Moderation or Strategy? Political Giving by Corporations and Trade Groups[*]

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Abstract

Do bipartisan contributions by corporations and trade associations reflect strategic considerations or ideological moderation? In this paper, I leverage lobbying disclosures in Iowa, Nebraska, and Wisconsin to provide a new measure of ideology that allows me to adjudicate between the two accounts. These states' legislatures permit or require lobbyists to declare their principals' positions on lobbied bills. I combine these data with roll call votes to estimate the ideal points of legislators and private interests in the same ideological space. I find that the revealed preferences of most corporations and trade groups are more conservative than what would be implied by their contribution behavior. The discrepancies are particularly acute for high-level contributors. This shows that a moderate contribution record need not imply moderation in policy preferences. Thus, such interests may not reduce polarization overall. Further, the divergence between contribution and position-taking behavior indicates that many business interests employ sophisticated strategies to influence public officials whom they disagree with.

Introduction

Corporations and trade associations in the U.S. often contribute to candidates from both parties, and appear to show a preference for contributing to moderate over extreme legislators. Is this behavior motivated by strategic considerations or ideological moderation? If corporations and trade groups are ideologically moderate, they are unlikely to increase polarization. While extreme corporations and trade groups that contribute to both parties could increase or decrease polarization, this behavior would suggest that these interests employ sophisticated strategies to influence public officials whom they disagree with. The stakes in this question are high, as many business interests make campaign contributions and are active in lobbying (e.g., Tripathi, Ansolabehere, and Snyder 2002).

Recent research has provided substantial evidence that strategic considerations, including incumbency, affect the campaign contributions of corporate and trade political action committees (PACs) (e.g., Barber 2016; Bonica 2013; Gordon and Hafer 2005; Fouirnaies and Hall 2014, 2018; Powell and Grimmer 2016). Another strand of research has estimated the ideology of PACs based on the assumption that campaign contributions by private interests are primarily driven by ideological preferences (e.g., Poole and McCarty 1998; McCarty, Poole, and Rosenthal 2006; Bonica 2013, 2014). This literature tends to show moderately conservative corporate and trade PACs, reflecting the fact that many of them contribute to moderate politicians, and to politicians on both sides of the aisle. However, the sparseness of ideological estimates of corporations and trade groups not based on contributions has made it hard to gauge the extent to which moderation in campaign contributions by corporations and trade groups may be driven by strategic motivations.

In this paper, I leverage lobbying disclosure requirements in Iowa, Nebraska, and Wisconsin to collect the positions of private interests on lobbied bills.[1] Using an item-response model, I then estimate the revealed preferences of private interests and state legislators in the same ideological space by treating lobbyists' positions on behalf of their principals as votes on the passage of a bill,

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[1] I use the term private interests to include both corporations and interest groups.

and combining them with roll call votes. Further, I leverage organizations that lobby in multiple states and legislative candidates that respond to the same survey questions as bridging observations to estimate ideal points across the three states in a common space.

I find that relative to legislators, the estimated policy preferences of most corporations and trade groups are more conservative than what would be implied by their campaign contributions. The discrepancies are particularly acute for high-level contributors. This shows that a record of moderation in contributions need not imply policy moderation more generally. Therefore, such interests may not reduce polarization overall. Moreover, it provides additional evidence that these interests employ sophisticated strategies in order to influence public officials whom they disagree with.

Background

Previous research on campaign contributions has provided substantial evidence that strategic considerations, including incumbency, affect the campaign contributions of corporate and trade political action committees (PACs) (e.g., Barber 2016a; Bonica 2013; Gordon and Hafer 2005; Fouirnaies and Hall 2014, 2018; Powell and Grimmer 2016). However, there has been less consensus on whether this relatively nonideological political giving by "investor" or access-motivated PACs (Snyder 1992b) is indicative of moderate policy preferences (see, e.g., Barber 2016b; Brunell 2005).

Another strand of research has estimated the ideology of PACs based on the assumption that campaign contributions by private interests are primarily driven by ideological preferences (e.g., Poole and McCarty 1998; McCarty, Poole, and Rosenthal 2006; Bonica 2013, 2014). This literature tends to show moderately conservative corporate and trade PACs, reflecting the fact that many of them contribute to moderate politicians, and to politicians on both sides of the aisle. However, the sparseness of ideological estimates of corporations and trade groups not based on contributions has made it hard to gauge the extent to which moderation in campaign contributions by corporations and trade groups may be driven by strategic motivations.

The extent to which moderate contribution records by business interests are indicative of similarly moderate policy preferences has important implications for polarization and lobbying. If the policy preferences of corporations and trade groups are generally moderate, these interests are unlikely to contribute to increased polarization (e.g. Bonica 2013) and may even contribute to reducing it (e.g., Barber 2016b). However, if the moderate contribution behavior is not indicative of such policy preferences, it would suggest that these interests do not exclusively lobby natural allies and use contributions to signal similarity of preferences (Hall and Deardorff 2006). Instead, it would suggest that corporations and trade groups employ sophisticated strategies to influence public officials whom they disagree with (e.g., Hall and Wayman 1990).

Data

Lobbyist Declarations in the Iowa, Nebraska, and Wisconsin state legislatures provide a novel source of position-based data for estimating private interests' and legislators' positions in a common space. Previous studies have used interest group positions from legislator ratings to estimate the ideology of legislators and these organizations on the same scale (Gerber and Lewis 2004; Poole and Rosenthal 2007). However, few trade groups – and no corporations – comprehensively rate legislators on their voting behavior.

Although all 50 states have reporting requirements for state-level lobbyists, disclosure requirements vary substantially by state.[2] Current lobbying rules in Iowa, Nebraska, and Wisconsin are unusual in that they require lobbyists to report the bills on which they lobby legislators and the principal on whose behalf they lobby on each bill. Crucially, they also require or permit lobbyists to declare their principals' positions on lobbied bills. Nevertheless, there are several differences in the reporting requirements. First, lobbyists in Iowa and Nebraska are required to report their principals' positions, while lobbyists in Wisconsin may leave the position undisclosed.[3] Second,

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[2]For an overview from the National Conference of State Legislatures, see `http://www.ncsl.org/research/ethics/50-state-chart-lobbyist-registration-requirements.aspx`.

[3]Between 2003 and 2016, only 16.7% of positions were not disclosed.

the states differ in how quickly lobbyists have to report lobbying activity and in their options for reporting positions. Finally, the states differ in how far back in time data is made available online.[4]

I collected data to assemble a dataset of all lobbyist declarations from Iowa, Nebraska, and Wisconsin between 2003 and 2016.[5] Lobbying principals include corporations and trade associations, as well as labor unions, cooperatives, ideological/single issue groups, and others. I categorize organizations as corporations and trade associations based on FEC criteria (Appendix B.1). Given the potential for changes in political control, I exclude declarations on behalf of most local governments. Further, I collected all state legislative roll calls and bill histories for the three states from 2003 through 2016. Moreover, I collected all available *Political Courage Test* (PCT) surveys filled out by state legislative and congressional candidates in the three states between 2002 and 2016 from *Vote Smart*'s Archive (Appendix A.3). To compare the position-based estimates to measures of political giving, I employ datasets containing the common-space Campaign Finance score estimates of contributors and recipients (Bonica 2016).

Combining Position-Based Data from Multiple Sources

I use the lobbyist declaration data to construct a vote matrix that combines principals' positions with roll call votes in the Iowa, Nebraska, and Wisconsin state legislatures. Since bills are often amended in the legislative process, matching declarations with final passage votes requires assumptions about which version of a bill a principal's position refers to. In each state, I employ the histories of bill actions to determine the dates of successful amendments to identify which bill version was current at a particular date. I assume that any successful amendment creates a new bill version. I only consider a bill as amended when the amendment has been approved by a floor vote.

Further, I assume that any declaration applies to the then-current bill version. Therefore, I do not assume that declarations refer to previous versions of a bill. In a final step, I construct the

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[4]Appendix A.2 provides more details on the reporting requirements in the three states.
[5]Prior to 2005, lobbyist declarations in Iowa did not include the lobbyists' principals.

legislator-principal-vote matrix by combining the declarations on bill versions with roll calls votes when a bill version is associated with a final passage vote. For bill versions not associated with a roll call vote (for example, because the bill died in committee), I add the declarations associated with the bill version to the matrix as a separate column. These position-data are supplemented with candidate responses to the PCT.[6]

Assumptions and Estimation

As is common in the roll call literature, I assume sincere voting, ignorable nonresponses, and conditional independence across actors and votes (e.g., Bafumi and Herron 2010; Gerber and Lewis 2004; Poole and Rosenthal 2007; Shor and McCarty 2011; Jessee 2016). The assumption of sincere voting by lobbying principals is motivated by state laws and legislative rules governing disclosure (Appendix A.2), lobbyists' concerns for their reputation and success in future attempts at lobbying, and the need for clear communication between lobbyists and legislators, as well as lobbyists and their principals.

High rates of nonresponse by lobbying principals warrant greater caution over the interpretation of their ideal points. First, high nonresponse rates increase the uncertainty about parameter estimates, including the ideal points of lobbying organizations. Moreover, in conjunction with violations of the ignorable nonresponse assumption, they increase the potential for bias in the ideal points (Rosas, Shomer, and Haptonstahl 2015).

I address the first issue by relying not only on point estimates, but also on the proportion of corporations and trade groups that are less conservative than a given legislator quantile, as well as the uncertainty about that proportion (Figure 1, Panels 4-6). To address the second issue, I present results from robustness checks which show that selection effects, either due to a focus on contro-

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[6]Appendix B.2 provides additional details on how lobbyist declarations were combined with roll call votes. Appendix B.3, details the procedures for merging or splitting the position-record of principals across sessions of the same state, as well as across states. Appendix B.4 specifies the coding of PCT responses, and the merging of PCT responses from different states and years.

versial votes or due to a focus on particular policy areas, are unlikely to lead to artificially extreme estimates of private interests in the sample.[7]

I employ a combination of bridging assumptions to jointly estimate legislators and private interests in a one-dimensional space. Private interests whose lobbyists took positions in multiple states, chambers, or years permit merging across states, chambers, and sessions. Further, candidate responses on the PCT serve as bridging votes across states and chambers. Politicians who served in both chambers of a legislature or in multiple sessions help to bridge across chambers and sessions.[8]

To balance the trade-off of estimating the ideal points of legislators and interest groups with sufficient precision and estimating preferences of a substantial number of interest groups, I reduce the vote matrix so that all included *votes* have a minimum number of 9 *actors* voting on it, all included *actors* have at least 20 *votes*, with at least 3 *actors* voting in the minority.[9] Further, the matrix excludes votes that combine unanimous roll calls with opposing lobbying principals. This results in a voting matrix that includes 674 lobbying principals 12,642 matched bill versions, 1,004 candidate survey items, and 47,373 positions from lobbying principals on bill versions. I estimate the ideal points using Clinton, Jackman, and River's (2004) Bayesian 2-parameter item-response model (*IDEAL*) which is implemented in the R package *pscl* (Jackman 2015).[10]

In comparing position-based estimates from three states with contribution-based estimates, I assume that these groups have the same ideal points across jurisdictions and time (see also Bonica 2014).[11] For non-corporate organizations registered with the same name in multiple states, I assume that they are separate actors, unless the registration record indicates a federal or regional representation. I define estimates as "moderate" if they are between the median Democratic and

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[7]Appendix B.5 provides additional discussion and analysis that address the issues of nonresponse and conditional independence.

[8]For tests of across-state bridging assumptions, see Appendix E.

[9]In combination with minimum vote thresholds to ensure sufficient precision of the estimates, another practical consequence of high nonresponse rates by private interests is that ideal points can only be estimated for a subset of all lobbying principals. In robustness checks following the main results, I show that the main results are robust to a set of different minimum vote parameters.

[10]See Appendix C for details about the estimation, sampling, and convergence diagnostics.

[11]While these assumptions are consistent with using CFscores that rely on contributions to candidates in all 50 states and Congress, the results do not depend on this (see Appendix H.4).

Figure 1: Position- and Contribution-Based Estimates of Legislators and Business Interests
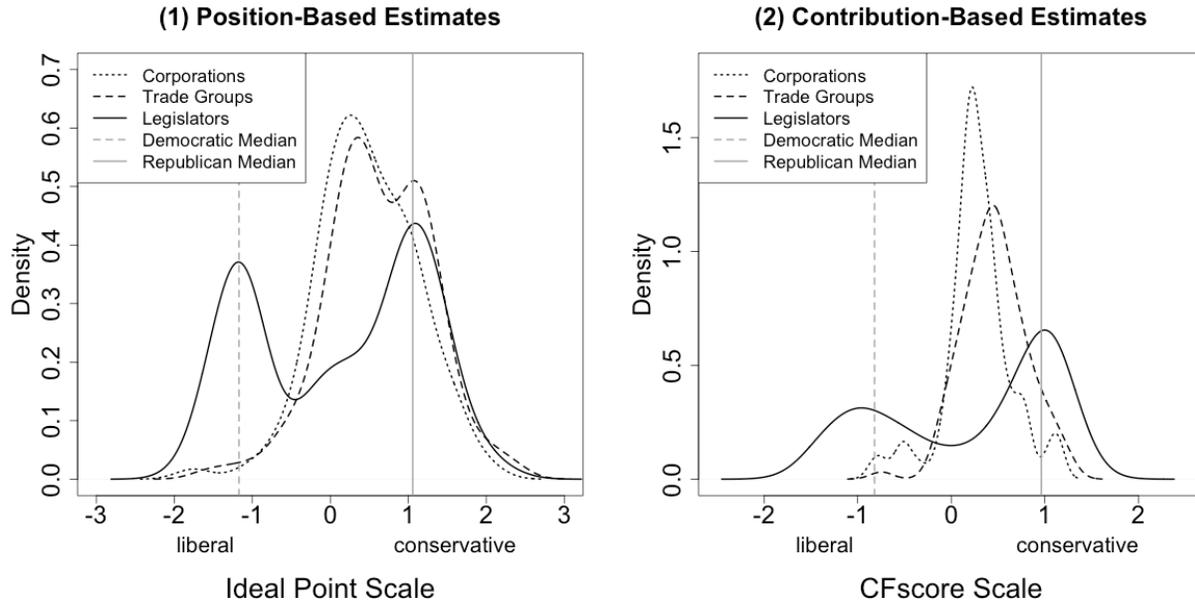
Note: Panel 1 shows the ideal point distributions of 746 legislators from Iowa, Nebraska, and Wisconsin, as well as of 102 corporations and 171 trade groups. Panel 2 shows the CFscore distributions of the subset of 676 legislators, 83 corporations, and 105 trade groups for which CFscores were estimated or projected based on campaign contributions (Bonica 2016). In each panel, the dark gray lines show the median Democratic and median Republican legislator estimates.

the median Republican legislator estimate in the sample, weighted by the number of bienniums in state legislative office between 2003 and 2016.

Ideological Estimates of Corporations and Trade Groups

The first panel of Figure 1 presents the ideal point distributions of 746 legislators, as well as of 102 corporations and 171 trade associations. Although a majority of corporations and trade groups have ideal points between the median Democrat and median Republican, 70 organizations (26%) are more conservative than the median of Republicans' ideal points.

The Campaign Finance scores (CFscores) reveal that most corporations and trade groups in the sample have moderate contribution records, reflecting contributions to moderate legislators, legislators of both parties, or both. Panel 2 presents the CFscore distributions for the set of 676 legislators, 83 corporations, and 105 trade groups for which I estimate ideal points and for which

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Figure 2: Comparison of Position- and Contribution-Based Estimates of Private Interests
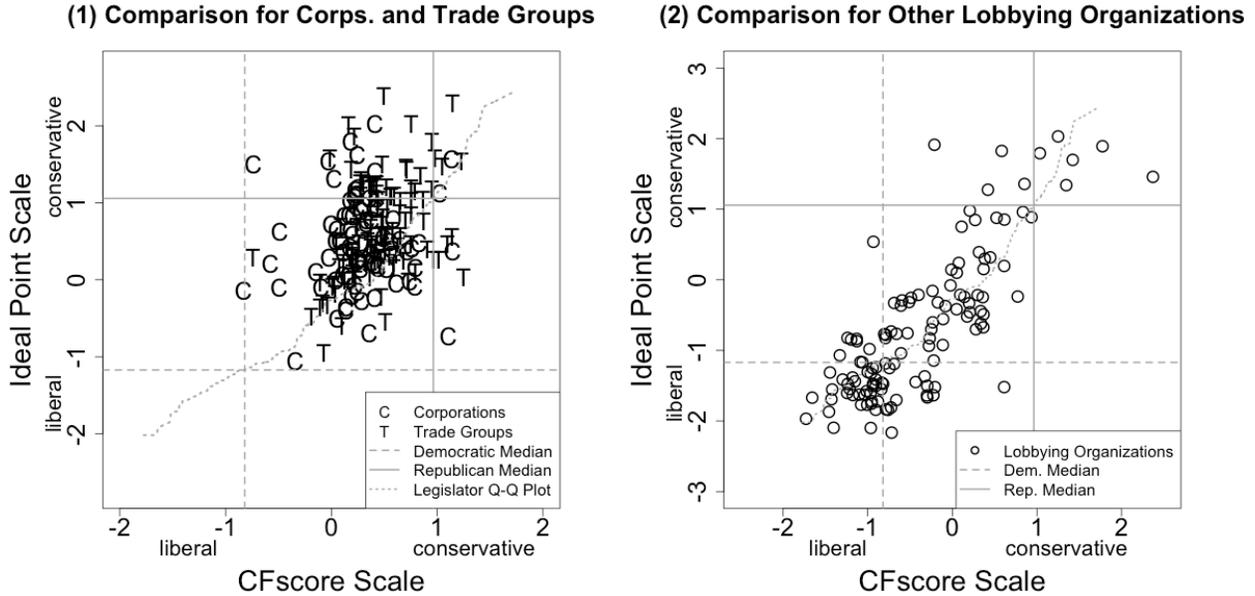
Note: Panel 1 compares the contribution- and position-based measures for 188 corporations and trade groups organizations. Panel 2 compares the contribution-based CFscores and the position-based ideal points for 124 professional, ideological/single issue, labor, and other organizations.The dotted line shows the Q-Q plot for legislator estimates. In each panel, the dark gray lines show the median Democratic and median Republican legislator estimates.

preferences were estimated or projected based on campaign contributions (Bonica 2016).[12] Of the 188 organizations, only 13 (7%) have extreme conservative contribution records, while 174 (93%) have "moderate" contribution records, placing them between the medians of the two parties.

Since the contribution-based CFscores and the position-based ideal points of corporations and trade groups are not directly comparable, I use the legislator quantiles on each measure as the basis for an indirect comparison (Figure 2). I find that 150 of the 188 organizations (80%) reveal more conservative policy preferences than implied by their contribution record (see Panel 1). Moreover, of the 174 organizations with "moderate" contribution records, 41 (24%) reveal "extreme" policy preferences, indicating that their political giving does not reflect ideological moderation.

Panel 2 compares CFscores and ideal points of private interests that are not corporations or trade groups.[13] The very strong correlation of $r = 0.80$ provides an important cross-validation

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[12]See Appendix F for details.

[13]They include cooperatives, ideological/single issue groups, labor unions, and professional associations.

Figure 3: Cumulative Distributions of Position- and Contribution-Based Estimates
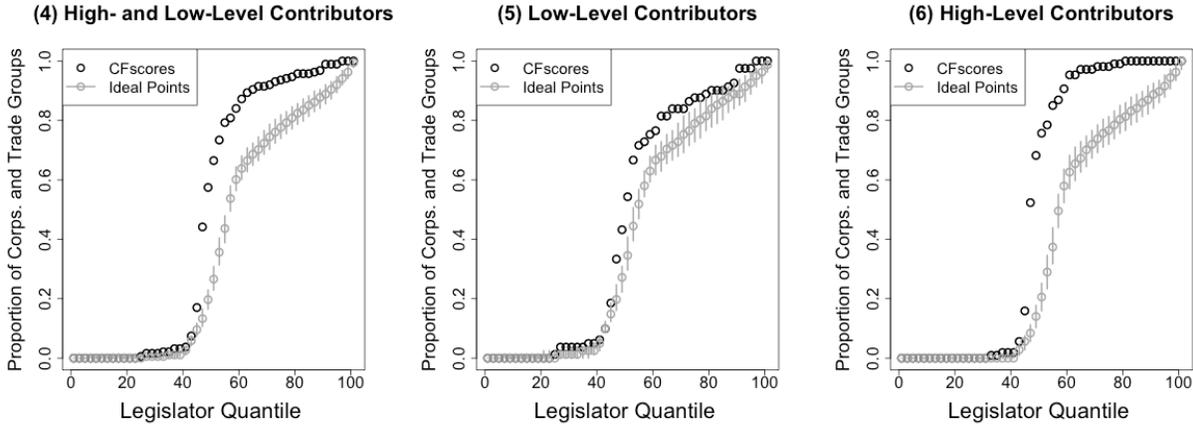
Note: Panels 1-3 display the proportions of corporations and trade groups with position- and contribution-based estimates that are less conservative than a given legislator quantile. The position-based proportions also plot the 95%-credible intervals based on draws from the posterior distribution. Panel 1 presents the proportions for all 188 corporations and trade groups. Panel 2 shows the proportions for 25 corporations and 56 trade groups that contributed less than $100.000 between the 2004 and 2014 election cycles in any state or federal election. Panel 3 plots the proportions for 58 corporations and 49 trade groups that contributed at least $100.000.

for both sets of estimates. On the other hand, the low correlation of 0.27 between position- and contribution-based estimates of corporations and trade groups suggests that ideological considerations, beyond a general conservative or Republican preference, do not determine the contributions of most business interests.[14]

The pattern of political giving by corporations and trade groups masks substantial ideological variation. Panel 1 in Figure 3 shows the proportion of the 188 corporations and trade groups that are less conservative than a given legislator quantile.[15] Whereas for the contribution-based measure, the proportion increases from 3.7% to 87.2% (84 pp) between the 40th and 60th legislator quantiles, a similar increase for the position-based measure is distributed between the 40th and 86th quantiles.

Panels 2 and 3 show that these differences vary substantially by level of contribution, by classifying organizations as high- or low-level contributors, depending on whether they contributed at least $100,000 to any state-level or federal campaign between 2004 and 2014. Whereas for high-

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[14]As a summary of contribution behavior, (projected) CFscores of corporate and trade PACs provide a more appropriate comparison than IRT PAC scores (Bonica 2013), since they do not control for strategic motivations by including covariates.

