Sorting of Candidates: Evidence from over 20,000 Electoral Ballots*

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Abstract

Using over 20,000 electoral ballots from proportional representation elections, we document that political parties systematically sort candidates on the ballots according to their valence and *intra* party value, measured by political donations and membership. The observed patterns are consistent with market mechanisms between candidates and party leaders where the party leaders benefit from candidates' valence and *intra* party value and offer ballot positions (i.e. probability of winning a seat) in exchange. Consequently, we show that candidates of high valence and those who possess *intra* party value are placed on better positions, despite the fact that candidates with *intra* party value tend to receive relatively fewer votes than their counterparts of the same characteristics at the same position on the ballot. We also show that as a party becomes more popular and expects more council seats, the share of candidates with *intra* party value increases. Overall, we provide strong evidence that political parties skew political representation based on a quid pro quo relationship with candidates.

JEL Codes: H1, H70, J45, P16, D72.
Keywords: ballots, election, party, candidates, donations

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1 Introduction

Politicians matter for economic outcomes and quality of lives. In many electoral systems, including the European Parliament[1], politicians are selected through elections with a strong gate-keeping power of political parties. Political parties thus substantially influence who becomes a politician. Importantly, political parties and party leaders are also believed to pursue their own goals, e.g. rewarding candidates' loyalty (e.g. Galasso and Nannicini, 2017) or defending their leadership position within the party (e.g. Besley et al., 2017). These motives of political selection may be in conflict with the public interest of electing high valence candidates. On the one hand, political parties improve political selection by partially overcoming information asymmetry between candidates and voters (e.g. Caillaud and Tirole, 2008), on the other hand, parties create a principal-agent problem, in which voters cannot control the pre-selection process of candidates.

We study how political parties select and order candidates on electoral ballots in proportional representation system[2] (henceforth PR), where a ballot position is highly informative about electoral success of candidates. Using data from over 20,000 electoral ballots from Czech municipal elections, we find that: (i) high valence (measured by education) candidates are placed on better ranked positions than low valence candidates; (ii) candidates with *intra* party value (measured by membership status and political donations) are ranked better; (iii) conditional on observables, candidates with *intra* party value tend to receive significantly fewer votes than their counterparts; (iv) an increase of party popularity is associated with a weak increase in the share of high valence candidates and a sizeable increase in the share of candidates with high *intra* party value.

To explain the established observations, we propose a simple model of the market of candidates. A party leader, the demand side, who selects and ranks candidates on a ballot benefits from: (i) *intra* party value of candidates (provision of scarce resources for the party, e.g. donation or voluntary labor) and; (ii) candidates' valence, as it attracts swing (quality sensitive) voters. Potential candidates are either of high or low valence which entail different opportunity costs of running in the election and decide on costly action that increases their

[1]The power of political parties over electoral results in the European Parliament elections varies from country to country.

[2]PR systems usually entail multiple representatives being elected and mandates are allocated proportionally or close to proportionally to party vote shares.

intra party value. For example, they decide whether to become members and whether to donate money to the party. In an environment with strong gate-keeping power of the party, the party leader trades ballot ranks which embody probabilities of winning seats for candidates' valence and *intra* party value. Candidates accept party offer of a ballot rank if it satisfies their participation constraints. As a result, candidates that are more valuable for the party are rewarded by better ranked positions. An important implication is that stronger parties can attract more valuable candidates, both in terms of valence and *intra* party value, as they can offer more positions with high probabilities of winning a seat. Consequently, political parties skew the selection of political representation towards candidates who have, or are willing to provide, *intra* party value.

We contribute to the existing literature by revising the candidate selection problem in three main aspects.[3] First, parties not only control the selection of candidates, but also their positions on a ballot, i.e. probability of wining a seat[4]. Findings (i) and (ii) demonstrate that the sorting of candidates on the ballots is statistically and economically significant. Neglecting the ballot rank in theoretical models and assuming a constant share of high-valence candidates may therefore lead, especially in closed-list electoral systems, to misleading conclusions about average quality of elected politicians. Second, we explicitly consider candidates' participation constraints and thus effectively add the supply side of the candidates market. The supply side helps us to explain after a popularity shock parties can attract more valuable candidates, as documented in finding (iv). Third, we relax an assumption of mutual exclusivity between high valence and *intra* party value. Specifically, we let the *intra* party value to be a control variable of candidates. This brings the possibility of low valence candidates being well ranked and likely elected due to their *intra* party value despite their weaker electoral performance, as documented by finding (iii). We thus diverge from previous literature on the role of political parties in the selection of candidates that typically features one of two following situations: (i) a party chooses which candidate to nominate in which (one-candidate) district (e.g. Galasso and Nannicini, 2011); or (ii) a party chooses the shares of high-valence (experts) and loyal candidates on the ballot where the two are mutually exclusive, ignoring

[3]Dal Bó and Finan (2018) provide a great summary of recent progress in the literature of political selection.

[4]Very recently, scholars have paid attention to the sorting of candidates (safe vs. hopeless positions) on the ballot. For example, Fiva and Røhr (2018) showed that in party-list systems, incumbency advantage of candidates goes through a better ballot positions, as incumbents are placed on better positions. Similarly, Cirone et al. (2019) link candidates' positions in party (and thus on the ballot) with their seniority. Studying different aspects of ballot sorting, Buisseret et al. (2019) provide robust evidence that in the PR system (similar to ours), candidates are ranked according to their quality in descending order.

the ballot ranking (Galasso and Nannicini, 2017; Besley et al., 2017). Additionally, candidates are usually considered passive players who cannot reject party's offer.

Furthermore, abandoning the assumption of mutual exclusivity between high valence and *intra* party value, allows us to address apparent controversy in the previous literature. In a study by Galasso and Nannicini (2015), a party leader ranks two mutually exclusive types of candidates on the ballot: loyal and expert candidates. The authors show that safe positions are occupied by loyal candidates (party officials and incumbent members of the parliament). On the contrary, Buisseret et al. (2019) show, using Swedish administrative data, that candidates are ranked according to their quality in descending order. The authors thus reject the hypothesis that strong candidates (those who are likely to attract voters) are placed on marginal ranks.[5] Our evidence along with the provided intuition show that both findings can be consistent.

More broadly, this paper builds on the literature that places political parties and their own interests at the center stage of the process of selecting candidates. Scholars have proposed different reasons for why political parties may not strictly prefer high valence candidates. In Besley et al. (2017) party leader balances the potential threat of being overthrown by high quality party members against voters' preference for competent candidates. Mattozzi and Merlo (2015) present a model in which having a strong candidate may discourage other candidates from the party, therefore, it may be optimal to recruit only mediocre candidates. Alternatively, Galasso and Nannicini (2011) and Galasso and Nannicini (2017) proposed that leaders may prefer loyal candidates who in their model cannot be of a high valence. While these models proposed different underlying motives of political selection, their design does not allow to address the findings we establish.

The Czech Republic is a convenient case study for its availability of data, large number of municipalities, legal option to make political donations and duty to declare them, and the presence of the PR system in which independent candidates (non-members) are allowed to

[5] Although it is not the focus of this study, we do see some evidence supporting marginal ranks hypothesis. For example, Figure 7 shows a peak in relative votes around one fifth of the ballot. Additionally, most of the candidates elected due to their preferential votes were elected from close-to-marginal positions. Specifically, one third of the candidates who jumped up due to preferential votes were only one position below the threshold of getting elected given the original ranking.

run on party ballots.[6] However, we believe our results are generalizable to many national elections and the European Parliament election.

2 Institutional Background

In the Czech Republic, the public administration is organized in three levels: central, regional, and municipal. There are more than 6,000 municipalities, and each has its own council and representation that is elected every four years in municipal elections. The number of seats in municipal council depends on the number of citizens in the given municipality and varies from 5 in the smallest municipalities to 70 in the capital of Prague. The number of residents in municipalities varies with the average around 1,600 inhabitants. Municipalities are responsible for delivering public goods such as schooling, child care, and waste management. Czech municipal elections are characterized by a large number of candidates and parties. In every municipal election, there are around 200,000 candidates and roughly one third of them win a council seat. Half of the candidates run on a ballot of a local branch of one of the national parties, while the other half on a ballot of one of the purely local parties[7]. Local branches of national parties, the focus of this study, are more professionally organized, whereas local parties, majority of which are active only in one municipality, often lack structural internal organization.

Municipal elections in the Czech Republic are classified as open list elections which means that parties rank candidates on the ballots but voters are allowed to cast preferential votes to their desired candidates. Every voter has as many votes as there are seats to allocate. Voters can follow one of the three following voting strategies. First, they can cast all their votes to one party. Second, they can distribute votes preferentially to different candidates regardless of the ballot they are listed at. Third, they can combine the two approaches, i.e. some of their votes can be allocated directly to preferable candidates and the remaining votes to a party. Nobody can give more than one vote to any of the candidates. The allocation of seats to parties is determined using the D'Hondt method based on all the votes that the

[6]There are other recent studies (e.g. Jurajda and Münich, 2015, Palguta and Pertold, 2018, Palguta, 2015, Kuliomina, 2016 and Titl and Geys, 2019) that used the advantage of empirically convenient environment of municipal and/or regional election in the Czech Republic.

[7]The exact shares of candidates running on ballots of national parties varies election by election and depends on classification of national parties and election coalitions of parties.

party received, including those allocated to individual candidates as preferential votes.[8] If a candidate receives at least 110% votes of the party average per candidate, then he automatically jumps up to the top of the ballot. Over the past five municipal elections 15% of seats were assigned to candidates who received enough preferential votes to jump higher up the rank and would not receive the seat otherwise. The number is not insignificant, but it is clear that the initial party ranking shapes the final electoral outcome substantially, as the remaining 85% of seats were assigned to the candidates at the top of the ballot - i.e. those pre-selected by the party. This system thus allows well ranked candidates to be elected despite having fewer votes than their party mates. The number of candidates on the ballot of a party is limited to at most the number of seats in the municipal council.

The Czech legal system allows both individuals and firms to make donations to political parties. A complete list of political donors, including additional individual information has to be published by the parties once a year. We collect the data on donations made by both individuals and firms between 1995[9] and 2018 and match it with a dataset of all candidates in all elections since 2002. This allows us to identify those who donate money to the party they run for and classify them as candidates-donors.[10]

The available data consists of a universe of individual candidates from all elections since 1998 through to 2018. We observe candidates' names, age, academic degrees, place of residence, occupation, political membership, party they run for, position on the ballot, the number of votes each candidate received, and elected status.[11] The candidates do not have individual unique identifiers, so instead, we match them across different types of elections (municipal, regional, parliamentary) using their individual characteristics.[12] The initial dataset consists of 735,393 unique individuals who have run in at least one of the elections since 1998. We restrict the dataset to candidates that have run in at least one municipal election for one of the six main parties that operate nationally (KDUCSL, CSSD, KSCM, ODS, TOP09,

[8]Note that there is also a threshold share of all valid votes that the party has to exceed, otherwise it is not assigned any mandates. The default threshold is 5% and it can be lower for parties that have fewer candidates than there are council seats in the municipality.

