

# Positioning in Congressional Primary Campaigns\*

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## Abstract

The concept of campaign positioning is integral to theoretical investigation of elections, representation, and political behavior, yet empirical studies rely upon proxy measures that may not reflect candidates' public campaign positions. Leveraging original data on issue platforms from the campaign websites of 2016—2022 congressional primary candidates, I introduce a new measure based directly on candidates' own campaign positions during the increasingly important primary election stage. Primary campaign positions are temporally dynamic, straightforward to validate, and clearly recover a recognizable liberal–conservative dimension. The utility of the measure is demonstrated with an application to an ongoing debate about whether nationalization mitigates candidates' district ties, wherein I find that primary candidates' rhetoric varies systematically with district partisanship. Estimating primary candidates' positions independently of campaign receipts and roll–call voting facilitates future investigation into the substantive relationships between public campaign rhetoric, financial contributions, and subsequent legislative behavior.

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Candidate positioning is a ubiquitous concept in both theories of elections and ongoing empirical debates in electoral and representation studies.<sup>1</sup> Announced policy platforms are critical to Downsian formal models of electoral behavior and competition (Banks 1990; Baron 1994; Cameron and Enelow 1992; Downs 1957; Enelow and Hinich 1982) and a focus of scholarly debates regarding extremist success, the role of nationalization versus district preferences, and other key topics within the study of legislative elections (Ansolabehere, Snyder, and Stewart 2001; Kujala 2020; Bonica and Cox 2018; Hall 2015; Hall and Snyder 2015; Hopkins 2018; Utych 2020; Woon 2018).

Understanding the dynamics of candidate positioning during the primary stage of contemporary elections is particularly important for two reasons. First, primary elections have grown to have an outsized influence on electoral outcomes: the shrinking number of congressional districts competitive for both Democrats and Republicans today means that many House elections are as good as decided once the primary race ends (Abramowitz, Alexander, and Gunning 2006; Jacobson 1990, 2015).<sup>2</sup> Second, primaries are fought between those who share a party label, thus presenting an opportunity to select between different *kinds* of Republican or Democrats. The irrelevance of traditional partisan heuristics creates a potentially greater role of intra-party variation in positions, as candidates may be incentivized to distinguish themselves from a co-partisan field.<sup>3</sup>

Although the focus on primary elections has increased in tandem with their influence on shaping the contemporary Congress (e.g. Hassell 2023; Henderson et al. 2022; Hirano and Snyder 2019; Thomsen 2022), scholars' ability to investigate key questions related to how candidates position themselves publicly during primary campaigns is limited by data

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<sup>1</sup>While terms like *ideology* or *ideal point* are used frequently in studies involving collections of political views, this paper is interested solely in how candidates present themselves during elections and is agnostic about the "truthfulness" of these self-presentations. For this reason, I instead refer to *positioning* and *positions*, although I use descriptors such as *liberal*, *conservative*, and *extreme* that are commonly associated with ideology.

<sup>2</sup>The number of House races decided within 10% was 33 in 2016, 90 in 2018, 77 in 2020, and 75 in 2022 ([https://ballotpedia.org/Congressional\\_elections\\_decided\\_by\\_10\\_percent\\_or\\_less,\\_2018](https://ballotpedia.org/Congressional_elections_decided_by_10_percent_or_less,_2018)).

<sup>3</sup>This is especially true in the case of open-seat primaries, where candidate fields tend to be large and no hopeful possesses the valence advantages enjoyed by a typical incumbent.

and measures. Questions regarding position-taking during elections to appeal to voters, co-partisans, potential donors, or the media require a direct measurement of candidates' self-presentation. As proxies for candidate positioning, scholars typically rely on estimates of campaign contribution networks (Bonica 2013, 2014; Hall and Snyder 2015) or legislative roll-call voting (Clinton, Jackman, and Rivers 2004; Poole et al. 2011). These measures possess appealing features and have been invaluable for advancing the study of electoral and legislative behavior. However, their underlying behavioral models and data limitations make them less valuable in certain settings. For instance, analyzing the relationship between candidates' positions and either campaign contributions or legislative behavior requires a measure of positions estimated separately from donations and roll-call voting (Kim, Lin, and Schnakenberg 2022; McCarty and Rothenberg 1996; Schnakenberg 2016).

I introduce a measure of positioning that closely mirrors the concept of policy platforms invoked by spatial models and is based on primary candidates' own campaign rhetoric. Using original text data on issue positions collected from campaign websites, I develop election-specific, unidimensional estimates of House primary candidates' positioning based on variation in word usage. This collection encompasses the over 6,000 candidates who appeared on major-party primary ballots in 2016, 2018, 2020, and 2022, allowing researchers to characterize the policy platforms and positioning of candidates from the most recent primary cycles.

The proposed measure of candidate positioning offers a number of conceptually and methodologically desirable properties. First, campaign websites capture candidates' issue priorities and positions in their own words — unmediated by media portrayals, donors' perceptions, or a fixed agenda (Druckman, Kifer, and Parkin 2009; Porter, Treul, and McDonald N.d.) — yet this strategic rhetoric is likely influenced by many factors of scholarly interest, such as electoral and candidate characteristics. In addition, the measure is transparent and straightforward to validate: candidates' estimated positions can be compared to their plain-English campaign platforms, and word-level parameters recovered during

scaling make clear how each word influences the position estimation. Finally, no special assumptions are made about individuals' positions from one election to another, effectively producing a time series of positions for candidates who ran in multiple cycles over the period.

The new measure of campaign positioning is introduced as follows. First, I explain how campaign websites constitute an ideal source of data for the concept of interest in much research on polarization and legislative elections. I then outline the process of collecting original data on issue positions from campaign websites and provide descriptive statistics on the primary candidates who are and are not captured in the sample. Having shown the representativeness of those included, I introduce the text scaling model and algorithm used to estimate candidate positions based on word usage and frequency in campaign platforms. With estimates of candidate- and word-level parameters in hand, I probe the measure's construct and face validity, underlying dimensionality, and statistical relationship with external measures. Next, I contribute to an ongoing debate regarding national versus constituency influence and demonstrate that while candidates' contribution networks appear to have nationalized, their campaign rhetoric varies systematically by district partisanship. The concluding section explicates the utility (and limitations) of the measure for yielding new insights about congressional elections and how candidates' strategic self-presentations relate to their fundraising and future legislative behavior.

## **Capturing Candidate Positioning**

Measures of political actors' positions are integral to many of the most important and ongoing debates in political science. A proliferation of data and methodologies have advanced our ability to scale preferences for more and more groups of interest, yet the behavioral and statistical models underlying readily-available measures do not always reflect the concept that is often of interest in studies of representation, electoral behavior, and po-

larization: how candidates publicly position themselves during an election. This section explicates the gaps between campaign positions and existing approaches, the suitability of campaign websites as a source of positioning data, and the text scaling model used to characterize and compare positions across primary candidates and over time.

## Existing Approaches

The introduction of roll-call-based ideological estimation transformed the study of legislative and electoral behavior. NOMINATE and its variations (McCarty, Poole, and Rosenthal 2006; Poole and Rosenthal 1991; Poole 2005), as well as Bayesian approaches that facilitate incorporation of external information (Clinton, Jackman, and Rivers 2004), allowed for the systematic characterization of congressmembers' spatial ideal points based on an underlying behavioral model. These methodologies opened the door for testing theories of representation (e.g. Bafumi and Herron 2010; Brady, Han, and Pope 2007; Canes-Wrone, Brady, and Cogan 2002), but the increasing interest in polarization required comparable measures of non-incumbent candidates' positions.

In response, Bonica (2014), Hall and Snyder (2015), and Hall (2015) leverage campaign receipt networks to proxy candidates' positions by assuming that donors contribute to those ideologically similar to themselves. While donors "are free to consider the many ways in which candidates express their ideology" (Bonica 2014, 372) including private information (Austen-Smith 1995; Hall and Wayman 1990; Kalla and Broockman 2016), this means that contribution-based measures do not solely reflect candidates' public positioning. Additionally, the behavioral model of donors making contributions solely on the basis of ideological proximity has been called into question by the apparent influence of strategic factors, such as district competitiveness and opposing candidate ideology, to donors' decisions (e.g. Barber 2016; Barber, Canes-Wrone, and Thrower 2017; Gimpel, Lee, and Pearson-Merkowitz 2008; Meisels, Clinton, and Huber N.d.).<sup>4</sup>

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<sup>4</sup>Although the same studies demonstrate that ideological congruence is one key factor in individual

Nevertheless, contribution-based estimates of candidates' positions (most notably, those from Bonica's (2014) Database on Ideology, Money, and Elections) offer one of the only measures of candidate positions not based on legislative behavior. Major surveys of federal candidates' stances, such as NPAT (National Political Awareness Test), have been plagued by low response rates for decades (McGhee et al. 2014), and television advertisements are prohibitively expensive for a large portion of House general election candidates, much less primary candidates (Herrnson, Panagopoulos, and Bailey 2020). Although researchers have derived text-scaling estimates of candidates' positions using Twitter data (Cowburn and Sältzer N.d.; Temporão et al. 2018), responsiveness of social media posts to events and controversies distinguishes tweets from more stable collections of issue stances and policy platforms.

## **Why Campaign Websites?**

Campaign websites constitute a uniquely well-suited source of data for estimating primary candidates' positioning. The vast majority of websites contain a page or section clearly delineated as a collection of issue stances, resembling a stated policy platform more closely than any other campaign activity. Moreover, the priorities and positions found on websites are selected and articulated by candidates themselves, in contrast to media interviews, televised debates, and newspaper write-ups. Websites also provide candidates an opportunity to present a far more comprehensive campaign platform than tightly time- and space-constrained advertisements in newspapers or on television (Sulkin, Moriarty, and Hefner 2007).

In addition to providing an unfiltered and not-directly-mediated picture of candidates' rhetoric, websites are also a highly accessible campaign medium compared to other activities. Creating and maintaining a website is easy and far cheaper than fundraising, sending mailers, and running television advertisements, resulting in a relatively even play-  

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donors' decisions, widely-used contribution-based measures assume that it is the sole donation motivation.

ing field with regard to candidates' resources.<sup>5</sup> Given that campaign websites "provide an unmediated, holistic, and representative portrait of messages aimed at voters in general" (Druckman, Kifer, and Parkin 2009, p. 346-347), scholars have long recognized their value for studying campaign strategy (Druckman, Kifer, and Parkin 2009; Druckman et al. 2010; Milita, Ryan, and Simas 2014; Nyhan and Montgomery 2015; McDonald, Porter, and Treul 2020; Porter, Treul, and McDonald N.d.).<sup>6</sup>

## Data: Primary Campaign Websites, 2016 — 2022

To characterize the rhetorical positioning of modern House primary candidates, I collect original data on the issue positions of all candidates who appeared on the ballot in a Democratic or Republican primary in 2016, 2018, 2020, and 2022 from campaign webpages.<sup>7</sup> This effort includes over 6,000 unique candidate-year observations, representing the largest collection of congressional primary candidates' platforms to my knowledge.