[15]The results in Figure 3 also take into account uncertainty over the estimates.

level contributors the cumulative distribution of CFscores rises from 2% to 95% between the 40th and 60th legislator quantiles, a similar increase for the position-based ideal points is distributed between the 40th and 96th legislator quantiles.

Assessing Potential Sources of Artificial Extremism

One potential consequence of violations of the ignorable nonresponse assumption in the context of this analysis is that the extremism of lobbying principals is an artifact of the bills and votes on which they take positions. Snyder (1992a) showed that by focusing on an unrepresentative sample of controversial votes, interest group ratings can produce artificially extreme legislator estimates. If principals only lobby and take positions on such bills, it can similarly lead to artificial extremism in the ideal point estimates of private interests.[16] Similarly, it is possible that lobbying organizations only care about outcomes on a narrow set of policies, and that different types of organizations appear more or less extreme because the issue area they inhabit is more or less polarized along partisan lines (comment by anonymous reviewer). Below, I examine whether selection effects, either due to a focus on controversial votes and/or a focus on particular issue areas are likely to lead to artificially extreme estimates of the private interests in the sample.

To address the first concern, I compare the level of extremism in two sets of business interests/lobbying principals. Those that are presumed to be susceptible to artificial extremism and those that are not. To identify these two sets, I test whether the distribution of cutpoints from an organization's votes is significantly different from the overall distribution of cutpoints.[17] In addition, I test for each organization, if the variance of its cutpoint distribution is significantly lower than that of the overall distribution of cutpoints.

Based on these criteria, I classify 113 principals (59 corporations or trade groups) as being

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[16]Code for simulations is available upon request.

[17]I employ a two-sided Kolgomorov-Smirnov test, limiting the analysis to those votes that discriminated significantly on the main dimension, excluding cutpoints outside the range of ideal points, and excluding items from the candidate surveys.

Figure 4: Robustness Check to Address Potential Artificial Extremism
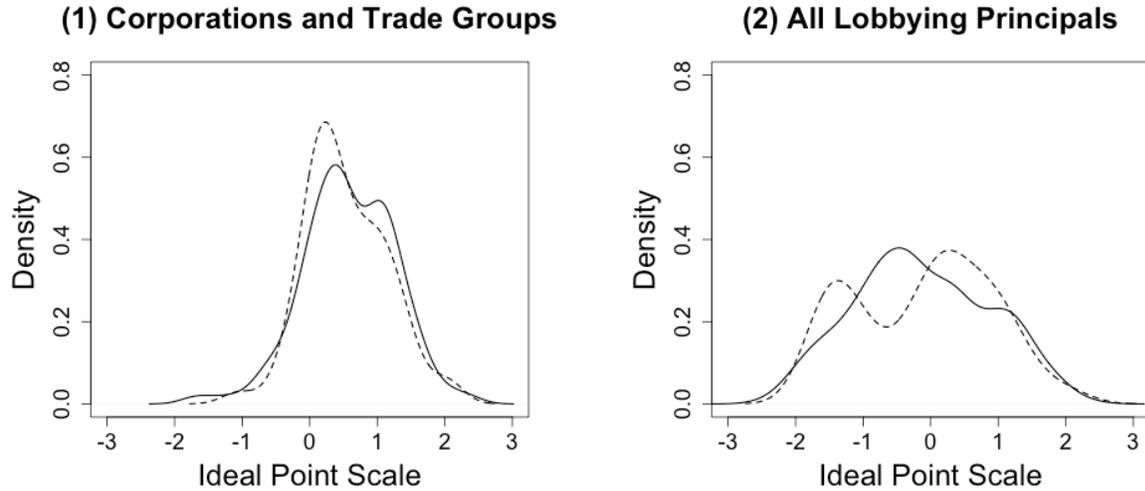
Note: This figure compares the ideal point distributions of lobbying principals that were and were not classified as being susceptible to artificial extremism. Panel 1 compares the ideal point distribution of these two sets among corporations and trade groups. Panel compares the two sets among all lobbying principals (Panel 2). The ideal point distribution of the susceptible set (non-susceptible set) is shown in dashed (solid) lines.

susceptible to artificial extremism, as they have a significantly different cutpoint distribution for their votes and the variance of their cutpoints is significantly lower than the overall variance of cutpoints. On the other hand, 561 principals (214 corporations or trade groups) are classified as not being susceptible to artificial extremism. If artificial extremism is driving the results, we should expect the ideal points of the susceptible subsets to exhibit different distributions of ideal points, with a higher variance and more extremists than the ideal points of the non-susceptible subset.

Figure 4 compares the ideal point distributions of lobbying principals that are and are not classified as being susceptible to artificial extremism. Panel 1 compares the ideal point distribution of these two sets among corporations and trade groups. Panel 2 compares the two sets among all lobbying principals. The ideal point distribution of the susceptible set (non-susceptible set) is shown in dashed (solid) lines. While in both panels the two distributions do not overlap perfectly, Kolgomorov-Smirnov tests reveals no statistical difference between the two sets of distributions ($p=0.42$, $p=0.19$). Moreover, in both cases, an F-test of the equality of the variances is not statisti-

cally significant (p=0.29, p=0.89). Further, the proportions of organizations with "extreme" ideal points are very similar for both comparisons.[18] This suggests that a focus on controversial bills or votes is not primarily driving levels of extremism, either of corporations and trade groups, or of lobbying principals as a whole.

Next, I examine whether lobbying principals tend to focus on a narrow set of policies, and whether the policy focus of different types of organizations makes them appear more or less extreme (comment by anonymous reviewer). To compare bill selection across different types of organizations, I group all lobbying principals with ideal point estimates – not just corporations and trade groups – into 13 sectors using the classification system from the Center for Responsive Politics (`www.opensecrets.org`).[19] Further, I categorize legislation based on the committee to which it was initially referred, or which sponsored it.[20] I then classify committees into categories based on major topics from the Pennsylvania Policy Database Project (McLaughlin, Joseph, et al. 2010).[21] Finally, I aggregate the number of lobbying declarations across types of organizations and types of votes.

Figure 5 shows the row percentages of which types of votes different types of organization lobby on.[22] As might be expected, there is some specialization depending on the sector of the lobbying principal. For example, agribusiness organizations focus more strongly on bills referred to Agriculture committees, and organizations in the health sector focus more on "Health and Social Welfare" than other organizations. Nevertheless, there is also substantial overlap in the policy focus of organizations. Organizations from all sectors lobby in the policy areas "Economy, Business,

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[18]In particular, while 20.3% of susceptible corporations and trade groups had extreme ideal points, in the non-susceptible set of organizations, the proportion was 28.5%. The proportions for all lobbying principals were 34.5% for the susceptible set and 31.2% for the non-susceptible set.

[19]More details are available online (`https://www.opensecrets.org/industries/slist.php`, `https://www.opensecrets.org/downloads/crp/CRP_Categories.txt`, accessed July 15, 2018).

[20]See Fouirnaies and Hall (2018) for a similar approach.

[21]The revised 2015 codebook is available at `http://www.cla.temple.edu/papolicy/codebook/` (accessed July 23, 2018). Due to overlapping committee jurisdictions and few committees in some categories, I combine several policy areas (see Table 2, Appendix H.1). Any committees that do not fit the combined policy areas are grouped into the category "Mixed". Bills which were not introduced to committees or sponsored by committees are classified as "Unknown".

[22]Figure 11 in Appendix H.1 presents the row percentages of which types of bills different types of organizations lobbied on. It includes bills on which no vote was taken, and declarations other than "for" or "against".

and Finance", "Government Operations", and "Justice, Family Issues, and Defense". Most other policy areas see at least a partial overlap between different sectors. Crucially, all sectors appear relatively spread out in terms of their policy focus which should alleviate concerns that position-taking by lobbying organizations occurs within a narrow set of policies.

To further examine the possibility that different types of organizations appear more or less extreme because the issue area they inhabit is more or less polarized along partisan lines (comment by anonymous reviewer), I conduct an additional analysis that relates the proportion of extreme organizations for each sector to the proportion of votes that they take in the most polarized policy areas.[23] Polarization of the policy area is measured by the proportion of votes where the discrimination parameter loads onto the main dimension[24] and where the cutpoint is between the 75th legislator quantile for Democrats and the 25th legislator quantile for Republicans (weighted by number of sessions in office).[25]

Values on the horizontal axis of Figure 6 display the average proportion of positions (on votes) by each organization within a sector that fall into the most polarized policy areas. The vertical axis shows the proportion of extremists in a given sector. For robustness, the three panels show results for the three, five, and seven most polarized policy areas.[26] All panels show relatively little variation across sectors in the average proportion of positions in the most polarized policy areas. Crucially, in none of the panels is there a significant correlation between the two variables. These results suggest that is it unlikely that organizations in the sample appear more or less extreme because the issue area they inhabit is more polarized along partisan lines.

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[23]Consistent with the main analysis, extremism is measured by whether they are more liberal than the median Democratic or more conservative than the median Republican legislator in the sample (medians are weighted by the number of sessions in office).

[24]Here, the criterium is again whether the 95%-credible interval includes zero.

[25]The results do not change substantially when these thresholds are changed to include more or fewer votes.

[26]The seven most polarized policy areas from most to least polarized are (1) Labor and Employment, (2) Education, (3) Economy, Business, and Finance, (4) Health and Social Welfare, (5) Unknown, (6) Government Operations, and (7) Justice, Family and Defense.

Figure 5: Patterns of Lobbying Principal Position-Taking on Votes (in Policy Areas by Sector)

	Agriculture	Community Developm. & Housing	Economy, Business & Finance	Education	Energy, Environm. & Nat. Resources	Government Operations	Health & Social Welfare	Justice, Family & Defense	Labor & Employment	Mixed	Transport., Telecomms. & Tech.	Unknown
Agribusiness	12	1	9	1	10	28	3	9	16	7	3	0
Communications/Electronics	0	0	12	1	5	42	1	16	14	5	4	0
Construction	0	4	12	1	8	28	1	10	20	12	2	0
Energy & Natural Resources	2	1	16	0	19	24	3	10	13	9	2	0
Finance, Insurance & Real Estate	1	2	26	1	3	15	6	15	22	9	2	0
Health	0	1	15	10	1	23	25	12	6	7	1	0
Ideological/Single Issue	2	1	10	5	12	24	10	17	5	11	2	0
Labor	0	1	9	7	2	25	3	14	25	10	2	0
Lawyers & Lobbyists	2	1	9	3	5	21	6	22	19	8	4	0
Misc Business	1	2	14	3	6	25	5	10	22	10	2	0
Other	2	3	8	9	7	33	7	14	7	9	3	0
Transportation	2	1	13	1	3	18	3	14	23	13	9	0

Note: This figure shows the row percentages of which policy areas lobbying principals in a particular sectors tend to focus on. All positions "for" or "against" from lobbying principals and votes which are included in the analysis are aggregated by sector and policy area. The shading of each cell reflects the level of its row percentage.

Figure 6: Relationship Between Policy Focus and Ideal Point Extremism (by Sector)
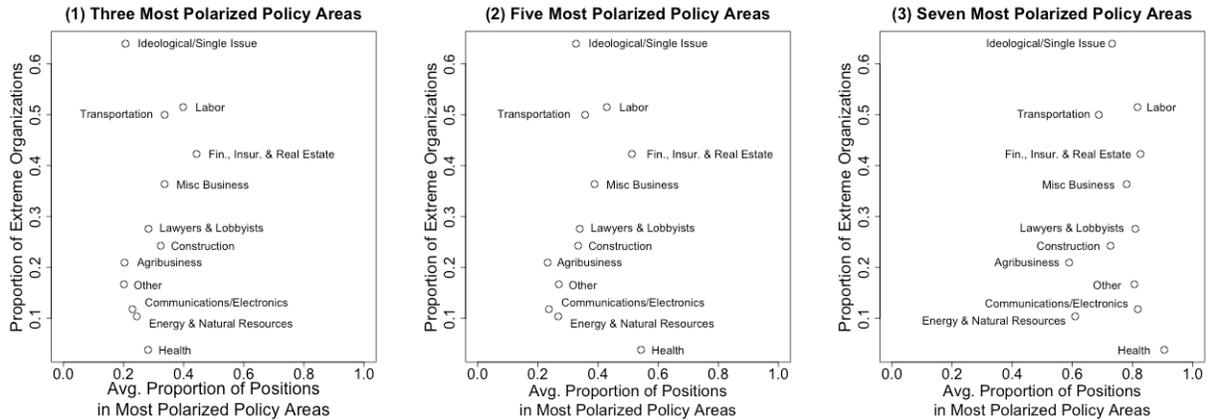
Note: The panels in this figure compare the extent of a sector's focus on the (3, 5, and 7) most polarized policy areas to the extremism of the sector's principals. The horizontal axes show the average proportion of positions on "votes" (across each organization within a sector) within the most polarized policy areas. The vertical axes show the proportion of extremists in a given sector. Polarization of the policy area is measured by the proportion of votes that load onto the main dimension and have a cutpoint estimate between the 75th Democratic and the 25th Republican legislator quantile. Ideal points are "extreme" if they are more liberal (conservative) than the median Democratic (Republican) legislator estimate in the sample.

Robustness to Alternative Restrictions on the Vote Matrix

Given the high rates of nonresponse for lobbying principals, there are at least two ways in which the restrictions on the vote matrix could affect the results. First, by affecting the estimates of legislators and organizations in the sample. Second, by affecting which legislators, legislative candidates, and organizations are included in the sample. This section addresses these concerns by showing that main results are robust to reasonable changes to the minimum vote requirements.

In particular, I estimate all 27 permutations of the following parameter choices: minimum of 9/15/20 actors, minimum of 15/20/25 votes, minimum of 2/3/4 actors vote in the minority.[27] The minimum values of these minimum vote restrictions are consistent with prior research (e.g. Jessee 2016; Peress 2009) as well as the relatively non-demanding objective of estimating a one-dimensional Bayesian item-response model.

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[27] All permutations have the further requirement that at least 2.5% of the vote are in the minority. Therefore, even in cases where 120 actors vote and the minimum lopsidedness requirement is 2, a minimum of 3 votes are required to be in the minority. The vote matrices also exclude votes that combine unanimous roll calls with opposing lobbying principals (see Appendix C.1).

Figure 7: Results Based on Vote Matrices With Varying Restrictions
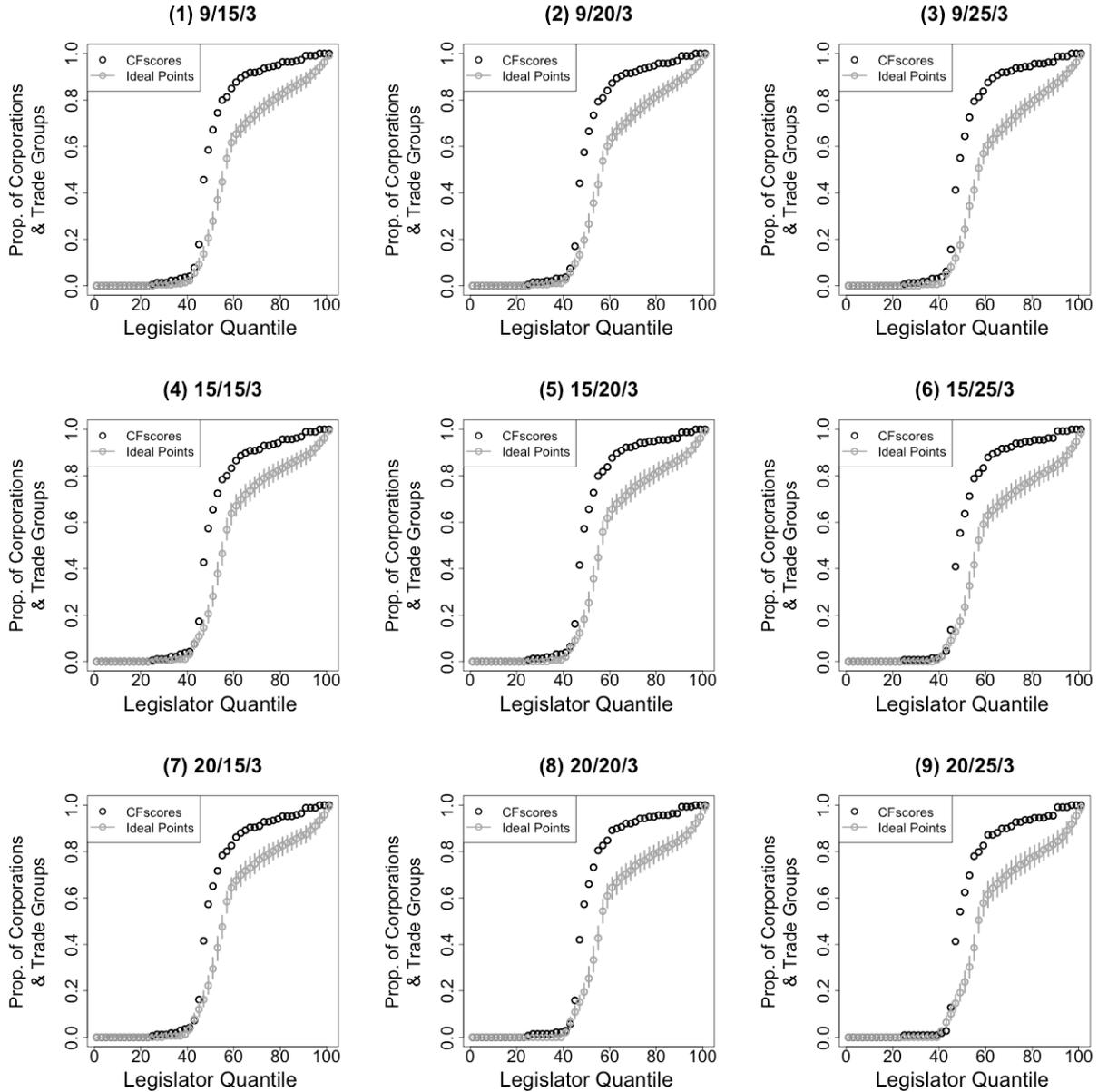
Note: The panels in this figure show the proportion of corporations and trade groups with position- and contribution-based estimates that are less conservative than a given legislator quantile. The position-based proportions also plot the 95%-credible intervals based on draws from the posterior distribution. The estimates in each panel rely on a minimum of 9/15/20 actors, a minimum of 15/20/25 votes, and a minimum of 3 actors voting in the minority, as shown in the title of each panel.

The panels in Figure 7 recreate Panel 1 of Figure 3 which compares the proportion of organizations that are more liberal than a given legislator quartile, for both the contribution-based CFscores and the position-based ideal points.[28] In all cases, the position-based estimates reveal more conservative estimates for corporations and trade groups than what would be implied from their contribution record. This suggests that the results of the analysis are robust to reasonable changes of the minimum vote parameters.

External Validity Beyond Iowa, Nebraska, and Wisconsin

The main analysis has shown that corporations and trade groups which lobbied in Iowa, Nebraska, and Wisconsin between 2003 and 2016 tended to have moderate overall contribution records. Moreover, these interests tend to reveal more conservative policy preferences that what would be implied by their contribution record. How representative are these three states of other states and Congress, and to what extent might the results and their implications generalize? Since similar position data for private interests is currently not available for all states and Congress, this question can only be addressed indirectly using auxiliary data and existing research.

In this section, I show that the proportion of corporate and trade PACs with a moderate contribution record across Iowa, Nebraska, and Wisconsin is very similar to or lower than the proportions for a majority of states and Congress. Second, I demonstrate that the median Democratic and median Republican state legislator across Iowa, Nebraska, and Wisconsin are likely to be representative of most states and Congress. Finally, I rely on lobbying registrations and previous research to argue that there a likely to be a lot of similarities between the stated preferences of business interests in the sample and those lobbying in other states and in Congress. Jointly, these elements suggest that concerning the main results and their implications, the states in the sample are unlikely to be

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[28]Additional results from estimations with minimum lopsidedness requirements of 2 and 4 are presented in Appendix H.3. To examine the possibility that changes in the restrictions on the vote matrix affect the estimates of legislators and organizations in the sample, I also compute the correlations between all common estimates from the 27 estimations. The distributions of the overall correlations and the correlations for lobbying principals are presented in Appendix H.3. The minimum overall correlation is r=0.985, and the minimum correlation between estimates of common lobbying principals is r=0.971.

outliers among all state legislatures and Congress.

Representativeness of Contribution Behavior by Corporate and Trade PACs

First, existing research suggests that corporations and trade groups, both in Congress and in the states contribute to both parties (Brunell 2005; Fouirnaies and Hall 2014) and favor moderate legislators (Bonica 2013a). To provide further evidence of moderate contribution behavior of corporate and trade PACs on the federal and state level, I employ contributor CFscores of corporate and trade PACs in all 50 states and Congress (Bonica 2016).

As indicated by Bonica (2014, 370), corporations and trade PACs were excluded from the original estimation, and subsequently projected onto the recovered space as supplementary observations. I focus on the sample of CFscores by corporations and trade PACs – as indicated by the variable "is.corp" – which rely on at least 2 distinct contributions and where the PAC was active at least once between 2002 and 2014. After removing an additional 1,224 projected estimates of candidate, party, labor and professional/membership PACs, this results in a sample of 137,182 contributor CFscores.

To link contributors to states, I use the variable "most.recent.contributor.state" which contains the contributor's last self-reported state. For robustness, I use three different indicators to capture contributors to Congress. First, any contributor which had "DC" as the last reported state. Second, the sample of contributors that had contributed at least a hundred thousand dollars between 2002 and 2014, and third, the entire sample of 137,182 contributors.

To classify contributors in the states into having moderate or extreme contribution records, I employ recipient CFscores of elected state legislators between 2002 and 2014. In particular, any contributor with a CFscore located between the medians of Democratic and Republican state legislators is classified as moderate. To classify contributors to Congress as having a moderate contribution record, I use the medians of elected members of Congress between 2002 and 2014.