[9]Prior to 1999, parties did not have to publish donations below 100,000 CZK.

[10]We link firms' donation to firms' owners, executive directors or board members.

[11]Occupation and place of residence are self-reported.

[12]It is more complicated to match female candidates, as they may change their surname after marriage. We do robustness checks by matching females using all the usual characteristics except for surname and none of the analysis changes.

ANO)[13] in one of the last 5 municipal elections (2002, 2006, 2010, 2014, and 2018)[14].

The length of the ballots differ among parties and municipalities. To ensure comparability across elections, we: (i) further restrict the dataset to candidates running on full ballots (those with the maximum possible number of candidates listed)[15]; (ii) condition on other observable characteristics, e.g. political experience, age, and nominating party; and (iii) normalize the rank so it falls into [0,1] interval. We denote this conditional normalized measure *rank*[16]. Table 6 in Appendix A summarizes the final numbers of candidates running for different national parties.

3 Empirical Evidence

3.1 Types of Candidates

The order of candidates on the ballot is determined by many aspects including characteristics of candidates (e.g. political experience and ability), internal party organization (who bears the responsibility for ballot formation), municipality and voter characteristics, and political competition. We explore the role of candidates' valence and their *intra* party value and document that they both play a major role in explaining the observed ranking of candidates on ballots. Intuitively, valence represents the public value of candidates, i.e. it is the characteristic that the voters care about, while *intra* party value is any characteristic that the party itself appreciates.

We classify valence of politicians by their education level. Specifically, we consider candidates as of high valence if they have obtained at least a college degree and as low valence otherwise. We thus adopt an approach which is standard in the literature of political selection (e.g., Dal Bó et al. (2009) and Ferraz and Finan (2008)).[17] Importantly, Buisseret et al. (2019) show that education displays similar pattern on the ballot as other (likely better) measures of quality of politicians such as leadership, cognitive scores and labor market in-

[13]Note that TOP09 only participated in the last three elections and ANO in the last two elections.

[14]We do not consider candidates that run on a joint ballot for two or more parties in coalition, as we do not observe which party nominated which candidate.

[15]Maximum possible number of candidates on a ballot equals to the number of council seats in a municipality.

[16]For more details about *rank*, see Appendix A

[17]Dal Bó et al. (2017) argued that while education is correlated with ability, it may also reflects luck or social class.

come, providing some support for our measure. Nevertheless, we acknowledge there is little evidence and consensus among the general public and researchers on what characteristics qualify politicians as high valence and even less so when restricting the discussion to measurable and commonly available characteristics. Additionally, in one of the empirical exercises we measure candidates' public value by the relative share of votes they received, i.e. by the revealed preferences of voters.

As for the measure of *intra* party value of candidates, we use two distinct measures: (i) membership status; and (ii) political donations. Candidates in any election can be nominated by a party and run on the party's ballot while not being formal members of the party. On the voting ballot, those candidates are labelled as "without political affiliation". Candidates who are members of any political party have the name of the party listed instead. Being a member of a political party is often connected with certain costs. At the very least, all members usually have to pay a membership fee. Furthermore, they can take on other duties and work for the party, they may provide voluntary labor and help with fundraising, organization, and campaign activities. The share of candidates in municipal elections who are recorded as members of their nominating party is typically between 30 % and 50 %, but differs across parties and over time (see Table 7 in Appendix A). The typical ballot in our study consists of 10% of high valence members; 14.5% of high valence non-members; 28.5% of low valence members; and 47% of low valence non-members.

A candidate is classified as a donor if: (i) he or a firm that he owns or represents is listed as a donor by the party he runs for; (ii) the timing of the donation is close to the election, i.e. the year before municipal elections, the year of elections and one year after.[18] The typical ballot in our study consists of 1.6% of high valence donors; 22.9% of high valence non-donors; 1.2% of low valence donors; and 74.4% of low valence non-donors. There are dramatically fewer donors than there are members. We interpret that as a consequences of donations being a more costly form of *intra* party value for candidates compared to an active membership status. We discuss the difference in more detail in Section 4.

[18]The results are robust to different specification of the time window.

3.2 Ballot Structure

3.2.1 Members

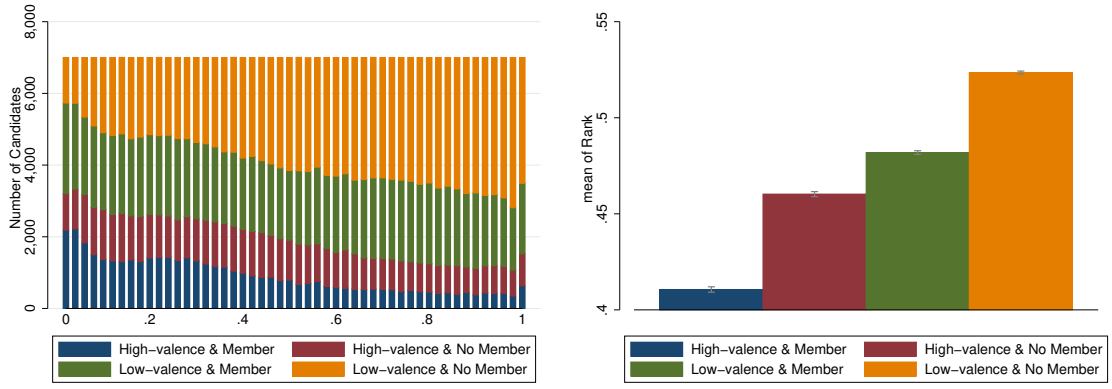
We first document that candidates classified according to their valence and membership status as systematically sorted on the ballot. Better positions, i.e. positions with higher probability of being elected are occupied by more valuable candidates. One of the immediate implications is that considering only a simple share of a group of candidates may lead to misleading results. The pattern is summarized in Observation 1.

Observation 1 (Ballot Structure - Members)**.** *Members are systematically sorted on the ballot. In terms of average rank, the groups are ranked as follows: (i) high valence members at the top; followed by (ii) high valence non-members; (iii) low valence members; and (iv) low valence non-members at the bottom of the ballot.*

Figure 1a provides graphical representation of Observation 1. Each bar represents 2% of candidates ordered according to their *rank* and shows the shares of the four groups of candidates in that rank. The x-axis shows the ballot position that goes from 0 on the left (best positions) to 1 on the right (worst positions). For example, the first bar implies that the share of high valence members in the 2% of the best ranked candidates is around 31%, while low valence non-members make up only 18%. As we go from the top positions to the tail of the ballot, high valence candidates (sum of HM and HN) are gradually replaced by low valence candidates (sum of LM and LN). The same is apparent for members (HM and LM) who are over represented among the better ranked positions. Figure 1b summarizes average rank and confidence intervals of the four groups. Appendix A presents two robustness exercises that confirm the same sorting pattern among candidates with no previous political experience and for candidates running on specific ballots that list at least one candidate of each type.

Interestingly, the tail of the ballot shows a peak of high valence members. There are two possible explanations for that. First, some of the popular politicians from national parliament, local celebrities or respected residents with no interest in being elected in municipal elections are voluntarily placed at the bottom in order to attract voters' attention to the party. If elected, they often refuse the council seat, as their main motivation for running is not getting elected but rather supporting the party. Second, voters may pay more attention to the candidates at the bottom of the ballot rather than around the middle of the list. Some candidates may, therefore, consider the bottom position more visible and thus more likely to

Figure 1: Ballot Structure for Members



(a) Ballot Rank (Members)

(b) Average Rank by Groups (Members)

attract preferential votes. As we discuss in Appendix A, candidates at the bottom positions differ in political experience and their shares of votes.

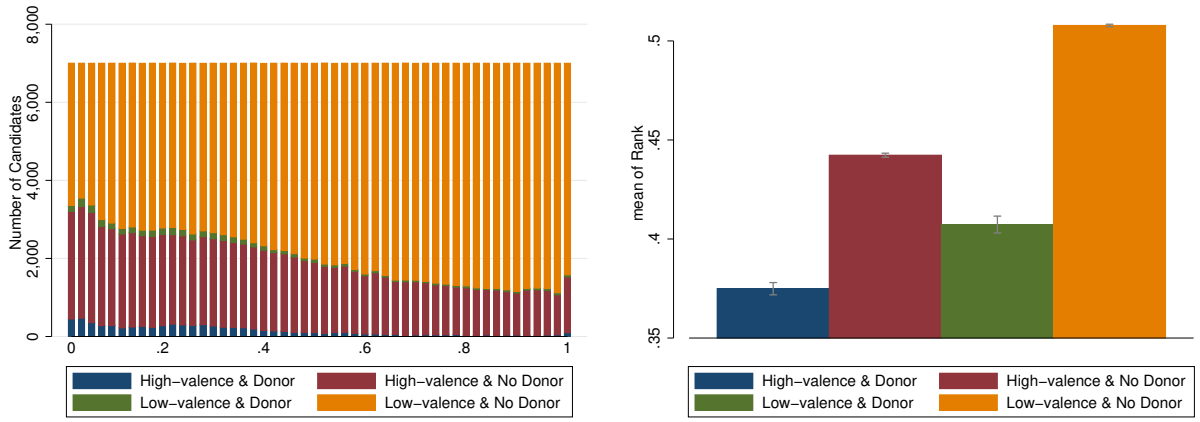
3.2.2 Donors

We next document that candidates classified as donors are also systematically sorted on the ballots. The main sorting pattern resembles the one of members, donors are, on average, ranked better than non-donors as summarized in observation 2.

Observation 2 (Ballot Structure - Donors)**.** *Donors are systematically sorted on the ballot. In terms of average rank, the groups are ranked as follows: (i) high valence donors; (ii) low valence donors; (iii) high valence non-donors; (iv) low valence non-donors. This holds for both municipal and parliamentary elections.*

The sorting pattern persists with one notable exception. While donors are over represented at the best ranked positions and under represented at the worst ranked positions, as expected, low valence donors are ranked better than high valence non-donors on average. Using alternative, arguably more costly, measure of *intra* party value leads to a switch between the two groups. Figure 2b provides graphical representation of observation 2. Similarly to Figure 1a we observe a spike in valence and donations at the bottom of the ballot. An identical exercise for parliamentary elections, presented in Appendix A, confirmed the same sorting pattern.