A simplified example workflow is illustrated in Figure 1, and Appendix A details the data collection at length. For each House district in a given election year, all candidates who appeared on the ballot in a Democratic or Republican primary were identified from *Ballotpedia*. Next, I searched for each candidate's campaign website by Googling "[candidate name] for Congress [election year]" and cross-checking websites such as Politics1.com and the candidate's *Ballotpedia* page for a designated campaign website.<sup>8</sup> I used *Wayback Machine* to find the websites of candidates who ran prior to 2022 as archived most

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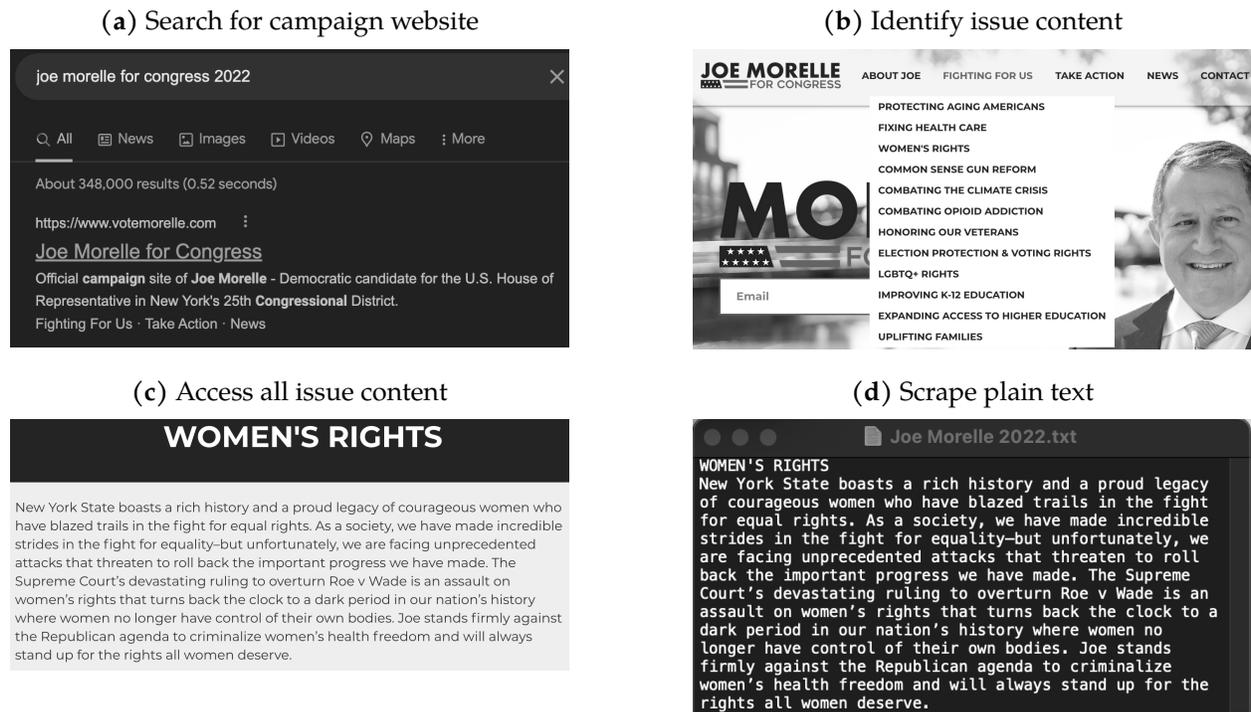
<sup>5</sup>While some candidates host highly professionalized websites clearly created by web designers, many candidates utilize free website creators, which offer easy-to-use interfaces that make website creation accessible to even the least technologically savvy candidate without the aid of campaign staff.

<sup>6</sup>The scope of existing research using House campaign websites has been limited to general election candidates, or to primary candidates from one or two election cycles.

<sup>7</sup>Because my focus is candidates who competed in major-party primaries, I drop third-party candidates, candidates whose primaries were cancelled, and candidates in CA, WA, LA, CT, UT, and certain party primaries in some VA districts. Appendix A provides the full list of and explanations for excluded locales.

<sup>8</sup>I exclude official governmental websites (those ending in .gov), as sitting incumbents maintain separate online presences for their campaign. Additionally, I exclude social media pages such as Facebook and Twitter, which are primarily forums for candidates to provide updates or respond to current events rather than establish stable platforms.

**Figure 1.** Example Data Collection Workflow



*Note:* Visual depiction of simplified steps involved in collecting Representative Joe Morelle’s 2022 primary campaign issue positions from [www.votemorelle.com](http://www.votemorelle.com). Appendix A describes each component of the data collection in detail.

directly prior to the candidate’s primary date, and 2022 candidates’ websites were collected in real time.<sup>9</sup> I then navigated to issue content, which was typically found on a page or in a section clearly designated “Platform,” “Issues,” or “Priorities.” Candidates’ issue positions were manually scraped by copying and pasting the text into files and also saving an image of the content exactly as it appeared.

All in all, over 60% (3,816) of all 6,274 major-party primary candidates from 2016 to 2022 hosted campaign websites with issue content. Because the baseline costs involved in creating a website are so low, “missingness” in the data is more plausibly related to primary candidates’ decision not to publicly commit to a platform than to factors unrelated to positioning but related to the availability of extant measures, such as insufficient fundraising (in the case of contribution-based measures) or failure to win election (in the

<sup>9</sup>Candidates’ live websites were accessed within a week of their primary election.

case of roll-call-based measures).

To investigate the representativeness of these candidates, Table 1 reports relationships between the binary presence of campaign website positions and observable candidate, election, and district characteristics thought to relate to candidates' willingness and ability to announce a platform. I estimate models separately by incumbency status due to different meanings of missingness in the data: incumbents virtually all hosted primary campaign websites over the period, but some omitted positions, whereas some non-incumbents lacked a website altogether, but those with websites nearly all included positions. Data on fundraising are from FEC pre-primary reports and presidential vote shares are from Daily Kos, which include 2020 election results for post-census 2022 districts. Competition is captured by indicators for whether the primary was unopposed or financially uncompetitive (with financially competitive as reference category)<sup>10</sup> as well as the party's advantage in the district<sup>11</sup> (Bartels 1986; Druckman et al. 2010; Lachat 2011; Grimmer 2013). In the non-incumbent model, I also indicate state legislative experience<sup>12</sup> and whether a candidate raised under 10% of the total receipts in the primary (Milita, Ryan, and Simas 2014).

Table 1 indicates high rates of campaign website position-taking, especially (and unsurprisingly) among incumbents and those who garnered more than a *de minimis* share of their primary's total fundraising. Non-incumbents who raised under 10% of the total receipts are 15 percentage points less likely to have website positions than those who raised more. However, the magnitude of this missingness is relatively modest considering that nearly 40% of sample non-incumbents did not even file pre-primary fundraising reports, and a substantial portion of such candidates likely did not actively campaign after filing to run. Overall, the results do not suggest that large swaths of candidates are systemat-

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<sup>10</sup>Following Thomsen (2022), a primary is coded as financially competitive if the top fundraiser garnered under 57.5% of the total receipts in the primary.

<sup>11</sup>Following Hirano and Snyder (2019), a party is advantaged if their nominee received over 57.5% of the vote share in the most recent presidential election, disadvantaged if they received under 42.5%, and swing if their vote share was somewhere in between.

<sup>12</sup>I thank Alan Wiseman for sharing data on state legislators, which I matched with House primary candidates based on first name, last name, state, and partisanship.

**Table 1. Determinants of Primary Campaign Website Positions, 2016—2022**

	Campaign Website Positions Present	
	Incumbents	Non-Incumbents
(Intercept)	0.866*** (0.068)	0.775*** (0.028)
Republican	0.025 (0.027)	-0.014 (0.014)
Unopposed Primary	-0.087 (0.065)	-0.054 (0.028)
Uncompetitive \$ Primary	-0.050 (0.065)	-0.014 (0.017)
Advantaged District	-0.076** (0.028)	
Receipts < 10%		-0.146*** (0.015)
State Legislator		0.025 (0.026)
Open Advantaged		0.001 (0.025)
Open Disadvantaged		-0.068* (0.034)
General Challenger Swing		-0.009 (0.024)
General Challenger Disadvantaged		-0.092*** (0.023)
Primary Challenger Advantaged		-0.046 (0.025)
Primary Challenger Swing		-0.029 (0.033)
Year Fixed Effects	✓	✓
Observations	1,213	4,939
Adjusted R <sup>2</sup>	0.012	0.100

*Note:* Linear probability models predicting presence (1) or absence (0) of campaign website issue positions during primary. Reference value for primary competitiveness is financially competitive, district type in incumbent model is swing, and district-candidate type in non-incumbent model is open-seat swing. HC3 standard errors in parentheses. \*p<0.05; \*\*p<0.01; \*\*\*p<0.001

ically excluded from data on campaign website positions on the basis of candidate type, electoral competitiveness, or even resources.

## Scaling Primary Campaign Positions

Having provided evidence that those who take positions are broadly representative of the universe of primary candidates, I now turn to estimating candidates' overall primary positioning based on their campaign website issue text. I follow other scholars in assuming that the frequency and usage of words in political text are informative about authors' positions on what is thought to be a liberal–conservative dimension (Lauderdale and Herzog 2016; Laver, Benoit, and Garry 2003; Lowe et al. 2011; Rheault and Cochrane 2020; Vafa, Naidu, and Blei 2020). As demonstrated by Grimmer and Stewart (2013), however, the validity of this assumption rests crucially on the dominance of a liberal–conservative dimension within the relevant texts. Manually identifying issue positions ensures that the collection of campaign website text is focused on issue positioning content, and the proceeding section provides individual–, aggregate–, and term–level evidence to validate the underlying dimensionality structuring primary campaign discourse.

To prepare the campaign position text corpus, I construct an  $\mathbf{N} \times \mathbf{M}$  sparse document–feature matrix with  $\mathbf{M}$  term columns,  $\mathbf{N}$  candidate–year rows which include all primary candidates with campaign website positions from 2016–2022, and term frequencies as cell entries. I pre-process the data by removing punctuation, reducing terms to their stem, and removing both highly frequent stopwords and highly infrequent terms to reduce noise in estimation and improve computing performance.<sup>13</sup> To help ensure that the key liberal–conservative dimension is identified and minimize the risk of misspecifying the policy space, I drop terms primarily associated with geographic or incumbency differences between candidates, such as state names and congressional procedure. In addition to all remaining unigrams that meet the above criteria, I likewise preserve frequently-used bigrams (e.g. common core), trigrams (e.g. freedom of speech), and quadgrams (e.g.

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<sup>13</sup>I drop terms that appear in fewer than 100 separate campaign texts. This is an extremely lenient requirement given that the corpus contains almost 4,000 campaign texts, yet this step substantially improves computing time. See Appendix B for further discussion of pre-processing choices.

right to bear arms).<sup>14</sup> Altogether, this results in more than 2,500 unique terms across over 3,800 separate primary campaigns. The detailed text processing flow and comparisons of estimates with and without scaling refinements are provided in Appendix B.

I use an unsupervised machine learning algorithm, *wordfish*, to scale unidimensional primary campaign positions at the candidate–year level (Slapin and Proksch 2008). The statistical model is based on item response theory and bears strong resemblance to correspondence analysis, the methodology used to estimate campaign contribution–based CF Scores (Bonica 2014).<sup>15</sup> Importantly, the model also accounts for candidate–level differences in wordiness and word–level differences in the informativeness *vis-à-vis* candidates’ positions.<sup>16</sup> The rate  $y$  at which primary candidate  $i$  uses term  $j$  in election year  $t$  is assumed to be drawn from a Poisson distribution, which is characterized by a single parameter  $\lambda$  representing both the expected value and variance. This parameter logarithmically links the probability distribution generating the observed term rate to the systematic components of interest:

$$y_{ijt} \sim \text{Poisson}(\lambda_{ijt}) \text{ where } \lambda_{ijt} = \exp(\alpha_{it} + \psi_j + \beta_j * \omega_{it}). \quad (1)$$

The key parameter is  $\omega_{it}$ , which stands in for candidate  $i$ ’s latent primary campaign position in election  $t$ , and is scaled to have sample mean 0 and standard deviation 1. As mentioned previously, no special assumption is placed on individuals’ positions over time: for candidates who ran in more than one House election between 2016 and 2022, each primary campaign constitutes a separate observation. The  $\beta_j$  represents word  $j$ ’s weight in discrim-

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<sup>14</sup>Scatterplots in Appendix B demonstrate high correlations between scaling estimates with and without non-unigram, geographic, and procedural terms ( $r = 0.997$ ;  $\rho = 0.998$ ).

<sup>15</sup>Scatterplots in Appendix B demonstrate strong correlations between scaling estimates from *wordfish* and one-dimensional correspondence analysis ( $r = 0.988$ ;  $\rho = 0.998$ ).

<sup>16</sup>For example, the term *gun* is neutral and used by candidates all across the political spectrum, whereas the term *high-capacity* highlights the danger of large firearm magazines and thus predominantly associated with candidates on the left.

inating between different campaign positions.<sup>17</sup> A word fixed effect  $\psi_j$  captures the rate at which word  $j$  is used generally, and a candidate-year fixed effect  $\alpha_{it}$  corresponds to the verbosity of candidate  $i$ 's campaign position text in election  $t$ . After calculating start values, estimation proceeds via expectation maximization, which entails estimating conditional expectations for the word and candidate parameters, calculating conditional maximum likelihoods, and iterating using these new parameter expectations until the model converges successfully.<sup>18</sup> Further technical details of the text data pre-processing, algorithm initialization, and parameter estimation, as well as alternative scalings using correspondence analysis and unrefined tokens, are relegated to Appendix B.

## Results, Validation, and Comparisons

I now examine the substance of the dimension structuring primary campaign positions, subject the measure to a series of validation exercises, and consider its relationship to other measurements. The terms underlying campaign discourse demonstrate that the scaling recovers a recognizable liberal–conservative dimension. Moreover, endogenizing the scaling by performing year– and incumbency–specific estimation shows dimensional stability across time and candidate seriousness. I then establish that the measure replicates the well–known bimodal distribution that distinguishes between positions of Republicans and Democrats and provides facially valid estimates that distinguish between more and less extreme candidates of the same party. Finally, I uncover evidence that primary campaign positions capture something meaningfully distinct from donor networks and legislative voting by exploring the measure's relationship with CF Scores and NOMINATE.

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<sup>17</sup>This is akin to an IRT discrimination parameter or factor analysis loading score.