Figure 8 presents the distribution of the proportion of corporate and trade PACs with moderate

Figure 8: Moderate Corporate Contributors in the States and Congress
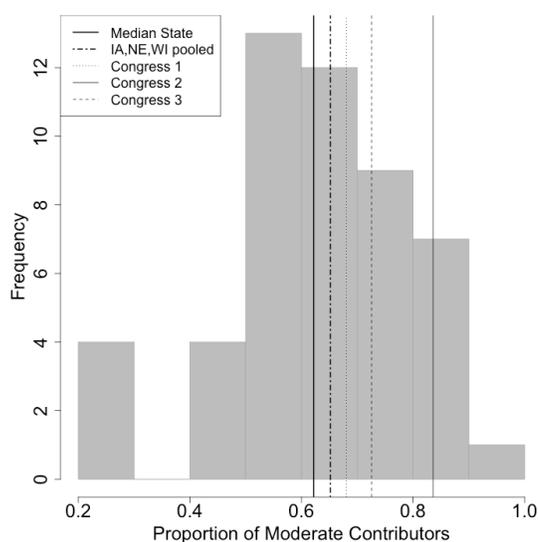
Note: This histogram shows the proportions (within each state) of corporate and trade PACs with a 'moderate' CFscore (Bonica 2016). The vertical lines show the median state, the pooled proportion across Iowa, Nebraska, and Wisconsin, as well as three indicators for the proportions of moderate PACs contributing to members of Congress. The measures include (1) any contributor that reported "DC" as the last state; (2) PACs that contributed at least $100,000 between 2002 and 2014, and (3) the entire sample of 137,182 contributors.

contribution records in the states. The distribution is unimodal and the median state's proportion is 62%. This indicates that in a majority of states, the contribution records of corporate and trade PACs are overwhelmingly moderate.

Pooling contributors across Iowa, Nebraska, and Wisconsin results in a very similar proportion of about 65%. Further, more than half of all states have a proportion within twelve percentage points of 65%, suggesting that the pooled contributors across the three states are broadly representative of the contribution behavior of such PACs in many states.[29]

Finally, for all three indicators of contributors to Congress, the proportion of moderate corporate or trade PACs (68%, 84%, and 73%) is higher than that of the median state (63%) or the pooled proportion across Iowa, Nebraska, and Wisconsin (65%). These results indicate that the proportion

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[29]The lower proportion of moderate contributors compared to the organizations in the sample (65% vs. 93%) is consistent with more strategic giving on behalf of business interests that engage in considerable lobbying.

of moderate contributors across the three states is not unusually high compared to most states and Congress.[30]

Representativeness of State Legislators

Below, I demonstrate that state legislators in Iowa, Nebraska, and Wisconsin are broadly representative in their revealed ideological positions of state legislators in most states as well as members of Congress. In Panel 1 of Figure 9, I show that the median Democratic and Republican state legislators across the three states (2003-2016) fall near the centers of the distributions of median Democrats and median Republicans in all states. The legislator estimates come from an updated version of the NPAT common-space scores (Shor and McCarty 2011; 2018) which includes legislator estimates up until 2016.[31]

Although, the three states are somewhat more polarized than the average state, they are near the center of the distribution with respect to the distance between party medians (Panel 2, Figure 9). The Panels 3 and 4 repeat the preceding comparisons using legislators' recipient CFscores (Bonica 2016), with broadly similar results. Crucially, the panels also include measures for members of Congress, which indicate a strong similarity to Iowa, Nebraska, and Wisconsin.

Representativeness of the Stated Preferences of Business Interests

There are at least two ways to think about the representativeness of the revealed preferences of business interests in Iowa, Nebraska, and Wisconsin. The first is to ask if the same organizations are lobbying to advance the same or similar positions and stating the same preferences in other jurisdictions? The second is to ask more broadly whether the business interests in the three states are likely to be representative in their revealed preferences of the broader set of business interests

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[30] The individual proportions for the three states are approximately 73% (Iowa), 64% (Nebraska) and 60% (Wisconsin). When the state-specific party medians are used to measure the proportion of PACs with a moderate contribution record, the proportions are approximately 76% (Iowa), 33% (Nebraska), and 77% (Wisconsin), with the median across all states being approximately 60%.

[31] Following Shor and McCarty (2011, 540), I pooled all state legislature so that each value represent the average in a particular states between 2003 and 2016.

Figure 9: Representativeness of Legislators in Iowa, Nebraska, and Wisconsin (NPAT scores and CFscores)
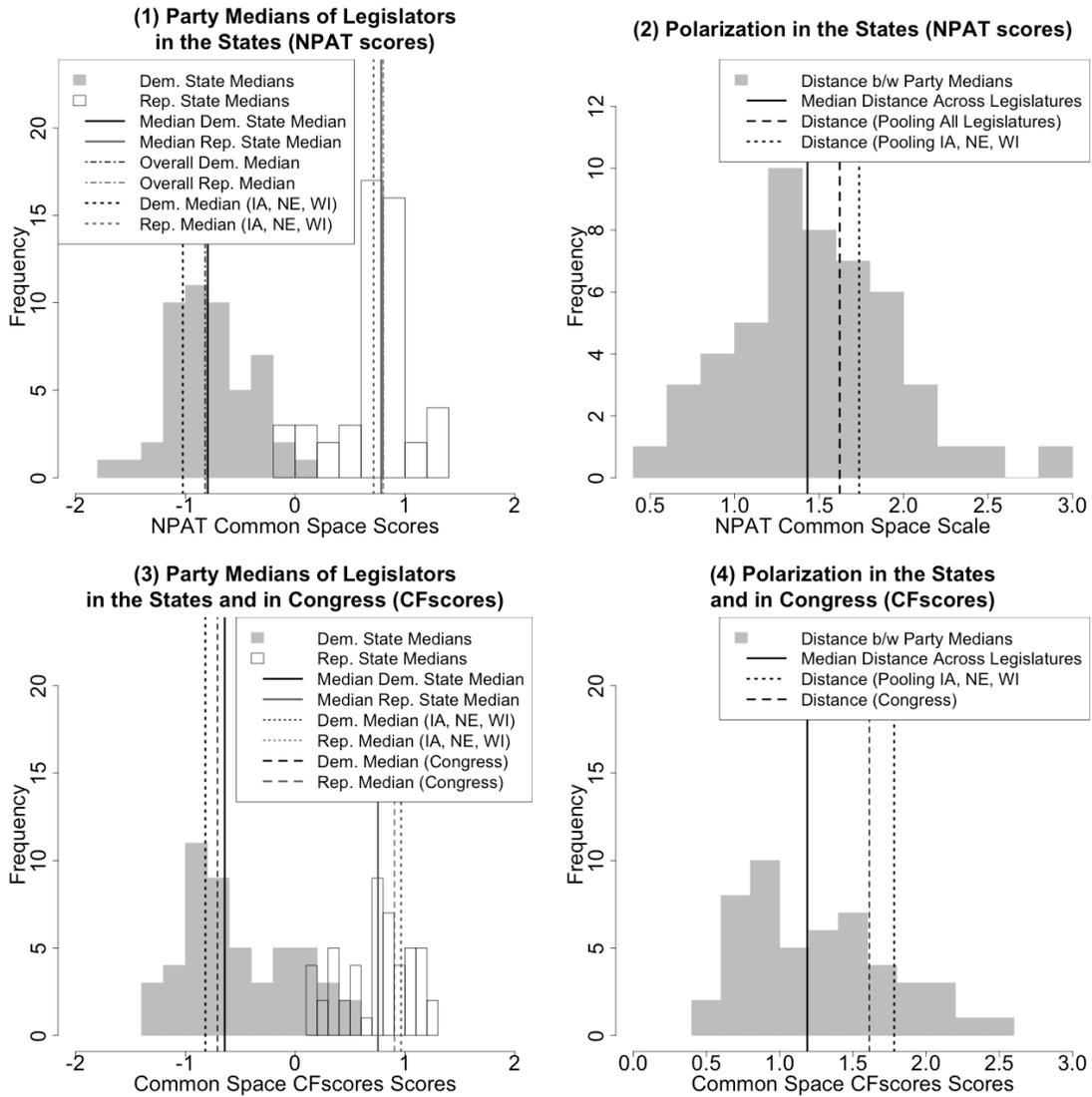
Note: Panel 1 shows the distributions of median Democratic and median Republican legislators' NPAT Common Space scores across states between 2003 and 2016 (Shor and McCarty 2018). Panel 2 shows the distribution of the distances between party medians across states. For Panels 1 and 2, the vertical lines show the median states, the overall pooled partisan medians (distances between medians), as well as the party medians (distances between medians) pooled across Iowa, Nebraska, and Wisconsin. Panel 3 shows the distributions of median Democratic and median Republican legislators' CFscores across states between 2003 and 2014 (Bonica 2016). Panel 4 displays the distribution of the distances between party medians across states. The vertical lines in Panels 3 and 4 show the median states, the medians pooled across Iowa, Nebraska, and Wisconsin, and the medians in Congress.

lobbying in other states and in Congress.

Disclosures of registered lobbying principals – also known as clients – allow us to tackle the question if the same or similar interests are lobbying in other states and Congress. I employ registrations of lobbying clients collected by the Institute of Money in State Politics (`followthemoney.org`) to measure the overlap, or lack thereof, in which principals are prepared to lobby across states. Specifically, I consider the sample of actively contributing corporations and trade group registered as clients in all 50 states in 2016. I then calculate the Jaccard Index, the size of the intersection divided by the size of the union for each pair of states. Since this measures only identical names, and not analogous organizations, it should be considered a lower bound on the similarity of registered business interests.

Panel 1 of Figure 10 shows the unimodal distribution of Jaccard indices for all comparisons between states. The median value of 0.11 implies that when 100 distinct organizations are registered to lobby in either of two states, 11 would be registered in both. For Iowa, Nebraska, and Wisconsin (Panels 2-4), the median values are 0.13, 0.09, and 0.12, which shows that these states are not atypical in the extent to which their lobbying populations overlap with other states.

Since lobbying disclosures on bills and positions are not currently required for all states, the question of what kind of preferences are expressed by business interests across all those jurisdictions can only be addressed indirectly. Previous research has identified a host of issues, e.g., reducing the influence of labor unions, reducing taxes and social spending, and weakening regulations, on which corporate interests have been generally united in the last twenty years (e.g., Hertel-Fernandez 2016; Skocpol and Hertel-Fernandez 2016). These preferences have been reflected most closely in the revealed preferences of Republican legislators, although pressure from small-business owners has also induced some Democrats to support tax reductions (Hertel-Fernandez and Skocpol 2015).

Groups like the American Legislative Exchange Council and Americans for Prosperity have been able to organize large business interests around electing supportive candidates, advancing favorable legislation through model bills, and trying to hinder the enactment of unfavorable leg-

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Figure 10: Overlap in Lobbying Principal Registrations Across States
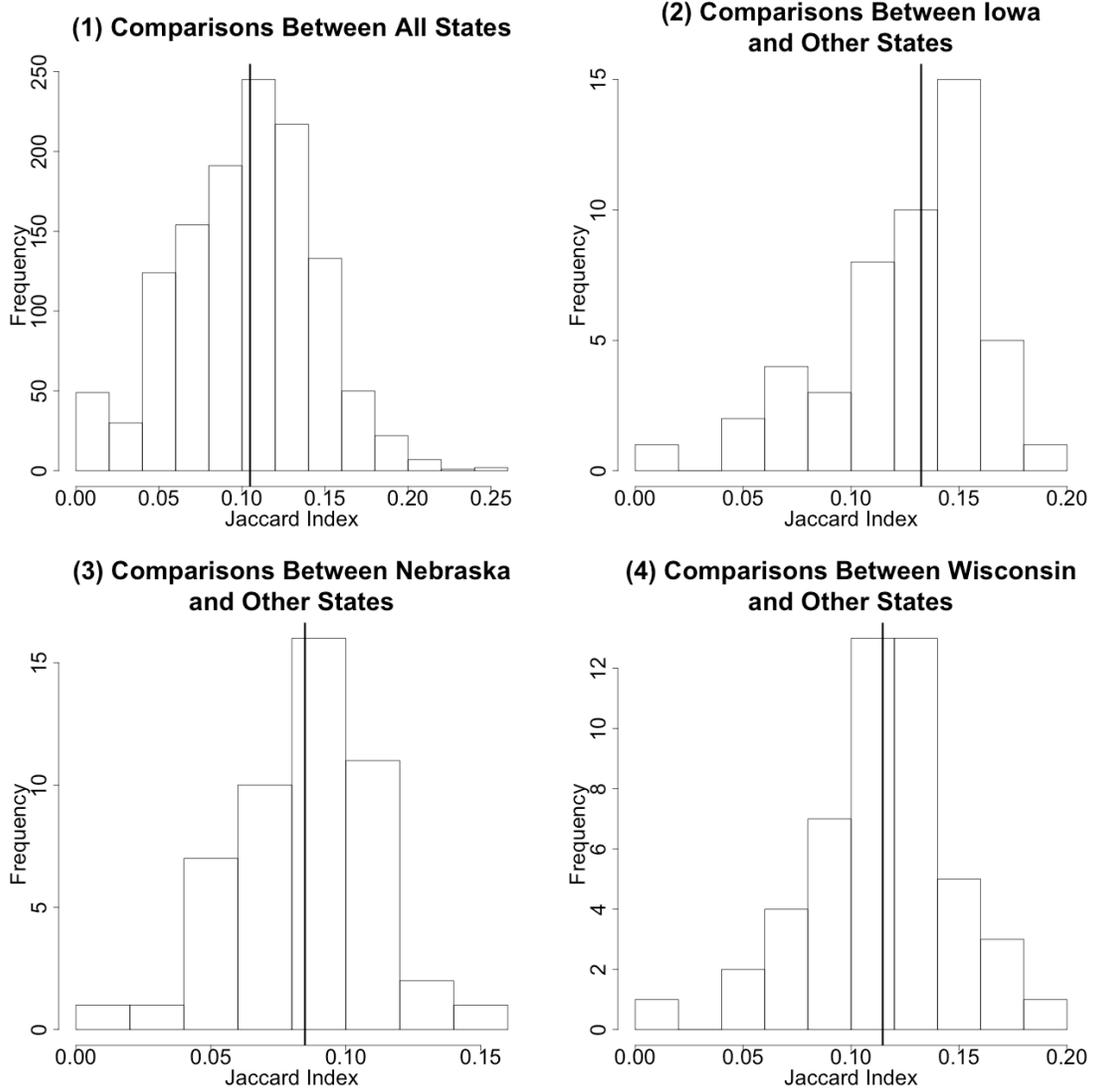
Note: The panels in this figure show the overlap between lobbying principal registrations of across states, based on data made available by the National Institute on Money in State Politics (www.followthemoney.org). Overlap is measured using the Jaccard index, i.e., the size of the intersection divided by the size of the union. Panel 1 shows the distribution comparisons between all pairs of states. Panels 2-4 present the comparisons between Iowa/Nebraska/Wisconsin, and all other states. The vertical lines show the median of each distribution.

islation (ibid.; Garret and Jansa 2015; Hertel-Fernandez 2014). The list of corporations and trade groups that are or have been active in ALEC intersects noticeably with the list of corporations and trade groups that are widely represented by lobbyists in state legislatures (see e.g., Center for Media and Democracy, D.B.A. Press, and Common Cause 2012; PRWatch Editors 2018). Therefore, it would not be surprising if in a majority of states and Congress, a substantial number of business interests have been lobbying with stated preferences that are as conservative as, or more conservative than those of the Republican medians.

Nevertheless, as the analysis has shown, there is also substantial heterogeneity across sectors in the extent to which the preferences of business interests align with one party or the other. In the sample, all corporations and trade groups in the Health sector (for-profit health-care providers and the pharmaceutical industry) reveal preferences between the party medians.[32] The same is the case for the investor-owned utilities in the sample. On the other hand, there is a high level of conservative extremism among corporate insurance interests ("Finance, Insurance, and Real Estate"), as well as the restaurant and hospitality industries ("Misc Business").

How might the differences across sectors in Iowa, Nebraska, and Wisconsin generalize to other states and Congress? While leaving a more extensive treatment for future analysis, the example of medicaid expansion might be instructive in several ways. After the Supreme Court's ruling in NFIB vs. Sebelius (132 S. Ct. 2566 (2012)) on June 28, 2012, states were left to decide whether or not to expand Medicaid as part of the Affordable Care Act (Hertel-Fernandez, Skocpol, and Lynch 2016). Whereas hospitals and health care businesses in all states favored such an expansion, a large coalition of corporate interests and right-wing conservatives (including AFP, ALEC, and the NFIB) opposed this (ibid.). Support among general business associations (e.g., chambers of commerce) varied across states, possibly due to variation in the influence of health care businesses. (ibid.).

This example shows that despite varying degrees in the extent to which state policy agendas are nationalized (Garlick 2017), many conflicts appear along similar sector-specific cleavages across

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[32]Health insurers are classified into "Finance, Insurance, and Real Estate".

states. It also indicates that the positions of general business associations may be a function of the strength of different sectors. Furthermore, it illustrates that a combination of federal and state laws govern large parts of the U.S. economy. To the extent that business interests are lobbying on the federal and the state level, there are many reasons to assume that the stated preferences will be consistent.

Discussion

The results presented here provide evidence that corporations and trade groups are more ideologically heterogeneous and more conservative in their stated policy preferences than suggested by their campaign contributions. Critically, these results are not an artifact of organizations only taking positions on controversial bills or focusing on a narrow set of policies. Moreover, the analysis – in combination with prior research – indicates that concerning the results, Iowa, Nebraska, and Wisconsin are unlikely to be outliers among all state legislatures and Congress. Furthermore, my findings demonstrate that moderate contribution records by these organizations need not imply moderation in policy preferences. Since corporations and trade groups do not have uniformly moderate preferences, strong claims of business interests acting as a damper on polarization may be overwrought.

The results also provide evidence that these interests employ sophisticated strategies to influence public officials whom they disagree with. This is especially the case for high-contributing organizations. The results are consistent with a variety of mechanisms. Therefore, more research is necessary to examine the extent to which tactical contributions are made to mobilize support and buy the time of supportive legislators (e.g., Hall and Wayman 1990), or demobilize opposition and keep proposals off the agenda (Bachrach and Maratz 1962; Hall and Wayman 1990, 814-815), or scare off regulators (Gordon and Hafer 2005).

Many scholars have observed differences in the contribution behavior of business interests to

the two parties (e.g., Brunell 2005; Hacker and Pierson 2014; Wand 2007). In particular, while business contributions to Democrats have been seen as a form of insurance intended to maintain access and moderate the party's policy stances (Brunell 2005; Wand 2007), contributions to Republicans have been taken to "foster an aggressive pro-business policy agenda" (Hacker and Pierson 2014, 653). The finding of generally conservative revealed policy preferences and moderate contribution records of business interests offers some support for this perspective. Based on the these interpretations, the results would further suggest that business interests have contributed to asymmetric polarization by moderating the policy stances of Democrats while encouraging a right-ward shift of the Republican Party (Hacker and Pierson 2014).

At the same time, the result of substantial heterogeneity in the policy preferences of business interests represents a potential caveat to this kind of argument. This is because Hacker and Pierson (2014, 654) attribute the right-ward shift of the GOP to a Schattschneiderian (Schattschneider 1960) logic of the balance of organized forces within each party. Given the heterogeneity in policy preferences, the results call for more research into the relative strength of different types of business interests. Moreover, the pattern of contributions may also be reflective of internal fundraising constraints which induce access-seeking PACs to appease liberal employees (Li 2018).

To the extent that contributions by corporations and trade groups to non-proximate legislators are motivated by the goal of gaining access (e.g., Barber 2016a; Fouirnaies and Hall 2018; Kalla and Broockman 2016; Powell 2012; Powell and Grimmer 2016), it would suggest that business interests do not only lobby natural allies (c.f., Milbrath 1963; Bauer, Pool, and Dexter 1963). Further, it would suggest that preference-centered lobbying strategies of exchange and persuasion – as opposed to budget-centered strategies of lobbying (Hall and Deardorff 2006) – are more common than sometimes assumed.

Although the analysis does not adjudicate among competing pluralist, economic, and neopluralist perspectives on interest representation (see Lowery and Gray 2004), it can speak to aspects of each. In particular, notwithstanding differences in relative strength, the heterogeneity of the policy
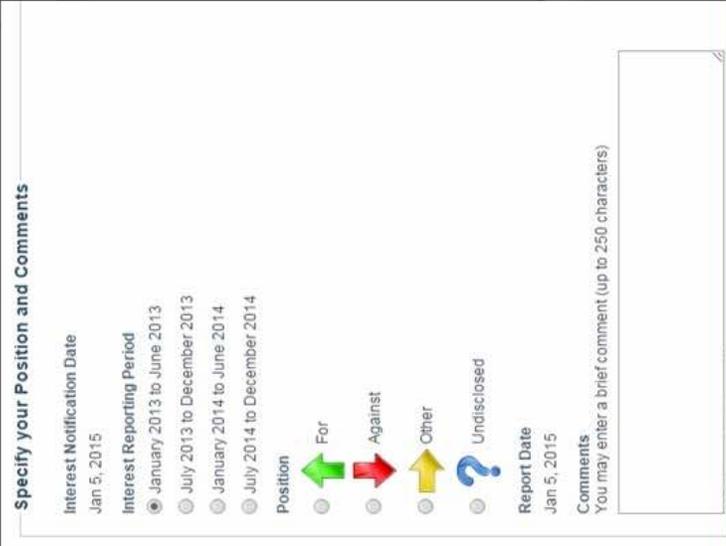
preferences of corporations, trade groups, and other organized interests that are active in lobbying is at least partly reflective of the broader distribution of salient interests in society consistent with a pluralist perspective (Truman 1951). As mentioned above, the results are also consistent with a variety of mechanisms that would support an economic perspective. And from a neopluralist perspective, the pragmatism of contributing to "ideological enemies" can be seen as an important component in the power of institutional representation that is characteristic of business interests (Salisbury 1984, 75).

Appendix A: Screenshots from Lobbyist Reporting Systems

Figure 11: Screenshot of Wisconsin Government Accountability Board Webinar on *Eye on Lobbying: 15-Day Reporting*

Note: In the webinar, the Government Accountability Board staff member points out that "Legislators often review registered positions prior to committee hearings and votes on the floor of the legislature." An updated version of the training webinar is available at `https://lobbying.wi.gov//FAQ/FAQTraining/VideosLink?contentID=bfa02378-13c3-4b69-9018-2569450a90d5`.