Figure 2: Ballot Structure for Donors



(a) Ballot Structure (Donors)

(b) Average Rank by Groups (Donors)

3.3 Effect of *Intra* Party Value of Candidates

We next use fixed effect model that controls for all time invariant unobservable characteristics of candidates and provides stronger evidence that donations and membership status positively affect ballot position.

Observation 3 (*Intra* Party Value of Candidates)**.** *Becoming a member and/or a donor is associated with a shift towards better ranked positions and higher probability of being placed among the electable positions.*

The data is organized in a panel with individual candidate being the unit of observation. We exploit time variation in individual candidates' membership and donation status. Formally, we run the following regression:

$$y_{i\tau} = \alpha_i + \delta_\tau + \eta_p + \zeta_{p\tau} + \gamma_1 Membership_{i\tau} + \gamma_2 Donation\ Dummy_{i\tau} + \gamma_3 Donation\ Size_{i\tau} + \beta X_{i\tau} + \epsilon_{i\tau}, \quad (1)$$

where $y_{i\tau}$ stands either for $Unconditional Rank_{i\tau}$ which is the unconditional ballot position of individual candidate i at time τ, normalized to be between 0 and 1[19], or $Electable Position_{i\tau}$ indicator that equals to 1 if candidate's position would win a seat if the party received as many seats as it did in the previous election; and 0 otherwise. Additionally, α_i, δ_τ,

[19]We use the transformation Rank = (Ballot position-1)/(Total number of candidates-1), so that the first position on the ballot always has rank 0 and the last position rank 1.

η_p, and $\zeta_{p\tau}$ stand for individual, time, party, and party-time fixed effects, respectively. *Donation Dummy*$_{i\tau}$ indicates whether candidate i made a donation in political cycle τ, whereas *Donation Size*$_{i\tau}$ is the amount donated (measured in millions of CZK). We assign a particular donation to political cycle τ if it was made the year previous to the elections, the year of the elections or a year after. Vector $X_{i\tau}$ captures fixed effects for the age of the candidate and his previous political experience from municipal, regional, parliamentary, and senate elections. We remove the candidates who simultaneously run for other offices during the political cycle τ, because in their case their donation could be related to different elections.

Table 1: Individual fixed effects

	(1) Unconditional Rank	(2) Unconditional Rank	(3) Electable Position	(4) Electable Position
Donation Dummy	-0.056***	-0.057***	0.103***	0.101***
	(0.004)	(0.004)	(0.008)	(0.008)
Donation Size (in millions CZK)	-0.011*	-0.011*	0.055***	0.050***
	(0.006)	(0.006)	(0.018)	(0.018)
Membership	-0.107***	-0.106***	0.076***	0.077***
	(0.003)	(0.004)	(0.005)	(0.006)
Age FE	Yes	Yes	Yes	Yes
Political experience FE	Yes	Yes	Yes	Yes
Party and year FE	Yes	Yes	Yes	Yes
Gender	All	Men	All	Men
N	345,701	236,059	345,701	236,059

Standard errors in parentheses
Party and year fixed effects include their interactions.
Previous political experience includes running and getting a mandate in municipal elections, regional elections, parliamentary elections and senate.
* $p < .10$, ** $p < .05$, *** $p < .01$

The first two models of Table 1 show that donations and membership are associated with better positions (with lower rank). Similarly, Models (3) a (4) show that membership and donations are associates with higher probability of being placed at the electable positions. All four specifications control for all time invariant individual characteristics, such as moti-

vation, ability or local popularity. We cannot, however, rule out that the results are driven by some time varying characteristics such as an increased interest in a political career, which would place the candidate at better positions on the ballot and at the same time increase his likelihood of becoming a member and donor.

Models (1) and (2) show that the coefficient on *Donation Dummy* is negative and significant and suggest that the act of donating money to the party is associated with jumping 5.6 percentage points up the ballot. On a ballot of a median length, i.e. 21 candidates, this effect means roughly moving 1 position upward. Similarly, becoming a member of the party is associated with a 10.7 percentage point shift up the ballot which corresponds to a shift of a little over 2 places upward on a ballot with 21 candidates. The coefficient *Donation Size*, though significant and negative as expected, is of a very low magnitude[20]. Donating 1 million CZK (approx. 40,000 EUR) to the party is associated with a shift of only 6.7 percentage points up relative to not donating anything at all.

Models (3) and (4) show the same results for *Electable Position*. Becoming a member seems to be associated with a 7.6 percentage points higher likelihood of being listed on one of the electable positions. Donating money to the party increases the likelihood by 10.3 percentage points and donating 1 million CZK is associated with 15.8 percentage points higher likelihood of getting an electable position compared to not donating any money. The results for both *Unconditional Rank* and *Electable Position* show the same story. The coefficients on *Electable Position* are slightly higher. Intuitively, it may be because they capture the relationship between *intra* party value and the outcome of direct interest of candidates, i.e. whether they are placed on an electable position or not. Since we are more confident about correctly matching male candidates across different elections, we estimate the effect on only male candidates in Models (2) and (4). The coefficients remain very stable in both specifications.

3.4 Electoral Performance of Candidates

We next provide evidence that candidates with high *intra* party value receive relatively fewer votes, as summarized in Observation 4. The results suggest that the candidates that are valued by the party for their *intra* party value may not be equally popular among

[20]The reason is, we suspect, that the coefficient estimates an intensive margin of the treatment effect on a group of candidates who would be more likely to be placed on better positions even without the treatment

voters; and thus there is a potential trade-off between *intra* party value and public value of candidates.

Observation 4 (Electoral Performance of Candidates)**.** *Conditional on ballot rank and other characteristics, candidates with high intra party value receive fewer votes.*

To compare the relative performance of candidates during the election we: (i) do matching; and (ii) run OLS regression. We argue that both donations and membership are unlikely to have a direct effect on voters' preferences and it is more plausible that donors and members are negatively selected on some characteristics that are unobservable to us, but observable to voters at the time of election, e.g. ability, reputation, political scandals, or effort in campaign. In both exercises we use a $Relative\,Votes_i$ variable, defined as a ratio of votes a candidate i received and the party's average number of votes per candidate.

First, the first row of Table 2 shows the unconditional comparison of means of $RelativeVotes$ between donors and non-donors and members and non-members and suggests that donors and members receive more votes than their counterparts. However, once we control for candidates' and ballots' characteristics in the second row, the sign reverses; candidates with high *intra* party value, in fact, receive fewer votes conditional on the ballot position. The results hold for two different specification: i) the whole ballot - Columns (1) and (3); and (ii) electable positions - Columns (2) and (4). Apart from Column (2), donors and members receive more votes in all other specifications. For example, the first column implies that donors received by 18 percentage points more votes than non-donors on average. This, however, is likely to be caused by donors being placed on better ranked positions and having richer political experience. Once we match on observables[21], the effect changes sign. The second row (ATT) shows the opposite story, donors and members receive fewer votes by 7 and 6 percentage points respectively. The effect is even stronger for candidates placed on electable positions.

We next run pooled OLS specified in Equation 2, where the vector X_i represents gender, flexible functions of previous political experience, age of candidates, party-year fixed effects, and three dummies: (i) for the last position on a ballot; (ii) interaction of the last position

[21] Using p-score, calculated as probit using flexible functions of unconditional rank, political experience, degree, and fixed effects for political cycle and party.

Table 2: Under-performance of *Intra* Party Valued Candidates - Matching

	(1) Relative Votes	(2) Relative Votes	(3) Relative Votes	(4) Relative Votes
Unmatched	0.180***	-0.011*	0.030***	0.001
	(0.003)	(0.006)	(0.001)	(0.003)
ATT	-0.072***	-0.111***	-0.060***	-0.146***
	(0.005)	(0.009)	(0.002)	(0.007)
Constant	0.994***	1.274***	0.987***	1.273***
	(0.001)	(0.002)	(0.001)	(0.003)
N	348962	53190	349504	53108
Sample	Whole Ballot	Electable Positions	Whole Ballot	Electable Positions
Treatment	Donations	Donations	Membership	Membership

Standard errors in parentheses

Electable positions: number of seats won in last election increased by 1.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

and donor dummy; and (iii) interaction of the last position and membership[22]. Controlling for all candidate characteristics available, Table 3 shows that both membership and donations are associated with lower performance of candidates. Specifically, given a particular position and the same observable characteristics, a donor receives on average fewer votes than a non-donor.

$$Relative\,Votes_i = \sum_{k=0}^{5} \theta_k Unconditional\,Rank_i^k + \omega Donation\,Dummy_i + \zeta Membership_i + \delta X_i + \varepsilon_i \quad (2)$$

There are two possible explanations: either voters dislike membership and donations or candidates with *intra* party value are more likely to be worse in terms of some unobservables which are, however, known to voters. We consider the first explanation very unlikely. Although membership status is observable to voters, there is no evidence that membership status would enter voter's preferences directly and affect their behaviour, especially when

[22]We only include the last three fixed effects in order to make sure that the last position does not affect our main results for the rest of the ballot, since we have already mentioned that the last position may be special.

Table 3: Under-Performance of *Intra* Party Valued Candidates - OLS

	(1) Relative Votes	(2) Relative Votes
Membership	-0.046***	-0.113***
	(0.001)	(0.003)
Donation Dummy	-0.078***	-0.088***
	(0.003)	(0.005)
Degree	0.074***	0.035***
	(0.001)	(0.003)
Unconditional Rank	Yes	Yes
N	349558	53252
Sample	Whole Ballot	Electable Positions

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

taking into account that we are only considering votes given to non-members versus members of the party on whose ballot they both run. More importantly, the list of political donations is published only during the year after the election, so donations are rarely known at the time of the election and are certainly not displayed on the ballot. Voters therefore rarely know that a certain candidate is a donor and yet, donors under-perform in terms of the votes they receive compared to non-donors. We consider it more likely that donors and members differ in some aspect for example in terms of individual quality which is observable to voters who value them less, or donors and members may be less motivated and put in less effort during the electoral campaign. Regardless the channel, from the party leader's perspective it is noteworthy that candidates with *intra* party value under-perform and deliver fewer votes than their counterparts.

3.5 Strength of Parties

We next ask how party's strength (popularity) shapes the ballot structure and specifically, whether popular parties have more or less candidates with *intra* party value. Suppose there is a popularity index for every party at the municipal level. This variable is at least to some extent visible to the residents, but it remains latent for us. The only observable realization for us is trough the shares of votes during elections. As the popularity of the party increases, so does its share of votes. We measure party's popularity by the share of votes the party

received in the latest parliamentary election at the municipal level. We show that after a party becomes more popular which implies it can expect higher share of council seats, it places weakly more high valence candidates and significantly more candidates with *intra* party value on the ballot. Observation 5 is thus consistent with the interpretation that a more powerful party can attract more high valence candidates and induce them to increase their *intra* party value.

