the policy agenda. We have:

$$D_\tau(\theta;\mathsf{t}_0(\theta),\mathsf{t}_b(\theta)) = R\left[\mu\delta_p(\mathsf{t}_0(\theta) + (1-\mu)\delta_p(\mathsf{t}_b(\theta)\right] + \chi(\theta+\tau)$$

Let $\{\hat{\theta}_\tau, \check{\theta}_\tau\}_{\tau\in\{0,b\}}$ be defined as follows:

$$D_0(\hat{\theta}_0;\mathsf{n},\mathsf{y}) = R(1-\mu)\delta_p(\mathsf{y}) + R\mu\delta_p(\mathsf{n}) + \chi\hat{\theta}_0$$
$$D_0(\check{\theta}_0;\mathsf{y},\mathsf{y}) = R\delta_p(\mathsf{y}) + \chi\check{\theta}_0 = 0$$
$$D_b(\hat{\theta}_b;\mathsf{n},\mathsf{n}) = R\delta_p(\mathsf{n}) + \chi(\hat{\theta}_b + b) = 0$$
$$D_b(\check{\theta}_b;\mathsf{n},\mathsf{y}) = R(1-\mu)\delta_p(\mathsf{y}) + R\mu\delta_p(\mathsf{n}) + \chi(\check{\theta}_b + b) = 0$$

Notice that

$$\mu < \underline{\mu} \quad \Rightarrow \quad \hat{\theta}_b < \check{\theta}_b < \hat{\theta}_0 < \check{\theta}_0$$
$$\mu \geq \underline{\mu} \quad \Rightarrow \quad \hat{\theta}_b \geq \check{\theta}_b\,,\ \ \hat{\theta}_0 \geq \check{\theta}_0\,,\ \ \check{\theta}_b < \hat{\theta}_0$$

Lemma A.2. *The following strategy profile constitutes a symmetric equilibrium:*

$$\mathsf{t}_0^*(\theta;\mu) = \begin{cases} \mathsf{n} \ \textit{with prob.} \ 1 & \theta < \min\{\hat{\theta}_0, \check{\theta}_0\} \\ \mathsf{n} \ \textit{with prob.} \ \mathbf{I}_{\{\mu \geq \underline{\mu}\}} + \mathbf{I}_{\{\mu < \underline{\mu}\}}\lambda_0(\theta) & \theta \in \left[\min\{\hat{\theta}_0, \check{\theta}_0\}, \max\{\hat{\theta}_0, \check{\theta}_0\}\right] \\ \mathsf{n} \ \textit{with prob.} \ 0 & \theta \geq \max\{\hat{\theta}_0, \check{\theta}_0\} \end{cases}$$

$$\mathsf{t}_b^*(\theta;\mu) = \begin{cases} \mathsf{n} \ \textit{with prob.} \ 1 & \theta < \min\{\hat{\theta}_b, \check{\theta}_b\} \\ \mathsf{n} \ \textit{with prob.} \ \mathbf{I}_{\{\mu < \underline{\mu}\}}\lambda_b(\theta) & \theta \in \left[\min\{\hat{\theta}_b, \check{\theta}_b\}, \max\{\hat{\theta}_b, \check{\theta}_b\}\right] \\ \mathsf{n} \ \textit{with prob.} \ 0 & \theta \geq \max\{\hat{\theta}_b, \check{\theta}_b\} \end{cases}$$

where

$$\lambda_0(\theta) \equiv \frac{-D_0(\theta;\mathsf{y},\mathsf{y})}{D_0(\theta;\mathsf{n},\mathsf{y}) - D_0(\theta;\mathsf{y},\mathsf{y})} = \frac{\check{\theta}_0 - \theta}{\check{\theta}_0 - \hat{\theta}_0}$$
$$\lambda_b(\theta) \equiv \frac{-D_b(\theta;\mathsf{n},\mathsf{y})}{D_b(\theta;\mathsf{n},\mathsf{n}) - D_b(\theta;\mathsf{n},\mathsf{y})} = \frac{\check{\theta}_b - \theta}{\check{\theta}_b - \hat{\theta}_b}$$

