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Abstract

We conduct the first analysis of individual investor ideology by examining their votes as shareholders. Following Bolton et al's (2020) and Bubb and Catan's (2022) work on mutual fund ideology, we conduct a dimension reduction analysis to ascertain the main dimensions on which individual investors divide and disagree. Unlike mutual funds, individual investors have largely unidimensional preferences, with 56% of variation in voting explained by a dimension that can be interpreted as sentiment towards management. Further, we show that voter-specific ideology, not shared views of proposal quality, is the dominant driver of individual votes: individual votes vary primarily across individuals, not across proposals. In practice, this means that individual investors' votes are highly consistent and predictable within-topic, across topic, and across category. We deepen our understanding with three additional findings. First, for environmental and social (ES) and governance proposals, the ideological composition of the firm's individual investor base—and not any aspect of the firm or the proposal itself—drives most of the variation in the proposal's voting performance. Second, individual voting ideology is closely correlated with individual political ideology. Third, to the extent individuals consider firm or proposal factors, such as recent stock performance, in their voting, they may not be using such factors as a gauge of proposal quality. Recent stock performance strongly predicts individual voting even on proposal types for which stock performance arguably provides no signal as to proposal quality. The results together describe a set of investors with strong ideologically preferences that communicate non-specifically through voting.

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INDIVIDUAL INVESTOR IDEOLOGY

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We conduct the first analysis of individual investor ideology by examining their votes as shareholders. Following Bolton et al's (2020) and Bubb and Catan's (2022) work on mutual fund ideology, we conduct a dimension reduction analysis to ascertain the main dimensions on which individual investors divide and disagree. Unlike mutual funds, individual investors have largely unidimensional preferences, with 56% of variation in voting explained by a dimension that can be interpreted as sentiment towards management. Further, we show that voter-specific ideology, not shared views of proposal quality, is the dominant driver of individual votes: individual votes vary primarily across individuals, not across proposals. In practice, this means that individual investors' votes are highly consistent and predictable within-topic, across topic, and across category. We deepen our understanding with three additional findings. First, for environmental and social (ES) and governance proposals, the ideological composition of the firm's individual investor base—and not any aspect of the firm or the proposal itself—drives most of the variation in the proposal's voting performance. Second, individual voting ideology is closely correlated with individual political ideology. Third, to the extent individuals consider firm or proposal factors, such as recent stock performance, in their voting, they may not be using such factors as a gauge of proposal quality. Recent stock performance strongly predicts individual voting even on proposal types for which stock performance arguably provides no signal as to proposal quality. The results together describe a set of investors with strong ideologically preferences that communicate non-specifically through voting.

JEL Classification: G11, G18, G23, G34, G38, D72.

Keywords: Individual Investor Voting, Shareholder Proposal, Corporate Governance, Investor Ideology, Dimension Reduction

In this article, we use rich microdata on individual investor and mutual fund votes to study U.S. individual investor preferences and present the first analysis of individual investor voting ideology—ideology defined, as in Converse (1964), as predictable voting across a wide range of issues, presumably due to some underlying set of beliefs. We ask, first, what are the ideological dimensions of individual investors, i.e., the primary issues that separate and divide shareholders? Second, does variation in voter ideology across investors explain variation in votes, or should we instead look to variation in valence (e.g., proposal quality) across proposals?

In answering the first question, we show that individual investors are essentially unidimensional in their preferences. We conduct an unsupervised learning analysis to determine the key dimensions of individual voting patterns, following Bolton et al. (2020) and Bubb and Catan (2022)'s work on mutual funds. A single dimension of ideology—interpretable as individual investor sentiment towards management—explains 56% of the variation in individual votes. Much as political voters' positions on wide-ranging and highly disparate social, economic, and foreign policy issues are closely correlated, so too are investor voters' positions on environmental and social issues, governance issues, director elections, and other management-sponsored proposals all highly correlated.

The answer to the second question indicates that ideology is indeed the proper lens through which to study individual investor voting choice. Variation among individuals explains far more of voting than variation among proposals, suggesting that differences in voter ideology are far more important than variation in valence across proposals. The answers to the two questions together suggest that a simple model of individual investor voting choice captures variation in individual investor voting to a remarkable degree.

We describe a picture of individuals as highly opinionated, with strong and consistent preferences or beliefs that differ across shareholders, but indiscriminate, making little distinction between different types of proposals—a contrast with funds. Consider, for example, how a vote in favor of an environmental or social (ES) proposal predicts an individual's votes at a different firm the next year. Both individuals and funds are highly consistent when voting on the same topic. For an individual, a vote in favor on a randomly selected ES proposal increases her likelihood of voting in favor of an ES proposal on the same topic at a different firm next year by 60%. For funds, that number is 58%, statistically indistinguishable. But individuals and funds

diverge in how predictive their votes are on *different* topics and categories. For individuals, the vote in favor on a randomly selected ES proposal increases her likelihood of voting in favor of an ES proposal on a different topic by 47%, and in favor of a governance proposal by 44%. For funds, those numbers are 34% and 24%, respectively. Both individuals and funds are consistent on particular topics but individuals are much more consistent in their voting across different topics and categories. In fact, for individual investors, a vote on an ES proposal is virtually as predictive of votes on governance proposals as it is of votes on other ES proposals.

