

## 0.1 Legislative Candidates

Brazil’s electoral system puts individual candidates at the center of political choice. Indeed, the literature notes that (i) parties are weak, under-resourced, and often unable to constrain opportunistic behavior by individual legislators (Alderson et al., 2006); (ii) open-list PR and a lack of formal mechanisms channeling resources to congressional party leaders promote candidate-centric legislative careers (Alderson et al., 2006); and (iii) Brazilian elections tend to be candidate-centric rather than party-centric, with voters effectively responding to candidate characteristics above party labels (Alderson et al., 2006).

Understanding the drivers of voters’ choices, therefore, requires that we analyze them at the candidate level. To that end, we bring together data on candidates running for a seat in the Câmara dos Deputados in the 2006, 2010, and 2014 elections. In total, across these three elections and all 27 legislative districts, there were 15,698 candidate-years: 4,944 in 2006, 4,887 in 2010, and 5,867 in 2014. For each candidate running for office, we observe the number of votes obtained by the candidate in each municipality, along with a rich set of individual characteristics including their previous professional and political experience, level of education, and gender.<sup>1</sup> For 10,025 of these candidates, we are also able to estimate a measure of their policy positions using individual campaign contributions.

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Figure ?? provides summary statistics of candidates’ observable non-policy characteristics.<sup>2</sup> Overall, we find that incumbents constitute only a fraction of all candidates, but are disproportionately represented among candidates who secure a seat in the chamber. While only about half of the candidates have higher education, this figure increases to about 75% for elected candidates; women compose only about a quarter of total candidates, but an even far lower percentage of elected candidates; candidates with business or government (bureaucratic) experience make about 10% of the pool of candidates, and they represent a significantly lower proportion of elected candidates.

### NEED TO INCLUDE

Education, professional experience, gender, and other valence attributes of candidates are clearly important to voters. Policy positions candidates adopt matter as well. This has been documented in the U.S. and elsewhere.<sup>3</sup> In Brazil, there is growing evidence of the

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<sup>1</sup>This information is available from the *Tribunal Superior Eleitoral* (TSE).

<sup>2</sup>following standard practice, we refer to these non-policy attributes as valence.

<sup>3</sup>See, e.g., Alderson et al., 2006, and Alderson et al., 2006.

strengthening of programmatic parties and policy position ? . These defined policy positions can alter voting behavior, but defining the extent to which voters respond to these changes has been fraught by a set of challenges which we address in this exercise.

Estimating how voters’ preferences for candidates vary with the policies endorsed by legislative candidates requires a measure of both elected and non-elected candidates’ policy positions. Unfortunately, there are currently no available measures of both incumbents’ and challengers’ policy positions for Brazilian legislative elections.<sup>4</sup> To address this gap, we adopt the estimation approach of ? and produce novel estimates of candidates’ policy choices, using micro-level data on campaign contributions for 2004-2014.<sup>5</sup> The key assumption is that a contributor’s marginal benefit of giving to a candidate is decreasing in the distance between the contributor’s ideal policy and the candidate’s choice. Through an augmented correspondence analysis, we use these campaign contributions to estimate individual policy positions across candidates, pooling available data for the entire period.<sup>6</sup> The basic intuition is that candidates who receive campaign donations from the same contributors should be close with respect to their policy positions.<sup>7</sup> Conversely, if patterns of contributions are dissimilar, these differences translate into a greater distance in their policy positions.

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<sup>4</sup>? and ? estimate *incumbents*’ ideal points using surveys that ask them to place themselves and all the main political parties represented in the legislature on a left-right, ten-point scale. As these scholars note, estimation of incumbents’ ideal points via DW-Nominate is challenging due to widespread “vote-buying” of legislators through pork-barrel spending and cabinet allocations.

<sup>5</sup>In U.S. data, Bonica’s estimates closely match ideal point estimates obtained using roll call data.

<sup>6</sup>Details of the estimation can be found in Appendix X.

<sup>7</sup>While Bonica interprets these estimates as politicians’ preferred policies, we only make the assumption that these are the candidates’ policy choices, which could or not correspond to their true preferences.