Figure 12: Screenshot of Iowa's Online Lobbyist Declaration System

To Declare on a Bill:
1. Click on the **"My Declarations"** tab.
2. Click the **"Declare Yourself"** tab along the top of the screen.
3. Enter the **"Bill Number"**.
4. Select **"Position"** (For, Against, or Undecided).
5. Select **"Client"** from the drop down list.
6. Click **"Submit"**.

| Declarations | Declare Yourself | Declare Multiple | Declare Others | Edit Declaration | Lock Bill |

Bill Declaration

Bill Number	Position	Clients/Lobbyist
	For ○ Against ○ Undecided ◉	Lobbyist: John Doe Client: IA. Assn. For Justice - client added on January 5, 2012 ▾
	For ○ Against ○ Undecided ◉	Lobbyist: John Doe Client: IA. Assn. For Justice - client added on January 5, 2012 ▾
	For ○ Against ○ Undecided ◉	Lobbyist: John Doe Client: IA. Assn. For Justice - client added on January 5, 2012 ▾
	For ○ Against ○ Undecided ◉	Lobbyist: John Doe Client: IA. Assn. For Justice - client added on January 5, 2012 ▾
	For ○ Against ○ Undecided ◉	Lobbyist: John Doe Client: IA. Assn. For Justice - client added on January 5, 2012 ▾

Cancel   Submit

Note: The screenshot is taken from guidelines for Iowa's online lobbyist system (`https://www.legis.iowa.gov/docs/publications/LDOC/780741.pdf`)

Figure 13: Screenshot of Nebraska 2009 Session Statement of Activity (NADC Form D) by Lob-byist David S. McBride on behalf of the Nebraska Association of Health Underwriters (NAHU)

Note: This statement of activity is available at https://nebraskalegislature.gov/lobbyist/view.php?link=view_form&form=formd&RegistrationID=6911.

Appendix A.2: Details About Lobbyist Disclosures in the Iowa, Nebraska, and Wisconsin State Legislatures

All 50 states currently have reporting requirements for state-level lobbyists. However, the extent of required disclosure varies significantly from state to state.[33] Lobbying rules in Iowa, Nebraska, and Wisconsin are rare in that they require lobbyists to report the bills and resolutions on which they lobby legislators, as well as the principal (known as 'client' in Iowa) on whose behalf they lobby on each bill or resolution. Furthermore, lobbyists in Iowa and Nebraska are also required to report the position which they communicated towards legislators on behalf of their principals.[34] Although lobbyists are not required to disclose the communicated position in Wisconsin, they do so in a large majority of cases. Between 2003-2016, in 83.3% of cases where lobbyists registered an interest in a bill or resolution on behalf of a client, they also reported a position.[35]

The format in which positions are reported is different for each state. In Iowa, lobbyists must choose between *For*, *Against*, and *Undecided* within one day of lobbying a legislator.[36] Similarly, they must report any change in the communicated position on behalf of a principal within one working day.[37] Lobbyists report their principals' positions through an online system, and the positions, once reported, are immediately made publicly accessible as *lobbyist declarations* on the website of the Iowa State Legislature.[38] A declaration includes the name of the bill or resolution, the name of the lobbyist, the name of the principal, and the date when the declaration was made.[39] Each bill in the online *BillBook* has a link to the relevant lobbyist declarations.[40] Differently from Nebraska

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[33] A state-by-state overview is available from the National Conference of State Legislatures at `http://www.ncsl.org/research/ethics/50-state-chart-lobbyist-registration-requirements.aspx`.

[34] Colorado, Montana, New Jersey, and Rhode Island, currently have similar requirements. The rules concerning lobbyists are specified in Iowa Code §68B.36, (and lobbyist rules passed by the Iowa state legislature) §49-1488 of Nebraska Revised Statutes, and Chapter 13 of the Wisconsin Statutes.

[35] These are often viewed by legislators ahead of committee meetings and votes (see Appendix A, Figure 11).

[36] The *Undecided* declaration is also used to indicate that the lobbyist is monitoring a bill which may be of interest to a his or her principal.

[37] Since 2015, lobbyists may also choose *Withdraw* as a position to indicate that the principal is no longer interested in the legislation. However, previous declarations will remain visible.

[38] A screenshot of the reporting application is shown in Figure 12 in Appendix A.

[39] Information on the exact time that a declaration was made is available starting 2009.

[40] `https://www.legis.iowa.gov/legislation/BillBook`

and Wisconsin, Iowa requires the representatives of state offices and agencies to register their position online.

Wisconsin has a similar reporting system to Iowa. Lobbyists must register their principals' interest within 15 days of first communicating with a legislator. Furthermore, lobbyists who choose to report their principals' position can choose between *For*, *Against*, *Other*, and *Undisclosed*. In addition, lobbyists can upload documents and links to documents in support of their position, as well as a comment with a maximum of 250 characters.[41] These statements are immediately made publicly accessible through the website *Eye on Wisconsin*, currently maintained by the Wisconsin Ethics Commission.[42] As in Iowa, lobbyists in Wisconsin may amend their principals' reported position at any point in the legislative process, with previously reported positions remaining publicly accessible. The online database shows the date a position was first reported or amended. Differently from Iowa and Nebraska, it does not show specify which lobbyist reported the position on behalf of a principal.

In Nebraska, lobbyists must register the positions they communicated on behalf of their principals on a *Statement of Activity* (Nebraska Accountability and Disclosure Commission Form D) within 45 days of the end of a legislative session.[43] Lobbyists are required to report communicated positions on bills. Whereas in Iowa and Wisconsin the reported positions refer to the version of the bill that is current at the time, the reported positions in Nebraska generally refer to the last version of the bill. However, some lobbyists also report their principals' positions at different stages of the legislative process (e.g., *Support as Introduced, Oppose as Amended*).[44] Electronic versions of

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[41] See Figure 11 in Appendix A for a screenshot of the reporting system from a training presentation by Wisconsin's Government Accountability Board.

[42] The website is available at https://lobbying.wi.gov/Home/Welcome. The Wisconsin Government Accountability Board (GAB) was replaced by the Wisconsin Elections Commission and the Wisconsin Ethics Commission on June 29, 2016, pursuant to Wisconsin Act 118.

[43] See §49-1488. An example of a filled out Statement of Activity is provided in Figure 13 in Appendix A.

[44] Since 2015, lobbyists in Nebraska must submit statements of lobbying activity electronically, which limits their options to *Support*, *Oppose*, and *Neutral* (LB 782, 2012). Prior to 2013, many statements were submitted manually, allowing for more variation in how positions were described.

filed forms are available on the website of the Nebraska state legislature.[45]

I collected and assembled all lobbyist declarations from Iowa between 2005 and 2016, all statements of activity from Nebraska between 2003 and 2016, and all principal lobbying efforts in Wisconsin between 2003 and 2016. I did not include lobbyist declarations from Iowa from 2003 through 2004, as these do not include information on the lobbyists' principals and the date when the declaration was made. I also did not include statements of activity from Nebraska before the 2003 session so as to maintain a relative balance in the time period across states.[46] The current *Eye on Wisconsin* website only shows lobbying efforts from 2003-2016.[47]

Appendix A.3: Candidate Survey Data from *Vote Smart*

I collected all available *Political Courage Test* (PCT) surveys on behalf of state legislative and congressional candidates in Iowa, Nebraska, and Wisconsin between 2002 and 2016 from *Vote Smart*'s Archive.[48] The overlap in questions on the PCT across states has previously been leveraged to obtain common-space estimates of legislators (e.g., Shor, Berry, and McCarty 2010; Shor and McCarty 2011, 2018). Appendix B.4 specifies the coding of PCT responses, and the merging of PCT responses from different states and years.

Appendix B.1: Coding Organizations as Corporations and Trade Groups

I base the coding of trade groups/associations on the definition in 11 CFR 114.8, "[a] trade association is generally a membership organization of persons engaging in a similar or related line of

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[45]See `http://nebraskalegislature.gov/lobbyist/view.php?v=principal`. Figure 13 in Appendix A shows a screenshot of the 2009 Session Statement of Activity by Lobbyist David S. McBride on behalf of the Nebraska Association of Health Underwriters (NAHU).

[46]The Nebraska state legislature makes all statements of activity since 2001 available on its website.

[47]However, an older website (`http://ethics.state.wi.us/LobbyingRegistrationReports/LobbyingOverview.htm`) also has position records from 2001-2012. In addition, prior lobbying efforts are available in paper format from the State of Wisconsin Historical Society (see `http://www.gab.wi.gov/lobbying`).

[48]Prior to 2010, the PCT was called the *National Political Awareness Test* (NPAT). Access to the archive is available upon request to Vote Smart members who are academics or journalists via `votesmart.org`. Since the archived 2012 Wisconsin State Legislative PCT survey has all entries missing, I collected all available responses from that survey from Vote Smart's API. Several legislators completed PCTs in different years and elections.

commerce, organized to promote and improve business conditions in that line of commerce and not to engage in a regular business of a kind ordinarily carried on for profit, and no part of the net earnings of which inures to the benefit of any member." I code cooperatives (FEC Interest Group Category "V") as a separate, non-trade group category for the main analysis.[49] Professional organizations that service a profession, or other membership organizations of individuals, non-profits, government entities, or elected officials are not coded as trade groups (or corporations).

Further, I code both for-profit stock (Category "C"), non-stock corporations (Category "W"), and mutual companies as corporations. In addition, I included all lobbyist/law firms in the sample (15) under the category corporation. Since such firms may be considered as partnerships, I include a robustness check in Appendix G where I treat the 13 lobbyist/law firms in the sample as non-corporate organizations. The results do not change substantially. I do not code organizations as corporations that were classified as non-profits (e.g., 501c(3) charitable organizations) by the IRS.[50]

Appendix B.2: Details of Combining Declarations with Roll Call Votes

Since introduced bills are frequently amended in the legislative process, in order to match declarations with roll call votes on bill passage it is necessary to make assumptions about which version of a bill a declared position by a principal refers to. I employ the bill histories from Iowa, Nebraska, and Wisconsin in order to determine the dates of when a bill was successfully amended so as to identify which version of a bill was current at a particular date.[51] I assume that any amendment

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[49]See http://classic.fec.gov/finance/disclosure/metadata/DataDictionaryCommitteeMaster.shtml.

[50]To code organizations based on these criteria, I use the information services GuideStar (www.guidestar.org), Hoovers (www.hoovers.com), Bloomberg (www.bloomberg.com, as well as current and archived websites of the organizations.

[51]The bill histories identify the dates of legislative actions, including bill introductions, committee referrals, committee reports, amendments filed, amendments adopted, and floor votes. I downloaded all bill histories from Iowa from https://www.legis.iowa.gov/legislation/billTracking/billHistory. In Iowa, I also merge bill histories and the declaration record for study bills and subsequently introduced identical House Files or Senate bills. I also merge bill histories and the declaration record for identical companion bills within the same chamber. In Nebraska, archived bill chronologies are available by session, e.g., at http://www.nebraskalegislature.gov/session/view_archives.php?leg=98 for the 98th Legislature (2003-2004). On the website of the Wisconsin state legislature, each bill history is listed on the website of the bill, e.g., http://docs.legis.wisconsin.gov/2015/proposals/

constitutes a change in the version of a bill.[52]

Next, I assume that any lobbyist declaration applies to the then-current bill version. Therefore, I do not assume that the declaration refers to previous versions of the bill or resolution. In Iowa and Wisconsin, where position statements can be made throughout the legislative process and are reported by date, I assume that any declaration made at a time when a previous bill version was current carries over to subsequent version unless a new declaration is made.[53] Any bill versions that were only current for a day or less were disregarded, under the assumption that potential changes in the principal's position cannot be picked up in such a short interval. However, declarations from the day on which an amendment takes place were not disregarded and were matched to subsequent bill versions if these last longer than one day.[54]

In Nebraska, position statements on behalf of principals are generally made after the end of a session. Therefore, I assume that any general position statement such as *Support* or *Oppose* without reference to amendments or different versions of the bill applied only to the then-current version of the bill. As a result, there were relatively fewer positions on the initial versions of bills that were reported out of committee. I use the bill histories to determine the bill version current at the end of the session. However, whenever a more detailed position was provided, such as *Oppose as Introduced, Support as Passed*, I manually code these accordingly, i.e., with a *nay* vote on the first bill version and a *yea* vote on the last bill version. I also manually code positions on amendments or procedural motions, whenever they can be matched to a roll call vote. Any discrepant positions

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`reg/asm/bill/ab1` for Assembly Bill 1 in the 2015-2016 Wisconsin legislature.

[52]Another way to proceed would be to distinguish between contentious and non-contentious amendments.

[53]In Iowa, since I aggregated declarations by different lobbyists for the same principal, and since lobbyists tend to make an initial *Undecided* declaration before declaring a position in support or opposition, I excluded all *Undecided* declarations by lobbyist 1, for principal A on bill X, unless lobbyist 1 had previously declared support or opposition to bill X for principal A.

[54]These assumptions imply active lobbyists that follow the progress of bills and change their declaration if the position of their principals changes. I assume that lobbyists in Iowa and Wisconsin use the online reporting system to communicate any changes in their principals' position to legislators as quickly as possible. In Iowa, this assumption is also motivated by Rule 2.2 of the Joint Rules Governing Lobbyists (HJR 7 2015-2016), that requires lobbyists to declare any change in their principal's position within a business day. Results from robustness tests in which I made different assumptions about how to merge declarations with bill versions, e.g., that declarations were only merged with the first bill version or only the bill version that was current at the time, are available upon request.

on behalf of one principal that cannot be reconciled are coded as *missing*.[55]

In the ideal point estimation, I only use lobbyist statements that indicate a position for or against the passage of a bill, resolution, amendment, or procedural matter. Where any other position categories were matched to a bill version, I recode the position to missing. This is done in order to simplify the analysis, as many of the other response categories are harder to interpret. For example, in Iowa, the position *Undecided* may indicate that a lobbyist is monitoring a bill and not a genuinely undecided position. In Wisconsin, the position *Other* may indicate a support of portions of the bill and an opposition to others, a neutral position, or a general concern or interest relating to the legislation. Similarly, the *Neutral* position in Nebraska, which has experienced a pronounced increase in usage since 2012 may indicate monitoring of bills, supporting some parts while opposing others, as well as a reflecting a position between support and opposition.[56] Without additional information on which responses indicated a genuine undecidedness, naive coding of *Undecided* declarations in Iowa, *Neutral* positions in Nebraska, or, *Other* positions in Wisconsin as a middle category between *Oppose* and *Support* is likely to result in biased estimates (see e.g., Lo 2013).[57]

In the final step, I construct the legislator-principal-vote matrix from the matched position statements by combining the declarations on bill versions with legislator roll calls whenever a bill version is associated with a final passage roll call vote. Whenever a bill version is not associated with a roll call vote, for example, because the bill died in committee, I add the bill version and its associated declarations to the matrix as a separate column. Therefore, declarations on bills that died in committee are coded as "votes" on the initial version of the bill.[58]

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[55]This affects less than 50 positions.

[56]The use of the *Neutral* position in Nebraska increased from about 900 in 2012 to about 12,500 in 2016, while the combined number of supporting and opposing positions stayed roughly the same across the years.

[57]In a robustness check in which the response category *Undecided* is naively coded as a middle category between *For* and *Against*, and Iowa legislator are scaled together with interest groups that took positions in Iowa, the results lack face-validity in that the estimation placed all interest groups in a very narrow band between all Democrats and all Republicans. Similarly, results from scaling legislators and interest groups in Nebraska, and treating the neutral position as a middle category lack face-validity in that they show almost all interest groups, including unions, being more conservative than the most conservative Nebraskan legislator.

[58]I consider a bill as unamended, until the amendment (for example a committee amendment) was on the floor of the chamber.

Appendix B.3 Identity of Principals Across States and Time

Merging principals' position-record across states and legislative sessions requires assumptions about the identity of a principal.[59] I use the principals' registered names, addresses, and websites in order to identify matches across states.[60] For all non-profit organizations with the same name (e.g., unions), I assume that an organization is a separate actor within a state, unless the registration record clearly indicates a federal or regional representation by the organization. I did not merge subsidiary and parent (or holding) companies, unless the registration indicates a representation by the parent company. In cases where one company with a registered lobbyist acquires another company with a registered lobbyist, and where the registration record of principals does not reflect this change, I changed the name to reflect either its new subsidiary name or, in case the acquired company was likely represented by a new parent company, to the name of the new parent company.

Appendix B.4: Details on Coding of Political Courage Test Responses

Since using the PCT to bridge across chambers, states, and years requires bridging questions to be *measure invariant* across the groups being merged (e.g., Oberski 2014), I applied several criteria for bridging questions. First, I did not merge answers to a question across states if the question references state-specific status quo policies and/or proposals. I merged answers to these questions across years within a state only when the status quo is unlikely to have changed. In cases of national policies and a national status quo, I merged across states, but not across years. Finally, general questions that do not refer to a potentially changing status quo permitted merging across states and years.

I dichotomize questions on the Political Courage Test in two ways. For question items where candidates were asked to pick the policies they support (e.g., on abortion), I dichotomize each re-

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[59]This issue does not usually arise in item-response analysis, because the subjects tend to be individuals, such as legislators, voters, or students.

[60]In Nebraska, I also employ an official directory of name changes to identify principals which changed their name.

sponse category as a *Yes*/*No* or *Support*/*Oppose* item. For question items where candidates chose between different levels of spending or taxation, I dichotomize the question by turning it into *Support for Increase*/*Support for Decrease*. If the respondent chose *Maintain Status*, the answer is coded as *missing*. When a candidate filled out a PCT in multiple years and the same question was answered differently, I also code the answer as *missing*.

Appendix B.5: Conditional Independence and Ignorable Nonresponse

In addition to sincere voting, the ideal point estimations in this paper rely on the assumptions of conditional independence across actors and votes, and ignorable nonresponse (e.g., Gerber and Lewis 2004; Poole and Rosenthal 2007). In this section, I briefly discuss the motivation for and interpretation of the conditional independence and ignorable nonresponse assumptions. Further, I discuss actual or potential consequences of high rates of missingness in the positions of legislators and private interests in the context of this assumption. Appendix H.1 includes robustness checks to examine whether selective nonresponse by lobbying principals may be driving the main results.

Conditional Independence and Endogeneity of the Agenda

The assumption of conditional independence is valid if, conditional on a legislator's ideal point and the item parameters for a vote, the vote choice is independent of all other vote choices by all legislators. Conditional independence is consistent with a view of interest groups that help draft legislation or lobby for amendments, thereby moving the vote cutpoint (Poole and Rosenthal 1991) and rule out vote-buying interest groups (e.g., Snyder 1991), interest groups who base their decision to lobby on those of other groups (e.g., Holyoke 2009), and similar violations of the conditional independence assumption.

If legislators' votes are affected by party whipping or successful lobbying efforts from private interests (e.g. through vote buying), the conditional independence assumption would be violated

with the magnitude of the error in the ideal points depending on the extent of vote buying and pressure (e.g., Clinton 2012). Similarly, if successful lobbying, gatekeeping by committee outliers, or partisan gatekeeping keeps bills from coming to the floor, it can result in nonrandom abstentions, where special interests take positions on bills while legislators do not.[61] This issue has additional relevance due to the relatively low proportion of lobbied bills and resolutions that received a roll call vote (11%).[62]

Previous research has examined a number of potential consequences of an endogenous agenda on ideal point estimates. In the context of testing theories of lawmaking, Clinton (2007) points out that an endogenous agenda may lead to incorrect estimates that do not permit distinctions between different theories.[63] Further, Snyder (1992c) argued that gatekeeping by committee outliers can lead to both artificial unidimensionality and artificial moderation of legislator estimates. The latter issue arises because bills that would distinguish between extreme and less extreme legislators are blocked from coming to the floor.

For the analysis in this paper, it may be said that while censoring of the agenda has the potential to bias ideal point estimates of legislators (Clinton 2012; Hirsch 2011), as long as interest groups' preferences estimates are valid, this problem should be mitigated by the fact that interest groups are taking positions on bills that do not receive a roll call votes. Nevertheless, if only lobbying organizations (and not legislators) take positions on bills that reveal different preferences among extreme and less extreme organizations, it could lead to an overestimate of 'extreme' organizations. To address this possibility, I examine the distributions of cutpoints of 'votes' on bills that did and that did not receive a roll call vote.[64] If bills that would distinguish between extreme and

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[61]Of course, it is also possible that successful lobbying or the potential for lobbying activity may keep some bills from being introduced in the first place (e.g., Drutman 2015, Ch.4; Barach and Maratz 1962). This phenomenon could be examined in future studies of the Wisconsin legislature, which requires disclosure of lobbying on topics, if a bills has not (yet) been introduced (Wis. Statutes §13.67).

[62]Here, the denominator includes only legislation on which at least one principal lobbied for or against the bill and excludes 'study bills' in Iowa, since such bills receive a different ID when they are introduced by committees. The proportions decrease to as low as 9.0% if bills with positions other than 'for' or 'against' and/or study bills are included.

[63]Hirsch (2011), Clinton (2012), and Krehbiel and Peskowitz (2015) show that this depends on the amount of error that is present in roll call voting.

[64]An actor with an ideal point at the cutpoint is indifferent between voting for or against a motion.

Figure 14: Cutpoint Distributions of 'Votes' on Bills With and Without Floor Votes
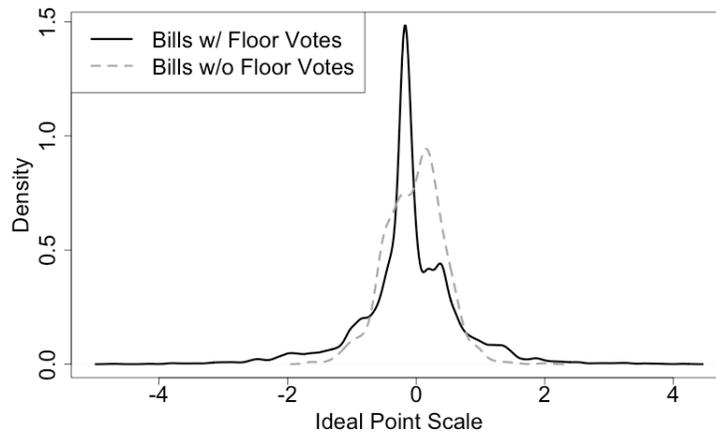
Note: The solid black line shows the distribution of 9,814 cutpoints from votes on bills that received a floor vote. The dashed gray line displays the cutpoint distribution of 1161 "votes" on bills that did not receive a floor vote. In the latter case, the estimates are based only on positions from lobbying principals. Not included are cutpoints from votes in the 2003-2004 Iowa General Assembly, from votes that do not load onto the estimated dimension, and cutpoints far outside the range of estimated ideal points. Also excluded were cutpoints from candidate survey items.

less extreme legislators die in committee, votes by lobbying principals on such bills should reveal cutpoints towards the extremes on the ideal point scale.