We then extend these results with analysis that helps interpret these findings. First, we decompose the determinants of why one proposal outperforms another among individual investors—why one environmental proposal achieves 30% of the individual investor vote while a different environmental proposal at a different firm achieves only 20%, for example. We show that, for Environmental and Social (ES) and Governance proposals, more than half of the variation in voting outcomes across proposals is explained by the composition of the firm's individual voters, not by any aspect of the proposal itself.

Second, we relate investor ideology to political ideology, and find that the unifying ideology of individual investors, which predicts their votes on everything from the employee incentive plans to merger approvals, is closely related to political ideology. A 10-percentage point increase in an in an individual's zip code's political voting for Republicans is associated with a 13.2-percentage point decrease in her individual voting in favor of ES proposals and a 10.9-percentage point decrease in her voting in favor of governance proposals. There are also strong associates between voting for these proposals and the zip code's resident age (negative), education levels (positive), and population density (positive), corresponding precisely with political ideological demographics.

Third, we further explore the correlation between individual investor voting choices and recent company stock returns, first shown in Brav, Cain, and Zytnick (2022). Even this relation appears to be driven at least partially by sentiment towards management rather than solely by the individual's assessments of the quality of the proposal. Even in situations in which the performance of a company's stock does not signal the quality of the proposal being voted on, stock returns are significantly correlated with individual investor voting choices.

The goal of this paper is to open a black box. By understanding individual ideology, we hope to provide a framework for modeling individual decisions. Individual investor preferences

are a matter worthy of study. First, individual investors own firms directly, and their votes impact voting outcomes at the firms they own (Brav, Cain, and Zytnick, 2022). Second, the votes of individuals who directly own stocks serve as a window into the preferences of all individual investors, including non-voting individuals and individuals who own institutional investors.

Individual investor preferences are at the core of Hart and Zingales's (2017) proposal that companies should maximize the welfare of underlying individual investors. Hart and Zingales recommend using shareholder voting to capture individual welfare preferences. Our results suggest that individual voting captures a coarse-grained, unidimensional version of individual preferences. If preferences on a given issue can be predicted from votes on other issues, that makes the challenge for company managers easier and suggests that voting might effectively communicate individual preferences on a wide range of corporate policies.

Our results also have implications for pass-through voting, in which institutional investors pass through the right to vote directly to their underlying customers. Our results suggest that a system of partially intermediated voting, in which individuals make a single choice on a voting "package", may capture the same degree of information as true pass-through voting in which the individual votes on each individual proposal in her institution's portfolio.

The paper proceeds as follows. In Section 1, we review relevant literature, In Section 2, we describe our data and present summary statistics. In Section 3, we describe our main questions and the intuition underlying them. In Section 4, conduct a dimension reduction analysis to understand the key dimensions dividing individual investors. In Section 5, we compare the importance of the investor and the proposal in determining the vote on an investor's ballot, and assess how predictable such votes are across topics and categories. In Section 6, we aggregate to the proposal level, and study how proposal outcomes are determined by the ideological composition of a firm's voters. In Section 7, we look at the factors predicting an individual's ideology. In Section 8, we study the extent to which within-individual variation in voting reflects variation in the individual's assessment of proposal quality. In Section 9, we discuss policy implications. Section 10 concludes.

1. Literature Review

This paper extends the literature on mutual fund ideology to individual investors. Because individual investors cast many votes and are identifiable across votes, the data structure resembles a legislative setting. We follow researchers in political science by using a dimension

reduction analysis to obtain the ideological dimensions of their preferences (e.g., Poole and Rosenthal (1985)). Bubb and Catan (2022) and Bolton et al. (2020) each extend such analyses to shareholder voting. Each paper maps out the dimensions of institutional investor ideology using a dimension reduction analysis, providing a clear picture of how institutional investors differ.[1] We extend their methodologies to individual investors, then elaborate on them by showing the nature of individual ideology, how such ideology manifests in voting, and its consequences.

There is a thin body of empirical work on individual investor voting, which this paper makes substantial contributions to by focusing on voting choices. Brav, Cain, and Zytnick (2022) study individual investor voting in a framework focused on whether individuals monitor firms, with an emphasis on turnout decisions and what company factors affect individual investor votes. Zytnick (2024) compares the votes of mutual funds to the votes of individual investors who own those mutual funds. Kastiel and Nili (2016) use non-votes to estimate individual investor turnout.

Another literature describes the preferences of individual investors outside of a voting context, including Bonnefon et al. (2025), Hart, Thesmar, and Zingales (2024), and Giglio et al. (2023), and Kempf and Spalt (2024). Some such papers relate corporate policies to opinions of the general public: Montagnes, Peskowitz, and Sridharan (2024) survey U.S. adults to assess the representativeness of pass-through voting to the general public, and Aggarwal, Erel, and Starks (2014) compare corporate policies to public opinion surveys.