To implement this approach, we rely on rich micro-level data on dyadic contributions, which include both individual and corporate donations and to which politician they have donated.<sup>8</sup> Since corporations may donate to candidates strategically to secure access, we exclude them from our data and focus on private contributions by non-partisans and non-politicians. In total, we leverage data from over 650 thousand unique contributions at the federal level, and 3.8 million unique contributions at the local level, pooling across electoral cycles.<sup>9</sup> Because many non-viable candidates tend to receive no individual-level contributions, we are forced to drop a sizable number of candidates from the database. Nevertheless, our final sample includes 10,025 candidates across the three elections.<sup>10</sup>

Figure ??

We perform a battery of sanity checks of the external and internal validity of our candidate policy estimates. The left panel of figure ?? in the Appendix shows that there is a strong correlation between policy positions within the same party at both the local and federal level. The right panel of the same figure shows that our policy estimates are correlated with the ideology scores estimated by ? at the party level. Figure ??, on the other hand, shows that our estimates capture the leftward ideological shift of voters and parties in the 2000s found in Latinobarometer surveys. Figure ?? shows that our estimates are robust to excluding top

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<sup>8</sup>The campaign contribution data is available since the 2000 election, when the TSE mandated the disclosure of electoral campaign contributions to candidates at all levels of government.

<sup>9</sup>Under-the-table donations—*caixa dois*—are common, but previous research using the same data shows that officially declared donations capture the majority of campaign contributions (?).

<sup>10</sup>The candidates for whom we are able to recover policy positions make an overwhelming fraction of all candidates seriously contending for a seat in the Câmara dos Deputados—see Figure ?? in the Appendix. In fact, only 0.2% of candidates for whom we don’t have policy data were ultimately elected. Table 1 in the Appendix summarizes coverage of the final dataset by state and electoral cycle.

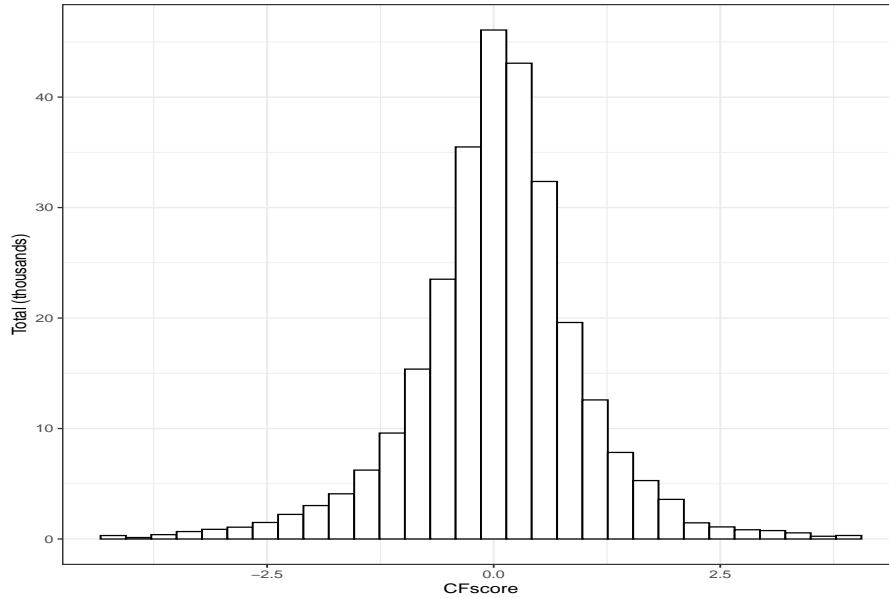


Figure 1: Distribution of policy positions across politicians. Sample includes federal, state and local-level candidates (2000-2014).

5 and 10 percentile donors. Lastly, figure ?? shows that individual level contracts do not correlate with total earmarks by federal deputy.

In the next section, we use this information on candidates' valence characteristics and policy choices, along with election results, to estimate voters' preferences. The key for doing this, of course, is that voters can in principle give their vote to any candidate in the district but choose someone with particular attributes. Another alternative that is de facto available to voters is to abstain or to cast a void vote. This "outside option" is thus effectively competing with all the candidates for votes. As Figure ?? illustrates, this, in itself, is a formidable alternative. The 29% average abstention rate and 8.6% average blank vote rate in what is formally a compulsory voting system provide suggestive evidence that voters are not enthusiastic about the candidates they face.