Observation 5 (Strength of Parties)**.** *After a local popularity shock, there are weakly more high valence candidates and significantly more candidates with intra party value on the ballot. In particular, the share of high valence candidates with intra party value increases, while the share of low valence candidates with no intra party value decreases. This is the case for both of our measures: membership status and political donations.*

We use parliamentary election results as a measure of popularity of the party at the municipal level because party vote shares are available at the municipal level and because parliamentary elections conveniently take place from 4 to 12 months prior to municipal elections. Figure 3 shows the sequence of parliamentary and municipal elections in different years. Our specification (Equation 3) controls for time-party and municipality-party fixed effects, and the identification is thus based on the time variation in municipal political preferences that is orthogonal to changes in national political preferences and to long-term geographical variation in political preferences. For example, a local perception of national or regional policy promoted by a given political party generates such variation.[23] Furthermore, we control for time-varying ballot structure at the regional level, so any within party organizational changes (e.g. party level demand for donors) in ballot formation are filtered out.

For both of our measures of *intra* party value we run the following regression.

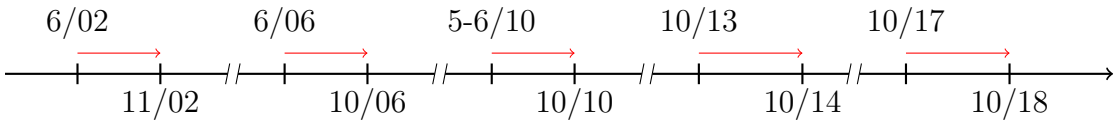
$$Share^{g}_{pj\tau} = \alpha^{g} + \beta^{g} PE\ ShareVotes_{pj\tau} + \sum_{k \in \{HM,HN,LM\}} \delta^{k} PE\ Share^{k}_{p\tilde{j}\tau} + \gamma^{g}_{pj} + \gamma^{g}_{p\tau} + \epsilon^{g}_{pj\tau} \tag{3}$$

where p denotes political party, j municipality, τ is a political cycle, and k is a group of candidates: high-valence with *intra* party value (HM), low valence with *intra* party value (LM), etc. $PE\ ShareVotes_{pj\tau}$ is the share of votes that a party p received in municipality j

[23] National policy promoted by a given political party may affect different municipalities differently depending on their local demographic and economic conditions.

Figure 3: Sequence of Elections

National Elections:



Municipal Elections:

in the parliamentary elections during a political cycle τ, and finally $PE\ Share^{k}_{\tilde{pj}\tau}$ captures the share of candidates of group k on the ballot of party p in the parliamentary elections in the electoral region $\tilde{j}$ and political cycle τ. We include these terms in order to control for the effect of the structure of the ballot in the particular region - i.e. to control for the possibility that a party receives more votes in a given municipality not because it gained more popularity but because it formed a particularly good ballot in the parliamentary elections.

3.5.1 Membership

We first discuss results for membership status as a measure of *intra* party value of candidates. An increases in party's share in parliamentary election is associated with an increase of members on the ballot in the subsequent municipal election. Formally, for each of the following groups g: (i) high valence members (HM); (ii) high valence non-members (HN); (iii) low valence members (LM); (iv) and low valence non-members (LN) we run Regression 3 separately.

Each column of Table 4 represents a regression for one group of candidates. First row captures estimates of β^g from Equation 3. One percentage point increase in the vote share in parliamentary election at a given municipality is associated with an increase of 0.08 percentage points of a share of high valence members in the following municipal election. Since the average share of high valence members is roughly 10 percent of a ballot, the effect represents 0.8% increase. The results further show that the share of low valence members increases by 0.35 percentage points and the share of low valence non-members decreases by 0.40 percentage points. These effects represent 1.2% increase of low valence members and 0.85% decrease of low valence non-members, respectively. Overall, low valence non-members, who are arguably the least valuable for the party leader, are squeezed out and

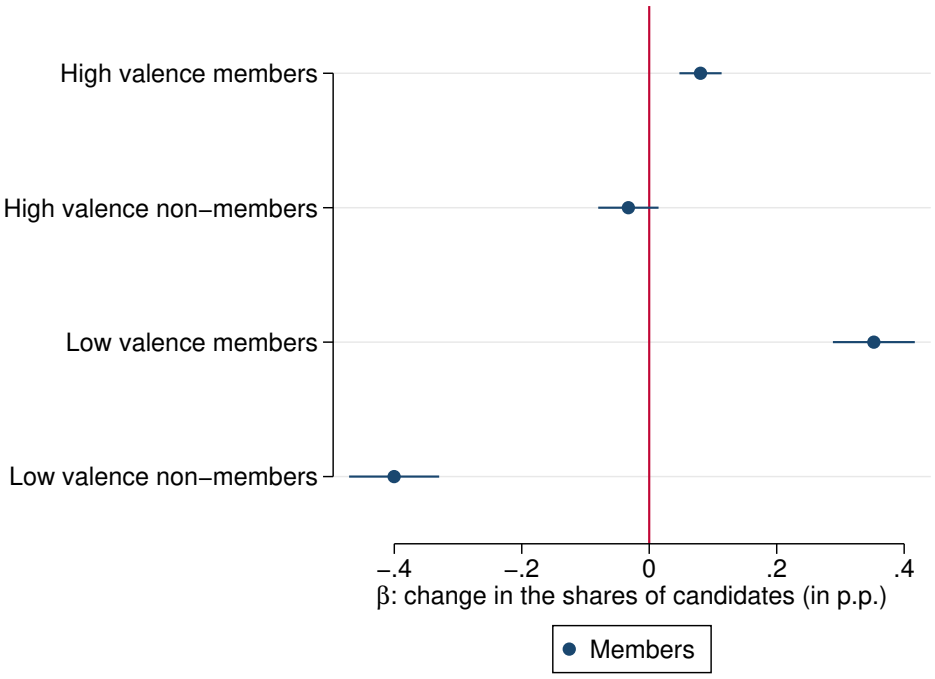
Table 4: Changes in party popularity and shares of members

	(1) Share of HM	(2) Share of HN	(3) Share of LM	(4) Share of LN
PE Share Votes	0.080***	-0.033	0.352***	-0.400***
	(0.017)	(0.024)	(0.033)	(0.036)
PE Share of HM	-0.001	-0.003	-0.048	0.052
	(0.016)	(0.022)	(0.030)	(0.033)
PE Share of HN	-0.009	0.012	-0.048	0.045
	(0.018)	(0.025)	(0.034)	(0.038)
PE Share of LM	-0.005	0.014	-0.032	0.023
	(0.016)	(0.023)	(0.032)	(0.035)
N	21442	21442	21442	21442
Party Year FE	Yes	Yes	Yes	Yes
Party Municipality FE	Yes	Yes	Yes	Yes

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 4: Changes in Shares of Groups of Candidates (Members)



replaced by more valuable groups, as the party strengthens. An increase in the vote share in the parliamentary election is followed by a municipal election ballot that consists more high valence candidates and strictly more members on the ballots. Considering a ballot of a median length, i.e. 21 candidates, receiving additional 10 percentage points of votes in the parliamentary elections implies one additional member in the subsequent municipal election. Figure 4 shows the β coefficients and their confidence intervals graphically. Figure 12 in the Appendix A decomposes the effect for individual political parties.

3.5.2 Donors

The effects among donors are qualitatively equivalent but of a lower magnitude. An increase in vote share in parliamentary elections of a party is connected to an increase in the shares of high and low valence donors, while the share of the least valuable candidates, low valence non-donors, decreases. That implies an increase in both the share of donors and the share of high valence candidates. Formally, we run regression (3) for g: (i) high valence donors (HD); (ii) high valence non-donors (HN); (iii) low valence donors (LD); (iv) low valence non-donors (LN).

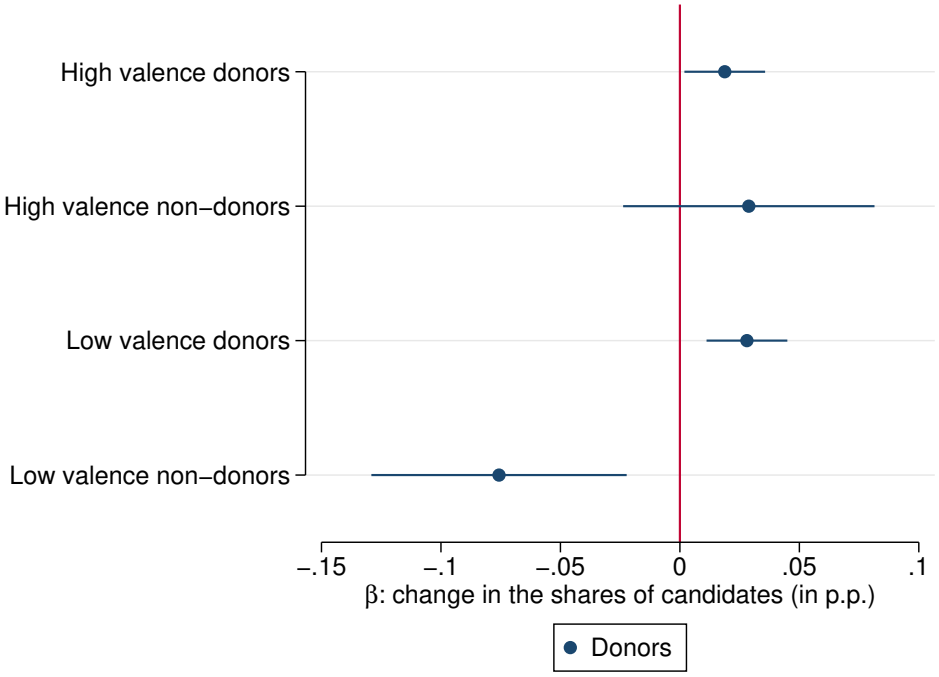
Table 5: Changes in party popularity and shares of donors

	(1) Share of HD	(2) Share of HN	(3) Share of LD	(4) Share of LN
PE Share Votes	0.019**	0.029	0.028***	-0.076***
	(0.009)	(0.027)	(0.009)	(0.027)
PE Share of HD	0.023***	-0.029**	0.016***	-0.010
	(0.004)	(0.012)	(0.004)	(0.012)
PE Share of HN	-0.003	-0.001	0.000	0.004
	(0.003)	(0.010)	(0.003)	(0.010)
PE Share of LD	0.018***	0.004	0.026***	-0.049***
	(0.005)	(0.015)	(0.005)	(0.015)
N	21442	21442	21442	21442
Party Year FE	Yes	Yes	Yes	Yes
Party Municipality FE	Yes	Yes	Yes	Yes

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 5: Changes in Shares of Groups of Candidates (Donors)



Receiving 10 additional percentage points in parliamentary election is related to a 0.19 percentage point increase in high valence donors on the ballots. Taking the average ballot structure as a baseline case, i.e. only 1.4% of high valence donors, this is equivalent to a 1.3% increase in the number of high valence donors. The most pronounced positive effect is among low valence donors, as an increase of 10 percentage points in parliamentary elections implies 0.28 percentage point (or 2.8 % of low valence donors on average) increase in the share of low valence donors. The increase in the share of donors is offset by the share of low valence non-donors whose share falls by 0.76 percentage points after a 10 percentage point popularity shock. The coefficients seem low, but that is due to the very low proportions of donors on ballots. Figure 5 shows the effects graphically.