By detailing how individual investors vote, this paper helps inform a new theoretical literature on pass-through voting, spurred by the recent introduction of pass-through voting by the largest institutional investors. Persico and Ravina (2024) model the effects of pass-through voting with an ideologically polarized individual investor base; this paper demonstrates the extent and manner in which individual investors are ideologically polarized. Malenko and Malenko (2024) model when investors prefer to delegate their votes rather than hold on to their votes, based on the heterogeneity of their preferences; this paper provides the first empirical information on the heterogeneity of individual investor voting preferences.[2]

[1] A much wider literature has studied rationales for mutual fund voting decisions, including Davis and Kim (2007) and Iliev and Lowry, 2015.

[2] One paper helps understand pass-through voting by drawing a parallel to fund families decentralizing power to fund managers: Hermann, McInnis, Monsen, and Starks (2024) study the effects of Vanguard's decision to decentralize power from the fund family to the fund level. Several law papers discuss the legal and policy implications of pass-through voting, including Fisch and Schwartz (202) and Griffin (2020).

Other papers have called for increasing the voting power of individual investors, either direct holders or mutual fund owners. Hart and Zingales, 2017; Fisch, 2017; Fisch and Schwartz, 2024. Others have proposed limitations on mutual fund voting that would mechanically increase the power of individual investors. Lund, 2017; Griffith, 2020. Our paper helps inform such proposals, their potential consequences, and what individual investor voting communicates to firms.

Our results in Section 6 demonstrate a potential trade-off between investors using buying and selling choices, on the one hand, and voice or voting choices, on the other, in influencing corporate policy. In particular, we show that ideological investors are more likely to purchase ideologically compatible firms, thereby reducing their voting power at ideologically incompatible firms. In this, we provide empirical support to a theoretical literature, including Broccardo, Hart, and Zingales (2022), that describes trade-offs between exit and voice of ideological investors.

A vast body of literature has tested theories of voting choice in explaining political voting, often by regressing voting outcomes on proxy variables for candidate quality and/or proxy variables for ideology (see, e.g., Ho et al. (2013) and Sanders et al. (2011) for representative examples). Our setting, where voters vote on multiple ballots and where we observe votes at the individual level, allows us to conduct analysis distinguishing the influence of the voter and the ballot without proxying for measures of ideology or proposal quality.

2. Data and Summary Statistics

We use proprietary data on individual investor voting merged with a series of other datasets.

The individual investor voting data comes from Broadridge, which is the service provider that, during the data period, handled nearly all US shareholder voting. The data, which was first used in Brav, Cain, and Zytnick (2022), contain individual investor votes for U.S. shareholder meetings for the years 2015 through 2017.[3] For each investor-meeting, we observe the individual's number of shares owned, whether she voted, how she voted, and her zip code.

[3] The data do not include proxy contests and do not include some shareholders who own shares as registered shareholders. The data also exclude investors who are the only one in their zip code, to maintain anonymity. Our data includes more proposals than Brav, Cain, and Zytnick (2022) because they exclude proposals that did not match to a second Broadridge dataset that is not used here.

We merge the voting data with several other datasets. We merge at the proposal level with ISS Voting Analytics' US Company Vote Results to obtain data on proposal characteristics, including ISS recommendations, and proposal descriptions. We classify proposals as shareholder-sponsored ES proposals (consisting of environmental and social proposals), shareholder-sponsored governance proposals, and management-sponsored proposals following Brav, Cain, and Zytnick (2022).

Following Zytnick (2024), we obtain mutual fund votes from ISS Voting Analytics and merge them with CRSP Open-End Mutual Funds dataset. We treat funds at the CRSP Class Group level (i.e. combining all share classes of a single fund). We limit to votes on proposals for which we have individual investor votes.

For firms, we calculate returns and market cap using data from CRSP and Tobin's q and ROA using data from Compustat.

In Section 6, we look at firms in politically charged industries. We follow Hong and Kostovetsky (2012)'s industry definitions for tobacco (SIC Codes 2100-2199) and military/firearms (SIC Codes 3760-3769, 3795, and 3480-3489). As explained in Zytnick (2024), Hong and Kostovetsky's third category is "Natural Resources," which consists of SIC codes for Forestry, Metal Mining, and Non-Metallic Mining Excluding Fuels. Since these categories do not have an obvious political valence, we replace that variable with Oil and Gas Industries (SIC Codes 1300-1399 and 2911). As in Zytnick (2024), we classify a firm as a renewable energy firm if it appears in NASDAQ's Clean Edge Green Energy index or Wilderhill's New Energy Global Innovation Index.

In Section 7, we correlate voting ideology with political ideology and other individual features. Because we observe an individual's zip code but little other personal information (outside of information about her equity portfolio), we rely on zip code-level information for our analysis in that section. We obtain zip code characteristics from various sources: 2016 U.S. presidential election results at the county level from CQ Voting and Elections; zip code percentages with Bachelor's or post-Bachelor's degrees from the Bureau of Labor Statistics; zip code adjusted gross income from the IRS website; and several zip code demographic characteristics from the U.S. Census Bureau.