<sup>18</sup>Start values of  $\psi$  and  $\alpha$  are functions of word frequencies, while start values of  $\beta$  and  $\omega$  are obtained via singular value decomposition of the matrix of word frequency marginals — hence the strong relationship between estimates resulting from correspondence analysis versus wordfish in the Appendix.

## Content and Dimensionality

Of chief importance when using unsupervised scaling methods is ensuring that the dimension of interest — here, a left–right, issue–based dimension — is the one structuring individuals’ positioning estimates (Grimmer and Stewart 2013; Egerod and Klemmensen 2020). Luckily, interrogating the underlying substance is relatively straightforward and transparent in the case of text data, as terms included in the scaling likewise receive parameter estimates based upon their ability to discriminate between positions. Table 2 reports the ten terms with the largest negative (left) and positive (right)  $\beta$  weights from Equation 1, while the top 20 terms and their corresponding  $\beta$  and  $\psi$  estimates are reported in Appendix B. While terms related to critical race theory, Christianity, anti-abortionism, illegal immigration, and socialism are strongly associated with conservative campaign positions, terms related to inequality, injustice, gender and sexuality, and affordable education are strongly associated with liberal positions. Overall, these results provide strong evidence that the rhetoric underlying the scaling estimates is structured by well–recognized modern divisions along the liberal–conservative spectrum.

A major advantage of primary campaign positions is their dynamic, time-series nature: if a candidate’s campaign rhetoric changes from primary–to–primary, so too will her estimated primary campaign position. While the narrow temporal scope of the data makes it especially unlikely that the meaning of words changed substantially across the time period (Egerod and Klemmensen 2020), it is nevertheless informative to check whether the vocabulary of primary campaigns differed from one election to the next. Performing scaling separately by year in Appendix B suggests substantial continuity in even the top terms with the most liberal and conservative weights,<sup>19</sup> as well as correlations above 0.90 between primary campaign position estimates from the pooled scaling and each of the

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<sup>19</sup>Moreover, the emergence of heavily weighted terms such as `lew1` (a stem from references to the John Lewis Voting Rights Act, legislation proposed by House Democrats in the 117th congress) and `crt` in 2022 is consistent with contemporaneous real-world changes in Democrats’ and Republicans’ electoral and legislative priorities.

**Table 2.** Words With 10 Most Conservative and Liberal Weights

<b>Left</b>	<b>Right</b>
community-bas, rental, equit, reproduct, trauma, matern, lgbtq, high-capac, lewi, low-incom, dispar, childcar, disproportion, pell, pre-k, tuition-fre, underserv, expung, resili, discriminatori	critical race theori, build the wal, tyrann, crt, indoctrin, god, tyranni, christian, sanctiti, god-given, unborn, pro-lif, communist, swamp, socialist, amnesti, islam, sanctuary c, alien, 2nd amend

*Note:* Terms with the ten largest positive (right) and negative (left)  $\beta$  discrimination parameters from scaling. Appendix B reports top 20 terms and corresponding  $\beta$  and  $\psi$  parameters.

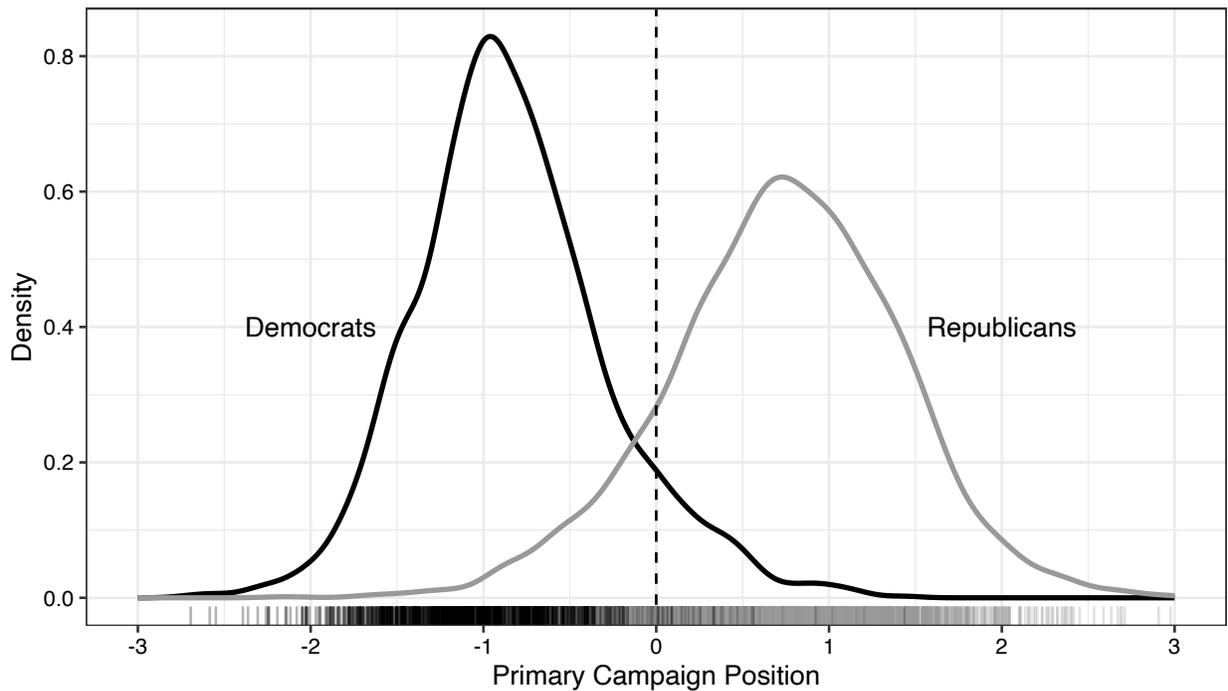
year-specific scalings.

An additional benefit of campaign websites as a data source for candidate positions is the inclusion of vastly understudied long-shot candidates. Although little can be said about the financial contributors, campaign advertisements, or expenditures of candidates who did not file pre-primary fundraising reports with the FEC, 45% of such candidates nevertheless hosted campaign websites with positions, and are therefore included in the new measure of campaign positioning. However, to ensure that the scaling space is not primarily defined by marginal candidates who may be using rhetoric distinct from that of viable candidates, I perform the scaling including only sitting incumbents (see Appendix B). The correlation of over 0.95 between incumbents' campaign positions from the pooled and incumbent-only scalings suggests that marginal candidates do not differentially drive nor distort campaign positioning estimates.

## **Primary Campaign Positioning Distribution and Variation**

The density of primary campaign positions by candidate partisanship is presented in Figure 2. Consistent with well-documented partisan polarization among political elites (Bafumi and Herron 2010; McCarty, Poole, and Rosenthal 2016; Theriault 2006; Thomssen 2014), positions are bimodally distributed, with most Republicans substantially to the right of most Democrats and most Democrats substantially to the left of most Republicans. However, a modest degree of overlap in Republican and Democratic candidates' positions

**Figure 2.** Distribution of Primary Campaign Positions by Party, 2016 – 2022

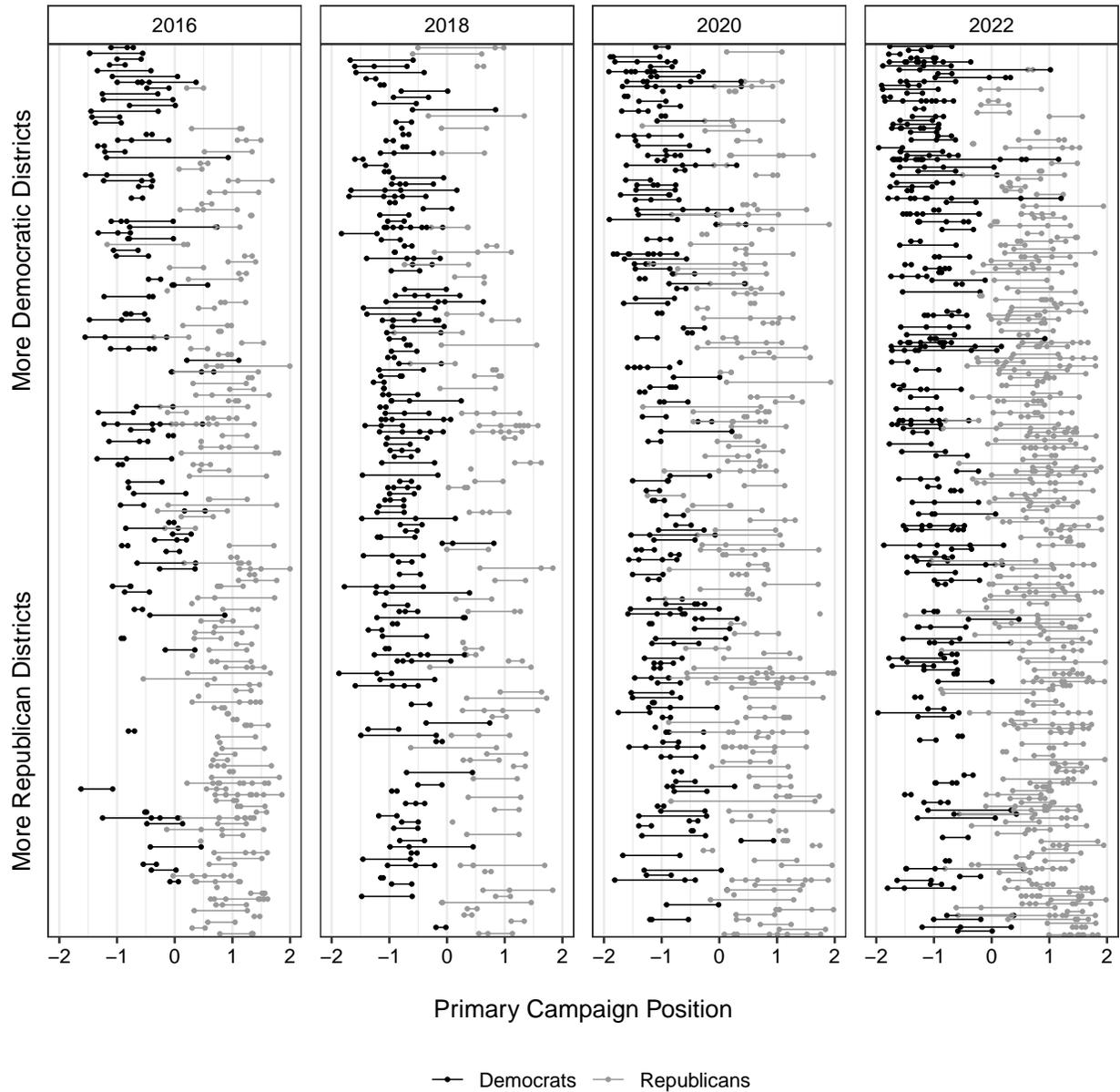


*Note:* Kernel density plots of  $\omega$  estimates from Equation 1, representing primary candidate positions based on campaign website platforms. Democratic candidates shown in black and Republican candidates in gray. Negative values indicate more liberal/less conservative.

is also consistent with the frequency with which candidates of both parties choose to campaign similarly on the same issues, such as job creation and veterans affairs. This contrasts with roll-call estimates of House members' ideal points from recent congresses, which exhibit no partisan overlap partly due to the strategic selection of legislative floor votes that frequently exaggerate differences between parties (Clinton 2012; Clinton and Lapinski 2008; Cox and McCubbins 2005; Lee 2016). Additionally, the distributions of only viable and incumbent candidates' positions are presented in Appendix B and suggest that these more serious candidates likewise span the full range of the scale.

Beyond aggregate distribution, Figure 3 showcases the substantial variation in candidates' positions within and across primaries, districts, and parties. The spread of campaign positioning differs widely by primary field, with some races featuring candidates who are rhetorically located at almost the same point, while others span nearly two stan-

**Figure 3.** Variation in Campaign Positions Within and Across Primaries



*Note:* Circles represent campaign positions of each primary candidate, with lines connecting those running in the same primary. Districts descending along horizontal axis from highest to lowest two-party Democratic presidential vote share. Democratic candidates shown in black and Republican candidates in gray. Primaries with at least two candidates with campaign positions are included.

dard deviations. Consistent with aggregate evidence in Figure 2, Republican primary fields consistently fall to the right of Democratic primary fields across districts, but the degree of divergence — or, in some cases, overlap — between Democratic and Repub-

lican primary candidates running in the same (or similar) districts is far from uniform. The ability to independently characterize the campaign positioning of candidates competing within the same primary election highlights the potential for investigation of intra-primary dynamics related to campaign rhetoric, such as whether the most extreme candidate within a primary field tends to campaign on different issues than the other candidates.