Proof. First, we prove the claim for the case $\mu < \underline{\mu}$. Fix j's strategies to t_0^* and t_b^*. Consider first type b of i. Since $\hat{\theta}_b < \hat{\theta}_0$, whenever $\theta < \hat{\theta}_b$, $\mathsf{t}_0 = \mathsf{n}$ and thus individual rationality requires that $\mathsf{t}_b(\theta) = \mathsf{n}$. Since $\check{\theta}_b < \hat{\theta}_0$, whenever $\theta > \check{\theta}_b$, $D_b(\theta, \mathsf{t}_0^*, \mathsf{t}_b^*) \geq D_b(\theta, \mathsf{n}, \mathsf{y}) \geq 0$. Hence, individual rationality requires that $\mathsf{t}_b(\theta) = \mathsf{y}$. When $\theta \in [\hat{\theta}_b, \check{\theta}_b]$, instead, the net expected payoff from supporting the policy agenda for type b of i is equal to (notice that $D_b(\theta;\mathsf{n},\mathsf{y}) < 0$)

$$(1 - \lambda_b(\theta))D_b(\theta;\mathsf{n},\mathsf{y}) + \lambda_b(\theta)D_b(\theta;\mathsf{n},\mathsf{n}) = 0$$

Hence, type b of i is indifferent between y and n in $\theta \in [\hat{\theta}_b, \check{\theta}_b]$. Consider now type 0 of i. Since $D_0(\theta, \mathsf{t}, \mathsf{t}) = D_b(\theta, \mathsf{t}, \mathsf{t}) - \chi b$ and $D_b(\theta, \mathsf{t}_0^*, \mathsf{t}_b^*) \leq 0$ whenever $\theta < \check{\theta}_b$, individual rationality requires that $\mathsf{t}_0(\theta) = \mathsf{n}$ whenever $\theta < \check{\theta}_b$. When $\theta \in [\check{\theta}_b, \hat{\theta}_0]$, $D_0(\theta, \mathsf{t}_0^*, \mathsf{t}_b^*) = D_0(\theta, \mathsf{n}, \mathsf{y})$ and by definition of $\hat{\theta}_0$, individual rationality also requires that $\mathsf{t}_0(\theta) = \mathsf{n}$. Similarly, when $\theta > \check{\theta}_0]$, $D_0(\theta, \mathsf{t}_0^*, \mathsf{t}_b^*) = D_0(\theta, \mathsf{y}, \mathsf{y})$ and by definition of $\check{\theta}_0$, individual rationality requires that $\mathsf{t}_0(\theta) = \mathsf{y}$. When $\theta \in [\hat{\theta}_0, \check{\theta}_0]$, the net expected payoff from supporting the policy agenda for type 0 of i is equal to (notice that $D_0(\theta;\mathsf{y},\mathsf{y}) < 0$)

$$(1 - \lambda_0(\theta))D_0(\theta;\mathsf{y},\mathsf{y}) + \lambda_0(\theta)D_0(\theta;\mathsf{n},\mathsf{y}) = 0$$

Hence, type 0 of i is indifferent between y and n in $\theta \in [\hat{\theta}_0, \check{\theta}_0]$.

Second, we prove the claim for the case $\mu \geq \underline{\mu}$. In this case, we have that $D_\tau(\theta, \mathsf{y}, \mathsf{y}) > D_\tau(\theta, \mathsf{n}, \mathsf{y}) > D_\tau(\theta, \mathsf{n}, \mathsf{y})\ \forall\ \theta \in \mathbb{R}$. That $\mathsf{t}^*_\tau(\theta) = \mathsf{n}$ for $\theta < \hat{\theta}_\tau$ and $\mathsf{t}^*_\tau(\theta) = \mathsf{y}$ for $\theta > \check{\theta}_\tau$ follows from the same reasoning of the previous case. Suppose that $\theta \in [\hat{\theta}_0, \check{\theta}_0]$ (the argument for $\tau = b$ is analogous). Since $\hat{\theta}_0$ is defined as the root of $D_0(\theta, \mathsf{n}, \mathsf{y}) < D_0(\theta, \mathsf{y}, \mathsf{y})$, $D_0(\theta, \mathsf{t}^*_0, \mathsf{t}^*_b) = D_0(\theta, \mathsf{y}, \mathsf{y}) > 0, \forall\, \theta > \hat{\theta}_0$. □