In Section 8, we look at merger approvals. We limit our subset of mergers, and obtain announcement dates and announcement stock return premia, using mergers data from Securities Data Company (SDC).

Table 1 presents a table of summary statistics. Voters average 29.8% support for ES proposals, 31.3% support for governance proposals, and 90.0% support for management proposals. The median portfolio size is $95,677.01.

3. Questions and Intuition

In this section, we elaborate on our primary questions.

First, we ask what are the main dimensions that separate and divide individual investors? We may think of this as asking, who is on the "left", who is on the "right", and what is the nature of their disagreement? We use dimension reduction analysis to distill the central disagreements.

Individuals may differ on many, possibly infinite, dimensions. They may disagree on whether firms should sacrifice profits for environmental or social causes, have different beliefs about the effectiveness of performance pay in maximizing profits, or have different information regarding the effectiveness of existing company management. With dimension reduction analysis in Section 4, we posit and test the hypothesis that many of these dimensions of disagreement are correlated and that most of the variation across investors can be captured by a small number of composite dimensions.

In Section 4 we show that roughly 56% of the variance in individual investor voting can be explained by a single dimension, more than the first two dimensions of mutual fund disagreement combined. This dimension, we show, can be interpreted as sentiment towards management.

This finding sets up our second question, in Section 5: to what extent is variation in individual voting explained by differences across individuals at all, as opposed to differences across proposals? This question is essentially asking which of the two classic frameworks of voting choices better captures individual investor voting: the Downs (1957) model, which posits that voters are ideological and select the choice that is closer to their personal ideology, and the Stokes (1963) model, which posits that voters make choices based on "valence" factors, such as the quality of the candidate or proposal. We explore this question by decomposing the variation in voting into investor and proposal fixed effects.

We rely on an intuitive premise: if there is substantial disagreement across voters but little variation across proposals, then valence factors—factors relating to proposal quality and shared across all investors—cannot be the main driver of variation in voting. That is, if there were little variation in proposal outcomes but lots of variation across investors, it must be investor-varying factors that drive voting, which would rule out a Stokes (1963) valence explanation. By contrast, if there were little disagreement across voters but extensive variation across proposals, multiple explanations would be possible.[4]

After addressing these questions in Sections 4 and 5, we turn to additional questions that further explain how investors make voting decisions in Sections 5 through 8.

4. Individual and Institutional Investor Ideology

A. Overview and Methodology

In this section we explore individual investor ideology by conducting a dimension reduction analysis on their votes. Since we use an unsupervised learning approach, this section is essentially exploratory in nature. Following Bubb and Catan (2022), we test the hypothesis that individual investor voting preferences can be mostly captured within a low-dimensional preference space. We then seek to answer: (i) what are the main ways in which individual investors differ in their preferences, as reflected by their voting, (ii) what are characteristic types of individual investors?

Dimension reduction analysis establishes the primary dimensions of heterogeneity along which voters disagree. If, on some proposals, the same voters consistently disagree, then those proposals must capture some dimension of ideology—and those disagreeing groups of voters are at different ends of the ideological spectrum in that dimension. Dimension reduction analysis (i) finds the most important dimensions of difference, and (ii) identifies where voters and proposals are situated within those dimensions.

Two different dimension reduction analysis techniques have been used in the recent shareholder voting literature: Principal Components Analysis (PCA), in Bubb and Catan (2022),

[4] First, it might suggest that there is extensive variation across proposals in the ideological extremism of the proposals, i.e., how far they are from the median voter, still consistent with a Downs (1957) model. Second, it might suggest that there is extensive variation in proposal valence, consistent with Stokes (1963). In our setting, the question is largely moot, because individual voting is marked by disagreement across voters and lack of variation across proposals.

and W-NOMINATE, in Bolton et al. (2020). In the main text of this paper, we use PCA, because it has greater flexibility and methodological simplicity, permitting estimation of the space using one group of voters and then projecting a different group of voters onto the space. In Online Appendix D, we repeat the exercise with W-NOMINATE and reach identical conclusions.[5]

PCA can be summarized as follows. For an $I \times P$ matrix of votes Y, with voters $1, \dots, I$ and proposals $1, \dots, P$, PCA finds K dimensions (each of which is a linear combination of the proposals and orthogonal to all previous dimensions) that capture the most information. Specifically, it identifies (i) the $I \times K$ matrix Z, which contain the scores for each of the I voters in each of the K dimensions, and (ii) the $P \times K$ matrix A, which contains the weights for each of the P proposals in each of the K dimensions, to (iii) minimize $||Y - M - ZA'||$, where $Y - M$ is the demeaned vote matrix. For any given voter i, her score in dimension k, Z_{ik}, is simply the product of the (demeaned) $1 \times P$ vector of her votes $Y_i - M_i$ and the $P \times 1$ vector of proposal weights in dimension k, A_k. In Online Appendix C, we describe in detail the methodology we use in conducting PCA.