### **Selected Candidates' Primary Campaign Positions**

In addition to visually evaluating inter- and intra-party variation, we can also assess the face validity of candidates' primary campaign positions. A selection of relatively well-known candidates' positions from across the political spectrum is reported in Table 3. A Republican representing a rural district in New York's North Country since 2014, Elise Stefanik's 2018 primary campaign fell almost one standard deviation to the left of the mean. Although she has since made headlines for her impassioned defense of former President Trump during his first impeachment proceedings,<sup>20</sup> Stefanik campaigned on strengthening trade with Canada, expanding agricultural visa programs, veteran welfare, environmental protection, healthcare access, and affordable education. Conversely, the 2016 primary of Texas Democrat Henry Cuellar, who has voted with Republicans on legislation regarding abortion, firearms, and immigration,<sup>21</sup> was almost a quarter standard deviation to the right of the mean. Tennessean Blue Dog Democrat Jim Cooper, the "man in the middle"<sup>22</sup> and "the last moderate...loathed by Republicans for being in the wrong party, and scorned by Democrats for his fiscal conservatism"<sup>23</sup> represented mean 0 during his 2020 primary campaign. Likewise, the campaigns of those widely regarded as the most progressive Democrats and conservative Republicans fall toward the endpoints of

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<sup>20</sup><https://www.reuters.com/world/us/loyalty-trump-catapults-elise-stefanik-into-republican-stardom-2021-05-11/>

<sup>21</sup><https://www.texastribune.org/2022/10/06/henry-cuellar-texas-2022/>

<sup>22</sup><https://washingtonmonthly.com/2022/12/13/man-in-the-middle/>

<sup>23</sup><https://www.nytimes.com/2011/09/06/opinion/the-last-moderate.html>

**Table 3.** Primary Campaign Positions of Notable Candidates

Party	Candidate	District-Year	Position
(R)	Elise Stefanik	NY-21-2018	-0.93
(R)	George Devolder-Santos	NY-3-2020	-0.13
(R)	Liz Cheney	WY-2022	0.29
(R)	Andy Biggs	AZ-5-2022	0.58
(R)	John Rose	TN-6-2022	1.07
(R)	Madison Cawthorn	NC-11-2022	1.35
(R)	Marjorie Taylor Greene	GA-14-2020	1.95
(D)	Henry Cuellar	TX-28-2016	0.21
(D)	Jim Cooper	TN-5-2020	-0.00
(D)	Debbie Wasserman Schultz	FL-23-2020	-0.21
(D)	Joaquin Castro	TX-20-2018	-0.74
(D)	Jerrold Nadler	NY-12-2022	-1.01
(D)	Alexandria Ocasio-Cortez	NY-14-2022	-1.54
(D)	Ayanna Pressley	MA-7-2020	-1.89

*Note:* Primary campaign positions of selected candidates from across the scale. Campaign positions are  $\omega$  estimates from Equation 1, which are scaled to have mean 0 standard deviation 1, and are increasing in conservatism.

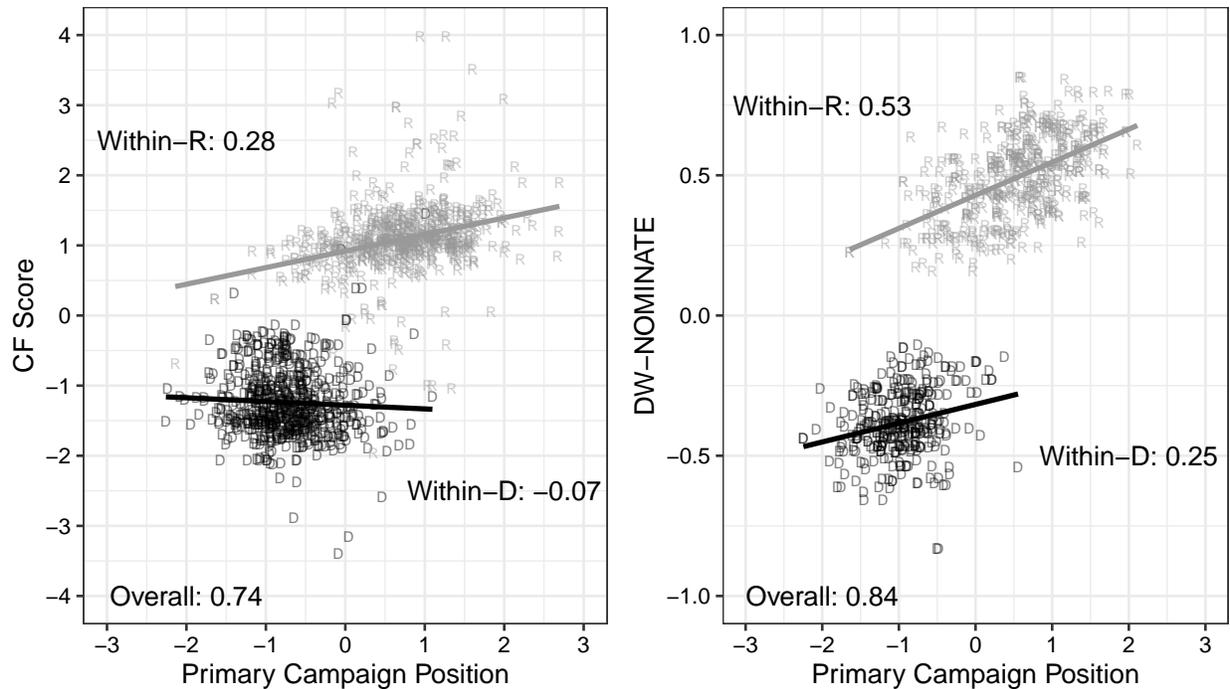
the campaign position range.

## Comparisons to Existing Measures

Primary campaign positions measure something conceptually distinct from — yet potentially empirically related to — roll call voting and fundraising networks. The measure introduced here captures primary candidates’ public campaign rhetoric, which may reflect “true” views or strategic appeals to potential donors, voters, or activists, but is ultimately under the purview of candidates themselves.<sup>24</sup> In contrast, DW-NOMINATE (Lewis et al. 2023) is based upon legislators’ voting behavior, which occurs in an institutional setting that is relatively opaque and influenced by a strategically–selected roll call agenda not determined by any one individual legislator (Arnold 1990; Clinton 2012; Clinton and Meirowitz 2001; Lee 2016; Patty and Penn 2019). On the other hand, CF Scores

<sup>24</sup>This remains true in the case of political consultant influence (e.g. Nyhan and Montgomery 2015), as the buck ultimately stops with the candidate, who can fire consultants advocating strategies with which she disagrees.

**Figure 4. Relationship Between Primary Campaign Scores, CF Scores, and DW-NOMINATE**



*Note:* Left plot compares the primary campaign positions and CF Scores of House candidates from 2016 and 2018. Right plot compares the primary campaign positions and 1st-dimension DW-NOMINATE scores of members of the 115th–118th Houses. Simple bivariate regression lines fit separately by party, with Democrats in black and Republicans in gray. Pooled and intra-party Pearson’s  $r$  correlations reported.

(Bonica 2019) are sourced from patterns of campaign contributions, which are donor-led (rather than candidate-led) and may be driven by candidates’ public and private rhetoric, institutional position, personal values, election characteristics, or opponents (Barber 2016; Barber, Canes-Wrone, and Thrower 2017; Bonica 2014; Magleby, Goodliffe, and Olsen 2018; Meisels, Clinton, and Huber N.d.; Stuckatz 2022). It is therefore unclear how strongly candidates’ public primary campaign rhetoric should relate to their legislative voting and contribution networks.

Figure 4 presents scatterplots comparing primary campaign positioning to CF Scores and DW-NOMINATE. The left plot includes primary candidates from 2016 and 2018 as CF

Scores are only available through 2018, and the right plot includes only sitting legislators.<sup>25</sup> Overall, primary campaign positions appear to co-vary more strongly with roll-call voting than with campaign contribution networks. While pooled correlations are quite strong (but still stronger with DW-NOMINATE than with CF Scores), the intra-party correlations between primary campaign positions and DW-NOMINATE are substantially greater than those with CF Scores. Whereas recent work by Barber (2022) documents the complete disappearance of a statistical relationship between House Democrats' CF Scores and DW-NOMINATE scores since 2014, Democrats' primary campaign positions exhibit a persistent relationship ( $r = 0.25$ ) with their DW-NOMINATE scores, and the NOMINATE-campaign position correlations for Republicans and candidates overall are comparable to the NOMINATE-CF Score correlations found in Barber (2022).<sup>26</sup> These results illuminate the potential for further investigation of relationships between primary candidates' rhetorical positioning, donor networks, and legislative behavior facilitated by measuring public positioning independently of campaign contribution and roll-call data.

## Evaluating District Importance to Candidate Positions

I now turn to an example of the measure's utility for providing new insights into House candidate behavior with a descriptive application to the ongoing debate about nationalization versus district preferences. I find that even within party, primary candidates take systematically more liberal (or less conservative) campaign positions as the district's Democratic partisanship increases. Crucially, relying instead upon contribution-based estimates would lead to a different conclusion entirely: the district relationship is reversed among Democrats, and no relationship is evident among Republicans. The disparate re-

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<sup>25</sup>Candidates who successfully won their election were matched to their DW-NOMINATE score from the following congress: the 2016 election corresponds to the 115th, 2018 to the 116th, 2020 to the 117th, and 2022 to the 118th.

<sup>26</sup>Moreover, the differences in strength of Democrats' relationships between the new measure and existing measures are not driven by the differential inclusion of non-incumbents when making comparisons to CF Scores versus DW-NOMINATE scores. The intra-Democrats correlation between campaign positions and CF Scores among only those with DW-NOMINATE scores remains at a paltry 0.03.

sults for primary campaign positions and CF Scores are consistent with donor behavior having nationalized while candidate behavior remains district-tailored, presenting a more nuanced picture of the role of nationalization in recent House primary elections.

## **Does the District Still Matter?**

The importance of (sub-)constituency is all but a given in classic theoretical and empirical studies of elections and representation (e.g. Canes-Wrone, Brady, and Cogan 2002; Downs 1957; Enelow and Hinich 1984; Meirowitz 2005; Miller and Stokes 1963). Whether represented by the median or a distribution, and consisting of voters, constituents, co-partisans, or donors, the key population of interest in candidates' strategic positioning is thought to be district-specific. However, recent evidence on the nationalization of political behavior, media, and donors calls into question whether candidate-district ties have been severed (Ansolabehere, Snyder, and Stewart 2001; Abramowitz and Webster 2016; Gimpel, Lee, and Pearson-Merkowitz 2008; Hopkins 2018; Jacobson 2015; Martin and McCrain 2019; Moskowitz 2021).

Bonica and Cox (2018), for example, argue that political parties strategically nationalized congressional elections in response to increased competition for majority control since 1994 (Lee 2016). If elections are primarily fought over national party positions, national donor support, and national media attention, candidates no longer stand to benefit from tailoring their positions to the district, and instead stand to benefit from adopting the party line and appealing to extreme donors and activists.<sup>27</sup> However, the most recent evaluations of this argument have not found decreasing support for extreme nominees post-1994, suggesting that incentives may not have changed along these lines (Canes-Wrone and Kistner 2022; Lockhart and Hill N.d.).

Given that primary elections have become increasingly consequential because the num-

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<sup>27</sup>Specifically, Bonica and Cox (2018) argue that voters have become more party-centered and therefore no longer penalize candidates for extremism, whereas extremism can benefit candidates via activist and donor support.

ber of House districts competitive for both parties in the general election is in decline, I provide new evidence for whether candidates' positions vary systematically by district or whether nationalization has severed such ties. Focusing on primary candidates presents a potentially more difficult case: the preferences of candidates' key primary constituency (whether co-partisan constituents, voters, or donors) are unlikely to perfectly co-vary with district preferences, which may induce an even weaker district–candidate relationship than would be found in the general election case.