Lemma A.3. $(\mathsf{t}^*_0(\cdot), \mathsf{t}^*_b(\cdot))$ *is the symmetric equilibrium that maximizes separation among types. Specifically*
(i) When $\mu < \underline{\mu}$, there is a unique symmetric equilibrium, and it features mixed strategies
(ii) When $\mu \geq \underline{\mu}$, there is a continuum of symmetric equilibria in pure strategies; the one maximizing type separation given by $\{\mathsf{t}^*_0, \mathsf{t}^*_b\}$, that is

$$\mathsf{t}^*_0(\theta) = \begin{cases} \mathsf{n} \ \textit{with prob.}\ 1 & \theta < \check{\theta}_0 \\ \mathsf{n} \ \textit{with prob.}\ 1 & \theta \in \left[\check{\theta}_0, \hat{\theta}_0\right] \\ \mathsf{n} \ \textit{with prob.}\ 0 & \theta \geq \hat{\theta}_0 \end{cases}$$

$$\mathsf{t}^*_b(\theta) = \begin{cases} \mathsf{n} \ \textit{with prob.}\ 1 & \theta < \check{\theta}_b \\ \mathsf{n} \ \textit{with prob.}\ 0 & \theta \in \left[\check{\theta}_b, \hat{\theta}_b\right] \\ \mathsf{n} \ \textit{with prob.}\ 0 & \theta \geq \hat{\theta}_b \end{cases}$$

Proof. (i) When $\mu < \underline{\mu}$ we have that when $D_\tau(\theta; \mathsf{n}, \mathsf{n}) < 0$, it is a dominant strategy for each type τ incumbent to choose $\mathsf{t}_\tau = \mathsf{n}$ regardless of the other incumbent's strategy. Similarly, when $D_\tau(\theta; \mathsf{y}, \mathsf{y}) > 0$, it is a dominant strategy for each type τ incumbent to choose $\mathsf{t}_\tau = \mathsf{y}$ regardless of the other incumbent's strategy.
Let $(\mathsf{t}'_0(\theta), \mathsf{t}'_b(\theta))$ be j's strategy.
Fix θ so that $D_b(\theta; \mathsf{n}, \mathsf{y}) > 0$ and $D_b(\theta; \mathsf{y}, \mathsf{y}) \leq 0$, and suppose that $D_b(\theta; \mathsf{t}'_0, \mathsf{t}'_b) \leq 0$. By symmetry and the fact that $\forall\ \mathsf{t} \in \{\mathsf{n}, \mathsf{y}\}^2\ D_b(\theta; \mathsf{t}) > D_0(\theta; \mathsf{t})$, we must have $\mathsf{t}'_0(\theta) = \mathsf{n}$. This, in turns, implies that $D_b(\theta; \mathsf{t}'_0, \mathsf{t}'_b) \geq D_b(\theta; \mathsf{n}, \mathsf{y}) > 0$, a contradiction. Hence, we must have $\mathsf{t}(\theta) = \mathsf{y}$ in this range.
Fix θ so that $D_b(\theta; \mathsf{n}, \mathsf{n}) \geq 0$ and $D_b(\theta; \mathsf{n}, \mathsf{y}) \leq 0$ (that is, $\theta \in [\hat{\theta}_b, \check{\theta}_b]$), and suppose that $D_b(\theta; \mathsf{t}'_0, \mathsf{t}'_b) > (<)0$. Then it must be that $\mathsf{t}'_b(\theta) = \mathsf{n}$ ($\mathsf{t}'_b(\theta) = \mathsf{y}$), which contradicts symmetry. Hence, $\theta \in [\hat{\theta}_b, \check{\theta}_b]$ implies that $D_b(\theta; \mathsf{t}'_0, \mathsf{t}'_b) = 0$, which implies that $\mathsf{t}'_0(\theta) = \mathsf{n}$, by symmetry, that $\mathsf{t}_0(\theta) = \mathsf{n}$ and $\mathsf{t}_b(\theta) = \mathsf{n}$ with prb. $\lambda_b(\theta)$.
The argument for type 0 is analogous.
(ii) By a similar dominance argument as part (i), it must be that $\mathsf{t}_\tau(\theta) = \mathsf{n}$ whenever $\theta < \check{\theta}_\tau$ and