In simple terms: the first dimension is the dimension on which voters most disagree, and a voter who scores highly in the first dimension votes in favor of proposals that score highly in the first dimension. The second dimension is orthogonal to the first, and by construction cannot capture as much disagreement.

The dimension reduction analysis uses no inputs other than a matrix containing the identity of the voters (the row labels), the proposal ID (the column labels), and the votes themselves (the contents of each cell—for, against, or missing). PCA relies on comparing votes of different voters on the same proposal and the same voter on different proposals, so we begin by limiting to proposals with a sufficient number of votes (1000 from individuals and 25 from funds) and investors with a sufficient number of votes (25 across at least three separate ballots). Because of the computational intensity of the process, we then draw a random sample of 4,000 individual investors.[6]

[5] W-NOMINATE has the benefit of being explicitly designed with a utility interpretation: voters have a bliss point B, and utility is given by $\beta e^{(-\frac{1}{2}(B-X_v))} + Q_v$, where $X_v \in \{X_{yes}, X_{no}\}$ is the left-right ideological location of the vote outcome and $Q_v \in \{Q_{yes}, Q_{no}\}$ is the quality of the vote outcome. However, it lacks the flexibility and transparency of PCA, and, given the qualitatively identical results produced by each, we focus in the main paper on PCA.

[6] As a result, our results in this section derive from a small sample of investors who cast an unusually high number of votes. Our results are visually, qualitatively, and quantitatively extremely similar across different sample draws.

Most individual shareholders do not vote on most proposals, so most cells are missing. Following Bubb and Catan (2022), we run PCA iteratively to impute missing cells. Before the first iteration, we fill missing cells with the average vote on a given proposal. Following each iteration, we predict the missing votes based on the voter scores Z and proposal scores A generated from the previous iteration, with Y imputed as $M + Z \times A$. We always use the actual vote where there is one, and we truncate imputations at 0 and 1.[7]

We can create a dimensional space using one group of voters, and then place other voters (real or hypothetical) on that space. This is useful if, say, we want to assess where out of sample voters (like funds or proxy advisors) would place on the dimensional space created by individual investors. We can also use it to place hypothetical voters, like one who always votes with management, onto the space created by individual investors. For any subset of voters whose votes are given by $\ddot{Y}$, their scores are $(\ddot{Y} - M) \times A$.

We describe our methodology in greater detail in Online Appendix C. Appendix D shows the results of a W-NOMINATE analysis, *a la* Bolton et al. (2020). The conclusions are qualitatively identical to the conclusions from the PCA.

B. Is The Individual Voting Space Low-Dimensional?

Conducting dimension reduction analysis using a sample of individual investors and, separately, mutual funds, we first ask whether variation in voting can be well-captured by a small number of dimensions. If every group of proposals has a different group of supporters, then a small number of dimensions would not be able to explain much variation in voting.

In Figure 1, we present a scree plot, which captures the extent of variation captured by the most explanatory dimensions. The x-axis contains the composite dimensions, starting with the most powerfully explanatory dimension; the y-axis contains the percentage of total variation captured by that dimension on the y-axis.

The scree plot shows that individual investor votes are mostly explained by just one dimension of ideology. The first dimension captures 56.0% of the variation in individual investor voting; the second dimension captures an additional 14.4%. This is substantially greater than for

The subsetting and sampling is limited to the PCA analysis in this Section 4; starting next section, we draw a large sample of investors from all individual voters.

[7] In Online Appendix C and Online Appendix Figure C.1, we describe various measures of imputation error and document our error rates using these methods. A natural benchmark is to funds, as first analyzed in Bubb and Catan (2022); we show lower imputation errors for individual investors than for funds.

mutual funds: the first dimension in the mutual fund space captures 39.1% of variation and the second dimension captures roughly 18.9% of variation, together capturing a majority of variation.

We conclude that individual investors are more unidimensional in their voting preferences than are funds. We next turn to interpreting the primary dimension of individual ideology.

C. Ideological Dimensions of Individual Investors

We visually examine the dimensional space created by the votes of individual investors. Figure 2, Panel A shows a scatterplot of individuals plotted on the first two dimensions. We label hypothetical voters on the space: one who always agrees with management recommendations, one who always votes in favor of each proposal, one who always votes against each proposal, one who always votes counter to management recommendations, one who always votes in agreement with ISS recommendations, and one who always votes with Glass Lewis recommendations. Figure 2, Panel B establishes a point of comparison: the ideological space of funds.

We observe the following: First, the x-axis of Figure 2, Panel A corresponds quite well to a line between a pure management and a pure anti-management voter.[8] An individual who votes in favor of all management proposals and against all shareholder proposals (ES and governance) would locate on the far left, and an individual who does the opposite would locate on the far right. Pro-management votes appear on the left, and pro-shareholder votes appear on the right.