Figure 14 presents the distributions of cutpoints of "votes" on bills that did and that did not receive a roll call vote.[65] Compared to the distribution of cutpoints for bills that receive a roll call, the distribution of cutpoints for bills that die in committee does not concentrate in the extremes. Therefore, at least for this sample and based on these estimates, it does not seem to be the case that committee gatekeeping prevents the analysis from distinguishing between outliers on the estimated dimension.

With respect to gatekeeping and dimensionality, there is some tentative evidence for the effect described by Snyder (1992c) in that the proportion of "votes" that do not load onto the first dimen-

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[65]Here, the cutpoints represent ratios of two parameter estimates, and are therefore less stable (and should be treated with more caution) than if they had been estimated directly through a different parameterization of the item response model (Bafumi *et al*. 2005; Clinton 2007). I do not include votes from 2003 and 2004 in Iowa, since these did not yet include lobbying principals. I also exclude cutpoints with absolute values greater than 5 on the ideal point scale (which is far beyond the range of estimated ideal points). Further, I exclude 950 votes (8%) that do not load strongly onto the estimated dimension. The distributions do not change substantially when votes, where the 95%-credible interval of the item discrimination parameter includes zero, are included.

sion is twice as high for bills that died in committee.[66] On the other hand, this difference could be driven by higher uncertainty about the vote parameters due to the lower number of positions on bills that die in committee. While the position-data of private interests can be used to further address the dimensionality of blocked legislation, an estimation of additional orthogonal dimensions should not substantially change the ideal points on the partisan/left-right dimension.

Nonresponse and Ignorability

Due to the discretionary nature of lobbying (i.e., lobbying principals are not asked to take positions on all bills), there is a relatively high incidence of nonresponse by private interests. Moreover, since the estimations only rely on positions "for" or "against" bills, nonresponse in the vote matrix is also a result of discarding other types of positions (see Appendix A.2). For both types of nonresponse, the analysis assumes ignorability. In practice, ignorable nonresponse requires that nonresponses are missing at random and that the voting and nonresponse processes are distinct (Rubin 1976, 582). In a Bayesian context, distinctness requires the prior distributions of ideal point and nonresponse parameters to be independent (Rosas, Shomer, and Haptonstahl 2015, 514).

High rates of missingness in conjunction with violations of the ignorable nonresponse assumption increase the potential for bias in the ideal points (Rosas, Shomer, and Haptonstahl 2015). However, they also have consequences for the analysis even no violations occur. First, greater uncertainty about parameter estimates, including the ideal points of lobbying organizations (ibid.). The main analysis addresses this problem by focusing not only on the point estimates, but also the uncertainty over of the proportion of corporations and trade groups that are less conservative than a given legislator quantile (Figure 1, Panels 4-6).

Second, in combination with minimum vote thresholds to ensure sufficient precision of the estimates, a practical consequence of high nonresponse rates by private interests is that ideal points can only be estimated for a subset of all lobbying principals. In Appendix H.3, I show that the

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[66]Here, the criterium is again whether the 95%-credible interval includes zero.

ideal points and the results of the main analysis are robust to a set of different minimum vote and lopsidedness thresholds.[67]

While the assumptions justifying ignorable nonresponse can be difficult or impossible to assess empirically (Rosas, Shomer, and Haptonstahl 2015), there are many theoretical arguments about the voting behavior of legislators that make it easy to question the assumption that votes are missing at random (see Rosas and Shomer 2008, 576-577). In the context of interest group position-taking, Snyder (1992a) showed that by focusing on an unrepresentative sample of controversial votes, interest group ratings can produce artificially extreme legislator estimates. If principals only lobby and take positions on such bills, it can similarly lead to artificial extremism in the ideal point estimates of private interests.[68]

Similarly, principals may appear more or less extreme because the issue area they inhabit is more or less polarized along partisan lines (comment by anonymous reviewer). Appendix H.1 examines the possibility that selection effects, due to a focus on controversial votes or a focus on particular policy areas, lead to artificially extreme estimates of private interests in the sample.

A number of studies have shown that when modeling the abstention behavior of legislators, it is important to pay attention to the process that generates abstentions, and that naive applications of "complete-data" models that fail to do so can do more harm than good (e.g., Lo 2013; Rosas and Shomer 2008; Rosas, Shomer, and Haptonstahl 2015).[69] The same is likely to hold for nonresponses of lobbying principals. In the absence of existing item response models that are tailored to account for missing positions of lobbying principals, the observed-data estimates from the current analysis should be interpreted as a first step against which to compare future estimates from complete-data models (see Rosas, Shomer, and Haptonstahl 2015, 526).

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[67]More specialized methods that are tailored to address the sparse data (e.g. Bailey 2001, Peress 2009) may offer opportunities to estimate a larger set of organizations.

[68]Results from simulations are available upon request.

[69]Rosas, Shomer, and Haptonstahl (2015, 516) distinguish between "observed-data" and "complete-data" models, the latter of which also models the matrix of nonresponse.

"Third-Position" Declarations

Some observations and arguments about the declaration process in Iowa, Nebraska, and Wisconsin may help to provide the basis for complete-data model tailored to lobbying declarations. First, there are good reasons to believe that declarations of "undecided" (Iowa), "neutral" (Nebraska), and "other" (Wisconsin) carry important information about which bills are important to lobbying principals.[70] Such declarations indicate communications between lawmakers and lobbyists about bills. They also provide a way for lobbyists to signal to their principals that they are following the progress of all relevant legislation.[71]

At the same time, such declarations are a lot more ambiguous in what they communicate about principals' positions than "for" and "against". Therefore, additional information is required to distinguish between the different cases that make up the "third" categories (see also Appendix B.2). For example, "undecided" may represent a meaningful position between "for" and "against". It may also represent the lack of a clear position, perhaps due to uncertainty, low salience, or a decision to withhold judgment while awaiting pending amendments or referral to the floor. The fact that positions such as "undecided" or "neutral" are the required declaration when lobbyists communicate with legislators about bills without lobbying "for" or "against" (e.g., to seek clarification or ask for legislators' opinion on bills), should also caution against interpreting such positions as 'middle' categories without additional information.

Empirical support for varying interpretations by lobbyists and principals of the third categories comes from various sources. First, some lobbyists and interest groups provide declarations online that state "monitor" when their declared position was "undecided" or "neutral".[72] Further, publicly available comments that accompany declarations of 'other' in Wisconsin include a variety of state-

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[70]In Wisconsin, lobbyists may also leave the position undisclosed. Between 2003 and 2016, only 16.7% of positions were not disclosed. In many of these cases, positions from committee registrations offer a possible alternative to infer a principal's position.

[71]It is conceivable that the disclosure requirements deters some lobbying activity that would otherwise take place.

[72]For example, the Iowa Taxpayers Association: `https://web.archive.org/web/20120203192955/http://www.iowataxpayers.org/web/2005/10/status_of_bills.aspx` (accessed July 15, 2018) or the Nebraska Chapter of the American Institute of Architects: `https://web.archive.org/web/20171106210724/http://aiane.org:80/government_affairs/` (accessed July 15, 2018).

ments such as "neutral", "monitoring", "[w]ould support if amended to …" and other positions on particular amendments. Similar statements can be found in declarations by lobbyists in Nebraska prior to 2015, when the declaration process was updated to only permit declarations of "support", "neutral" and "oppose".[73] Relatedly, although legislators also differ in their ability to reduce uncertainty about the consequences of legislation, this variation is likely to be larger among private interests (e.g. Bartels 2016, 2), where differences in the available resources can translate to both differences in lobbyist expertise and access to lawmakers (e.g. Hall and Deardorff 2006).

Appendix C.1: Estimation and Sampling

To scale legislators and interest groups, I employ Clinton, Jackman, and River's (2004) Bayesian 2-parameter item-response model (*IDEAL*) which is implemented in the R package *pscl* (Jackman 2015). Starting values are obtained via scaled eigenvectors of the agreement score matrix, calculated by selecting the option *eigen* in the *ideal* function. I discard the first 50,000 iterations and thin the subsequent 300,000 iterations by sampling from every 100th iteration, resulting in 3,000 samples from the posterior distribution.[74] I examine convergence through a combination of commonly used tests (Heidelberger and Welch 1983; Gelman and Rubin 1992) on the posterior distribution of three chains and a visual analysis of the trace plots (see below).

I jointly estimate legislators and interest groups by using a combination of bridging observations to provide sufficient "glue" (Poole 2005) to combine otherwise disjoint parts of the vote matrix. Organizations whose lobbyists took positions in multiple states, chambers, or years permit merging across states, chambers, and sessions. Further, candidate responses on the PCT serve as bridging votes across states and chambers, while politicians who served in both chambers of a legislature or in multiple sessions help to bridge across chambers and sessions. I also leverage the additional

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[73]See "Electronic Filing Instructions" available at `https://nebraskalegislature.gov/feature/lobbyists.php` (accessed July 15, 2018).

[74]The estimations in Appendices D.1, D.2, and E relied on 200,000 iterations and 2,000 samples from the posterior distribution.

bridging observations for a test of whether the common ideal point (CIP) assumption required for joint scaling is valid for a joint estimation across states. I do not use actors as bridging observations when the assumption has been shown not be valid (see Appendix E).

To balance the trade-off between estimating the ideal points of legislators and interest groups with sufficient precision and estimating a substantial number of interest groups, I reduce the vote matrix for the main analysis so that all included *votes* have a minimum number of 9 *legislators*, all included *actors* have at least 20 *votes*, and at least 3 *actors* voting in the minority.[75] For votes with more than 120 actors, the minimum lopsidedness requirement is changed to 2.5%, in which case at least 4 actors have to be voting in the minority. In Appendix H.3, I show that the results of the analysis are robust to reasonable changes in the minimum vote and lopsidedness restrictions.

In cases where all legislators vote or abstention is not strategic, unanimous roll calls appear unlikely to capture a left-right dimension. Instead, they may capture deference to the chamber's majority or non-partisan inter-chamber conflict (Poole and Rosenthal 2007, 230). Therefore, I also exclude votes which combine unanimous roll calls with opposing positions from lobbying principals from the vote matrix.[76]

Appendix C.2: Convergence Diagnostics

Visual inspection of the traceplots and the potential scale reduction factor (PSRF/$\hat{R}$) (Gelman and Rubin 1992) show a high level of convergence in the Markov Chains. The $\hat{R}$ are calculated with each of the three MCMC chains. In Table 1, I show, for a sample of the estimations used in the paper, the number and percentage of parameters for which $\hat{R} > 1.1$.

The first three rows show the statistics for the within-state estimations, for which results are presented in Appendix D.1. The last three rows shows the results for the three different across-

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[75]Here, I use *actor* to refer to either legislators or a lobbying principal and *vote* to refer to roll call votes, declared lobbying positions on bill versions, or Political Courage Test question items.

[76]Where many or most bridging observations would take positions on such votes (see Appendix H.2), the likely bias resulting from the inclusion of such votes can potentially affect the stability of all estimates.

Table 1: Number/Percentage of Parameters w/ Potential Scale Reduction Factor ($\hat{R} > 1.1$) for Main Estimations

Estimation	$\hat{x}|\hat{R} > 1.1$	# votes	$\hat{\beta}|\hat{R} > 1.1$	%	$\hat{\alpha}|\hat{R} > 1.1$	%
Iowa	0	4,114	9	0.2	0	0
Nebraska	0	1,345	0	0	0	0
Wisconsin	0	5,512	124	2.3	7	0.1
Joint, 20/20, no-CIP	1	11,693	97	0.8	8	< 0.1
Joint, 20/20, CIP	0	11,693	105	0.9	10	< 0.1
Joint, 9/20/3, CIP, no unan. RCs	0	13,646	29	0.2	2	< 0.1

Note: This table shows, for a sample of the estimations used in the paper, the number and percentage of parameters for which $\hat{R} > 1.1$. The first three rows are based on within-state estimations. The last three rows are based on the joint estimations. The fourth row (*Joint, 20/20, no-CIP* shows the statistics for estimation with invalid bridging observations and a 20/20 minimum votes on an item/minimum votes per actor threshold. Rows five and six did not include invalid bridges and alternatively used 20/20 and 9/20 minimum votes. Row six shows the statistics for the estimation which was used for the main analysis in the paper.

state estimations. The fourth row shows the statistics from an across-state estimation, with the vote matrix reduced so that there were at least 20 votes per item, with at least 4 being in the minority, and 20 votes per actor. The legislator estimates of this estimation are compared to the NPAT common-space scores (Shor and McCarty 2011, 2018) in Appendix D.2. The fifth row shows the statistic for an analysis that has the same minimum vote requirements, but does not use actors to bridge across states when the common ideal point (CIP) assumption has been shown not to be valid (see Appendix E). The motivation for this estimation is to compare the estimates from using more conservative minimum vote requirements in the vote matrix (20/20) to estimates that lowered these requirements (9/20). The comparisons (see Appendix C.1) suggest extremely high correlations for the estimated ideal point and vote parameters. The last row shows the results for the estimation that is used for the main analysis in the paper (9/20/3, CIP, and no unanimous roll calls).

Only in one of the sets of ideal point estimates used in the main analysis does an ideal point estimate have an $\hat{R} > 1.1$ (see Table 1). For the item parameters, there is similarly a very low fraction for which $\hat{R} > 1.1$. In addition, in all but one of the analyses (Nebraska), the Heidelberger and Welch half-width test (Heidelberger and Welch 1983) was passed by more than 95% of ideal point estimates in each of the three chains. In the estimation for Nebraska, the half-width test is

passed by approximately 89% of the ideal point estimates.

Appendix C.3: In-Sample Model Fit

Overall, the model estimates predict 92.5% of votes correctly. Looking only at lobbying principals, the percentage of correctly classified votes is 88.1%. In order to control for different vote margins, I employ the measure of aggregate proportional reduction in error, or *APRE* (see, e.g. Poole and Rosenthal 2007, 36-37), where the baseline for classification errors is the minority vote.[77] The APRE for all actors is 0.78, whereas for lobbying principals it is 0.61. While in Congress, such a moderate APRE for a model estimating a single dimension would be indicative of a "second dimension" (Poole and Rosenthal 2007, Ch.3), the same does not necessarily follow for interest groups, where the additional variation in positions may not be easily captured by *one* additional dimension.

Appendix D: Results from Within- and Across-State Estimations

In the following, I first present the results from separate estimations of legislators and lobbying organizations in Iowa, Nebraska, and Wisconsin.[78] Second, I show the legislator and interest group ideal points that result from a joint scaling across the three states, using interest groups and candidates who responded to *Vote Smart's* Political Courage Test (PCT) as bridge observations. I also compare the resultant common space ideal points to Shor and McCarty's (2018) NPAT common space scores. For the estimates presented in Appendix D.1 and D.2 , the vote matrices are reduced so that all included *votes* have a minimum number of 20 *legislators*, all included *legislators* have at least 20 *votes*, and at least 4 *legislators* voting in the minority.

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[77]The minority vote is determined from all actors' positions on an item.

[78]In addition to corporations and trade groups, these include non-profit and professional organizations as well as ideological and single issue groups.

Appendix D.1: Within-State Ideal Point Estimates for Iowa, Nebraska, and Wisconsin
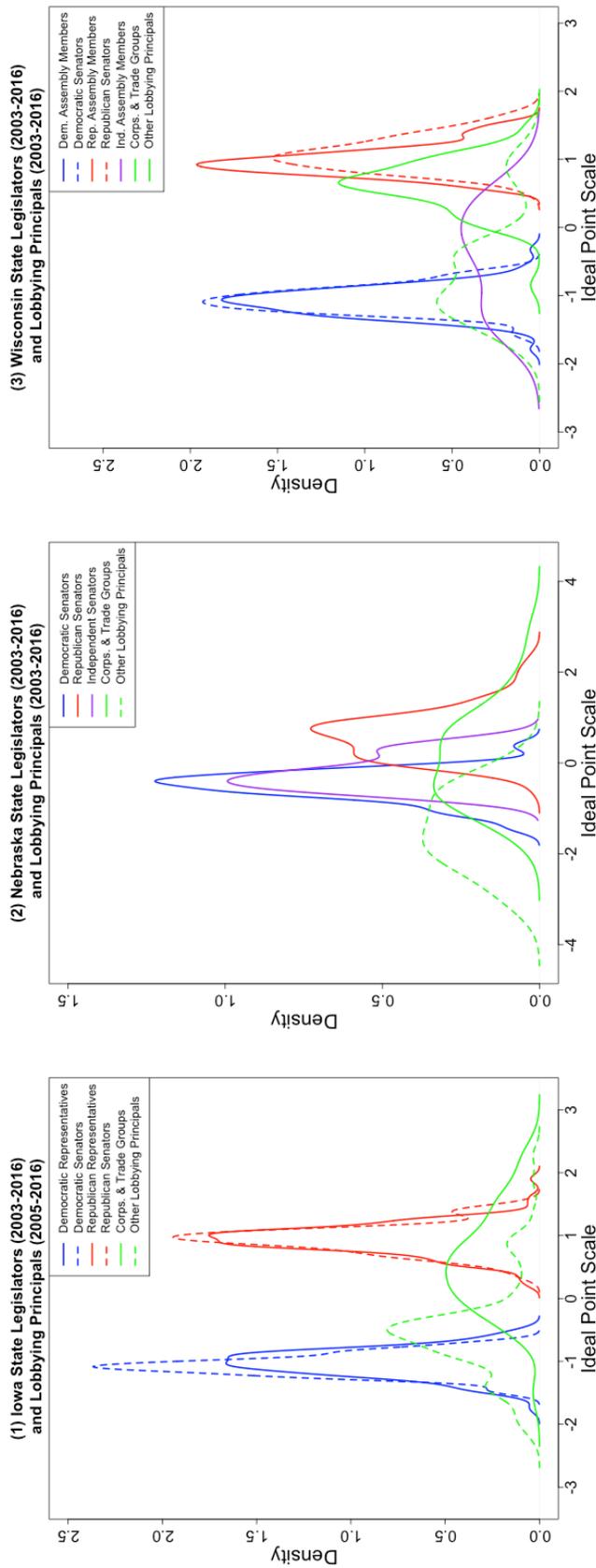
The first panel in Figure 15 shows the ideal point distributions of Iowa state legislators by party and chamber, as well as the ideal point distributions of principals lobbying in Iowa. The distributions of Democratic and Republican state legislators do not overlap, which reflects a high degree of partisan polarization. Meanwhile, the distribution of principals' ideal points has a slightly left of center mode and is right-skewed. Furthermore, corporations and trade groups are on average much more conservative than other lobbying principals. Although the ideal points of most principals falls within the range of state legislators, there is a substantial amount of extremism. For example, there are nine principals that are more liberal than the most liberal Democrat and ten principals that are more conservative than the most conservative Republican.

Next, Panel 2 in Figure 15 shows the ideal point distributions of Nebraskan state legislators by party, and of principals lobbying in Nebraska.[79] Compared to Iowa, Nebraskan legislators are less polarized as evidenced by the overlapping ideal point distributions of self-identified Democratic and Republican Senators. Similar to Iowa, the distribution of principals' ideal points has one left-of-center mode. There appears to be a substantial amount of interest group extremism in that fourteen principals are to the left of the most liberal Senator and one principal has a more conservative ideal point than the most conservative Senator. As in Iowa, the mode of corporations' and trade groups' ideal points is more conservative than that of the ideal points of the other lobbying principals.

Finally, Panel 3 in Figure 15 shows the ideal point distribution of Wisconsin state legislators by party and chamber, as well as the ideal point distribution of principals lobbying in Wisconsin. Similar to Iowa, the distribution of state legislators shows a high degree of polarization. The ideal points of principals have a somewhat bimodal distribution, with modes close to the median of each

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[79]Although Nebraskan senators do not run on a partisan ballot, most state legislators identify with a party. Where available, I retrieved party affiliations from the biannual Nebraska Blue Books. Where none were available, I use the party coding from Shor and McCarty (2018).

Figure 15: Ideal Point Distributions of State Legislators and Lobbying Principals from Within-State Estimations

**(1) Iowa State Legislators (2003-2016)
and Lobbying Principals (2005-2016)**

**(2) Nebraska State Legislators (2003-2016)
and Lobbying Principals (2003-2016)**

**(3) Wisconsin State Legislators (2003-2016)
and Lobbying Principals (2003-2016)**

Note: The panels in this figure show the distributions of legislator and interest group ideal points from three within-state estimations. Panel 1 displays the ideal point distributions of 97 Democratic Representatives (solid blue), 44 Democratic Senators (dashed blue), 128 Republican Representatives (solid red), and 63 Republican Senators (dashed red line) in the Iowa state legislature that held office between 2003 and 2016. It also shows the distribution of 88 corporations and trade groups (solid green) and 158 other lobbying principals (dashed green) that lobbied Iowa legislators between 2005 and 2016. The second panel shows the ideal point distributions of 40 Democratic (blue), 93 Republican (red), and 4 Independent Senators (purple) in the unicameral state legislature of Nebraska (2003-2016). The green lines show the ideal point distribution of 55 principals (27 corporations or trade groups; 28 other lobbying principals) who lobbied Nebraskan legislators between 2003 and 2016. Finally, Panel 3 displays the ideal point distributions of 100 Democratic Assembly members (solid blue), 30 Democratic Senators (dashed blue), 143 Republican Assembly members (solid red), and 38 Republican Senators (dashed red), and 3 Independent Assembly members in the Wisconsin state legislature that held office between 2003 and 2016. It also shows the distribution of 58 corporations or trade groups (solid green) and 113 other lobbying principals (dashed green) that lobbied Wisconsinite legislators between 2003 and 2016.