4 Understanding the Results

4.1 Model

In this section we build a simple model of the selection process and use it to formalize the intuition for the observed sorting of different types of candidates. The selection process can

be seen as a market of candidates where a party leader (she) demands candidates' valence and *intra* party value in exchange for a ballot position, while candidates offer their valence and costly *intra* party value in exchange for the probability of winning a seat. The party leader's objective is twofold. First, to attract swing voters and thus succeed in elections, she needs high valence candidates on the ballot. Therefore, she values high valence candidates more than low valence candidates. Second, as for her *intra* party objective, she maximizes the number of candidates with *intra* party value. For convenience, we consider the ballot as a [0,1] interval and denote a ballot rank as $t \in [0,1]$.

Voters' behaviour is given exogenously. As common in the literature, there are two types of voters: (i) party core voters; and (ii) swing voters. Core voters always vote for their preferred party; party p receives α_p share of votes from its core voters. Voting of swing voters depends on the overall quality of the ballot. We assume that voters are more sensitive to the quality of the top ranked candidates than those at the bottom of the ballot.[24] Specifically, the swing voters care about an aggregate measure of quality of the ballot $\bar{q_p} = \int_0^1 g(t)q(t)dt$, where $g(t)$ is a weighting function satisfying $g'(t) < 0$ and $g(1) \geq 0$, and $q(t) \in \{0, 1\}$ captures the valence of candidate placed on position t. Party p receives $\delta\bar{q_p} + \epsilon_p$ votes from swing voters, where ϵ_p is a random noise with zero mean. The behaviour of voters therefore yields the following probability of winning a seat.

$$P_p(\text{winning a seat}|\alpha, t, \bar{q}) = P(\alpha_p + \delta \int_0^1 g(\tilde{t})q(\tilde{t})d\tilde{t} + \epsilon_p \geq \omega_t) \tag{4}$$

where ω_t is a unique threshold for a position t. The probability measure is increasing in α and $\bar{q}$, but decreasing in t, as ω_t is increasing in t. Importantly, individual probability of winning a seat is a function of party p's popularity (α_p), candidate's ballot rank (t), and overall aggregate quality of the ballot ($\bar{q}$). A crucial aspect of our setup therefore is that voters do not care about *intra* party value, only valence. This is easier to justify in the case of political donations which are not visible to voters at the time of the elections, but we find no reason for it to not be true for membership.

[24]There are two reasons to support this assumption. First, even under an open-list electoral system, the top ranked candidates are more likely to be elected due to mechanical reasons, as seats are allocated from the top down. Hence, being more sensitive to the top ranked candidates follows from maximizing the expected quality of elected candidates. Second, if voters are inattentive, they are likely to pay attention to the more pronounced or salient candidates, i.e. the candidates at the top of the list. Additionally, this assumption was empirically supported by Buisseret et al. (2019) using Swedish data. They argued that ballots are formed according to the *rank-order hierarchy*.

There are two infinitely large pools of candidates: high valence candidates (with $q = 1$) and low valence candidates ($q = 0$), who differ in their opportunity cost of running; $c_h > c_l$, so candidacy is more costly for high valence candidates. In order to ensure a better ballot position, candidates can perform a costly action (c_a), i.e. become *intra* party valuable ($m = 1$). This can take the form of an active membership status or financial donation to the political party. Candidates value a seat that brings them a benefit b and maximize expected payoff (expected benefit minus cost). Valence and *intra* party value of candidates are indicator functions that equal 1 if candidates is of high valence and of high *intra* party value, respectively. Formally, $q(t) = 1$ denotes that candidate placed on t position is of high valence, while $m(t) = 1$ denotes that candidate placed on t position has *intra* party value.

Party leader seeks to maximize her value function

$$V(\bar{q}, \bar{m}) = \bar{q} + \gamma \bar{m},$$

where $\bar{q} = \int_0^1 g(t)q(t)dt$ is the measure of overall quality of the ballot that follows from he electoral success motive, as $\bar{q}$ increases the number of seats that the party expects to win. The other measure $\bar{m} = \int_0^1 m(t)dt$ is *intra* party value of candidates on the ballot. The crucial property that we impose on the party leader's objective is that it is weakly increasing with every additional high quality candidate and with every additional candidate with *intra* party value holding the rest of the ballot constant. To reach her goal, she selects and ranks candidates on the ballot.

At time $s = 1$, candidates receive an offer and must decide whether to accept or reject it. When making the decision candidates compare the expected payoff $P(\alpha, \tilde{q}, t)b$ with a cost of running and, if required, a cost of becoming *intra* party valuable, too. For the party leader, the offer is binding, so she cannot change it once accepted by candidates. Importantly, at the time of the decision, candidates do not know the realized quality $\bar{q}$ of the ballot. Instead, they base their decisions on a prior belief $\tilde{q}$. We impose this assumption in order to keep the model as tractable as possible. At time $s = 2$, the party leader assigns positions to candidates given their valence and their affiliation status and the aggregate quality of the ballot $\bar{q}$ is revealed. At time $s = 3$, election takes place, votes are realized and seats are assigned to candidates.

4.2 Characterization of Solution

There are four thresholds that fully characterize the allocation of candidates on the ballot. Three of the thresholds (t_1, t_2, and t_3) represent the supply side and are pinned down by participation constraints of candidates, defined by Equations (5) - (7).

$$P(\alpha, \tilde{q}, t_1) * b = c_h + c_a \tag{5}$$

$$P(\alpha, \tilde{q}, t_2) * b = c_l + c_a \tag{6}$$

$$P(\alpha, \tilde{q}, t_3) * b = c_h \tag{7}$$

For example, high valence candidates are only willing to run at positions t_3 or better.

The fourth condition follows from the party leader's preferences. Note that her objective function implies two dominant strategies: (i) she always prefers high valence candidate with *intra* party value over anyone else; (ii) she always prefers anyone else over low valence candidates with no *intra* party value. The only trade-off occurs between high valence candidates with no *intra* party value and low valence candidates with *intra* party value in the domain of the ballot where both types are available and willing to run. It is important to realize that the value of any additional high valence candidate is decreasing in his ballot rank, while the value of a low valence candidate with *intra* party value is constant across the ballot. Therefore, let us define the fourth threshold t_4 as a position above which she prefers high valence candidates with no *intra* party value and below which she prefers low valence candidates with *intra* party value. Formally, the fourth threshold is defined as

$$t_4 = \text{argmax} \;\; V(\bar{q}(t_4), \bar{m}(t_4); t_1, t_2, t_3). \tag{8}$$

4.3 Explaining the Data

In our model the predicted ranking of candidates depends on how the thresholds are ordered. The observed ranking of members is summarized in Observation 1 which states that on average, high valence members (HM) tend to be placed at the top of the ballot, followed by high valence non-members (HN), low valence members (LM) and lastly low valence non-members (LN). Proposition 1 defines the threshold ordering which is consistent with the patterns observed for members.

Proposition 1 (Membership)**.** *Consider membership as a measure of intra party value. If*

and only if $t_1 < t_3 < t_2$ & $t_1 < t_4$, the group ordering is as follows: (i) HM; (ii) HN; (iii) LM; and (iv) LN.

Proof can be found in Appendix B. Depending on where t_4 lies exactly, there are three different combinations of the thresholds that support the observed data.[25] We are not able to distinguish among the three cases without making additional assumptions or without more detailed data, as they all imply the same ordering.

Similarly, Observation 2 establishes the sorting among donors which differs from members in one fundamental aspect: low valence donors are on average placed on better ranked positions than high valence non-donors, the opposite of which is true for members. The following proposition argues that there is only one order of threshold that can generate the observed sorting among donors. Proof can be found in Appendix B.

Proposition 2 (Donations)**.** *Consider political donations as a measure of intra party value. If and only if $t_4 < t_1 < t_2 < t_3$, the group ordering is as follows: (i) HD; (ii) LD; (iii) HND; and (iv) LND.*

The introduced model enables us to understand the sorting differences between members and donors. First, note that among donors $t_2^D < t_3$, while the opposite is true among members $t_3 < t_2^M$ and since t_3 is the same in both cases[26], it must be that $t_2^D < t_3 < t_2^M$. Therefore, in order to meet participation constraints of donors, they must be rewarded by better ballot positions than members. In other words, donation is more costly than membership status ($c^D > c^M$). Second, the value of donors for party leader exceeds the value of membership. That follows from the fact that for members $t_1^M < t_4^M$, whereas for donors $t_4^D < t_1^D$. These two facts along with the cost differences showed before $c^D > c^M$, yield that $t_4^D < t_1^D < t_1^M < t_4^M$. Proposition 3 summarizes both implications.

Proposition 3 (Comparison)**.** *For candidates, becoming a donor is more costly than becoming a member. For party leaders, donors are more valuable than members of the same valence.*

The model can therefore rationalize the reversal in ordering between donors and members by donations being more costly for candidates and more valuable for political parties which we view as very reasonable. Finally, the model is also consistent with Observation 5. In

[25] These are: $t_1 < t_3 < t_2 < t_4$, $t_1 < t_3 < t_4 < t_2$, and $t_1 < t_4 < t_3 < t_2$

[26] As the t_3 is pinned down by participation constrain of candidates with no *intra* party value.

particular, the model predicts that an increase in popularity leads to a higher share of high valence candidates with *intra* party value and a decrease in low valence candidates without *intra* party value, which is what we find in the data for both members and donors.