Figure 3—which contains a scatterplot of proposals on the two-dimensional space, colored by management recommendation—provides further evidence of the nature of Dimension 1. Management proposals and shareholder proposals are cleanly distinguished in the first dimension, with virtually all management proposals earning negative scores and virtually all shareholder proposals earning positive scores. We conclude that the main feature separating

[8] Why does the point corresponding to an anti-management voter rest below the x-axis, rather than on it? The line between the management point and the anti-management point spans the entire first dimension, extending past all actual voters in both directions, demonstrating that the management-to-anti-management line is a close proxy for the first dimension. However, the line dips down rather than paralleling the x-axis. The reason is that not all proposals with a given management recommendation have the same scores in Dimension 2. Specifically, there are some proposals which have near-0 scores in Dimension 1 but high scores in Dimension 2. Because these proposals have high scores in Dimension 2, they shift an anti-management voter's Dimension 2 score a bit downward.

proposals is whether they are management- or shareholder-sponsored, and the main feature separating individuals is their stance towards management.

Note that the dimension 1 result is unrelated to the fact that most shareholders vote in favor of management proposals and against shareholder proposals. The individual voter scores would be identical if all votes on shareholder-sponsored proposals were flipped, so that instead of coding "yes/no", we coded "with management/against management." Instead, these results show that different shareholders are affected differently by management's recommendation, and this difference is the most important difference separating individual investors.[9]

Second, the factors that divide individual investors are different from those that divide funds. Conditional on a given voter's ideological scores, the most important predictor of an individual's management's recommendation; the most important predictor of a fund's vote is ISS's recommendation.

Third, variation in Dimension 2 arises from differences in *how* voters oppose management: whether they vote for shareholder proposals, or against management proposals. High scorers tend to vote for management and shareholder proposals; low scorers tend to vote against both. This is most neatly seen in Figure 2, Panel A—a hypothetical voter who votes in favor of all proposals is at one end of the y-axis, and one who votes against all proposals is at the other. We can see this in Figure 3 as well—the vast majority of proposals, both management-sponsored and shareholder-sponsored, have positive scores in the second dimension, implying that a vote in favor of a proposal (regardless of whether it is with management or against management) increases a voter's dimension 2 score.

Fourth, the PCA yields the party structure of individual votes: a concentrated "Management" party (left side of Figure 2 Panel A) comprising a large fraction of individual voters, which votes with management all or most of the time on management and shareholder proposals, and a dispersed opposition ranging from "pro-shareholder proposals" (upper right of Figure 2 Panel A) to "anti-management proposals, anti-shareholder proposals" (bottom right of Figure 2 Panel A). The graph also features a cluster of individuals on its top, on the left. A

[9] This result also does not imply that shareholders either vote with management recommendations on all proposals or against management recommendations on all proposals. The results suggest—and we later confirm—that individuals who vote against a management proposal are likely to do so repeatedly.

typical voter in the upper part of the graph votes in favor of management proposals but also votes in favor of some shareholder proposals.

We conclude that individual investors do have predictable voting ideologies that correspond to a small number of interpretable factors. We see clean and interpretable dimensions: the sign of the first dimension virtually always corresponds to management's recommendation, and a vote in favor generally yields a positive dimension 2 score.

D. Fund and Individual Dimension Comparison

Do the factors that divide funds divide individuals as well? Figure 4, Panel A shows funds projected onto the space created by individuals. Figure 4, Panel B shows individuals projected onto the space created by funds.

In Panel A, the fund space, the two axes are essentially defined by ISS recommendations (Dimension 1) and Glass Lewis recommendations (Dimension 2). Individuals cluster on a straight line between the hypothetical management and anti-management voter. Individuals do not fan out at all towards the hypothetical ISS follower or Glass Lewis follower that define the fund dimensional space. This graph reflects that individual votes are essentially uncorrelated with ISS or Glass Lewis recommendations.

In Panel B, the individual space, funds are clustered around the hypothetical ISS and Glass Lewis voter, but they also fan out substantially across the dimensional space created by individuals. This pattern reflects the fact that funds vary quite substantially in the extent to which they disagree with management (Dimension 1) and, if they do, whether they do so by voting against management proposals or voting for shareholder proposals (Dimension 2). That said, funds vary less in their position towards management than individuals, who fan out more in both dimensions.

The results of this section show that individuals, to the extent they disagree, disagree mainly on support for management. In the next section, we turn to whether disagreement or agreement among individual investors predominates.

5. Determinants of a Vote

Which better explains variation in voting: differences across individuals or differences across funds? And how consistent are individuals and funds in their voting patterns? In this section, we analyze these questions.[10]

A. Relative Importance of Voter and Proposal

We begin with a variance decomposition. We define $Y_{ip} = 1$ as a vote in agreement with management (in favor of a management proposal or against a shareholder proposal), and estimate equations of the form:

$$Y_{ip} = \delta_0 + \theta_i + \phi_p + \varepsilon_{ip} \qquad (1)$$

Where Y_{ip} represents investor i's vote on proposal p, and θ_i and ϕ_p represent individual and fund fixed effects.