$\mathsf{t}_\tau(\theta) = \mathsf{y}$ whenever $\theta > \hat{\theta}_\tau$. When $\theta \in [\check{\theta}_\tau, \hat{\theta}_\tau]$ instead, each type's action induces a symmetric best response, which implies that any strategy $\mathsf{t}_\tau(\theta)$ can be part of an equilibrium, provided that the condition

$$\mathsf{t}_0(\theta) = y \quad \Rightarrow \quad \mathsf{t}_b(\theta) = y \tag{33}$$

When b is large enough so that $\hat{\theta}_b < \check{\theta}_b$, the condition 33 does not bind. When instead $\hat{\theta}_b \geq \check{\theta}_b$, it must be that $\theta > \hat{\theta}_0 \Rightarrow \mathsf{t}_b(\theta) = \mathsf{y}$ and $\theta < \check{\theta}_b \Rightarrow \mathsf{t}_0(\theta) = \mathsf{n}$. Regardless of the value of b, the interval $[\check{\theta}_b, \hat{\theta}_0]$ is always non-empty. A strategy profile that maximizes the interval in which types vote differently is a threshold strategy in which the aligned type votes *nay* iff $\theta \leq \hat{\theta}_0$ and the misaligned type votes *aye* iff $\theta \geq \check{\theta}_b$. □

Corollary 4. *When $\mu > \underline{\mu}$, as κ approaches infinity the unique separating equilibrium features*

$$\begin{aligned}
\mathsf{t}_0^*(\theta) = \mathsf{y} \qquad &\textit{iff} \qquad \theta \geq \frac{RS\psi}{\chi}\left[(2\mu - 1)(\mu - \underline{\mu}) + \frac{1}{2\phi S}\frac{\eta - \alpha}{\eta(1 - 2\alpha)}\right] \\
\mathsf{t}_b^*(\theta) = \mathsf{y} \qquad &\textit{iff} \qquad \theta \geq \frac{RS\psi}{\chi}\left[(2\mu - 1)(\mu - \underline{\mu}) + \frac{1}{2\phi S}\frac{\eta - \alpha}{\eta(1 - 2\alpha)}\right] - b
\end{aligned}$$

Proof of Proposition 1. Follows directly, from Corollary 4.
When κ is finite and $\mu > \underline{\mu}$, we can substitute equations (29)-(32) to obtain

$$\begin{aligned}
\delta_p(\mathsf{y}; \kappa) &= \psi S\big(\hat{\mu}(\mathsf{y}, \mathsf{y}) - \underline{\mu}\big) + \psi S\zeta(\alpha, \gamma, \phi) + \mathcal{O}(1/\kappa) \\
\delta_p(\mathsf{n}; \kappa) &= \psi S\big(\underline{\mu} - \hat{\mu}(\mathsf{n}, \mathsf{n})\big) + \psi S\zeta(\alpha, \gamma, \phi) + \mathcal{O}(1/\kappa)
\end{aligned}$$

Now, since $\hat{\mu}(\mathsf{y}, \mathsf{y}) \xrightarrow[\kappa \to \infty]{} \mu$ and $\hat{\mu}(\mathsf{n}, \mathsf{n}) \xrightarrow[\kappa \to \infty]{} \mu$, there exists a finite κ above which $\delta_p(\mathsf{y}; \kappa) \geq \delta_p(\mathsf{n}; \kappa)$, which implies that y votes are strategic complements and we can apply the same reasoning of the analysis following Lemma A.1 to argue that there are four inception points $\{\hat{\theta}_b(\kappa), \check{\theta}_b(\kappa), \hat{\theta}_0(\kappa), \check{\theta}_0(\kappa)\}$ and a unique a unique separating symmetric equilibrium with type 0 (resp., type b) switching to supporting the agenda at $\hat{\theta}_0$ (resp., at $\check{\theta}_b$). □