## Evaluating District–Candidate Ties

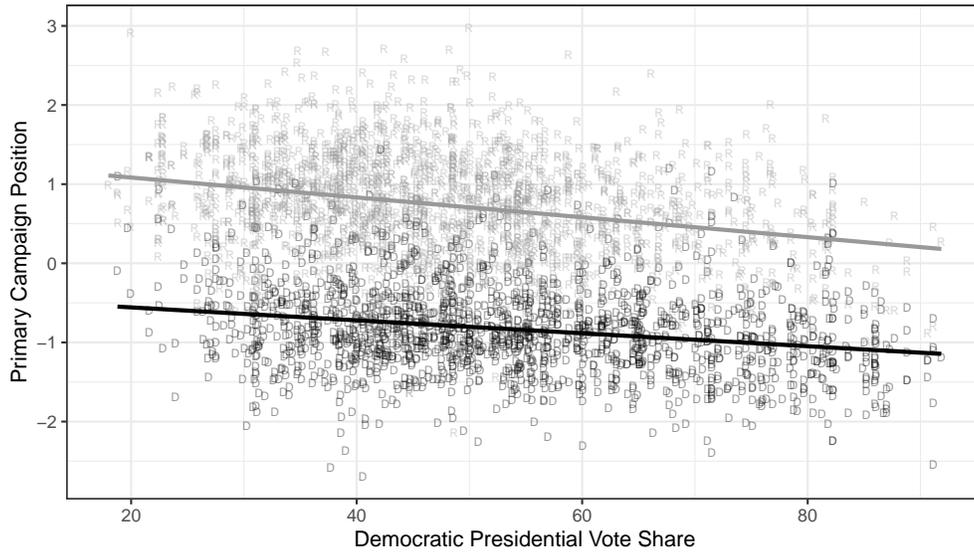
I investigate the responsiveness of primary candidates' public rhetoric and donor networks to district preferences by estimating the relationship between district partisanship and both primary campaign positions and CF Scores. As a first step, Figure 5 plots candidate–year level bivariate relationships between district two-party Democratic presidential vote share and primary campaign positions, while Figure 6 plots district Democratic vote and CF Scores. Although CF Scores only include two primary cycles while primary campaign positions include candidates from four, plotting only primary candidates who also have CF Scores in Appendix C reproduces the patterns shown in Figure 5.

Figure 5 shows that as the Democratic lean of districts grows stronger, both Democratic and Republican primary candidates' positions consistently become more liberal (or less conservative).<sup>28</sup> Although there is, unsurprisingly, an intercept shift between candidates of opposing parties running in similar districts, the lines fit separately by party demonstrate strong relationships between primary candidates' positions and their district's lean, such that increasing a district's Democratic presidential vote by 10% is associated with both Democratic and Republican primary candidates' positions becoming 10% of a standard deviation more liberal or less conservative ( $\beta_D = -0.008$ ;  $\beta_R = -0.012$ ; both  $p < 0.001$ ). On the other hand, Figure 6 paints a different picture in the case of candidates'

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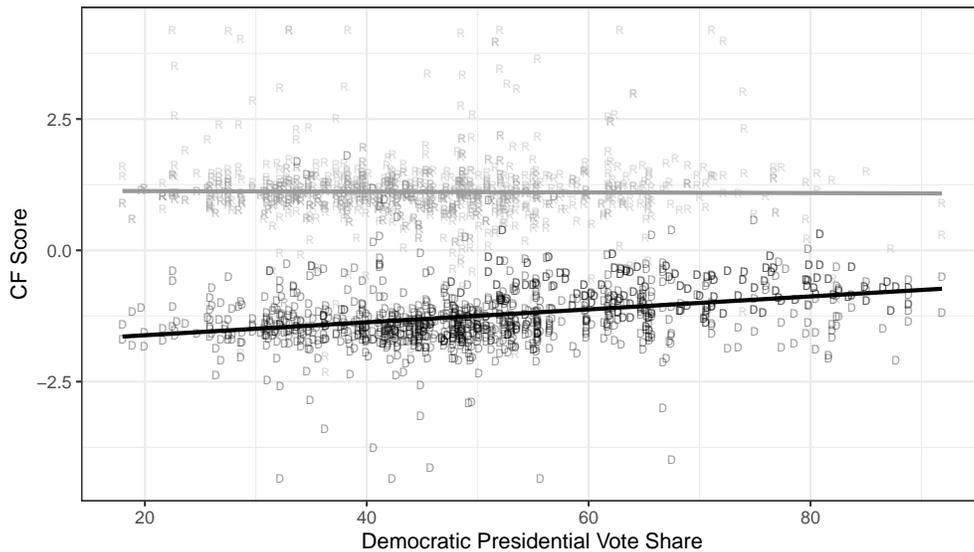
<sup>28</sup>The substantial spread of individual points makes it difficult to visually evaluate the linearity of the relationships. In Appendix C, fitting Loess curves instead suggests that the relationships are highly linear.

**Figure 5. Primary Candidates' Positions and District Partisanship, 2016–2022**



*Note:* Scatterplot points are individual candidate-year observations, with Republicans represented in gray and Democrats represented in black. Simple bivariate regression lines fit separately by party. Vertical axis plots  $\omega$  from Equation 1, which increase with conservatism and are scaled to have mean 0 SD 1. Horizontal axis plots district's most recent two-party Democratic presidential vote share.

**Figure 6. CF Scores and District Partisanship, 2016–2018**



*Note:* Scatterplot points are individual candidate-year observations, with Republicans represented in gray and Democrats represented in black. Simple bivariate regression lines fit separately by party. Vertical axis plots recipient CF Scores, which increase with conservatism and are scaled in Bonica (2014) to have mean 0 SD 1. Horizontal axis plots district's most recent two-party Democratic presidential vote share.

contribution networks. A very flat gray line ( $\beta_R < -0.001$ ;  $p = 0.708$ ) suggests that Republicans' CF Scores do not become more conservative as their districts grow less Democratic, while Democrats' CF Scores appear to become *less* liberal in more heavily Democratic districts ( $\beta_D = 0.012$ ;  $p < 0.001$ ). Appendix C demonstrates that disparities between campaign positions and CF Scores trends are not due to sample differences.

To evaluate the magnitude of the descriptive relationships between primary candidates' positions and district preferences from 2016 to 2022, I estimate the following equation separately for Democrats and Republicans:

$$\text{Position}_{idt} = \alpha + \tau \text{District}_{dt} + v \text{Open}_{idt} + \kappa \text{GenChall}_{idt} + \eta \text{PrimChall}_{idt} + \gamma_t + \epsilon_{idt} \quad (2)$$

where  $\text{Position}_{idt}$  stands in for two dependent variables, both of which were scaled in their original estimation to have mean 0 standard deviation 1: candidate  $i$ 's campaign position  $\omega$  from Equation 1 during the primary in district  $d$  in year  $t$ , and her recipient CF Score.<sup>29</sup> The key independent variable,  $\text{District}_{dt}$ , represents district  $d$ 's Democratic two-party vote share centered at 50% from the presidential election held in or most immediately before year  $t$ . Because primary campaign positions and CF Scores have standard deviations of 1, multiplying parameter  $v$  by 100 corresponds to the percentage of a standard deviation change in the outcome variable associated with increasing district Democratic vote by 1%. To examine descriptive differences between campaign positions by candidate type, indicator variables capture whether  $i$  was an open-seat candidate, a primary challenger, or a prospective general election challenger in primary  $dt$ . As such, intercept  $\alpha$  represents the primary campaign position of an incumbent representing a district with equal Democratic and Republican presidential vote share. Finally, I include year fixed effects to account for secular trends in candidates' extremism, progressivism, or campaign issue focus and I use

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<sup>29</sup>Notation is abused slightly by indexing Position by  $ip$ , as CF Scores vary only at the candidate level.

HC3 standard errors.<sup>30</sup>

## Conclusions Differ By Measure

Table 4 reports the relationships between primary candidates' positions, the district's Democratic lean, and candidate type by positioning measure and candidate partisanship.<sup>31</sup> Among both Democrats and Republicans, primary campaign positions become significantly more liberal (or less conservative) as the district grows more heavily Democratic: increasing a district's Democratic presidential vote share by 10 percentage points is associated with Democratic primary candidates' campaign positions becoming 10% of a standard deviation more liberal, while Republicans' grow 14% of a standard deviation more liberal. This suggests that even during the primary, Republican and Democratic pools of publicly-espoused campaign positions vary systematically by the district's partisan composition.

In contrast, campaign contribution networks do not appear to exhibit a similar relationship to district partisanship. While the coefficient corresponding to district Democratic lean achieves conventional levels of significance in the Democratic candidate model, it is relatively small and signed in the unexpected direction: a 10 percentage point increase in Democratic presidential vote share in the district is associated with Democratic primary candidates having 3% of a standard deviation more *conservative* CF Scores. District partisanship is correctly signed in the case of Republican primary candidates, however, the relationship with CF Scores is similarly small and fails to reach statistical significance.

Additionally, Table 4 uncovers evidence that non-incumbent Republican primary candidates' contribution networks and campaign positions are both substantially more conservative than those of incumbent Republicans, but disparate trends emerge among Democratic primary candidates. Although Democratic open-seat candidates, primary challengers,

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<sup>30</sup>Clustering standard errors at the primary level (e.g. the 2020 Republican primary in AL-1) is unsurprisingly immaterial to the results given the large number of primaries that are unopposed.

<sup>31</sup>Results from models using MRP district ideology estimates (Tausanovitch and Warshaw 2013; Warshaw and Tausanovitch 2022) as the key predictor or allowing district partisanship to interact with candidate type are presented in Appendix C.

**Table 4.** Relationship Between District Partisanship and Candidate Positions

	Primary Campaign Position		Recipient CF Score	
	Democrats	Republicans	Democrats	Republicans
(Intercept)	−0.567*** (0.036)	0.489*** (0.038)	−0.733*** (0.041)	0.985*** (0.030)
District Dem. Partisanship	−0.009*** (0.001)	−0.014*** (0.001)	0.003* (0.001)	−0.004 (0.002)
Open Seat Candidate	0.001 (0.036)	0.364*** (0.041)	−0.491*** (0.048)	0.183*** (0.046)
Primary Challenger	0.203*** (0.044)	0.457*** (0.042)	−0.393*** (0.075)	0.259** (0.080)
General Challenger	0.018 (0.039)	0.347*** (0.049)	−0.586*** (0.045)	0.282*** (0.065)
Year Fixed Effects	✓	✓	✓	✓
Observations	1,778	2,025	1,117	976
Adjusted R <sup>2</sup>	0.135	0.159	0.208	0.025

*Note:* Parameters from Equation 2 with HC3 standard errors in parentheses. Predictors are district Democratic two-party vote from most recent presidential election and candidate type, with intercept representing an incumbent in a 50% Democratic district. Models 1 and 2 include 2016–2022 primary candidates with primary campaign positions  $\omega$  from Equation 1. Models 3 and 4 include 2016 and 2018 primary candidates with recipient CF Scores from Bonica (2019). \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$

and prospective general election challengers have far more liberal CF Scores than Democratic incumbents on average, the primary campaign positions of Democratic open-seat candidates and general challengers do not appear significantly more liberal than those of Democratic incumbents, and Democratic primary challengers have, on average, 20% of a standard deviation *less* liberal campaign positions than Democratic incumbents. The extremism of non-incumbents' positions relative to incumbents' among Republicans and not Democrats complements recent evidence regarding patterns of state legislators running for the House (Phillips, Snyder, and Hall N.d.).

The results presented here suggest that candidates' public-facing rhetoric remains district-tailored while donor behavior has nationalized. Variation in primary candidates' public campaign positions by district preferences could be explained by strategic candidate entry, strategic campaigning behavior, or simple differences in positions of potential candidate pools across districts. However, the district–CF Score relationships shown in Figure 6 are consistent with donors contributing to co-partisans across the country — perhaps candi-

dates running in salient, heavily-covered races — and thus across the political spectrum, as demonstrated by Figure 5. In fact, electability considerations may lead nationalized donors to strategically fund co-partisan candidates who tailor their positions to district preferences. Ultimately, these divergent findings regarding the district-orientedness of donor networks versus candidate behavior indicate a more nuanced role of nationalization in modern House elections, and raise fundamental questions about whether and how donor behavior alters candidate incentives.

## Discussion and Future Avenues

Candidate positioning is integral to theoretical investigation of elections, representation, and political behavior, yet empirical studies rely upon proxy measures that may or may not be related to candidates' public campaign positions. Using data collected directly from campaign website issue platforms, I introduce a new measure based on candidates' own campaign rhetoric during the increasingly important primary election stage. I have demonstrated that the scaling recovers a widely recognizable liberal-conservative dimension, captures intra-primary variation, and provides facially valid estimates of primary candidates' campaign positions. Moreover, using primary campaign positions to contribute to an ongoing debate regarding nationalization of candidate behavior highlights the measure's ability to provide unique insights that would be missed by relying on existing measures.

As emphasized throughout, the measure introduced here is not simply a novel flavor of the same concept captured by alternative widely-used measures. Primary campaign positions do not purport to measure candidates' "true" ideologies, whether defined as sincerely held beliefs or accurate predictors of future behavior. As such, they should be employed in analyses concerned with modern candidates' public-facing rhetoric and issue stances. Candidate positions derived from campaign websites are also necessarily

limited in how far back in time they can extend, as campaign webpages were not generally adopted until the 2000s at the earliest (Druckman, Kifer, and Parkin 2007; Sulkin, Moriarty, and Hefner 2007) whereas campaign finance is publicly reported back through the 20th century and legislative voting began in the first U.S. Congress. Moreover, a lack of comparable sources of issue platforms from members of the public and other non-political actors precludes any common-space scaling.