Table 2 contains regression results.[11] Columns 1, 3, and 5 contain individual investors only (using a random sample of 100,000 accounts for computational tractability); Columns 2, 4, and 6 estimate it using funds only. In the first four columns, we include either investor fixed effects or proposal fixed effects; in columns 5 and 6, we include both.

In columns 5 and 6, we deconstruct the variance in voting choices into component parts:

$$Var(Y_{ip}) = Var(\theta_i) + Var(\phi_p) + 2cov(\theta_i, \phi_p) + Var(\varepsilon_{ip})$$

Where the error term ε is uncorrelated with ψ and ϕ by construction.

We observe the following in Table 2:

- Viewing the R^2 numbers, we can see from columns 1 and 2 that investor fixed effects alone explain a fairly large portion of the variation in voting for individuals (0.38) and a small percentage for funds (0.07). By contrast, from the R^2 numbers in columns 3 and 4, we see that proposal fixed effects explain a small fraction of the variation in individual investor votes (0.09), whereas they explain a large fraction for funds (0.41);

[10] We use the Principal Components Analysis of the previous section to guide our questions and understanding, but, for simplicity and ease of interpretation, do not use the products of the PCA as regression inputs. Whereas dimension reduction analysis is a method solely interested in conflict, not consensus, here we look to whether conflict or consensus is more important in individual voting patterns.

[11] Unlike in the dimension reduction of the previous section, where we were forced to limit to the subset of individuals that vote on at least three ballots and 25 proposals, our work in this and all other sections contains no sample restrictions on individual voters.

- In columns 5 and 6, we conduct the variance decomposition described above. For individuals, the variance of voter fixed effects is far greater than the variance of proposal fixed effects; for funds, the variance of voter fixed effects is far smaller than the variance of proposal fixed effects, indicating that the voter identity captures a greater fraction of variation in individual votes.

If all voting choices were based purely on the proposal's merits, made by voters with identical information, beliefs, and objectives, then variation within a proposal across the votes of different voters would be driven purely by random noise and we should see no voter fixed effects.[12] Instead, we see significant voter fixed effects for both individuals and funds, but with far greater explanatory power for individuals.[13]

The results of this subsection imply that individual investors are consistent in their voting; we next turn to directly evaluating that claim.

B. Consistency and Predictability of Voting

We have decomposed variation in voting into its component parts and shown that, for individuals, voter fixed effects are far more explanatory than proposal fixed effects, and that this difference appears to be greater for individuals than for funds. In this section, we clarify and deepen the analysis, asking: to what extent does an investor's vote predict her other votes on the same topic, different topics within the same category, and different categories altogether? Predictability on the same topic suggests consistent views; predictability on different topics or different categories suggests a broad-based ideology, perhaps governed by an underlying system of beliefs.

[12] In Online Appendix Table B.1, we repeat the exercise dividing the data by category into management, governance, and ES proposals; unsurprisingly, since proposals grouped in this manner are more similar, both individual and fund votes are more explained by individual variation than in the benchmark model that combines all proposals. The sharp contrast between individuals and funds remains.

[13] Since we have more individual investors than funds, there are more voter fixed effects for individuals than for funds, potentially explaining the greater collective explanatory power of individual fixed effects. In Online Appendix Table B.2, we run a robustness check in which we randomly subset the individuals so that there are as many individuals as funds and find identical results—though there is still a potential bias from funds' greater number of votes per investors. In any event, the consistency analysis in the next subsection always uses a single vote from individuals and funds and therefore cannot be biased by the different number of votes.

Formally, this is a test of systematic heterogeneity across voters, following Matvos and Ostrovsky (2010). We measure the extent to which a voter's votes in a category are predicted by its vote at *other* firms the previous year:

$$Y_{ipct} = \beta_0 + \beta_1 Y_{i\tilde{p}(-c)(t-1)} + \phi_p + \psi_t + \varepsilon_{ipct} \qquad (2)$$

Y_{ipct} denotes investor i's vote on proposal p at company c in year t. $Y_{i\tilde{p}(-c)(t-1)}$ denotes investor i's vote on randomly drawn proposal $\tilde{p}$ at a company *other* than c in the previous year. That is, we regress the investor's vote on a particular proposal on her vote on a randomly drawn proposal from a different firm in the previous year.[14] ϕ_i and ψ_t represent proposal and time fixed effects, respectively.

In Tables 2 and 3, we estimate Equation 2. Consider an investor's vote on a randomly drawn ES proposal last year.[15] In Table 2, columns 1 through 3, we report how that vote predicts that investor's votes on ES proposals at a different firm *this* year. In Table 2, columns 4 through 6, we report how that vote predicts the investor's votes on ES proposals on the same topic at a different firm this year.[16] In Table 2, columns 7 through 9, we report how that vote predicts the investor's votes on ES proposals on *different* topics at a different firm this year. Columns 1, 4, and 7 report on individual investors; for this regression, we draw a sample of 500,000 individual investors who cast at least one ballot at different firms in consecutive years. Columns 2, 5, and 8 report on funds. Columns 3, 6, 9 include both individuals and funds and report the differences between the two. In Table 3, we assess the cross-category predictiveness of a vote, reporting how the ES vote last year predicts governance and management votes at a different firm this year.