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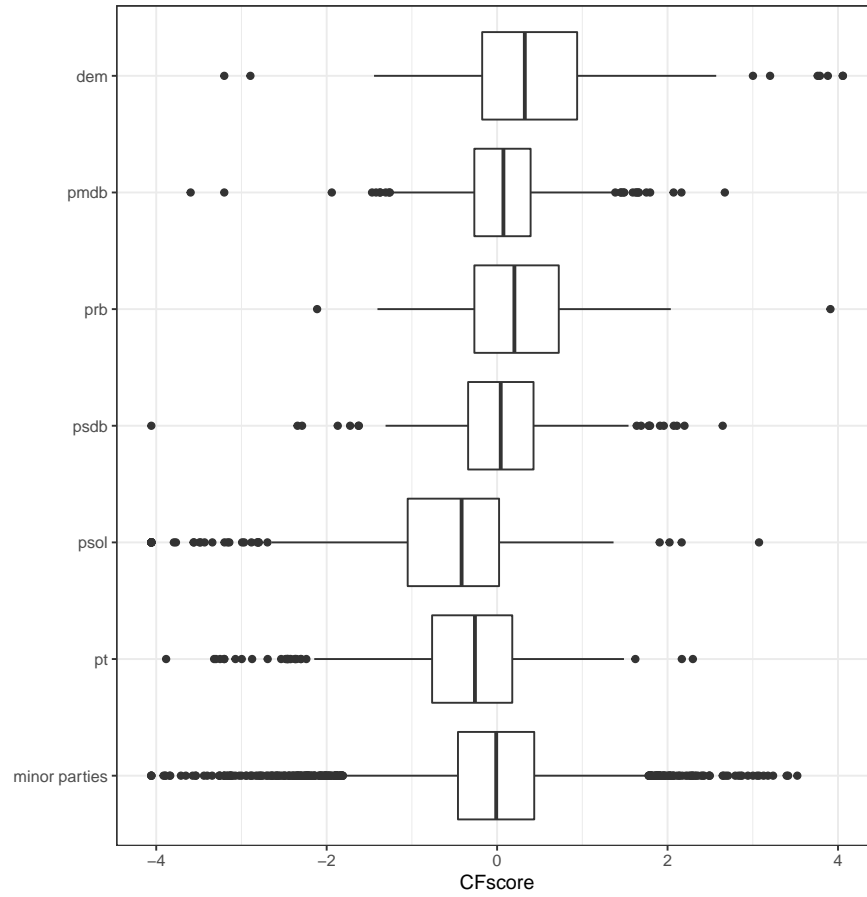


Figure 2: Distribution of policy positions across parties. Includes major parties such as PT, PMDB and DEM, as well as policy positions for all other parties.

State	2006			2010			2014		
	Full	Sample	Percent	Full	Sample	Percent	Full	Sample	Percent
Acre	50	24	48.00	37	20	54.05	62	35	56.45
Alagoas	82	41	50.00	63	33	52.38	99	61	61.62
Amazonas	78	33	42.31	51	30	58.82	76	54	71.05
Amapa	63	31	49.21	62	42	67.74	102	78	76.47
Amapa	63	31	49.21	62	42	67.74	102	78	76.47
Bahia	216	117	54.17	243	144	59.26	287	183	63.76
Ceara	145	70	48.28	114	57	50.00	190	130	68.42
Ceara	145	70	48.28	114	57	50.00	190	130	68.42
Distrito Federal	106	47	44.34	94	39	41.49	125	78	62.40
Espirito Santo	83	57	68.67	72	51	70.83	147	95	64.63
Espirito Santo	83	57	68.67	72	51	70.83	147	95	64.63
Goiias	109	64	58.72	116	67	57.76	93	58	62.37
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Maranhao	153	64	41.83	151	84	55.63	222	131	59.01
Maranhao	153	64	41.83	151	84	55.63	222	131	59.01
Minas Gerais	528	284	53.79	523	288	55.07	595	373	62.69
Mato Grosso Do Sul	70	42	60.00	67	44	65.67	114	71	62.28
Mato Grosso	92	59	64.13	68	43	63.24	86	63	73.26
Para	137	69	50.36	118	75	63.56	170	126	74.12
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Paraiba	87	53	60.92	77	60	77.92	90	70	77.78
Paraiba	87	53	60.92	77	60	77.92	90	70	77.78
Pernambuco	198	75	37.88	176	66	37.50	152	94	61.84
Piaui	83	44	53.01	87	52	59.77	85	71	83.53
Piaui	83	44	53.01	87	52	59.77	85	71	83.53