Comparative Statics

$$\begin{aligned}
\hat{\theta}_b &= \frac{RS\psi}{\chi}\left[\mu - \underline{\mu} + \frac{1}{2\phi S}\frac{\eta - \alpha}{\eta(1 - 2\alpha)}\right] - b \\
\check{\theta}_b &= \frac{RS\psi}{\chi}\left[(2\mu - 1)(\mu - \underline{\mu}) + \frac{1}{2\phi S}\frac{\eta - \alpha}{\eta(1 - 2\alpha)}\right] - b \\
\hat{\theta}_0 &= \frac{RS\psi}{\chi}\left[(2\mu - 1)(\mu - \underline{\mu}) + \frac{1}{2\phi S}\frac{\eta - \alpha}{\eta(1 - 2\alpha)}\right]
\end{aligned}$$

$$\check{\theta}_0 = \frac{RS\psi}{\chi}\left[\underline{\mu} - \mu + \frac{1}{2\phi S}\frac{\eta - \alpha}{\eta(1-2\alpha)}\right]$$

First, suppose that $\mu \geq \underline{\mu}$. In this case, constituency voters' welfare (under the proposed selection criterion) can be written as

$$\begin{aligned} W &\propto \kappa^2 - (1-\mu)\check{\theta}_b^2 - \mu\hat{\theta}_0^2 \\ &= \kappa^2 - (1-\mu)b^2 + \hat{\theta}_0\left(2(1-\mu)b - \hat{\theta}_0\right) \end{aligned}$$

where the second line comes from the observation that $\check{\theta}_b = \hat{\theta}_0 - b$. The effect of parameter $x \in \{R, \psi, S, \phi, \eta\}$ can then be obtained as follows:

$$\frac{\partial W}{\partial x} \propto ((1-\mu)b - \hat{\theta}_0)\frac{\partial \hat{\theta}_0}{\partial x} \tag{34}$$

By inspection, $\frac{\partial \hat{\theta}_0}{\partial \eta} > 0$ and $\frac{\partial \hat{\theta}_0}{\partial \alpha} < 0$. Substituting $\eta = \underline{\eta}$ into $\hat{\theta}_0$ we obtain

$$\hat{\theta}_0 \propto (2\mu - 1)(\mu - \underline{\mu}) - \frac{1}{2\phi S}\frac{\rho}{(1-2\alpha)(2+\rho)}$$

Since probabilities have to be interior and $\max\{V_i - V_O\} > 2S$, we must have $\frac{1}{2} + 2\phi S < 1 \Leftrightarrow \frac{1}{2\phi S} > 4$, there exists $\rho^*(\alpha)$ (*decreasing* in α) and $\eta^*(\alpha)$ (*increasing* in α) such that $\left\{\eta \leq \eta^* \wedge \rho \geq \rho^*\right\} \Leftrightarrow \hat{\theta}_0 \leq 0$. When $\rho \geq \rho^*$ and $\eta \leq \eta^*$ welfare is decreasing in R and ψ and increasing in S and ϕ. Otherwise, the effect of the parameters depends on b:

- when $b < \frac{\hat{\theta}_0}{(1-\mu)}$, welfare is strictly decreasing in R, S and ψ and strictly increasing (resp. decreasing) in ϕ if $\alpha < \eta$ (resp. $\alpha \geq \eta$);
- when $b \geq \frac{\hat{\theta}_0}{(1-\mu)}$, welfare is increasing in R, S and ψ and strictly decreasing (resp. increasing) in ϕ if $\alpha < \eta$ (resp. $\alpha \geq \eta$).

Finally, we consider comparative statics with respect to η. By inspection of (34), since $\frac{\partial \hat{\theta}_0}{\partial \eta} > 0$, we infer that there exists η^{**} solving $\hat{\theta}_0 = b(1-\mu)$ such that if and only if $\eta \geq \eta^{**}$, welfare strictly decreases in η.