Proposition 4 (Strength of Parties)**.** *An increase in the popularity of a party represented by an increase in α_p leads to a higher share of high valence candidates with intra party value and a lower share of low valence candidates with no intra party value.*

Proposition 4 follows from relaxing the participation constraints of all candidates. As α_p increases, so does the probability profile. The remaining shares of different types of candidates generally depend on the relative shifts of different thresholds. The thresholds are complex to characterize, as they depend on several features including the slope of the probability profile and the relative shifts are therefore not easy to calculate. The suggested ordering for donors stated in Proposition 2 additionally implies that the share of donors always increases when α_p increases. For members, since there are several possible combinations, not much more can be said about the two middle categories.

To provide intuition, consider one particular combination of thresholds: $t_1 < t_4 < t_3 < t_2$.[27] As a party is hit by a positive popularity shock, an increase in α_p to $\tilde{\alpha_p} > \alpha_p$, the participation constraints relax for all types of candidates. This shifts t_1, t_2, and t_3 towards the bottom of the ballot as displayed in Figure 6. Since t_4 does not change[28], the shares of high and low valence candidates remain unchanged, but the share of members (of both high and low valence) increases.

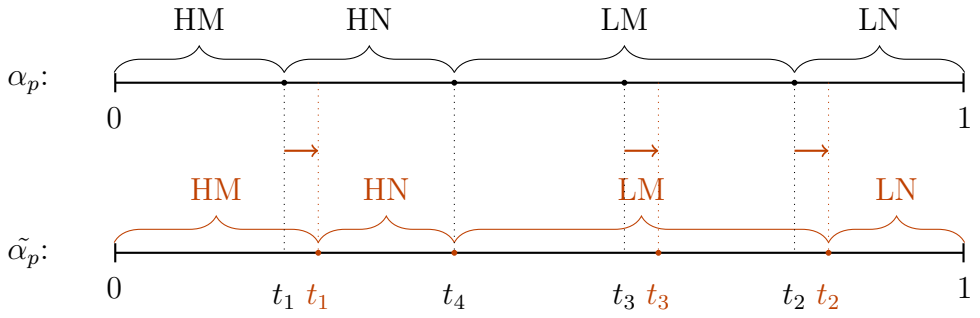
5 Concluding Remarks

We approach the process of selection of political candidates in PR systems as a market. On the one hand, party leader (the demand side) demands valence and *intra* party value in exchange for ballot positions that embody probabilities of winning seats. On the other hand, candidates (the supply side) decide on their *intra* party value, as they strive to win a seat on the municipal council. This interaction resembles typical market forces. We support the market-like interpretation by empirical evidence. First, candidates are sorted as predicted

[27] We consider this combination the most likely as it unambiguously predicts an increase in members in response to a positive party shock which is the most pronounced effect that we found in the data.

[28] See Appendix B.

Figure 6: Explaining Membership Data



by the market mechanisms in which the top positions tend to be occupied by candidates with both public and *intra* party value, whereas the bottom positions tend to be occupied by candidates that are the least valuable. Second, party leaders seem to voluntarily sacrifice some votes for *intra* party value of candidates. Third, with increasing party strength the party leader takes advantage of her position and forms a ballot with a higher *intra* party value, as she has more to offer the candidates in exchange for their value. Fourth, higher *intra* party value tends to be rewarded by better ballot positions. That follows from: (i) a comparison between membership and, arguably more costly, donations; and (ii) the positive link between the size of donations and rank.

Gate-keeping power of parties is likely to give rise to a principal-agent problem where party leaders may pursue their private goals in political selection. Swing voters incentivize the party leader to care about valence which mitigates the problem, assuming that voters' concern is candidates' valence. The interests of the party leader and voters are aligned at the top positions where high valence candidates are willing to increase their *intra* party value. The conflict between party leader's interests and the interests of the public tend to appear at worse ballot positions where the party leader has the opportunity to skew the selection and ranking of the candidates in her favor, by prioritizing low valence candidates with *intra* party value rather than high valence candidates without *intra* party value.

Relaxing the mutual exclusivity of valence and *intra* party value which is prevalent in the literature mitigates the principal agent problem, but may intensify other problems such as rent seeking. If being of high valence does not guarantee candidates to be placed on well ranked ballot positions, everyone is incentivized to acquire *intra* party value which may take differ-

ent forms and may not be limited to membership status and political donations. Instead, we consider *intra* party value to be a very broad concept that can include a large variety of attributes. For example employees of the party, public proponents or anyone providing services of any kind to the party may be considered of high *intra* party value, regardless of whether they are also members or donors. More importantly, any rent seeking activity that a candidate does for the benefit of the political party may be seen by the party leader as increasing his value for the party.

While this paper describes the process of selecting and ordering candidates on the ballot as a trade between party leaders and candidates, it is mute about the exact mechanism. It does not address the structure of the market, nor the form of contract between candidates and parties. As candidates and party leaders interact in a highly uncertain environment and the contract between them is potentially dynamic, there are other possible research questions to study. For example, who bears the cost of uncertainty? Do candidates at marginal positions make donations prior to the election or only after getting elected? Do party leaders enforce party affiliation after the election and does it depend on valence of candidates? Furthermore, this paper has abstracted from addressing the interactions among different political parties within a municipality, but future research may shed light on the influence of political competition on the interaction of parties and candidates.

References

Besley, T., Folke, O., Persson, T., and Rickne, J. (2017). Gender quotas and the crisis of the mediocre man: Theory and evidence from Sweden. *American Economic Review*, 107(8):2204–2242.

Buisseret, P. E., Folke, O., Prato, C., and Rickne, J. K. (2019). Party Nomination Strategies in List Proportional Representation Systems. *SSRN Electronic Journal*.

Caillaud, B. and Tirole, J. (2008). Parties as Political Intermediares. *Quarterly Journal of Economics*, 117(4):1453–1489.

Cirone, A., Cox, G. W., and Fiva, J. H. (2019). Seniority-based Nominations and Political Careers.

Dal Bó, E., Dal Bó, P., and Snyder, J. (2009). Political dynasties. *Review of Economic Studies*, 76(1):115–142.

Dal Bó, E. and Finan, F. (2018). Progress and Perspectives in the Study of Political Selection. *Annual Review of Economics*, 10(1):541–575.

Dal Bó, E., Finan, F., Folke, O., Persson, T., and Rickne, J. (2017). Who becomes a politician? *Quarterly Journal of Economics*, 132(4):1877–1914.

Ferraz, C. and Finan, F. (2008). Motivating Politicians: The Impacts of Monetary Incentives on Quality and Performance.

Fiva, J. H. and Røhr, H. L. (2018). Climbing the ranks: incumbency effects in party-list systems. *European Economic Review*, 101:142–156.

Galasso, V. and Nannicini, T. (2011). Competing on Good Politicians. *American Political Science Review*, 105(01):79–99.

Galasso, V. and Nannicini, T. (2015). So closed: Political selection in proportional systems. *European Journal of Political Economy*, 40:260–273.

Galasso, V. and Nannicini, T. (2017). Political selection under alternative electoral rules. *Public Choice*, 171(3-4):257–281.

Jurajda, Š. and Münich, D. (2015). Candidate ballot information and election outcomes: The Czech case. *Post-Soviet Affairs*, 31(5):448–469.

Kuliomina, J. (2016). Does Election of an Additional Female Councilor Increase Women's Candidacy in the Future?

Mattozzi, A. and Merlo, A. (2015). Mediocracy. *Journal of Public Economics*, 130:32–44.

Palguta, J. (2015). Political Rent-Seeking in Public Procurement: Evidence from the Entry of Political Challengers at Electoral Thresholds.

Palguta, J. and Pertold, F. (2018). Do Higher Wages Produce Career Politicians? Evidence from Two Discontinuity Designs. *SSRN Electronic Journal*.

Titl, V. and Geys, B. (2019). Political donations and the allocation of public procurement contracts. *European Economic Review*, 111:443–458.

Appendix A

Data Description

Table 6: Number of Candidates

Political Party	2002	2006	2010	2014	2018
KDUCSL	17,717	17,930	14,940	14,603	12,238
CSSD	16,095	16,111	16,884	16,336	11,752
KSCM	20,717	19,074	17,375	16,083	12,704
ODS	16,168	19,042	18,757	11,667	10,615
TOP 09	0	0	9,703	6,363	1,338
ANO	0	0	0	7,906	7,927

Table 7: Share of Affiliated

Political Party	2002	2006	2010	2014	2018
KDUCSL	37 %	34 %	31 %	27 %	27 %
CSSD	43 %	41 %	48 %	50 %	50 %
KSCM	60 %	55 %	52 %	48 %	48 %
ODS	48 %	51 %	51 %	50 %	43 %
TOP 09	.	.	27 %	29 %	35 %
ANO	.	.	.	18 %	27 %

Definition of Rank

For all years t and ballots i, being placed on a k-th position on a ballot with n candidates yields normalized rank

$$NormalizedRank = \frac{k-1}{n-1}. \tag{9}$$

To provide a better measure of the effect of political affiliation and quality on ballot order and to provide more neat figures, we employ a conditional rank defined as followed.

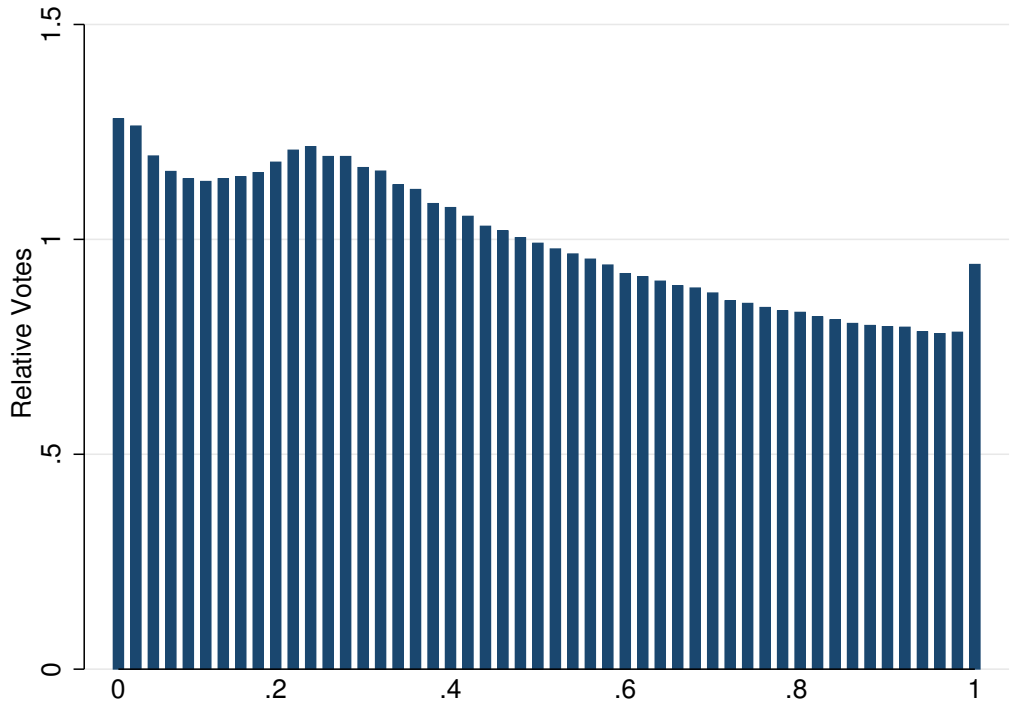
$$\begin{aligned} \frac{k_{it}-1}{n_{it}-1} &= f(X_{it}, \gamma_{it}) + \eta_{it} \\ rank_{it} &= \frac{\eta_{it} - min(\eta_{it})}{max(\eta_{it}) - min(\eta_{it})}, \end{aligned} \tag{10}$$

where f is a flexible function of year fixed effects, party fixed effects, party-year interactions, age, gender and previous political experience of candidates. The rank is normalized so it falls between (0,1). The rank converges to 0 as we approach the top position and to 1 as we approach the bottom of the ballot.