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Figure 16: NPAT Common Space Scores (Shor and McCarty 2018) Plotted Against Jointly Estimated Legislator Ideal Points
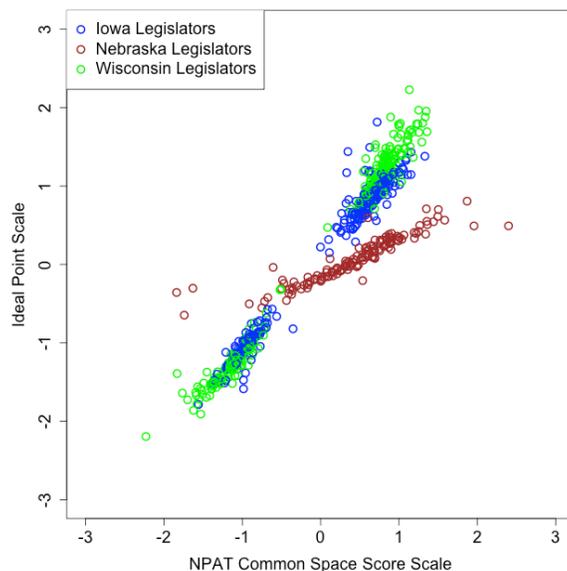
Note: This figure compares Shor and McCarty's (2018) NPAT common space scores of Iowa, Nebraska, and Wisconsin state legislators to the legislators' jointly estimated ideal points. Legislators from Iowa are shown in blue. Nebraskan legislators are shown in brown and Wisconsinite legislators are shown in green.

party.

Appendix D.2: Comparison of Common Space Ideal Points to NPAT Common Space Scores

In order to establish external validity, Figure 16 compares the NPAT common space scores from Shor and McCarty (2018) against the estimated ideal points from a joint estimation. As should be expected, the estimates correlate strongly within and across parties. Overall, Spearman's rank-order correlation is 0.90. The within-state rank-order correlations for Iowa, Nebraska, and Wisconsin Legislators are all 0.96. Interestingly, whereas the estimates are very similar for Iowan and Wisconsinite legislators, the ideal points of Nebraskan legislators are less conservative and less polarized than their NPAT scores.

Several factors may account for the discrepancies between legislators' ideal points and NPAT scores in Nebraska. The first is that the ideal points are estimated using not just PCT responses, but also interest groups as bridging observations. Second, whereas the ideal points are estimated based on data from 2002 through 2016, the NPAT scores were estimated based on data from 1996-2016 that also included more states and members of Congress. Third, even for the same surveys, there may be differences in how questions were used to bridge and in the coding of responses. Moreover, it may be the case that the common ideal point assumption is violated in either or both datasets. Finally, whereas the NPAT scores rely on a *linear mapping* approach to jointly estimate all state legislators and members of Congress, I estimate the common space ideal points using a *big-matrix* approach (Poole 2005).

Future research should more closely investigate the consequences of employing the linear mapping (as opposed to a big-matrix) approach to joint scaling and of using different bridging observations, NPAT/PCT survey years, and coding of survey responses. For the subsequent analysis, I employ only those actors as bridging observations which meet the common ideal point assumption.[80]

Appendix D.3: Across-State Ideal Point Estimates for Iowa, Nebraska, and Wisconsin

Figure 17 presents the results from a joint scaling using only the bridging observations for which the common ideal point assumption was validated (see Appendix E). Several results stand out from the joint scaling which allows for comparisons of legislator and interest group ideology across states. First, the mode and medians of the distributions of the Democratic and Republican legislators can be ordered in their extremism from least extreme in Nebraska, to most extreme in Wisconsin. With respect to the ideology of private interests, we see that private interests span the entire range from

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[80]The details of how these units were identified are described in Appendix E.

Figure 17: Ideal Point Distributions of Jointly Estimated Iowa, Nebraska, and Wisconsin State Legislators and Lobbying Principals
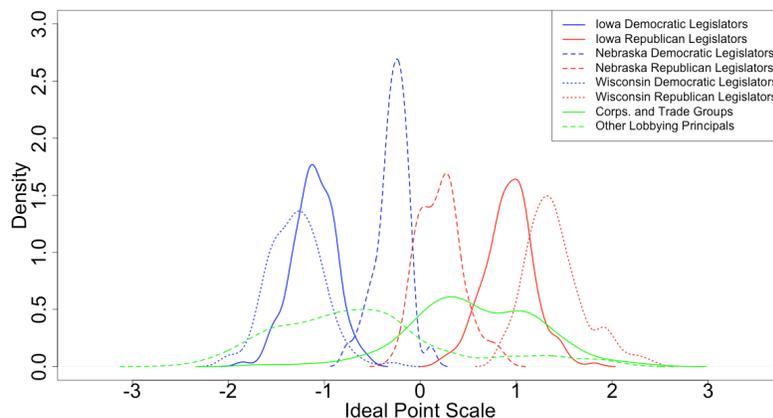
Note: This figure shows the ideal point distributions of Iowa (solid lines), Nebraska (dashed lines), and Wisconsin state legislators (dotted lines) by party (blue for Democrats, red for Republicans). There are 136 Democratic and 182 Republican legislators from Iowa, 40 Democratic and 93 Republican legislators from Nebraska, and 121 Democratic and 167 Republican legislators from Wisconsin. It also shows the ideal point distributions of 674 of the principals (273 corporations and trade groups, 401 other lobbying principals) that lobbied in one or more of the three states between 2003 and 2016 (green line). The ideal points are based on a joint estimation across the three states, as described in Appendix C.1. Respondents to the PCT and principals that took positions in multiple states are only used as bridging observations if they do not violate the common ideal point assumption.

the most liberal to the most conservative legislator. Similar to the within-state estimates, lobbying principals have a bimodal ideal point distribution, with corporations and trade groups being on average more conservative than the other lobbying organizations.

Appendix E: Investigating the Common Ideal Point Assumption

Several reasons may account for the discrepancies between Nebraskan legislators' estimated ideal points and their NPAT scores. The first is that my analysis also uses interest groups as bridging actors, as well as candidates responses to the PCT. Second, the bridging observations from Nebraska used by Shor and McCarty (2011, 2018) differ in that they included surveys from going back to 1996, as well as more members of Congress. Third, even for the same surveys, Shor and McCarty may have used a different set of NPAT/PCT questions as bridging votes. Further, the way that item responses were coded may lead to different results. Moreover, it may be the case that the

common ideal point assumption was violated in either or both datasets. Finally, Shor and McCarty (2011, 2018) used a *linear mapping* approach to jointly estimate all state legislators and members of Congress, while I use a *big-matrix* approach (Poole 2005).

Whereas it is difficult to determine the consequences of discrepant NPAT/PCT survey years, bridging questions, and coding of survey responses, it is possible to test the consequences of using different bridging observations and of using the linear mapping, as opposed to a joint estimation, approach. In panels 2 and 3 of Figure 18, I show the results from a joint scaling using only PCT respondents (Panel 2) and only interest groups (Panel 3) as bridging observations between states. The estimated ideal points using only PCT respondents as bridges show virtually identical results to the first panel. This indicates that adding interest groups as bridging observations to PCT respondents is unlikely to be responsible for the differences in the ideal point estimates of Nebraska legislators. The results differ when using only interest groups as bridges (Panel 3). In particular, many legislators from Nebraska appear to have more liberal estimates in the latter case.

These results suggest that the common ideal point assumption required for joint scaling is not valid for at least some of the bridge actors. If the ideal points of all bridges are the same in all contexts of voting (i.e., voting in different states and voting in a state vs. responding to the PCT) the ideal points should not differ significantly depending on which bridging observations are used. One way in which the ideal point assumption can be violated is if interest groups take systematically different positions in different states. Moreover, the CIP assumption can be violated by legislators who have one position on the PCT and another position when voting in the legislature. In addition, results from Wright and Schaffner (2002) which suggest that Nebraskan roll call voting may differ from the pattern of responses to the NPAT are a cause for concern. In the next step, I therefore investigate for which across-state bridging observations the common item assumption is not valid.

In testing the common ideal point assumption, I focus on those bridge actors that join different states and defer for later analysis the testing of the common ideal point assumption for bridge actors that bridge between chambers or across different legislative sessions. I proceed by splitting the

Figure 18: NPAT Common Space Scores (Shor and McCarty 2018) Plotted Against Jointly Estimated Legislator Ideal Points Using Different Bridging Observations
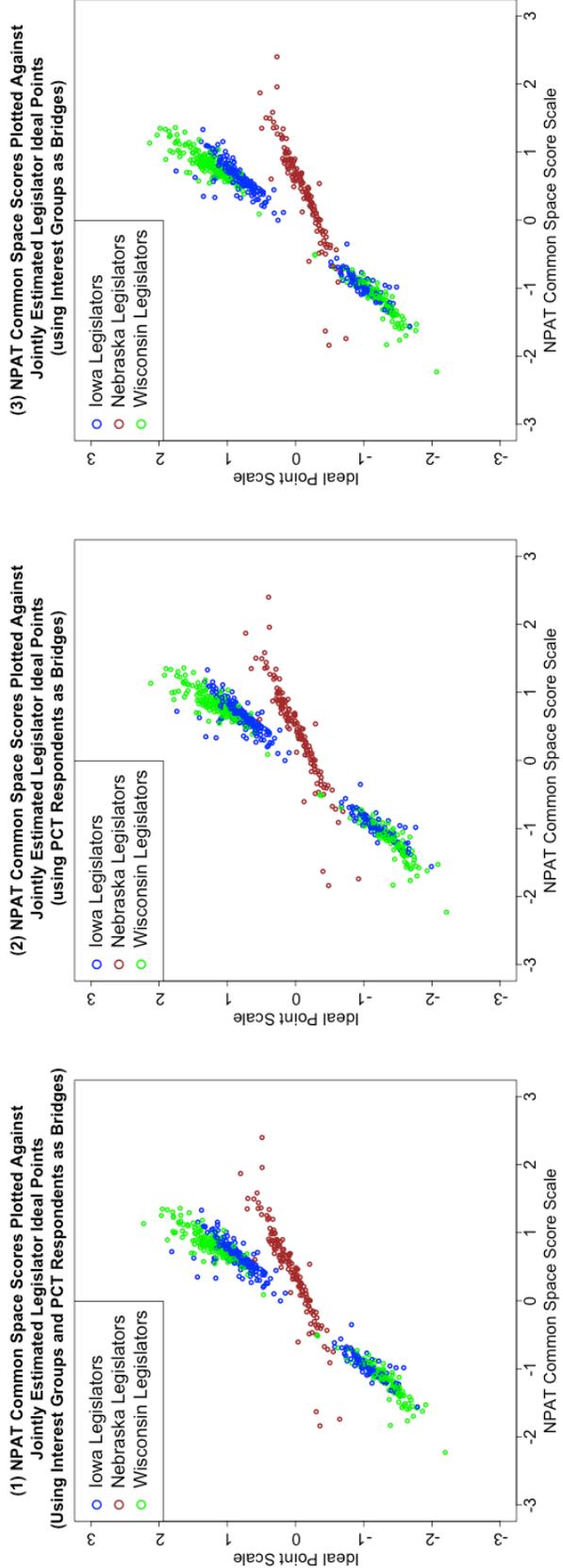
Note: The three panels in this figure compare Shor and McCarty's (2018) NPAT common space scores of Iowa, Nebraska, and Wisconsin state legislators (horizontal axes) to the legislators' ideal point estimates from joint scalings (vertical axes). Legislators from Iowa are shown in blue. Nebraskan legislators are shown in brown and Wisconsinite legislators are shown in green. In each panel, the NPAT scores are compared to a different set of ideal points which each use different bridging observations. In Panel 1, the vertical axis displays the ideal points from a joint scaling in which all interest groups that took positions in different states and all legislators who responded to the PCT surveys are used as across-state bridging observations. In Panel 2, the vertical axis displays the ideal points from a joint scaling in which only PCT responses are used to bridge across states. In Panel 3, the vertical axis shows the ideal points from a joint scaling in which only interest groups are used to bridge across states.

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Figure 19: Comparison of Ideal Point Estimates to Test the Common Ideal Point Assumption for Across-State Bridging Actors in Different Contexts of Voting

(1) Bridging Actors That Violate the Common Ideal Point Assumption

Legend:
- Iowa Legislators
- Nebraska Legislators
- Wisconsin Legislators
- Lobbying Principals

Ideal Point Estimate from Votes in State A

Ideal Point Estimate from Votes in State B or from Political Courage Test (PCT) Responses

(2) Bridging Actors That Do Not Violate the Common Ideal Point Assumption

Legend:
- Iowa Legislators
- Nebraska Legislators
- Wisconsin Legislators
- Lobbying Principals

Ideal Point Estimate from Votes in State A

Ideal Point Estimate from Votes in State B or from Political Courage Test (PCT) Responses

Note: This figure compares the ideal point estimates of observations that bridge across states in different contexts of voting in order to test if the common ideal point assumption for these observations is valid. For interest groups, it compares the positions that the groups take in different states. For legislators, it compares the ideal point from roll call voting to the ideal point from responses to *Vote Smart's* Political Courage Test (PCT). Separate estimates in the different contexts of voting are obtained by splitting the "vote record" accordingly. The two panels show estimates that come from seven different estimations, where in each estimation, a different set of legislators' and/or interest groups' voting record was split. Panel 1 compares the ideal points of those actors for which the estimates differ by context of voting, in that the 95%-credible interval of the difference between the two estimates does not include 0. For these observations, I reject the hypothesis that the common ideal point assumption (CIP) is valid. Panel 2 compares the ideal points of actors for which the CIP assumption is valid.

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voting record of individual legislators and interest groups depending on which state they are voting in, and whether they are voting on roll calls or answering PCT questions (Poole 2005).[81] In order to estimate the positions with a minimum amount of precision, I also require the *split* actors to have a minimum of 20 votes. In total, there are 130 legislators and 8 lobbying principals to which this criterium applies.[82]

Panel 1 of Figure 18 displays those bridging actors for which I reject the hypothesis of a common ideal point in different contexts of voting.[83] For legislators, the horizontal axis displays the ideal point estimate from roll calls and the vertical axis indicates the ideal point from the PCT. For interest groups, the values on both axes indicate their positions in different states. In part owing to large credible intervals around the interest group estimates, there are only two interest groups for which I reject the hypothesis of a common ideal point.[84] By contrast, the common ideal point assumption is not valid for 12 out of 31 Iowa legislators. In Nebraska, this is the case for 19 out of the 59 tested legislators. Moreover, 20 out of 39 Wisconsinite legislators violate the common ideal point assumption.

Appendix F: Linking Positions to PACs' Common-Space CFscores

In order to compare the ideal point estimates of interest groups to the common-space CFscores from the (*DIME*) (Bonica 2016), I link interest groups to their political action committees (PACs) through searching the name, address, zip code, city, and state variables in the dataset using regular expressions. In doing so, I restrict attention to those PACs that contributed to candidates in the

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[81]I split the voting record of up to 20 actors per analysis in order to reduce the number of required analyses from 138 to 7. In each of the seven analyses, the actors for which the voting record is split are chosen to come from different states and parties. Splitting the voting record of more than one observation at a time did not change the estimates of the other observations. The correlation coefficient for the ideal points of "non-split" actors for each combination of the seven separate estimations is always at $r = 0.999$.

[82]Many interest groups that bridge across states have more than 20 votes in one state, but less than 20 in another. Where an interest group has at least 20 votes in one state (A) and an aggregate of at least 20 votes in the two other states (B and C), I also split the roll call record to estimate the difference between the position in A and the combined position in B and C.

[83]I rejected the hypothesis if $|\frac{\bar{x}_i - \bar{x}_j}{sd(\bar{x}_i - \bar{x}_j)}| \geq 1.96$.

[84]The NFIB in Iowa vs. in Wisconsin and the BNSF Railway Co. in Iowa vs. in Nebraska and Wisconsin (together).

period from 2003 through 2014. Since some groups have multiple PACs and some PACs have multiple contributor IDs, I further restrict attention to PACs that are likely to represent the bulk of the contributions for this time period. I link interest groups to the PACs with the greatest dollar amount of all campaign contributions between 2003 and 2014. I also link interest groups to the PACs with the highest number of distinct contributions.[85]

Two sets of PACs were not included by Bonica (2014, 2016) in the *estimation* of common-space CFscores. First, PACs that were identified by Bonica (2016) as representing trade groups or corporations. Second, PACs with only one contribution. Both sets of PACs were later projected onto the recovered space as supplementary observations. I therefore repeat the above procedure, distinguishing between projected and non-projected groups.[86]

Appendix G: Additional Results

In Figure 20, I present a robustness check to the coding decisions described in Appendix B.1. In particular, I exclude 18 lobbyist/law firms from the set of corporations, since these are sometimes considered as partnerships.

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[85]For interest groups based outside the state, I match the group to the observation with the greatest dollar amount of all contributions from 2003 through 2014, or the highest number of overall distinct contributions, regardless of the last registered state. For many large corporations and national organizations, the PACs with the greatest contribution amounts tend to be either registered in the same state as their headquarters, or in Washington, D.C.

[86]I do not include CFscores that were based on one distinct recipient in the main analysis (see Appendix H.4).

Figure 20: Position- and Contribution-Based Estimates of Legislators and Private Interests (Law Firms Not Coded as Corporations)
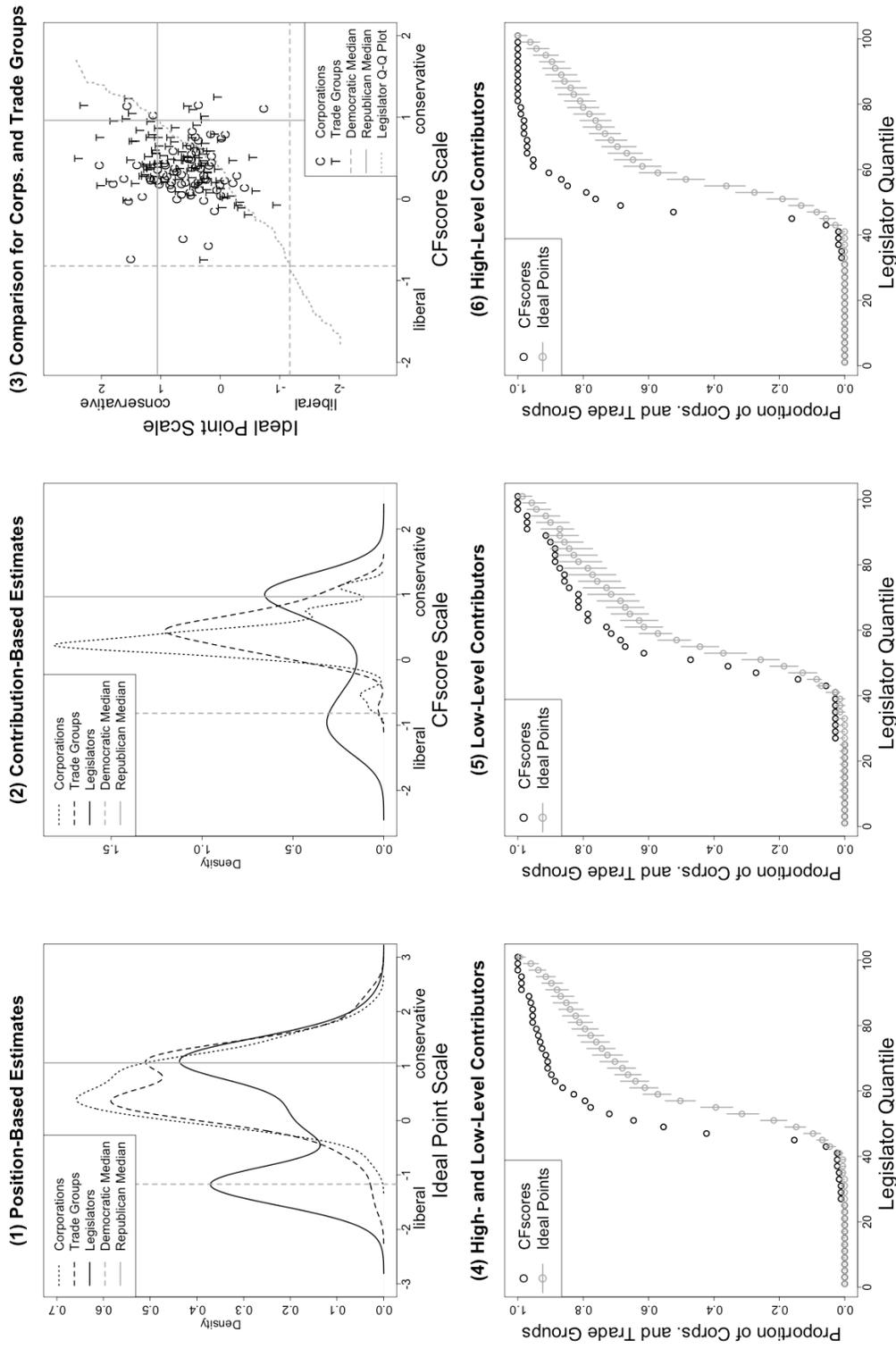
Note: Panel 1 shows the ideal point distributions of 746 legislators from Iowa, Nebraska, and Wisconsin, as well as of 84 corporations and 171 trade groups that lobbied in at least one of these states between 2003 and 2016. Panel 2 shows the CFscore distributions of the subset of 676 legislators, 70 corporations, and 105 trade groups for which preferences were estimated or projected based on campaign contributions (Bonica 2016). Panel 3 compares the contribution- and position-based measures for these 175 organizations. The dotted line shows the Q-Q plot for legislator estimates. In each panel, the dark gray lines show the median Democratic and median Republican legislator estimates. Panels 4-6 show the proportion of corporations and trade groups with position- and contribution-based estimates that are less conservative than a given legislator quantile. The position-based proportions also plot the 95%-credible intervals based on draws from the posterior distribution. Panel 4 presents the proportions for all 175 corporations and trade groups. Panel 5 shows the proportions for 14 corporations and 56 trade groups that contributed less than $100,000 between the 2004 and 2014 election cycles in any state or federal election. Panel 6 displays the proportions for 56 corporations and 49 trade groups that contributed at least $100,000.

Appendix H.1: Nonrandom Bill Selection – Additional Information and Results

Following the main results, the paper examined whether lobbying principals tend to focus on a narrow set of policies, and whether the policy focus of different types of organizations makes them appear more or less extreme (comment by anonymous reviewer). For that analysis, I categorize legislation based on the committee to which it was initially referred, or which sponsored it.[87] I then classify committees into categories based on major topics from the Pennsylvania Policy Database Project (McLaughlin, Joseph, et al. 2010).[88]

Due to overlapping committee jurisdictions and few committees in some categories, I combine several policy areas. Table 2 shows how major topics from the Pennsylvania Policy Database Project are combined. Any committees that do not fit the combined policy areas are grouped into the category "Mixed". Bills which were not introduced to committees or sponsored by committees are classified as "Unknown".