Intuition. When the list is valuable enough and closed enough, personal reputation vis a vis the party leader is more valuable than vis a vis the voter. As a result, increasing the value from office increases rubber stamping and reduces welfare. Otherwise, cultivating personal reputation vis a vis the party leader is not valuable enough (either in absolute terms or in

relative terms) and the tendency to obstructionism prevails.
When $\mu < \underline{\mu}$, instead,

$$W \quad \propto \quad \kappa^2 - \mu\big[\check{\theta}_0^2 + \hat{\theta}_0\check{\theta}_0 + \hat{\theta}_0^2\big] - (1-\mu)\big[\check{\theta}_b^2 + \hat{\theta}_b\check{\theta}_b + \hat{\theta}_b^2\big]$$

which implies that the effect of the parameter $x \in \{R, \psi, S, \phi, \eta\}$ can be obtained as follows:

$$\frac{\partial W}{\partial x} \quad \propto \quad -\mu\left[\frac{\partial\check{\theta}_0}{\partial x}(2\check{\theta}_0 + \hat{\theta}_0) + \frac{\partial\hat{\theta}_0}{\partial x}(2\hat{\theta}_0 + \check{\theta}_0)\right] - (1-\mu)\left[\frac{\partial\check{\theta}_b}{\partial x}(2\check{\theta}_b + \hat{\theta}_b) + \frac{\partial\hat{\theta}_b}{\partial x}(2\hat{\theta}_b + \check{\theta}_b)\right]$$

As before we can establish the existence of η^* and ρ^* so that when $\eta \leq \eta^*$ and $\rho \geq \rho^*$, $\check{\theta}_0$ (and thus all the other thresholds) are negative, and the analysis proceeds as in the case of $\mu \geq \underline{\mu}$.

We can also define η^{**} and ρ^{**} such that when $\eta \geq \eta^{**}$ and $\rho \geq \rho^{**}$, $\hat{\theta}_b$ (and thus all the other thresholds) are positive, in which case the analysis proceeds as in the case of $\mu \geq \underline{\mu}$.

We can then claim the following:

Lemma A.4. *There exists $\eta^h(\alpha) > \eta^l(\alpha)$, ρ^* and ρ^{**} such that*
(i) when $\eta \leq \eta^l$ and $\rho \geq \rho^*$, dyadic representation increases in η, decreases in R and ψ and increases in S and ϕ
(ii) when $\eta \geq \eta^h$ and $\rho \geq \rho^{**}$, dyadic representation decreases in η and decreases in R, ψ and S
(iii) $\eta^h(\alpha)$ and $\eta^l(\alpha)$ are increasing in α.

Corollary 5. *The effect of η on dyadic representation depends on the initial level of η and on polarization (α):*
(i) when η is small enough and α is large enough, decreasing flexibility (i.e., decreasing η) worsens *dyadic representation; (ii) when η is large and α is large enough, decreasing flexibility (i.e., decreasing η)* improves *dyadic representation;*

Proof. We have that

$$\lim_{\alpha\to 1/2}\lim_{\eta\to\underline{\eta}} \frac{\underline{\eta}-\alpha}{\underline{\eta}(1-2\alpha)} = \lim_{\alpha\to 1/2}\frac{-\rho}{(\rho+2)(1-2\alpha)} = -\infty$$
$$\lim_{\alpha\to 1/2}\lim_{\eta\to\overline{\eta}} \frac{\overline{\eta}-\alpha}{\overline{\eta}(1-2\alpha)} = \lim_{\alpha\to 1/2}\frac{\rho}{(\rho+2)(1-2\alpha)} = \infty$$

which implies that when partisanship (α) is sufficiently large, the sign of the ratio $\frac{\underline{\eta}-\alpha}{\underline{\eta}(1-2\alpha)}$ determines the sign of all thresholds. □

Comparative Static under Closed List

Closed list is equivalent to assuming that $\eta \leq \underline{\eta}$. In this case, the threshold $\xi = \xi_\eta$ is never attained when the Incumbent party obtains a single seat, and there are only two pivotal events. Proceeding as in the proof of Lemma A.1, we obtain:

$$\begin{aligned} V_i = V_j = & \frac{1}{2}\left\{ \begin{array}{c} (\hat{\mu}_i(\mathsf{t}) + \hat{\mu}_j(\mathsf{t}))S + \mathbb{E}[\theta \leq -b]q(\mathsf{n},\mathsf{n}) + \mathbb{E}[\theta \geq b]q(\mathsf{y},\mathsf{y}) \\ +\mathbb{E}[-b \leq \theta \leq 0]Q_{[-b,0]}(\hat{\mu}_i(\mathsf{t}), \hat{\mu}_j(\mathsf{t})) + \mathbb{E}[0 \leq \theta \leq b]q(\mathsf{y},\mathsf{y}) \end{array} \right\} \\ & + \frac{1}{2}\left\{ \begin{array}{c} (\hat{\mu}_i(\mathsf{t}) + \mu_O)S + \mathbb{E}[\theta \leq -b]q(\mathsf{n},\mathsf{n}) + \mathbb{E}[\theta \geq b]q(\mathsf{y},\mathsf{y}) \\ +\mathbb{E}[-b \leq \theta \leq 0]Q_{[-b,0]}(\hat{\mu}_i(\mathsf{t})) + \mathbb{E}[0 \leq \theta \leq b]Q_{[0,b]}(\mu_O) \end{array} \right\} \end{aligned}$$

and

$$\begin{aligned} V_O = & \frac{1}{2}\left\{ \begin{array}{c} (\hat{\mu}_i(\mathsf{t}) + \mu_O)S + \mathbb{E}[\theta \leq -b]q(\mathsf{n},\mathsf{n}) + \mathbb{E}[\theta \geq b]q(\mathsf{y},\mathsf{y}) \\ +\mathbb{E}[-b \leq \theta \leq 0]Q_{[-b,0]}(\hat{\mu}_i(\mathsf{t})) + \mathbb{E}[0 \leq \theta \leq b]Q_{[0,b]}(\mu_O) \end{array} \right\} \\ & + \frac{1}{2}\left\{ \begin{array}{c} 2\mu_O S + \mathbb{E}[\theta \leq -b]q(\mathsf{n},\mathsf{n}) + \mathbb{E}[\theta \geq b]q(\mathsf{y},\mathsf{y}) \\ +\mathbb{E}[-b \leq \theta \leq 0]q(\mathsf{n},\mathsf{n}) + \mathbb{E}[0 \leq \theta \leq b]Q_{[0,b]}(\mu_O, \mu_O) \end{array} \right\} \end{aligned}$$

which implies that $\max\{V_i, V_j\} - V_O \propto \hat{\mu}_i(\mathsf{t}) + \hat{\mu}_j(\mathsf{t}) - 2\mu_O + \mathcal{O}(1/k)$. Proceeding as in the rest of the analysis (and imposing $\eta = \underline{\eta}$) of the baseline model yields

$$\begin{aligned} \hat{\theta}_b^{CL} &= \frac{RS\psi}{\chi}\left[\mu - \frac{1}{2} - \frac{1}{2\phi S}\frac{\rho}{(1-2\alpha)(2+\rho)}\right] - b \\ \check{\theta}_b^{CL} &= \frac{RS\psi}{\chi}\left[2\left(\mu - \frac{1}{2}\right)^2 - \frac{1}{2\phi S}\frac{\rho}{(1-2\alpha)(2+\rho)}\right] - b \\ \hat{\theta}_0^{CL} &= \frac{RS\psi}{\chi}\left[2\left(\mu - \frac{1}{2}\right)^2 - \frac{1}{2\phi S}\frac{\rho}{(1-2\alpha)(2+\rho)}\right] \\ \check{\theta}_0^{CL} &= \frac{RS\psi}{\chi}\left[\frac{1}{2} - \mu - \frac{1}{2\phi S}\frac{\rho}{(1-2\alpha)(2+\rho)}\right] \end{aligned}$$

Suppose that $\mu \geq \max\{\underline{\mu}, 1/2\}$ (the argument for all other cases is similar), then legislative cohesion is higher under flexible list than under closed list if and only if $\hat{\theta}_0^{CL} - \hat{\theta}_0^{FL} > 0$. Notice that since cohesion is strictly decreasing in η for $\eta \in [\underline{\eta}, \overline{\eta}]$, we have

$$\lim_{\eta \to \underline{\eta}} \hat{\theta}_0^{CL} - \hat{\theta}_0^{FL} \propto (2\mu - 1)(\mu - 1/2 - (\mu - \underline{\mu})) = (2\mu - 1)\frac{1}{6}(2\mu_O - 1) > 0$$

which implies that when $\mu_O > 1/2$, there exists $\eta^{CL} > \underline{\eta}$ such that when $\eta \in (\underline{\eta}, \eta^{CL})$, legislative cohesion is strictly higher under flexible list than under closed list. When $\mu < \min\{\underline{\mu}, 1/2\}$, under both systems we have mixed strategy equilibria and we can show that there are conditions under which when η is close enough to $\underline{\eta}$, all thresholds are lower under flexible list.