Perhaps most promisingly, estimates of candidates' positions measured independently of their campaign contributions and (incumbents') roll-call votes suggests important new avenues of study. As highlighted by primary campaign positions' far-from-perfect correlations with DW-NOMINATE and CF Scores, each measures something conceptually and empirically different. The ability to estimate campaign positioning without having to assume that receipts or legislative voting *are* candidates' positions opens the door to meaningful empirical investigation into the substantive relationships between public campaign rhetoric, support from moneyed interests, and subsequent legislative behavior (Kim, Lin, and Schnakenberg 2022; McCarty and Rothenberg 1996; Schnakenberg 2016).

Additionally, the properties of text-based estimation of primary candidates' positions allow for research into previously difficult-to-study phenomena. Because this measurement model places no special assumption on individuals' continuity across elections, candidates' positions can be tracked over time and space (in cases of, for instance, redistricting or opting to run in a new district). The word-level parameters included in scaling results, representing each term's prevalence and ability to discriminate between positions, illuminate the substance of House primary discourse election-to-election. And while the average primary voter may not seek out their House candidates' campaign websites, the plain-English campaign platforms present an opportunity to evaluate the extent to which the public perceives inter- and intra-party differences in candidates' positions during primaries.

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# Appendix

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## A Data Collection Details

**Identifying relevant candidates.** I used Ballotpedia.com to identify all candidates who appeared on a Republican or Democratic primary ballot in each district in 2016, 2018, 2020, and 2022, as well as take down the primary election date and candidate type (incumbent/open seat/challenger). Independent, write-in, and dropout candidates were excluded, as well as candidates who ran in the primaries in the table below.

**Table A1.** Excluded Primary Races

Locale	Reason
Alaska, 2022 only	Top-4
California	Top-2
Connecticut	Party Convention
Louisiana	Top-2
Utah	Party Convention
Virginia, 2016, Democratic: Districts 5,7,1,6,9,10	Party Convention
Virginia, 2016, Republican: Districts 3,8,5,11,7	Party Convention
Virginia, 2018, Democratic: District 5	Party Convention
Virginia, 2018, Republican: District 5,8,3,7,6	Party Convention
Virginia, 2020, Democratic: District 9	Party Convention
Virginia, 2020, Republican: District 8,5,10,11,4,7	Party Convention
Virginia, 2022, Republican: District 8,5,10,11	Party Convention
Washington	Top-2

*Source:* Footnotes of FEC primary date calendars.

**Searching for campaign websites in real time.** Data on 2022 primary candidates were collected in real time. Candidates' web pages were accessed as immediately as possible before their primary, always within a week of the election date. I first performed a web search for "[candidate name] for Congress [election year]". Official governmental websites and social media sites were ignored. If no website appearing to be the candidate's campaign website appeared in the first page of search results, I added the district (e.g. "AL-1") to the search terms. If nothing appeared, I then consulted Politics1.com and Ballotpedia.com, which compile fairly reliable lists of candidates' campaign websites at various levels of government. If no non-social media website or non-governmental campaign website was found, I moved on to the next candidate. Although it is possible that some candidate websites eluded this data collection process, websites that were not found while deliberating searching via numerous steps were not readily accessible to members of the public, activists, or journalists, who would almost certainly devote less effort to find them.

**Searching for archived campaign websites.** For candidates who ran in 2016, 2018, and 2020, the process was identical to that outlined above, with an added step of accessing the archived website as it appeared at the relevant time via the Wayback Machine (archive.org). I first performed a web site for "[candidate name] for Congress [election year]". Some candidates ran in more recent elections and maintained a new website at the same URL which hosted their campaign website during the election year of interest. Because many candidates delete their campaign websites after losing election, I likewise consulted historic versions of Politics1.com and Ballotpedia.com. Once a potential historic campaign website URL was identified, I pasted it into the Wayback Machine and accessed the snapshot of the website most immediately before the date of the primary. While these archives ranged in time from very close to the primary to months before the primary, I also recorded the date of the archive version.

**Identifying issue positions.** The vast majority of campaign websites had clearly delineated pages or sections for policy platforms, issue positions, or candidate priorities. If the area devoted to positions was not readily obvious in the website architecture, I surveyed the entirety of the website for other places where one might find issue positions. I do not consider candidate biographies, endorsement lists, campaign updates, or volunteer/donation pages to be issue positions. Many incumbent candidates (and some candidates with state legislative experience) devoted a section of the website to their legislative achievements, and these were nearly always separate from issue position pages. I excluded pages devoted exclusively to legislative achievements, but some candidates relate positions on their issue pages to legislative achievements, all of which I include as issue positions. If a campaign website with issue position content was successfully accessed, the URL was recorded in a spreadsheet.

**Collecting issue position text.** Once issue position content was identified, I manually copied and pasted all of the associated positioning text — including the section header, issue stances, and candidate quotes — from each sub-issue page or section into one .txt file titled the candidate's name and election year. I also captured the website content exactly as it appeared with a combination of manual screen capture and automated screen capture via the Awesome Screenshot extension on Google Chrome.

## B Technical Scaling Details

### B.1 Text Processing Flow

To prepare the text of primary candidates’ issue positions for scaling, I build a corpus of documents, or a collection of all individual primary campaign platforms. I then tokenize each document’s text with terms standardized to all-lowercase and remove punctuation. Next, I preserve key non-unigram phrases found by compounding the separate terms.

To improve computing performance, I remove “stop words” such as “and”, “for”, and “of”, which are used very frequently and provide negligible substantive information. I then reduce terms to their stems in order to combine terms that have the same central meaning yet slightly different suffixes and prefixes — for example, “reduce”, “reduction”, and “reducing” share the stem “reduc”.

When utilizing unsupervised scaling methods, it is important to ensure that the dimension of interest — here, a left-right, issue-based dimension — is the dominant dimension structuring rhetorical discourse within the corpus. As such, it is beneficial to discard terms that are irrelevant to the dimension of interest and relevant to an orthogonal dimension within which the algorithm may get “stuck” (Grimmer and Stewart 2013; Egerod and Klemmensen 2020). I discard terms related to congressional procedure, which are overwhelmingly used by sitting legislators, as well as commonly-used geographical terms, in order to protect against identifying an incumbency-based dimension or region-based dimension. In practice, this refinement is inconsequential to the vast majority of primary candidates’ position estimates as illustrated by the strong correlation between estimates with and without these terms and the non-unigrams shown in the left panel of Figure B1. To improve computing time and drop other terms uninformative of the global dimension, I discard terms used in 100 campaign platforms or fewer — a lenient requirement given that the corpus consists of almost 4,000 campaign platforms.

The resulting  $\mathbf{N} \times \mathbf{M}$  document-feature matrix consists of  $j = 1, \dots, m$  term columns,  $it = 1, \dots, n$  candidate-year rows, and term frequencies as cell entries.

**Table B1.** Scaling Refinements

Procedural Terms Dropped	Non-Unigram Terms Included
"hr", "h.r", "co-chair", "congresswoman", "congressman", "co-sponsor", "reauthor", "codifi", "chair", "caucus", "introduc", "passag", "subcommitte", "cosponsor", "committe", "lawmak", "mayor", "congress", "chairman", "speaker", "legislatur", "re-elect", "hyperlink"	"first amendment", "1st amendment", "second amendment", "2nd amendment", "planned parenthood", "right to bear arms", "mandatory minimum", "mandatory minimums", "mental health", "clean energy", "sexual assault", "student loan", "student loans", "sexual violence", "critical race theory", "religious freedom", "reproductive freedom", "freedom of speech", "freedom of expression", "freedom of religion", "cancel culture", "debt ceiling", "balanced budget", "common core", "build the wall", "sanctuary city", "sanctuary cities"

*Note:* Scaling excludes procedural terms as well as geographic terms, and includes compounded non-unigram terms.

## B.2 Estimation with wordfish

wordfish (Slapin and Proksch 2008) is an unsupervised machine learning algorithm for scaling political text to infer the source’s latent position on a single dimension. Based on a Poisson IRT model, wordfish uses an iterative expectation maximization algorithm due to the need to estimate both term-level and candidate-level parameters as a function of observed term usage.

The rate  $y$  at which primary candidate  $i$  uses term  $j$  in election year  $t$  is assumed to be drawn from a Poisson distribution, which is characterized by a single parameter  $\lambda$  representing both the expectation and variance. This parameter logarithmically links the probability distribution generating the observed term rate to the linear predictors of interest to be estimated:

$$y_{ijt} \sim \text{Poisson}(\lambda_{ijt})$$

$$\lambda_{ijt} = \exp(\alpha_{it} + \psi_j + \beta_j * \omega_{it})$$

The key parameter is  $\omega$ , which stands in for candidate  $i$ ’s latent primary campaign position in election  $t$ .  $\beta$  represents word  $j$ ’s weight or, put differently, its importance in discriminating between campaign positions. A word fixed effect  $\psi$  captures the rate at which word  $j$  is used in general, and a candidate-year fixed effect  $\alpha$  captures the verbosity of candidate  $i$ ’s campaign position text in election  $t$ .

Parameter estimation is initialized with start values consisting of “best guesses” based upon term frequencies. Term fixed effects  $\psi_j$  begin as term  $j$ ’s logged average count, while the fixed effect for the first candidate-year ( $\alpha_1$ ) is set to 0 and  $\alpha_{2,\dots,n}$  begin as the logged average word count relative to that of  $it = 1$ . Start values for term weights  $\beta$  and candidate-

year positions  $\omega$  are the left and right singular vectors obtained from an SVD of the matrix of term and candidate-year residuals. Unsurprisingly, final estimates of  $\omega$  correlate highly with nonparametric estimates resulting from a simpler correspondence analysis as shown in the Alternative Scalings subsection. As such, the methodology from which my primary campaign positions derive bears strong resemblance to the augmented CA methodology used for Bonica's (2014) estimates of candidate ideology.

Estimation proceeds iteratively, with term parameters  $\psi$  and  $\beta$  first fixed at their start values and candidate-year parameters  $\omega$  and  $\alpha$  calculated conditionally on the expected term parameters. The following conditional log-likelihood is maximized for each candidate-year:

$$\sum_{j=1}^m (-\lambda_{ijt} + \ln(\lambda_{ijt}) * y_{ijt})$$

where

$$\lambda_{ijt} = \exp(\alpha_{it} + \psi_j^{prev} + \beta_j^{prev} * \omega_{it}).$$

To identify the global directionality of candidate positions  $\omega$ , a pair of documents (candidate-years) are specified with an inequality constraint. Moreover, the mean of candidate positions across all years is equal to 0 and the standard deviation is set to 1.

Taking the expected values of candidate-year parameters  $\omega$  and  $\alpha$  obtained previously, term parameters  $\psi$  and  $\beta$  are then calculated conditionally with the following log-likelihood maximized for each term:

$$\sum_{it=1}^n (-\lambda_{ijt} + \ln(\lambda_{ijt}) * y_{ijt})$$

where

$$\lambda_{ijt} = \exp(\alpha_{it}^{prev} + \psi_j + \beta_j * \omega_{it}^{prev}).$$

The overall log-likelihood of the model with the new parameter estimates is then calculated as the sum of the term log-likelihoods conditional upon the candidate-year log-likelihoods:

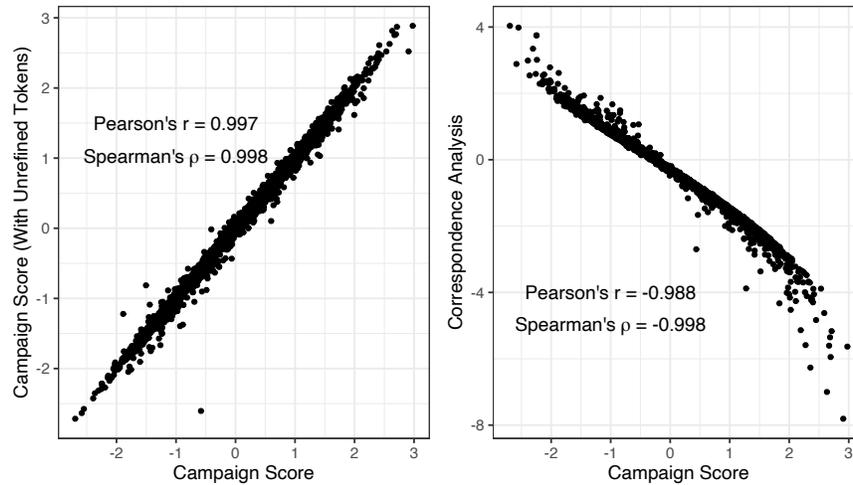
$$\sum_j^m \sum_{it=1}^n (-\lambda_{ijt} + \ln(\lambda_{ijt}) * y_{ijt}).$$

The candidate-year parameters are then re-calculated based upon the new term parameters, and the resulting candidate-year parameters are used to repeat the term parameter calculation. The conditional maximum likelihoods are calculated iteratively until the log-posterior reaches a convergence threshold of a one-millionth and the differences in parameter values from the previous iteration are under a hundred-millionth.