To complement the analysis in the paper, Figure 21 presents the policy focus across types of organizations and types of legislation. The figure is based on all declarations on all bills and resolutions by lobbying organizations that are included in the ideal point estimation (as opposed to being based on declarations matched to votes included in the analysis). Hence, it also relies on declarations with "third" or undisclosed category positions (see above), and also includes bills that were not included in the estimation of ideal points.

Figure 21 shows the row percentages of which types of legislation different types of organization lobby on. Similar to Figure 5 in the paper, there is some specialization depending on the sector of the lobbying principal. For example, Agribusiness organizations focus more strongly on bills referred to Agriculture committees, and organizations in the Health sector focus more on Health

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[87]See Fouirnaies and Hall (2018) for a similar approach.

[88]The revised 2015 codebook is available at `http://www.cla.temple.edu/papolicy/codebook/` (accessed July 23, 2018).

Table 2: Combined Policy Areas Based on McLaughlin, Joseph, *et al*. (2010)

Major Topic Codes (Pennsylvania Policy Database Project)	Combined Policy Area
Fiscal and Economic Issues	Economy, Business, & Finance
Civil Rights and Civil Liberties	Justice, Family, & Defense
Health	Health & Social Welfare
Agriculture	Agriculture
Labor and Employment	Labor & Employment
Education	Education
Environment	Energy, Environment, & Natural Resources
Energy	Energy, Environment & Natural Resources
Immigration	Immigration, Internat'l. Affairs, & Foreign Aid
Transportation	Transportation, Telecomm's., & Technology
Law, Crime, and Family	Justice, Family, & Defense
Social Welfare	Health & Social Welfare
Community Development, Housing Issues	Community Development & Housing
Banking, Finance, Domestic Commerce	Economy, Business, & Finance
Defense	Justice, Family, & Defense
Space, Science, Tech. Communications	Transportation, Telecomm's., & Technology
Foreign Trade	Immigration, Internat'l. Affairs, & Foreign Aid
Internat'l. Affairs and Foreign Aid	Immigration, Internat'l. Affairs, & Foreign Aid
State Government Operations	Government Operations
Public Lands and Water Management	Energy, Environment, & Natural Resources
Local Government and Governance	Government Operations

Note: This table shows how the major topic codes from the Pennsylvania Policy Database Project (McLaughlin, Joseph, *et al*. 2010) are combined into policy areas to examine the policy focus of different types of lobbying principals.

Figure 21: Patterns of Lobbying Principal Position-Taking on Bills (in Policy Areas by Sector)

	Agriculture	Community Developm. & Housing	Economy, Business & Finance	Education	Energy, Environm. & Nat. Resources	Government Operations	Health & Social Welfare	Justice, Family & Defense	Labor & Employment	Mixed	Transport., Telecomms. & Tech.	Unknown
Agribusiness	13	1	9	2	12	32	3	7	8	4	5	4
Communications/Electronics	1	0	15	3	3	43	4	14	9	3	4	1
Construction	1	5	12	2	6	34	1	9	13	10	5	2
Energy & Nat. Resources	3	0	17	1	18	34	2	6	9	5	3	1
Finance, Insurance & Real Estate	1	2	24	2	2	25	5	15	8	6	7	2
Health	0	0	9	10	1	22	36	11	3	4	2	2
Ideological/Single Issue	2	1	7	5	11	25	14	21	2	7	2	3
Labor	0	1	6	10	1	30	6	19	12	7	5	2
Lawyers & Lobbyists	2	2	7	5	4	19	10	32	6	6	4	3
Misc Business	2	1	17	4	6	37	5	8	9	7	3	2
Other	1	2	7	12	7	29	8	17	3	5	5	3
Transportation	2	1	9	1	3	30	2	10	15	6	20	2

Note: The figure shows the row percentages of which policy areas lobbying principals in a particular sectors tend to focus on. All Declarations from lobbying principals included in the analysis are aggregated by sector and policy area. This includes declarations with positions other than "for" or "against" and on votes that were not estimates are included in the figure. The shading of each cell reflects the level of its row percentage.

and Social Welfare than other organizations. Nevertheless, there is also (again) substantial over-lap in the policy focus of organizations. Organizations from all sectors lobby in the policy areas "Economy, Business, and Finance", "Government Operations", and "Justice, Family Issues, and Defense". Most other policy areas see at least a partial overlap between different sectors. Crucially, all sectors appear relatively spread out in terms of their policy focus. This should further reduce concerns that organizations in the sample appear more or less extreme due to a narrow focus on their particular policy niche.

Appendix H.2: Differential Position-Taking by Legislators and Lobbying Principals

In this section, I address the possibility that legislators reveal different preferences on bills that are of concern to business interests. This could be because multiple dimensions structure legislators' genuine policy preferences (e.g., McCarty 2011; Poole and Rosenthal 2007, Ch. 3). It could also be due to differential pressures from lobbyists (Clinton 2012, 84). This section also addresses the possibility that business interests reveal different preferences when considering bills that receive a floor vote, e.g, because those bills tend to be more polarized on the partisan dimension (see Appendix B.5).

To analyze these questions, I estimate four sets of ideal points based on four different vote matrices. First, a vote matrix that only includes roll call votes where corporations are lobbying ("for" or "against"). Second, a matrix that includes any "vote" where corporations are lobbying (including "votes" on bills that died in committee). The third and fourth vote matrices do the same for roll call votes/any votes where corporations or trade groups are lobbying. I then compare each set of ideal points to the estimates from the main results (see Figure 22). All comparisons show very strong correlations (at least $r \approx 0.93$).
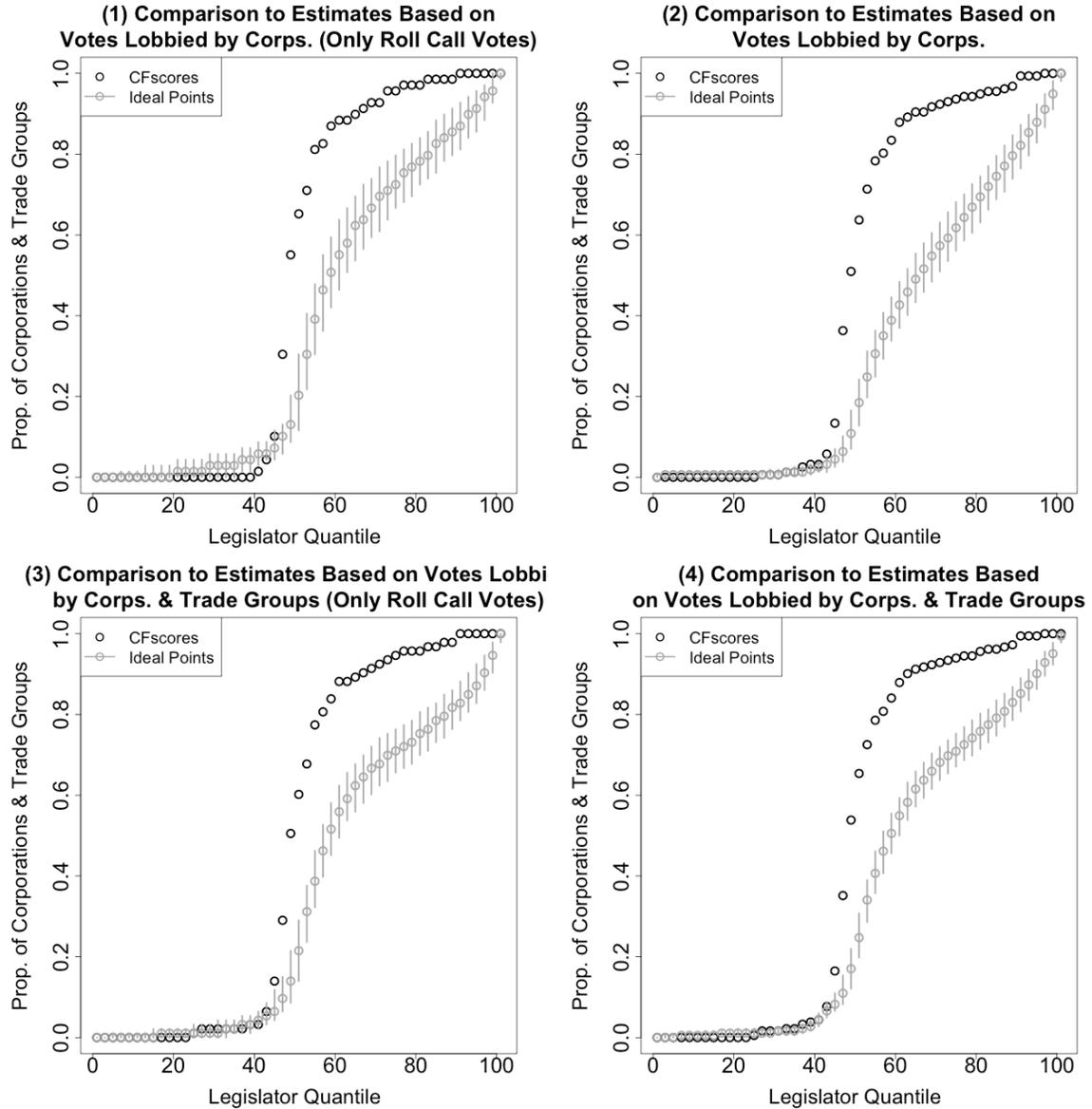
Next, I recreate the main analysis by comparing the four sets of ideal point estimates to the

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Figure 22: Ideal Points Based on Bills on which Business Interests Lobbied
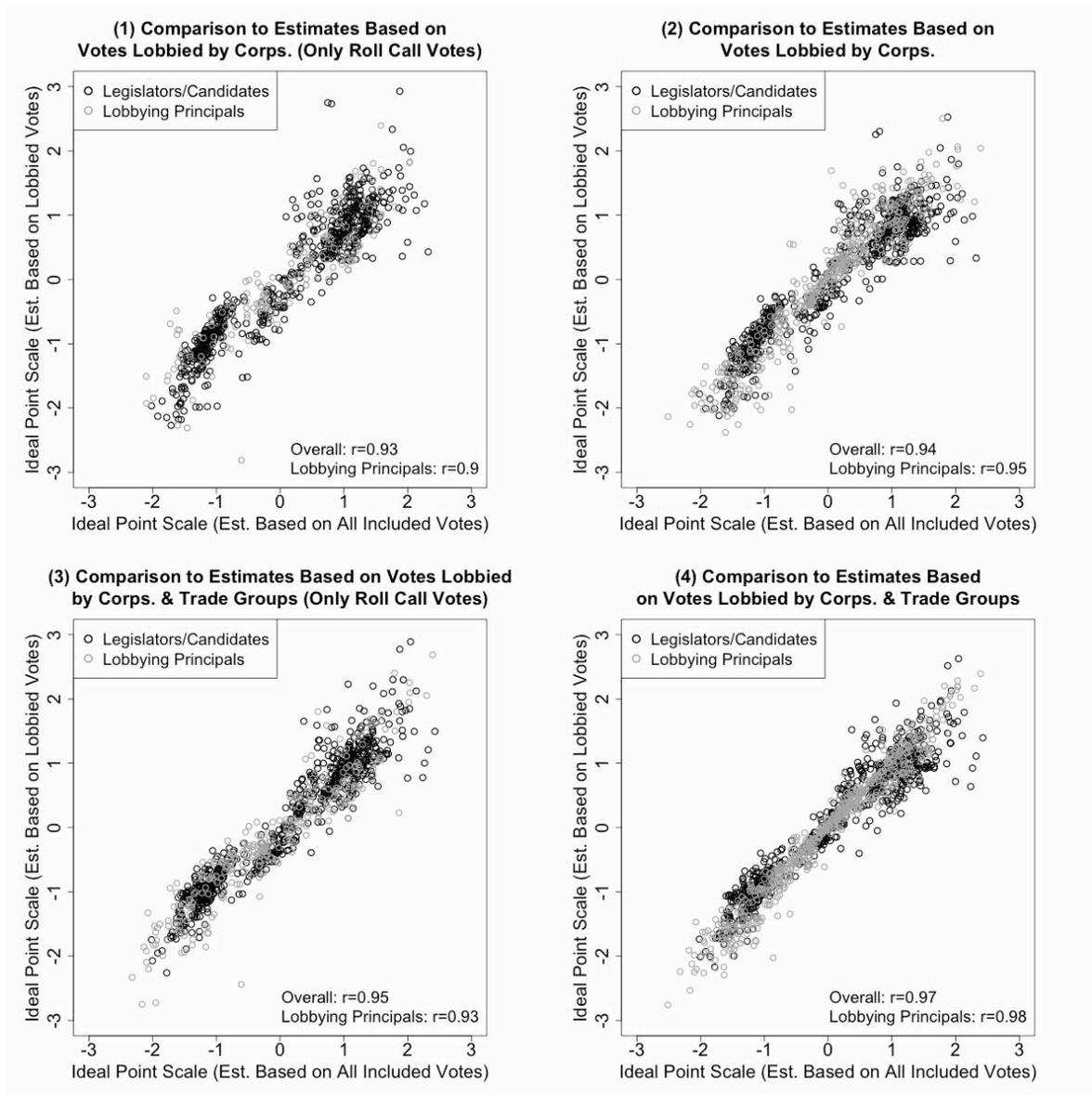
Note: The panels in this figure compare the estimates from the main analysis (horizontal axis) to estimates based on bills on which business interests lobbied (including and excluding bills without a floor vote). The estimates in the first panel are based on a vote matrix that only includes roll call votes where corporations lobbied ("for" or "against"). The estimates in the second panel are based on a matrix that includes any "vote" where corporations lobbied (including "votes" on bills that died in committee). The third and fourth vote matrices are constructed similarly but also include roll call votes/any votes where trade groups lobbied.

Figure 23: Results Based on Bills on which Business Interests Lobbied

Note: The panels in this figure show the proportion of corporations and trade groups with position- and contribution-based estimates that are less conservative than a given legislator quantile. The position-based proportions also plot the 95%-credible intervals based on draws from the posterior distribution. The estimates in the first panel are based on a vote matrix that only includes roll call votes where corporations lobbied ("for" or "against"). The estimates in the second panel are based on a matrix that includes any 'vote' where corporations lobbied (including "votes" on bills that died in committee). The third and fourth vote matrices are constructed similarly but also include roll call votes/any votes where trade groups lobbied.

contribution-based CFscores. The results are shown in the panels of Figure 23. Despite the lower sample sizes due to the reduction in the number of votes, in all four panels show results that are substantially similar to (and somewhat more pronounced than) the main results presented in Panel 4 of Figure 1. The strong correlation between the ideal point estimates and the close correspondence with the original results indicate that the main findings are not seriously confounded by the type of differential position-taking described above.

## Appendix H.3: Robustness to Different Restrictions on the Vote Matrix

There are at least two ways in which the restrictions on the vote matrix could affect the results. First, by affecting the estimates of legislators and organizations in the sample. Second, by affecting which legislators, legislative candidates, and organizations are included in the sample. This section addresses these concerns by showing that the estimates and the main results are robust to reasonable changes to the minimum vote and lopsidedness requirements.

In particular, I estimate all 27 permutations of the following parameter choices: minimum of 9/15/20 actors, minimum of 15/20/25 votes, minimum of 2/3/4 actors vote in the minority.[89] The minimum values of these minimum vote restrictions are consistent with prior research (e.g. Jessee 2016; Peress 2009) as well as the relatively non-demanding objective of estimating a one-dimensional Bayesian item-response model.

To examine the possibility that changes in the restrictions on the vote matrix affect the estimates of legislators and organizations in the sample, I computed the correlations between all common estimates from the 27 estimations. Panel 1 of Figure 24 presents the distribution of the correlations for all comparisons. The minimum (maximum) correlations are r=0.985 ($r \approx 1$) with a median at r=0.995. Further, Panel 2 presents the correlations between estimates of common lobbying princi-

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[89]All permutations have the further requirement that at least 2.5% of the vote are in the minority. Therefore, even in cases where 120 actors vote and the minimum lopsidedness requirement is 2, a minimum of 3 votes are required to be in the minority. The vote matrices also exclude votes that combine unanimous roll calls with opposing lobbying principals (see Appendix C.1).

Figure 24: Correlations between Ideal Points Based on Vote Matrices With Different Restrictions
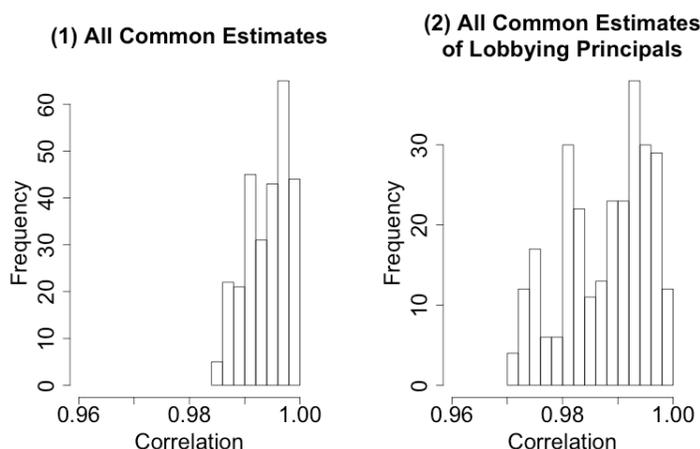
Note: The panels in this figure present the distributions of correlations between 27 sets of ideal points, for which the vote matrices are based on all 27 permutations of the following parameter choices: minimum of 9/15/20 actors, minimum of 15/20/25 votes, minimum of 2/3/4 actors vote in the minority. All permutations have the further requirement that at least 2.5% of the vote are in the minority. The vote matrices also exclude votes that combine unanimous roll calls with opposing lobbying principals (see Appendix C.1).

pals. The minimum (maximum) correlations are r=0.971 (r=0.999) with a median at r=0.990.

Even though all sets of estimates are very strongly correlated, it could be that the sample selection induced by different parameter choices affects the results. To examine this possibility, I recreated Figure 1, Panel 4 from the main analysis for all 27 sets of estimates (Figures 25-27). The figure compares the proportion of organizations that are more liberal than a given legislator quartile, for both the contribution-based CFscores and the position-based ideal points. In all cases, the position-based estimates reveal more conservative estimates for corporations and trade groups than what would be implied from their contribution record. This suggests that the results of the analysis are robust to reasonable changes of the minimum vote and lopsidedness parameters.

## Appendix H.4: Alternative Contribution-Based Estimates

The underlying data used to estimate the position-based ideal points and the contribution-based common-space CFscores (Bonica 2016) differ somewhat in the time periods and jurisdictions they cover. The ideal points are based on position-data by legislators, legislative candidates, and lob-

Figure 25: Results Based on Vote Matrices With Varying Restrictions (1)
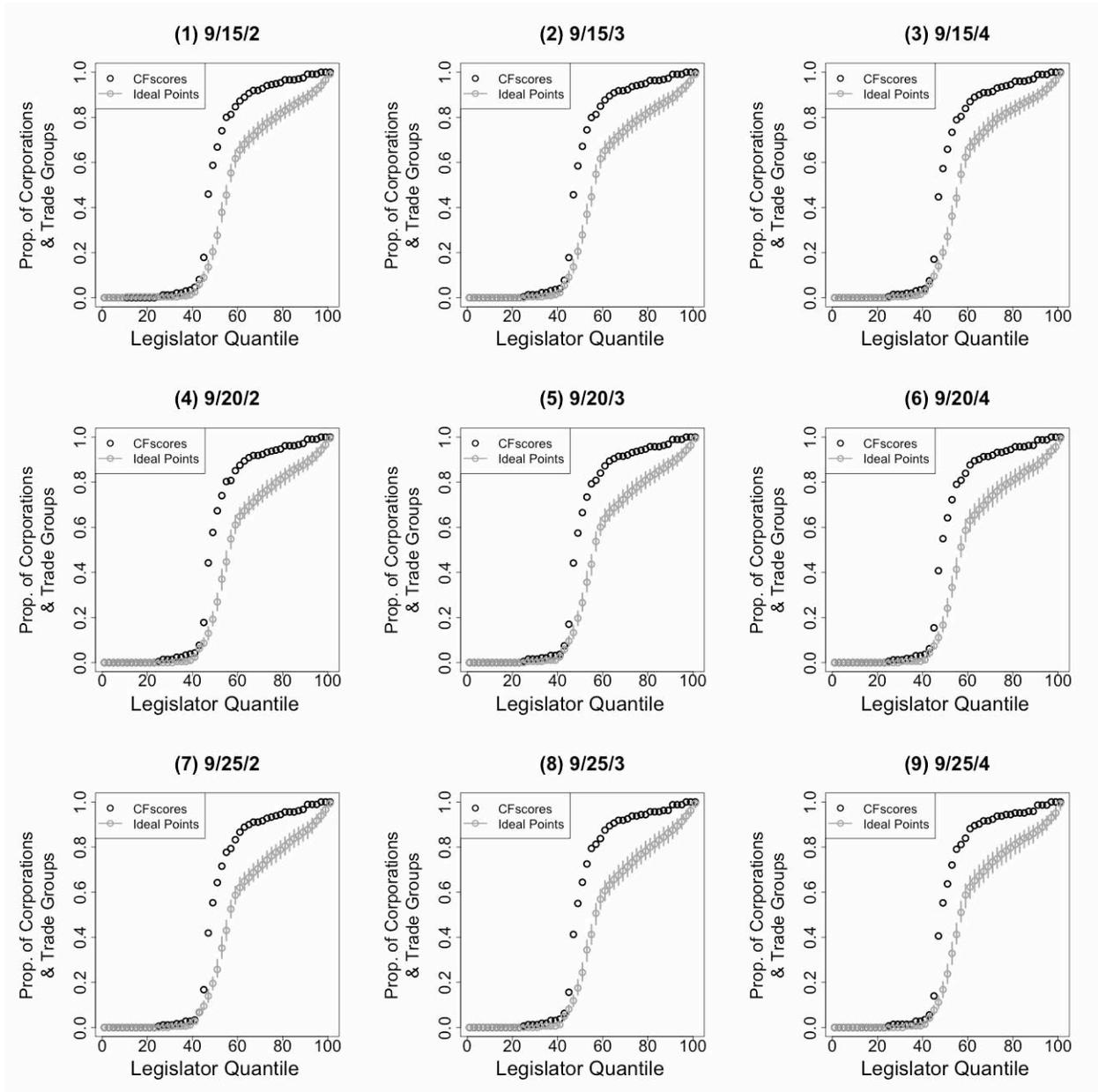
Note: The panels in this figure show the proportion of corporations and trade groups with position- and contribution-based estimates that are less conservative than a given legislator quantile. The position-based proportions also plot the 95%-credible intervals based on draws from the posterior distribution. The estimates in each panel relied on a minimum of 9 actors, a minimum of 15/20/25 votes, and a minimum of 2/3/4 actors voting in the minority, as shown in the title of each panel.