When $\mu \in (\underline{\mu}, 1/2)$, instead, there is mixing under closed list but not under flexible list. In that case, it is enough to show that when $\eta \approx \underline{\eta}$, $\hat{\theta}_b^{CL} > \check{\theta}_b^{FL}$ and $\hat{\theta}_0^{CL} > \hat{\theta}_0^{FL}$, that is

$$\hat{\theta}_b^{CL} > \check{\theta}_b^{FL} \propto (1/2 - \mu)(2\mu - 2\underline{\mu} - 1)$$
$$\hat{\theta}_0^{CL} > \hat{\theta}_0^{FL} \propto (1 - 2\mu)(1/2 - \underline{\mu}) > 0$$

which requires $\underline{\mu}$ to be small enough. Similar conditions can be obtained for $\mu \in (1/2, \underline{\mu})$.

Comparative Static under Single Member Districts

Under Single Member Districts, party leaders do not choose a list and each representative voter chooses to reelect her incumbent independently. We then have that (assuming that each district voter's payoff from a competent representative is $2S$ and that the realization of θ is common to both districts)

$$p_i(\mathsf{y}, \mathsf{y}) = \frac{1}{2} + 2\psi S\big(\hat{\mu}(\mathsf{y}, \mathsf{y}) - \mu_O\big) + \mathcal{O}(1/\kappa)$$
$$p_i(\mathsf{n}, \mathsf{y}) = \frac{1}{2} + 2\psi S\big(1 - \mu_O\big) + \mathcal{O}(1/\kappa)$$
$$p_i(\mathsf{y}, \mathsf{n}) = \frac{1}{2} + 2\psi S\big(- \mu_O\big) + \mathcal{O}(1/\kappa)$$
$$p_i(\mathsf{n}, \mathsf{n}) = \frac{1}{2} + 2\psi S\big(\hat{\mu}(\mathsf{n}, \mathsf{n}) - \mu_O\big) + \mathcal{O}(1/\kappa)$$

and, as a result, $\delta_p(\mathsf{y}) \xrightarrow[\kappa\to\infty]{} 2\psi S\big(\mu - 1\big)$ and $\delta_p(\mathsf{y}) \xrightarrow[\kappa\to\infty]{} 2\psi S\big(- \mu\big)$. As a result,

$$\hat{\theta}_b^{SMD} = \frac{RS\psi}{\chi} 2\mu - b$$
$$\check{\theta}_b^{SMD} = \frac{RS\psi}{\chi} 2\big[(1 - \mu)^2 + \mu^2\big] - b$$
$$\hat{\theta}_0^{SMD} = \frac{RS\psi}{\chi} 2\big[(1 - \mu)^2 + \mu^2\big]$$
$$\check{\theta}_0^{SMD} = \frac{RS\psi}{\chi} 2(1 - \mu)$$

When $\mu > 1/2$, $\delta_p(\mathsf{y}) > \delta_p(\mathsf{n})$ and by the same argument as in the baseline model, there is a unique separating equilibrium with threshold strategies at $\check{\theta}_b$ and $\hat{\theta}_0$.
Notice that $\min\{\hat{\theta}_\tau, \check{\theta}_\tau\} > \tau$, which implies that the incentive to cultivate a personal reputation always pushes towards obstructionism.

Comparing $\hat{\theta}_0$ under both systems yields

$$\hat{\theta}_0^{FL} - \hat{\theta}_0^{SMD} \propto \frac{1}{2\phi S}\frac{\eta - \alpha}{\eta(1-2\alpha)} - \underline{\mu}(2\mu - 1) - \mu - (1-\mu)^2$$

which implies that there exists η^{SMD} such that $\hat{\theta}_0^{FL} - \hat{\theta}_0^{SMD} > 0 \Leftrightarrow \eta > \eta^{SMD}$. $\square$