### B.3 Alternative Scalings

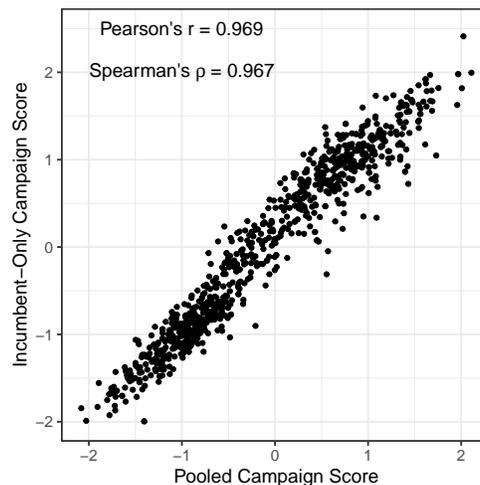
The following figures plot relationships between the main scaling specification and alternative scalings consisting of: leaving the tokens unrefined by keeping procedural and geographic terms and not non-unigrams, simple unidimensional correspondence analysis, incumbent-only scaling, and year-specific scaling. All correlations are above 0.90.

**Figure B1.** Relationship Between Primary Campaign Scores and Alternative Scalings



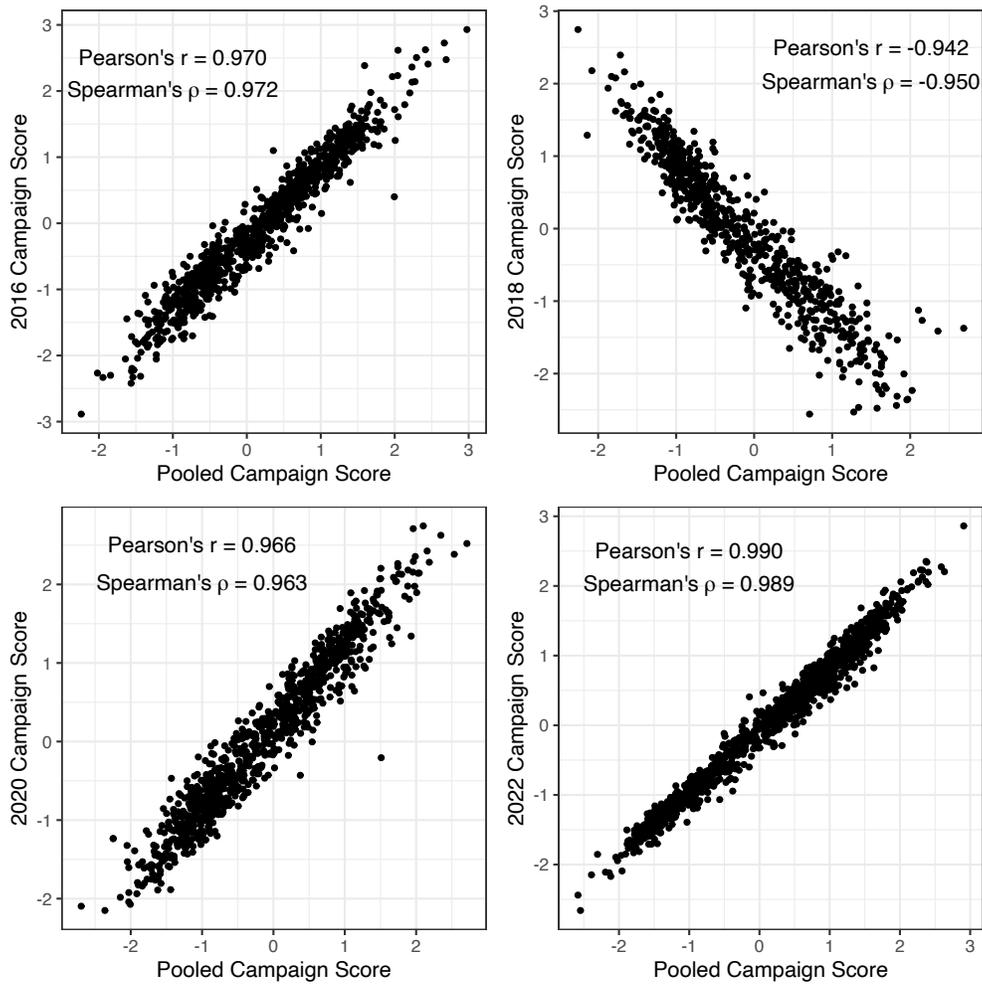
*Note:* Text-based scaling estimates of primary campaign positions along y-axes, estimates from unigram-only scaling including geographic and procedural terms (left) and from unidimensional correspondence analysis (right) along x-axes. Pearson and Spearman's ranking correlations show strong relationships.

**Figure B2.** Campaign Scores From Pooled and Incumbent-Only Scaling



*Note:* Relationship between incumbents' campaign scores from pooled scaling and incumbent-only scaling. Pearson and Spearman's ranking correlations show strong relationships.

**Figure B3.** Relationship Between Campaign Scores From Pooled and Year-Specific Scaling

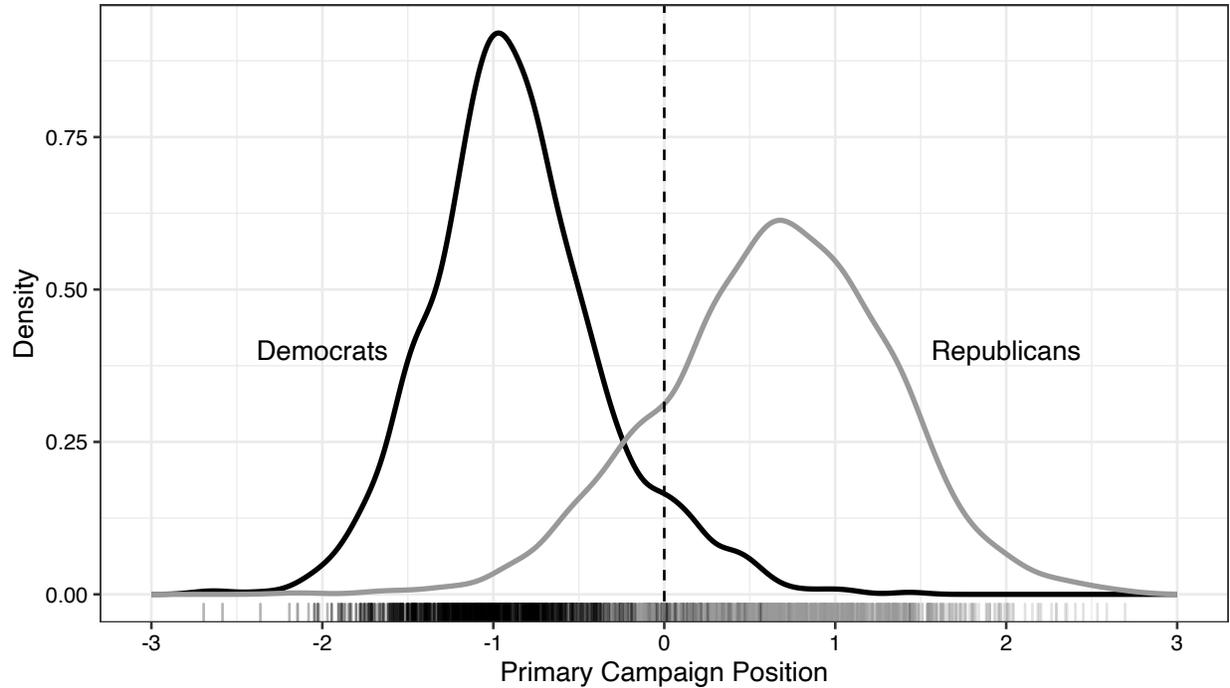


*Note:* Relationship between campaign scores from pooled scaling and each year scaled separately. Pearson and Spearman's ranking correlations show strong relationships.

## B.4 Viable Candidates

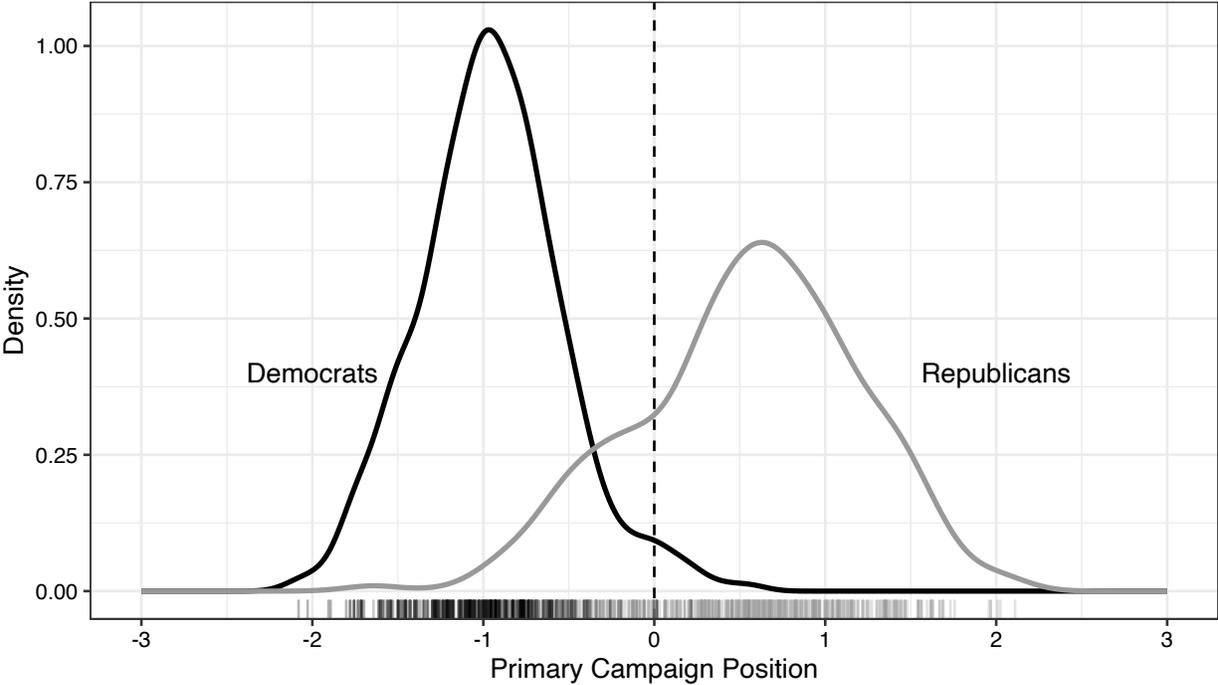
The following figures show that the campaign position distributions of incumbents and candidates who raised at least 10% of their primary's total receipts are similar to the pooled distribution presented in the main text.

**Figure B4.** Distribution of Financially Viable Candidates' Primary Campaign Positions



*Note:* Kernel density plots of  $\omega$  estimates from Equation 1 among only candidates who raised at least 10% of primary receipts. Democratic candidates in black and Republican candidates in gray. Negative values indicate more liberal/less conservative.

**Figure B5.** Distribution of Incumbents' Primary Campaign Positions



*Note:* Kernel density plots of  $\omega$  estimates from Equation 1 among only incumbents. Democratic candidates in black and Republican candidates in gray. Negative values indicate more liberal/less conservative.

## B.5 Top Discriminating Scaling Terms

Scaling results include word-level discrimination parameter  $\beta$  and overall frequency parameter  $\psi$ . Terms with the highest  $\beta$  are those that exert the greatest change to a candidate's campaign position, such that the most positive (negative) terms are most strongly associated with conservative (liberal) positions. The following tables report terms from the main pooled and year-specific scalings sorted by largest negative and positive  $\beta$ .

**Table B2.** Top 20 Most Conservative and Liberal Terms

	<b>Conservative</b>	$\beta$ (weight)	$\psi$ (FE)	<b>Liberal</b>	$\beta$ (weight)	$\psi$ (FE)
1	critical race theori	1.579	-3.306	community-bas	-1.990	-4.569
2	build the wal	1.566	-3.963	rental	-1.970	-4.425
3	tyrann	1.547	-3.885	equit	-1.959	-3.476
4	crt	1.527	-3.630	reproduct	-1.733	-2.395
5	indoctrin	1.510	-3.320	trauma	-1.713	-3.993
6	god	1.469	-1.869	matern	-1.678	-3.375
7	tyranni	1.466	-3.307	lgbtq	-1.637	-2.214
8	christian	1.453	-2.680	high-capac	-1.630	-4.550
9	sanctiti	1.447	-2.997	lewi	-1.621	-4.076
10	god-given	1.443	-3.345	low-incom	-1.586	-2.608
11	unborn	1.441	-1.930	dispar	-1.578	-3.093
12	pro-lif	1.436	-1.684	childcar	-1.572	-2.865
13	communist	1.388	-2.924	disproportion	-1.558	-2.780
14	swamp	1.373	-3.338	pell	-1.555	-3.514
15	socialist	1.365	-2.721	pre-k	-1.541	-3.105
16	amnesti	1.344	-2.393	tuition-fre	-1.506	-4.158
17	islam	1.336	-2.572	underserv	-1.467	-3.464
18	sanctuary c	1.333	-2.773	expung	-1.461	-4.104
19	alien	1.320	-2.301	resili	-1.386	-3.318
20	2nd amend	1.315	-1.483	discriminatori	-1.383	-3.526

*Note:* Top terms with most positive (conservative) discrimination parameters and most negative (liberal) discrimination parameters.