Bottom Positions

There is a disproportionately high share of high valued candidates at the last position on the ballots. Candidates at the bottom are more likely to be of high valence, of higher *intra* party value, and with more political experience. We also document that the bottom positions attract more votes (Figure 7).

Figure 7: Average Relative Share of Votes by Ballot Position

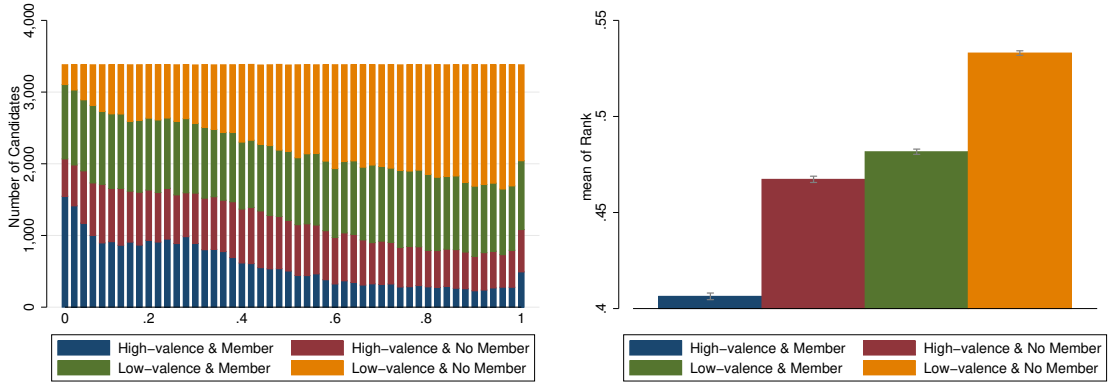


Robustness Exercises

Ballot Structure

As a robustness check, we provide several additional exercises. First, Figure 8a and 8b shows sorting and means by type of candidates for a sample of candidates who run on a ballot with all four types of candidates. Comparing to the baseline figures, it shows less than half of candidates. It also hints that a significant share of low valence non-members place on well-ranked positions are candidates running on a ballot with not high valence candidates. Overall, the figure supports sorting as summarized in Observation 1.

Figure 8: Ballots with all Four Types of Candidates

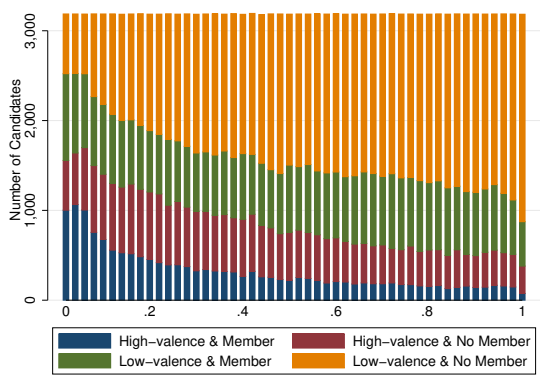


(a) Structure Ballots (Members)

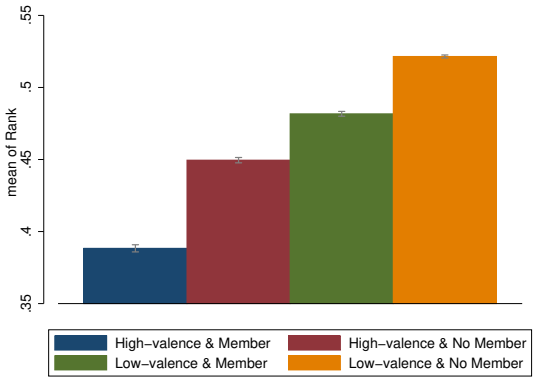
(b) Average Rank by Groups (Members)

Second, Figure 9a and 9b take into account only candidates that prior their candidacy have had no previous experience with municipal elections. It shows that the sorting patterns hold among political novices, too. Interestingly, there is no peak at the bottom of the ballot, suggesting that the peak is indeed driven by politically experienced candidates.

Figure 9: Only Candidates Without Political Experience



(a) Structure Ballots (Members)



(b) Average Rank by Groups (Members)

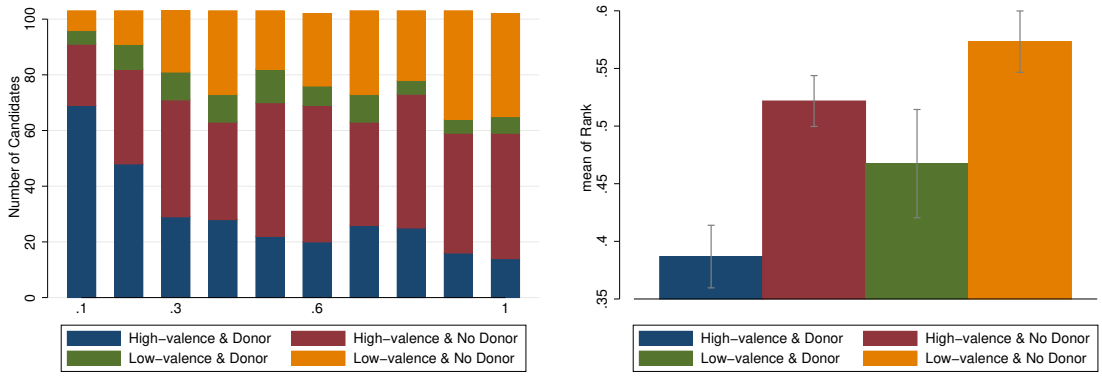
Donors - Parliamentary Election

Third, we provide additional evidence from parliamentary elections. The share of donors among candidates in municipal elections is small. To provide more robust evidence of sorting on the ballot among donors, we study ballots in parliamentary elections. While the number of candidates from one of the six main parties in the last 5 parliamentary elections is *only* around 8,500, roughly a third of them are classified as donors. We create *rank* as before, normalizing the ballot position into the [0,1] interval.

Figure 10a collapses candidates according to their rank by 10%. The share of high valence donors is decreasing rapidly as one goes to worse ranked positions on ballot. While there are almost two thirds of high valence donors among the 10% best ranked positions, there are only around 15% among the worst ranked candidates. Similarly to municipal election, in parliamentary elections, low valence donors are ranked better than high valence non-donors.

Next, we reclassify the group of donors to those who donate at least 50,000 CZK (approx.

Figure 10: Ballots in Parliamentary Election (Donors)

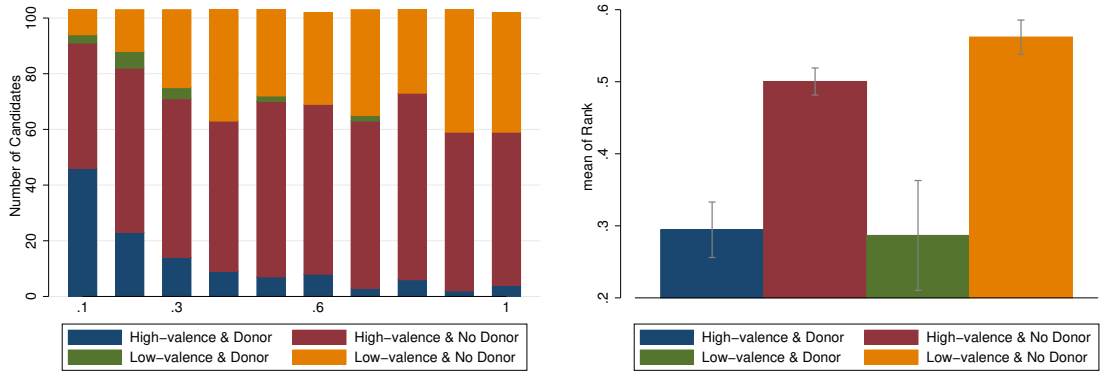


(a) Ballot Structure

(b) Average Rank by Groups

2,000 EUR). Figures 11a and 11b show the ballot structure for more generous donors. In line with the presented model, the share of donors shrinks, while the their ballot rank improved. In fact, as the threshold for donors increases, the different in rank between high and low valence candidates disappear.