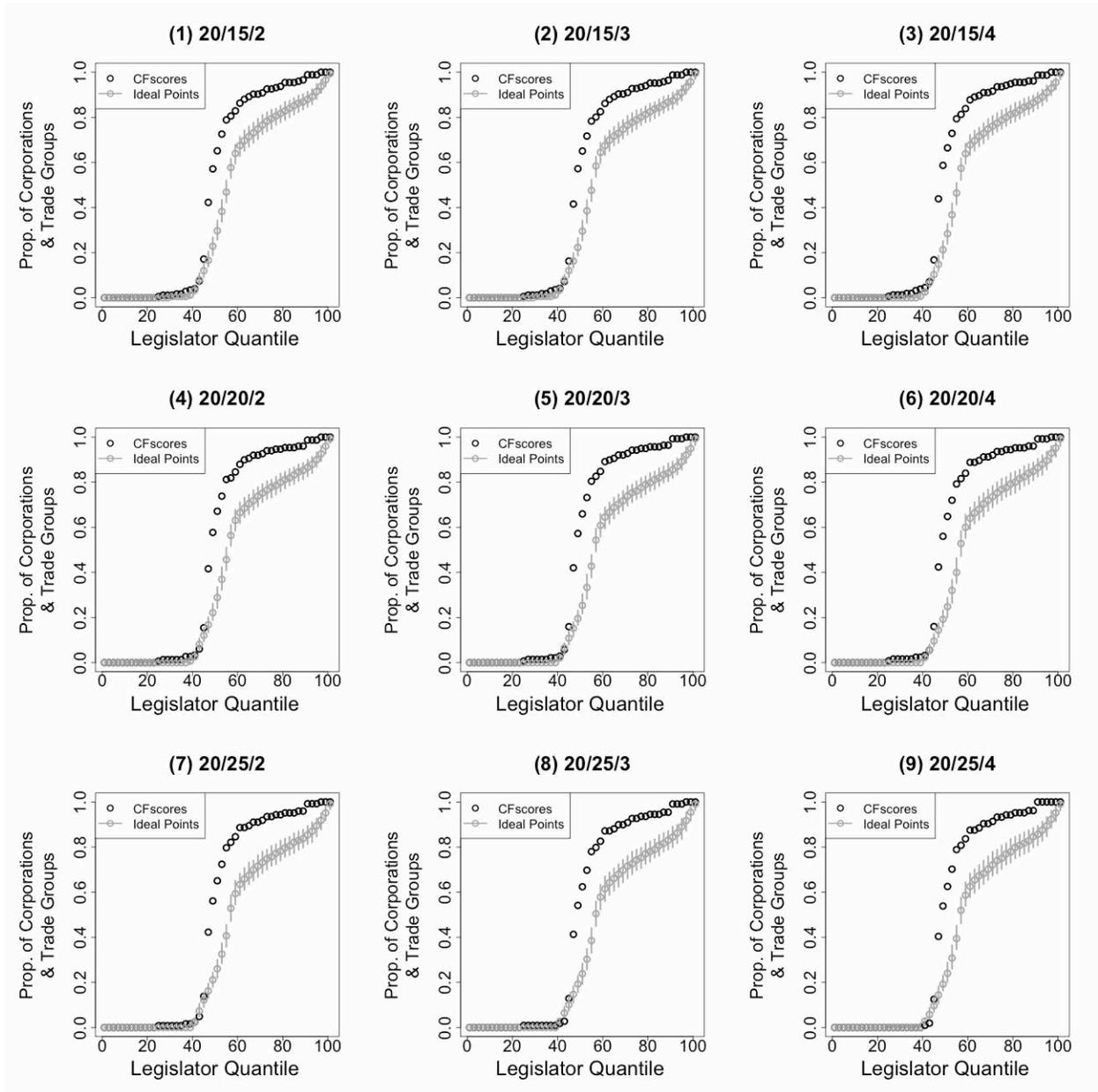Figure 26: Results Based on Vote Matrices With Varying Restrictions (2)
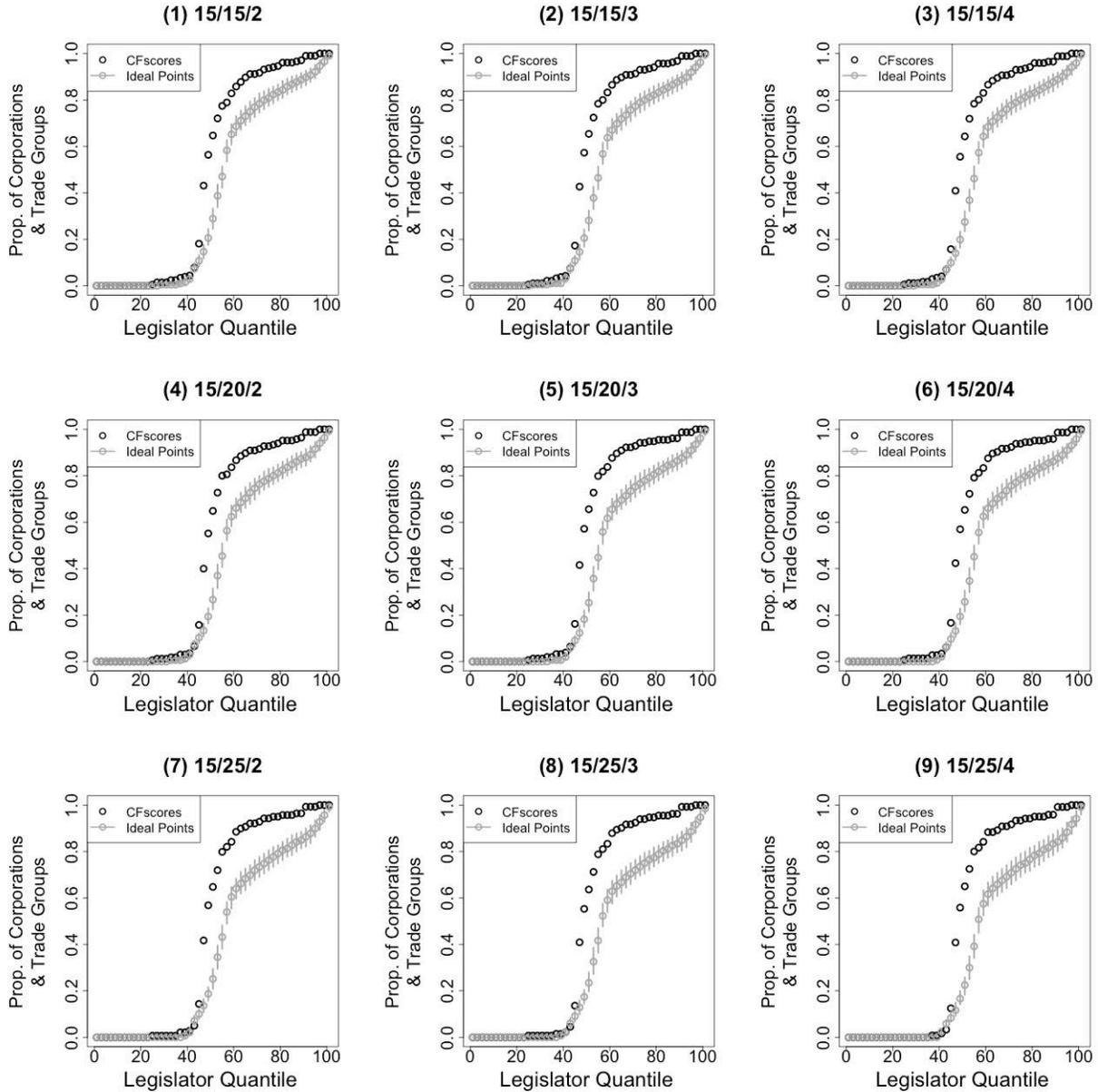
Note: The panels in this figure show the proportion of corporations and trade groups with position- and contribution-based estimates that are less conservative than a given legislator quantile. The position-based proportions also plot the 95%-credible intervals based on draws from the posterior distribution. The estimates in each panel relied on a minimum of 15 actors, a minimum of 15/20/25 votes, and a minimum of 2/3/4 actors voting in the minority, as shown in the title of each panel.

Figure 27: Results Based on Vote Matrices With Varying Restrictions (3)

Note: The panels in this figure show the proportion of corporations and trade groups with position- and contribution-based estimates that are less conservative than a given legislator quantile. The position-based proportions also plot the 95%-credible intervals based on draws from the posterior distribution. The estimates in each panel relied on a minimum of 20 actors, a minimum of 15/20/25 votes, and a minimum of 2/3/4 actors voting in the minority, as shown in the title of each panel.

bying principals in Iowa, Nebraska, and Wisconsin between 2002 and 2016.[90] By contrast, the CFscores were estimated using contributions to candidates running for federal and state offices in 50 states between 1979 and 2014.[91]

A comparison between these sets of estimates is consistent with the assumption of a common ideal point across time, as well as a common ideal point across jurisdictions for corporations and trade groups that are active in more than one state. The common ideal point assumption implies that additional position-data of such organizations for all states/Congress and a longer period of time would not change the revealed preferences.

Although prior research has to my knowledge not discussed this possibility, one reason for excluding contributions made to candidates in other states or running for Congress would be if organizations placed a greater emphasis on ideological considerations in some states than in others. Similarly, it could be an issue if the relative emphasis on ideological considerations changed over time.

Below, I first show that the results are robust to excluding the 2 organizations (5 observations) for which I show that the common ideal assumption across the three states is not valid (see Appendix E). To alleviate further potential concerns that the results may be driven by a reliance on contributions to candidates in other states or Congress or to differences in the time periods considered, the analysis in the subsequent section shows that the main results holds when limiting contributions to jurisdictions and election years that intersect with those from which the ideal points are estimated.

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[90]For each state, legislative roll calls include the seven bienniums between 2003 and 2016. The NPAT position-data covers the period from 2002 to 2016. In Nebraska and Wisconsin (Iowa), the disclosed positions were collected for the years 2003-2016 (2005-2016).

[91]Whereas the federal contribution data goes back to 1979, the earliest state-level data includes contributions from 1990 (Bonica 2014, 370). Among other changes, the updated dataset (Bonica 2016) adds data from 2013 and 2014 to the earlier dataset (Bonica 2013b).

Figure 28: Results Excluding Observations Violating the Common Ideal Points Across States
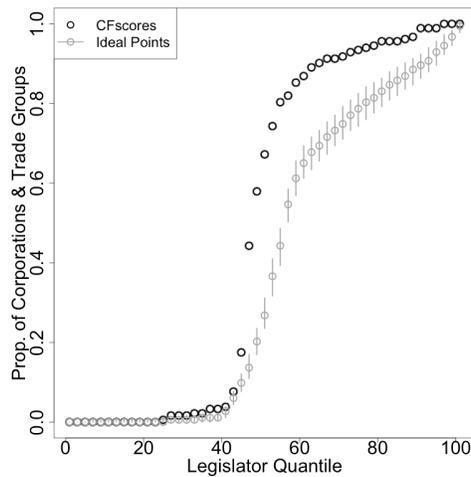
Note: This figure shows the proportion of corporations and trade groups with position- and contribution-based estimates that are less conservative than a given legislator quantile. The position-based proportions also plot the 95%-credible intervals based on draws from the posterior distribution. The figure excludes 5 observations from 2 lobbying principals (BNSF Railway Co. and the NFIB) for which the common ideal point assumption across states was found not to be valid (see Appendix E).

Robustness Check I: Excluding Organizations Violating the Common Ideal Point Assumption Across States

In this subsubsection, I show that the results of the main analysis hold when five observations associated with one corporations and one trade association (the BNSF Railway Co. and the NFIB) are excluded from the analysis. For these organizations, the common ideal point assumption was found not to be valid across the three states.[92]

Figure 28 recreates Panel 4 of Figure 1 from the main analysis, except that five observations associated with the BNSF Railway Co. and the NFIB are excluded. Using the legislator quantiles on each measure as the basis for comparison, I find that 145 of the 183 organizations (79%) reveal more conservative policy preferences than would be implied by their contribution record. As could be expected from such a small number of observations, this closely matches the 80% of organization

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[92]Unfortunately, this assumption can only be tested to the extent that position data is available in different states and Congress. Where organizations lobbied a sufficient number of bills, the available data could include additional states with mandatory disclosure of positions on lobbied bills (Colorado, Montana, New Jersey, and Rhode Island), as well as tests of the common ideal point assumption across time.

that reveal more conservative policy preferences in the main analysis.

Robustness check II: Contribution-Weighted Ideal Points as an Alternative Contribution-Based Measure

In this section, I show that the results from the main analysis are robust to only considering contributions to candidates in Iowa, Nebraska and Wisconsin who either held state legislative office between 2003 and 2016 or ran for state legislative office between 2002 and 2016. In particular, I estimate a contribution-weighted ideal point score (Hall 2015; Hall and Snyder 2015) for lobbying organizations that made direct contributions to such candidates.[93] The contribution data was collected from the website of the National Institute for Money in State Politics (NIMSP), available at https://www.followthemoney.org.

To obtain an analog of the recipient CFscore for legislators, I follow McCarty, Poole, and Rosenthal (2006) and Hall (2015) to calculate candidates' ideological positions from the contributors' contribution-weighted ideal points, weighed by their share of the candidates' receipts. For this, I include individual contributors, but exclude corporations, trade groups, and membership organizations (see Bonica 2014, 370), as well as candidates' contributions to their own campaigns (Hall 2015, 21). Finally, to achieve between-set identification of contributors and recipients, I conduct a regression analysis to project contributors onto the same space as recipients (see Bonica 2014, Supplemental Materials, A.1). To address potential attenuation bias due to measurement error, I conduct a multiple overimputation analysis (Blackwell, Honacker, and King 2017a, 2017b; Honacker, King, and Blackwell 2015). The estimates are then adjusted based on an intercept of 0.007 and a slope coefficient of 0.914.

Panel 1 of Figure 29 compares 660 contribution-weighted recipient scores and recipient CF-

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[93]The ideal point estimates for candidates who did not become legislators are estimated based on candidate survey responses (see Appendices A.3 and B.4). Similar to the estimation of CFscores of state legislators, I also consider contributions made to incumbents' committees before they became incumbents and contributions to campaigns of state legislative candidates when they sought a different office (e.g., U.S. Representative). Unlike Hall (2015), I also include contributions during general election campaigns.

Figure 29: Results With Contribution-Weighted Ideal Points
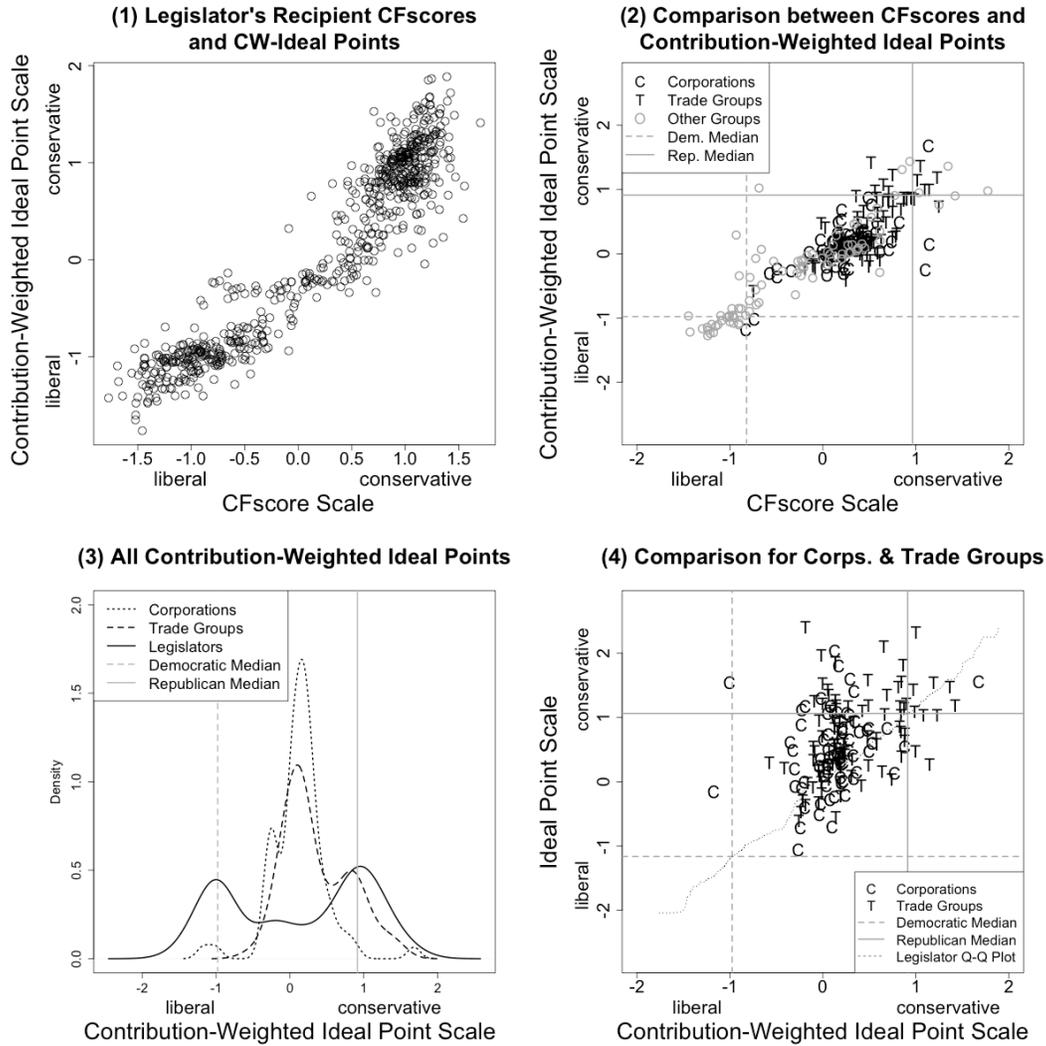
Note: Panel 1 in this figure compares 660 recipient CFscores of Iowan, Nebraskan, and Wisconsinite legislators (Bonica 2016) to the legislators' Contribution-Weighted Recipient Ideal Points. Following Hall (2015), candidates CW-Recipient Ideal Points were computed from the contributors' contribution-weighted ideal points, weighed by their share of the candidates' receipts. Panel 2 compares 166 contributor CFscores of PACs contributing in Iowa, Nebraska, or Wisconsin (Bonica 2016) to the PACs' Contribution-Weighted Ideal Points. The contribution-weighted ideal points (Hall 2015; Hall and Snyder 2015) were computed based on contributions to candidates in Iowa, Nebraska and Wisconsin who either held state legislative office between 2003 and 2016 or ran for state legislative office between 2002 and 2016. Panel 3 presents the distributions of contribution-weighted ideal points for the subset of 660 legislators, 71 corporations, and 105 trade groups for which preferences were estimated/computed based on campaign contributions. Panel 4 compares the contribution-weighted ideal points and the ideal point estimates for 69 corporations and 97 trade groups. The dotted line shows the Q-Q plot for legislator estimates. The dark gray lines in Panels 2-4 show the (weighted) median Democratic (dashed) and median Republican (solid) legislators.

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scores of incumbent state legislators in Iowa, Nebraska, and Wisconsin between 2003 and 2016. There is a very strong correlation of r=0.94 between the two measures. Next, Panel 2 compares CFscores and contribution-weighted ideal points for 69 corporations and 97 trade groups as well as 90 other groups. The overall correlation when including only corporate and trade PACs where both estimates rely on more than one contribution is strong (r=0.73). The correlation for the other (all) PACs is r=0.89 (r=0.86). The relatively higher correlation for non-corporate or trade PACs highlights a greater consistency in the ideology of their recipients across jurisdictions and over time.[94]

Moreover, the two sets of measures show a very high correspondence of 94% in which corporations and trade groups are classified as having moderate or extreme (either liberal or conservative) contribution records.[95] This provides a first indication that the result of moderate contribution behavior by corporations and trade groups in the sample is robust to which election jurisdictions and years are considered.

Next, I show robustness of the main results to using the contribution-weighted ideal point scores instead of the CFscores. Panel 3 of Figure 29 presents the distributions of the new contribution-based measures for 71 corporate and 105 trade PACs associated with lobbying organizations for which I estimate ideal points. Overall, 160 of 176 (91%) corporate and trade PACs have a moderate contribution-weighted ideal points that place them between the medians of the two parties. This is very close to the proportion of PACs with moderate CFscores in the main analysis (93%).

Finally, Panel 4 compares the ideal points 69 corporations and 97 trade associations to their contribution-weighted ideal points. Using the quantile-to-quantile legislator plot shows that 115 of 166 organizations (69%) have a more conservative ideal point than would be implied by their con-

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[94]Discrepancies in the number of contributions that go into the estimates for each observation arise not only from which time periods and jurisdictions are considered, but also potential differences in how contributions were linked to PACs. In addition, the contribution-weighted ideal-points do not include contributions to party committees. When including observations where both sets of estimates also include PACs with one distinct recipient, the correlations decrease to 0.61 for corporate and trade PACs, and 0.85 (0.81) for the other (all) PACs. Requiring a greater number of distinct recipients beyond two does not generally improve the correlations further. This provides a justification for only including estimates in the analysis that are based on contributions to at least two distinct recipients (see also Bonica 2014, 383).

[95]When including the observations where either estimate relied on one contribution, this correspondence remains high at 92.6%.

tribution record. This is somewhat lower, but comparable, to the 80% of 188 organizations in the comparison to CFscores. Of the 153 corporations and trade groups with a moderate contribution record, the revealed policy preferences of 35 (23%) are extremely conservative. This is almost the same percentage as in a similar comparison using the CFscores (24%). These results show that the main results of the analysis are robust to limiting contributions to jurisdictions and election years that intersect with those from which the ideal points are estimated.

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