**Table B3.** Top 20 Most Liberal Terms by Year

	2016	2018	2020	2022
1	student_loan	student_loan	lgbtq	equit
2	colleg	reproduct	racial	reproduct
3	infrastructur	mental_health	reproduct	low-incom
4	senior	epidem	disproportion	lewi
5	workforc	color	inequ	childcar
6	mental_health	violenc	incarcer	pre-k
7	bridg	childhood	+	good-pay
8	earli	priorit	low-incom	bargain
9	discrimin	clean_energi	color	inequ
10	loan	communiti	orient	lgbtq
11	invest	opioid	black	disproportion
12	partnership	transport	gender	high-qual
13	climat	champion	workplac	clean_energi
14	minimum	rural	discrimin	incarcer
15	univers	student	justic	childhood
16	access	access	emiss	gap
17	transit	transit	sexual	workplac
18	violenc	expand	fossil	discrimin
19	graduat	prescript	prison	climat
20	student	21st	gap	black

**Table B4.** Top 20 Most Conservative Terms by Year

	2016	2018	2020	2022
1	pro-lif	properti	pro-lif	critical_race_theori
2	amnesti	said	unborn	crt
3	unborn	liberti	balanced_budget	indoctrin
4	2nd_amend	obamacar	2nd_amend	god
5	liberti	2nd_amend	shall	unborn
6	constitut	bureaucrat	infring	pro-lif
7	common_cor	bear	concept	pelosi
8	second_amend	constitut	bureaucrat	communist
9	balanced_budget	illeg	obamacar	finish
10	illeg	answer	second_amend	overreach
11	bear	principl	illeg	liber
12	ir	say	radic	speech
13	concept	religi	border	infring
14	obamacar	second_amend	liberti	radic
15	border	man	bear	2nd_amend
16	epa	spend	southern	right_to_bear_arm
17	faith	govern	china	second_amend
18	bureaucrat	abort	presid	concept
19	principl	term	constitut	shall
20	repeal	deficit	conserv	ideolog

## C Application Robustness

The following figures and tables demonstrate the robustness of the results presented in the brief application of the new measure. The figures show that the trends from Figure 5 hold when subsetting to 2016 and 2018 candidates with CF Scores and when fitting a Loess curve instead of a straight line. The tables show that the main results do not mask considerable heterogeneity in the effect of district partisanship by candidate type, and subsetting to only candidates who raised at least 10% of their primary’s total receipts or instead using Tausanovitch and Warshaw’s (2013) updated district ideology (conservatism) MRP estimates from (Warshaw and Tausanovitch 2022) leads to similar results. However, this measure’s mapping onto the two-year House election time periods is even more problematic than presidential vote share: it is broken down into surveys from 2012-2016 and 2017-2021, so the former is matched to 2016 candidates, while the latter is matched to 2018, 2020, and 2022 candidates even though the surveys used to construct the measure do not include 2022. Although this variable is scaled to have a universe-wide mean 0 SD 1, it only ranges from  $-0.5$  to  $0.4$  in House districts during this time period, so I rescale the variable such that a 0.1 increase constitutes a one-unit increase in the regression.

Figure C1. Only Candidates With CF Scores

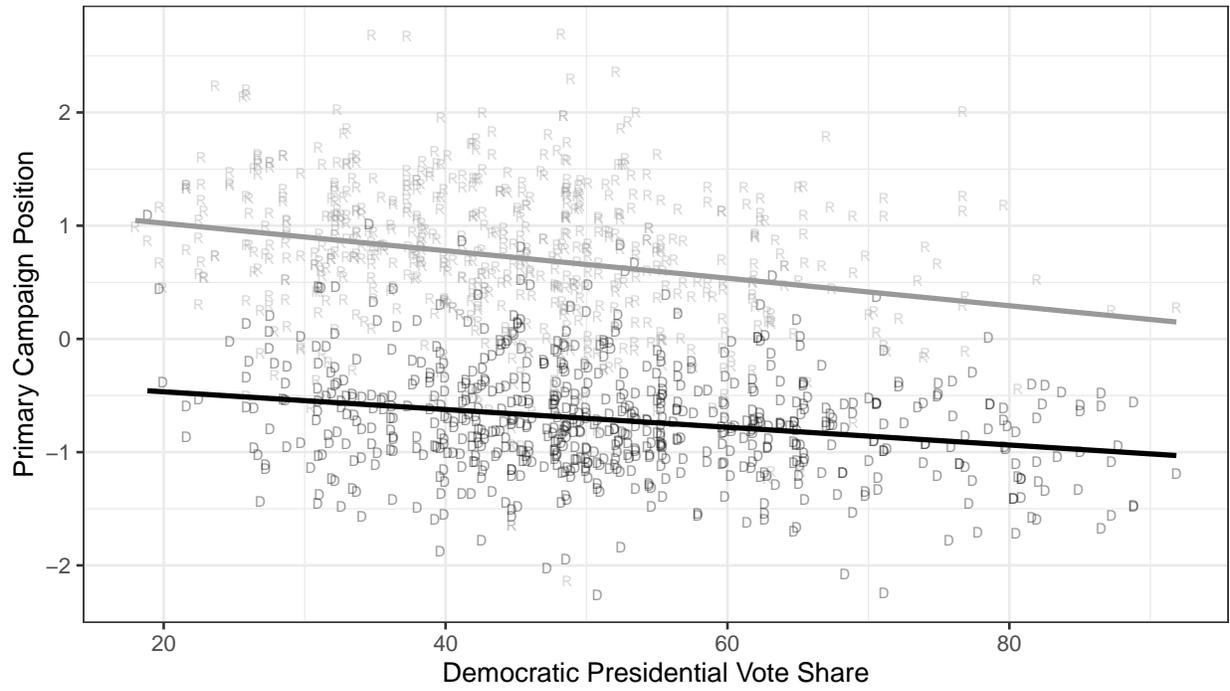
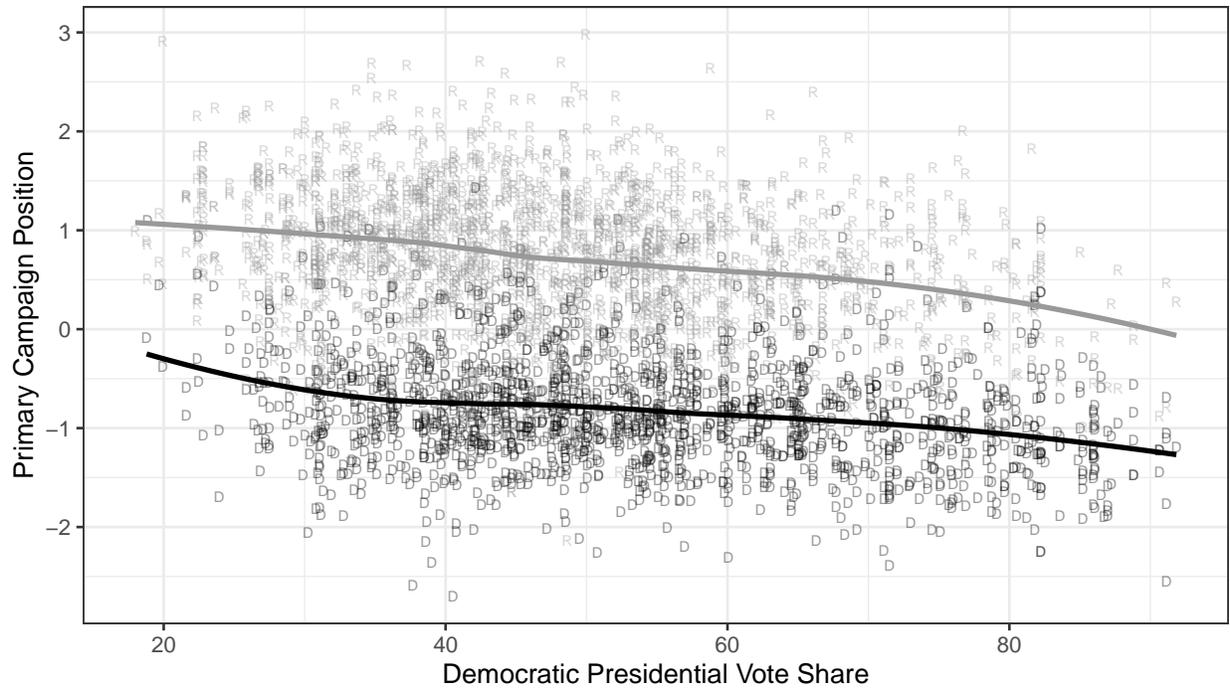


Figure C2. With Loess Curves Fit



**Table C1. District Partisanship and Candidate Positions With Interactions**

	Primary Campaign Position		Recipient CF Score	
	Democrats	Republicans	Democrats	Republicans
(Intercept)	-0.562*** (0.043)	0.465*** (0.049)	-0.702*** (0.049)	0.985*** (0.024)
District Dem. Partisanship	-0.010*** (0.002)	-0.017*** (0.003)	0.001 (0.002)	-0.003*** (0.001)
Open Seat Candidate	0.0005 (0.046)	0.358*** (0.055)	-0.535*** (0.062)	0.151* (0.065)
Primary Challenger	0.214* (0.085)	0.636*** (0.071)	-0.555*** (0.167)	0.332** (0.107)
General Challenger	0.045 (0.045)	0.347*** (0.059)	-0.649*** (0.053)	0.280*** (0.061)
District * Open	-0.001 (0.003)	-0.002 (0.004)	0.007 (0.003)	-0.004 (0.005)
District * Prim. Chall.	-0.0005 (0.004)	0.016** (0.005)	0.008 (0.007)	0.007 (0.008)
District * Gen. Chall.	0.005 (0.003)	0.004 (0.004)	-0.003 (0.003)	-0.0001 (0.006)
Year Fixed Effects	✓	✓	✓	✓
Observations	1,740	1,995	1,090	953
Adjusted R <sup>2</sup>	0.138	0.161	0.209	0.023

*Note:*

\*p&lt;0.05; \*\*p&lt;0.01; \*\*\*p&lt;0.001

**Table C2.** Relationship Between District Partisanship and Candidate Positions Among Financially Viable Only

	Primary Campaign Position		Recipient CF Score	
	Democrats	Republicans	Democrats	Republicans
(Intercept)	-0.550*** (0.037)	0.445*** (0.041)	-0.732*** (0.040)	0.959*** (0.029)
District Dem. Partisanship	-0.009*** (0.001)	-0.018*** (0.002)	0.002 (0.001)	-0.003 (0.002)
Open Seat Candidate	-0.038 (0.040)	0.424*** (0.054)	-0.433*** (0.054)	0.081* (0.037)
Primary Challenger	-0.003 (0.056)	0.541*** (0.062)	-0.251* (0.108)	0.208* (0.101)
General Challenger	-0.030 (0.042)	0.411*** (0.059)	-0.584*** (0.046)	0.288*** (0.066)
Year Fixed Effects	✓	✓	✓	✓
Observations	1,244	1,224	820	718
Adjusted R <sup>2</sup>	0.166	0.170	0.278	0.031

Note:

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

**Table C3.** District Ideology and Candidate Positions

	Primary Campaign Position		Recipient CF Score	
	Democrats	Republicans	Democrats	Republicans
(Intercept)	-0.630*** (0.033)	0.373*** (0.041)	-0.693*** (0.033)	0.918*** (0.040)
District Conservatism	0.071*** (0.010)	0.140*** (0.011)	-0.009 (0.011)	0.058** (0.020)
Open Seat Candidate	0.012 (0.035)	0.393*** (0.040)	-0.519*** (0.048)	0.195*** (0.046)
Primary Challenger	0.188*** (0.044)	0.454*** (0.042)	-0.386*** (0.076)	0.258** (0.081)
General Challenger	0.041 (0.038)	0.369*** (0.047)	-0.632*** (0.041)	0.338*** (0.065)
Year Fixed Effects	✓	✓	✓	✓
Observations	1,737	1,986	1,090	953
Adjusted R <sup>2</sup>	0.131	0.167	0.201	0.031

Note:

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001