Figure 11: Ballots in Parliamentary Election (Generous Donors)



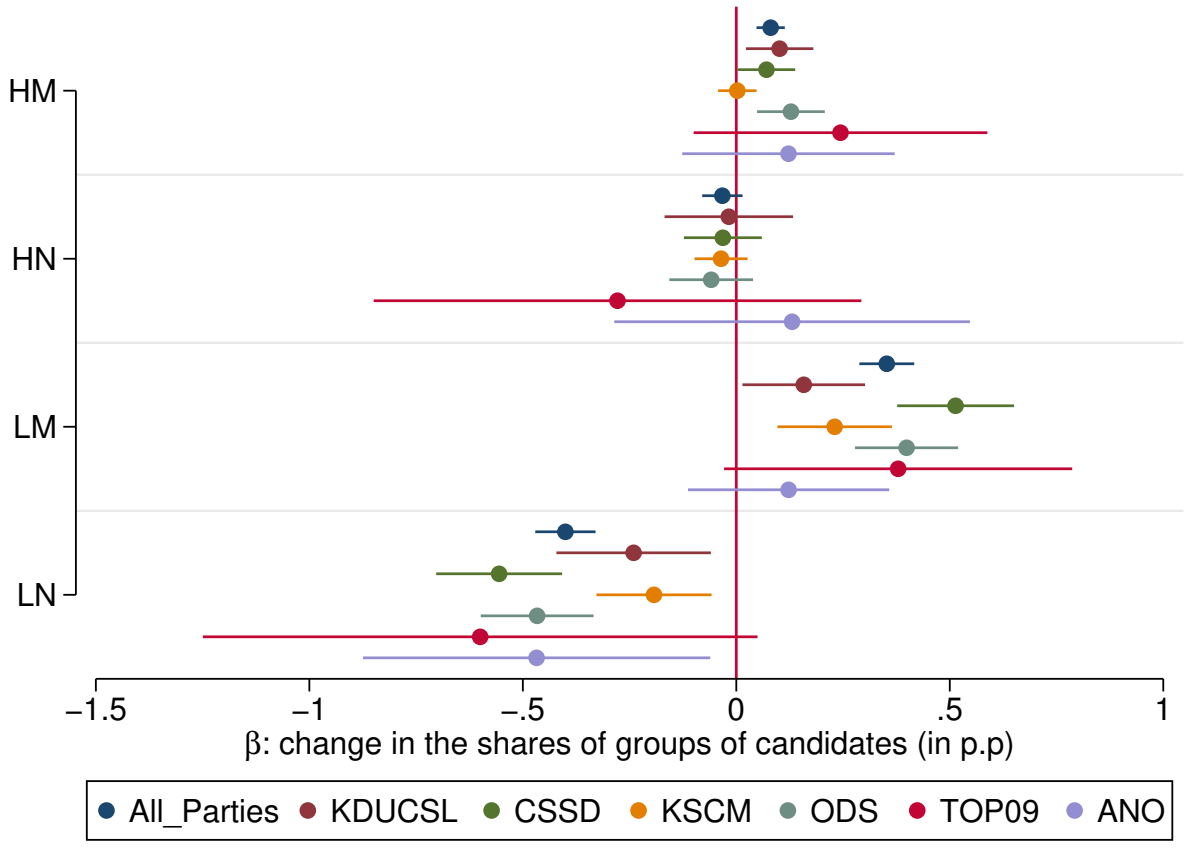
(a) Structure Ballots

(b) Average Rank by Groups

Party Strength

Figure 12 shows changes in ballot structure after a popularity shows decomposed for all six parties. Note that for both TOP09 and ANO, the coefficients have relatively large confidence intervals, as the parties have participated only in three and two elections, respectively and thus the estimates are based on fewer observations.

Figure 12: Changes in Groups Share (Members) by Party



Different Source of Variation

To provide additional evidence supporting our narrative, we explore different source of variation. Specifically, comparing to the Regression 3, we employ two different fixed effects: (i) party-municipality (γ_{pj}) as before; and (ii) political cycle (γ_τ) as captured in regression 11. Therefore, we do not control for variation caused by a change a party popularity at the national level. Suppose a party A becomes more popular, then this popularity shocks increases both the share of votes in national election in the municipality and the electoral potential in the next municipal election.

$$Share^g_{pj\tau} = \alpha^g + \beta^g PE\ ShareVotes_{pj\tau} + \sum_{k\in\{HM,HN,LM\}} \delta^k PE\ Share^k_{p\tilde{j}\tau} + \gamma^g_{pj} + \gamma^g_\tau + \epsilon^g_{pj\tau} \tag{11}$$

Figure 13: Changes in Group Shares (Robustness)

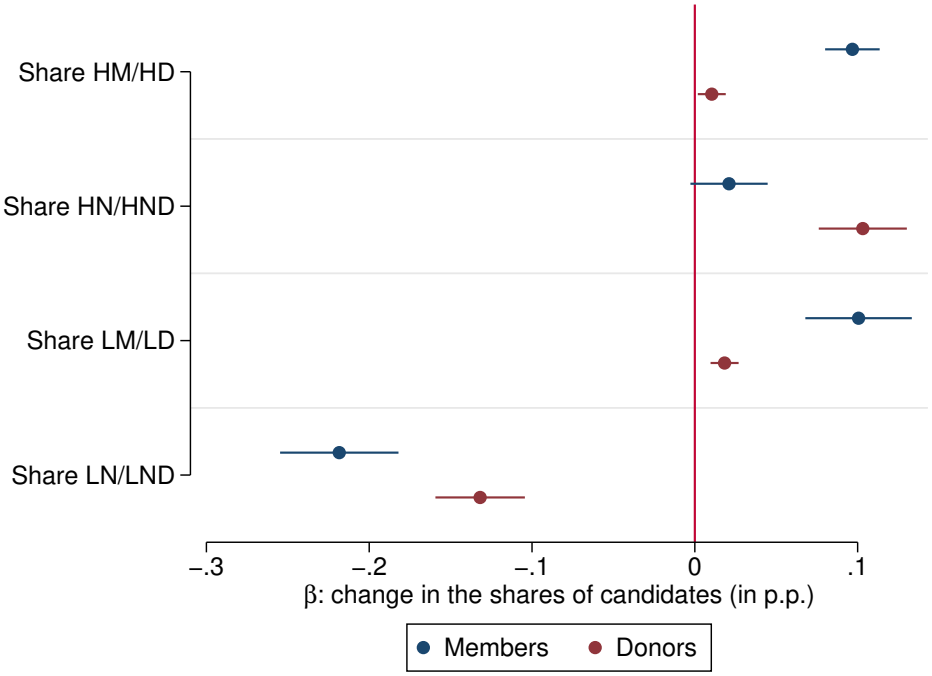


Figure 13 graphically shows coefficients β^g for both measures of *intra* party values. Despite some of the coefficient being insignificant, the main narratives hold. As party is more popular and thus its bargain power is higher, there are more high valence candidates and more candidates with *intra* party value on the ballot. Consequently, the least valuable group low

valence candidates with low *intra* party value are forced out.

Appendix B

t_4 is not sensitive to α

To see this, we show that optimal t_4 is not a function of a vector (t_1, t_2, t_3). Start with the definition of t_4 as a threshold that solve party leader's problem, i.e. a threshold that maximizes $V(\bar{q}, \bar{m})$ and note that $q(t)$ and $m(t)$ are indicator functions, so the problem can be split in four non-zero integrals.

$$V(\bar{q}, \bar{m}) = \int_{HM} g(t)dt + \int_{HM} \gamma dt + \int_{HN} g(t)dt + \int_{LM} \gamma dt \tag{12}$$

First, note that first two terms are independent of t_4, as HM will be always placed on the interval from [0,t_1]. That simplifies the problem into a sum of two integrals.

$$\tilde{V} = \int_{HN} g(t)dt + \int_{LM} \gamma dt \tag{13}$$

Second, note that t_4 is binding only if $t_4 < \min(t_2, t_3)$. That follows from the fact that for $t > \min\{t_2, t_3\}$, there is no trade off between LM and HN, as (at least) one of the groups does not satisfies the participation constraints.

Consider the following reduced objective function and denote x as a position of a switch between HN and LM.

$$\tilde{V} = \int_{t_1}^{x} g(t)dt + \int_{x}^{\min(t_2,t_3)} \gamma dt, \tag{14}$$

Deriving the FOC of $\tilde{V}$ with respect to x yields

$$g(x) = \gamma. \tag{15}$$

Since $g(t)$ is a decreasing function, there is no more than one value satisfies this optimal condition. If $x < min\{t_2, t_3\}$, there is an interior solution and $t_4 = x$; otherwise, $x = min\{t_2, t_3\}$ and t_4 is irrelevant. Irrelevance of t_4 implies that any value of t_4, such that $t_4 \in (min\{t_2, t_3\}, 1]$ is consistent with equilibrium behaviour. We show that while the switch between HN and LM is a function of α, as the vector of thresholds derived from candidates' participation constraints is a function of α, the t_4 it is not.

Proofs of Propositions

We prove both Proposition 1 and 2 simultaneously by discussing all possible combinations of thresholds and associated order of groups of candidates.

As there are four different thresholds t_1, t_2, t_3, and t_4 ordered on continuous interval $[0, 1]$, there are 24 different combinations in which they may be ordered. First, note that it must be the case that $t_1 < t_3$, otherwise *intra* party value would imposed negative cost, i.e. $c_a < 0$. That leaves us with 12 cases.

Second, note that if all four groups are represented on the ballot, it must be the case that $t_2 > \min\{t_3, t_4\}$. Suppose the opposite is true and $t_2 < t_4$ & $t_2 < t_3$, then low valence candidates with *intra* party value (LM candidates) are willing to run only from positions for which high valence candidates with no *intra* party value are preferable and willing to run. Therefore, LM would not be represented on the ballot. That excludes additional five combinations.

We are left with seven combinations of thresholds. Note that four thresholds divide the ballot into five intervals. We next describe which types of candidates (using a notation for membership status rather than donation) will be in which intervals.

(a) $t_1 < t_3 < t_2 < t_4$ implies the following intervals {HM, HN, LM, LN, LN}

(b) $t_1 < t_3 < t_4 < t_2$ implies the following intervals {HM, HN, LM, LN, LN}

(c) $t_1 < t_4 < t_2 < t_3$ implies the following intervals {HM, HN, LM, HN, LM}

(d) $t_1 < t_4 < t_3 < t_2$ implies the following intervals {HM, HN, LM, LM, LN}

(e) $t_4 < t_1 < t_2 < t_3$ implies the following intervals {HM, HM, LM, HN, LN}

(f) $t_4 < t_1 < t_3 < t_2$ implies the following intervals {HM, HM, LM, LM, LN}

(g) $t_4 < t_2 < t_1 < t_3$ implies the following intervals {HM, HM, HM, HN, LN}

Note that in cases (f) and (g), there are again not all groups represented, since HN are missing in (f) and LM are missing in (g). Case (c) is special, as HN are distributed in two disconnected intervals. If this was true, we should observe high variance in HN candidates' positions, which is not the case. Therefore, we rule the case (c) out as not representing the data.

Finally, the case (e) is the only possible case that implies that the average position of low valence candidates with *intra* party value is *better* than position of high valence candidates with no *intra* party values. That proves Proposition 2. Cases (a), (b), and (d) are the only three cases that: (i) satisfy the conditions from Proposition 1 ($t_1 < t_3 < t_2$ & $t_1 < t_4$); and at the same time: (ii) imply the sorting of candidates observed in data. This proves Proposition 1.

Proposition 4 follows by looking at the threshold orderings and shifting t_1, t_2 and t_3 to the right. However much they shift, the HM interval always increases and the LN interval is always reduced. We omitted cases where $t_1 < 0$ or does not exist and HM are not present. In that case, the share of the group at the top of the ballot increases instead.