We note the following results:

First, individual votes are highly predictive, and to a greater degree than for funds. Table 3, column 1 shows that an individual vote for one ES proposal in year $t-1$ increases her

[14] Studying mutual fund voting, Matvos and Ostrovsky (2010) regress a fund's votes on its *average* vote in the year prior, and conclude from the significantly positive coefficient that funds were systematically heterogeneous in voting choices. We modify Matvos and Ostrovsky (2010) to use a single (randomly selected) vote from last year on the right-hand side, rather than the average of all the shareholder's votes, to ensure that we do not have greater precision in the right-hand side variable for those voters who cast more ballots last year. This method ensures a precise and unbiased comparison between individuals and funds. Using the average of all the shareholder's votes last year, as Matvos and Ostrovsky (2010) did, yields virtually identical results.

[15] In Appendix Tables B.3, B.4, B.5, and B.6, we replicate Tables 2 and 3 for randomly drawn governance and randomly drawn management votes last year, with qualitatively similar—or perhaps stronger—results.

[16] We define as a proposal topic the *agenda general description* field from ISS Voting Analytics. There are 49 distinct topics for ES proposals, 51 distinct topics for shareholder governance proposals, and 261 distinct topics for management proposals. For ES proposals, common topics include "Report on Sustainability," "Political Lobbying Disclosure," and "Report on Climate Change."

likelihood of voting in favor of an ES proposal at a different company the next year by 47.6 percentage points. Column 2 contains the same results for firms, showing the vote last year is also quite predictive, with a pro-ES vote contributing to a 36.3-percentage point increase in voting for ES this year. There is a large gap between individuals and funds: Column 3 shows that one ES vote is more than 10 percentage points more predictive for individuals than for funds. Individuals, then, are consistent on ES proposals, and more consistent than are funds. Online Appendix Tables B.3, B.4, B.5, and B.6 show the same results are true of a vote on governance and management proposals last year.

Second, funds are much more discriminating across different topics than individuals are. As we narrow from a category, such as ES, to a specific *topic* within ES, individual votes are no more predictive than fund votes, as shown in Table 2, columns 4 through 6. The vote in favor last year increases the likelihood a vote this year on the same topic at a different firm by 60.4 percentage points for individuals and 58.5% for funds, not significantly different. However, as shown in Table 2, columns 7 through 9, on *different* topics, individual votes are far more predictive than fund votes, a gap of 12.4 percentage points. Whereas individuals and funds are similarly consistent on the same topic, individuals' votes are far more predictive on *different* topics.

Third, and similarly, on different *categories*, individual votes are far more predictive than fund votes. Table 3, column 1 shows that, for an individual, a vote on an ES proposal last year increases her likelihood of voting in favor of a *governance* proposal this year by 43.6 percentage points, similar to the 47.6 percentage number for ES proposals. For individuals, ES votes are almost as predictive of governance votes as they are of other ES votes. For funds, the predictiveness is much lower, just 23.5 percentage points.

Management proposals are similarly instructive as to the difference between individuals and funds. As a baseline, an individual who votes *against* the ES proposal last year has a 5.4% chance of voting against a management proposal; for funds, that number is similar, 5.6%. But an individual who votes *for* the ES proposal last year essentially triples her likelihood of voting against the management proposal, increasing the likelihood by 10.6 percentage points (Table 3, column 4). By contrast, a fund that votes for the ES proposal last year barely budges her likelihood of voting against the management proposal (Table 3, column 5).

Figure 5 presents a simple visual of the results of Table 2, as well as the corresponding Online Appendix Tables B.3 and B.5. For all voters (individuals and funds) with 10 or more votes, we calculate their percentage voting with management. Figure 5 presents histograms of individual and fund percentages voting with management. The upper left quadrant contains all proposals. We observe that individual investors have greater probability mass on both the left edge (always vote against management recommendations) and the right edge (always vote with management recommendations) as compared to funds, consistent with the notion that they vote more consistently and predictably.

We conclude that individuals demonstrate a consistency in voting that spans across topics and proposal category. Whereas both individuals and funds tend to be highly consistent on a specific proposal topic, individuals tend to be consistent across topics and even categories—a vote on an ES proposal strongly predicts a vote on a governance proposal.

This cross-proposal type consistency may provide insight into a question that has been of recent interest to academics (e.g., Pollman (2024)): why is "G" (governance) ubiquitously combined with "E" (environment) and "S" (social)? Although we cannot fully answer that question, we note that for individual investors, governance appears to be strongly linked with environmental and social issues, and individuals who vote for the one tend to vote for the other.

The results of this section allow us to draw conclusions on how best to model individual investor voting patterns. Our findings suggest that individual voting is more consistent with a Downs (1957) ideology framework of voting than a Stokes (1963) proposal quality framework of voting. Most variation in votes is explained by variation across individuals, not variation across proposals, so proposal quality cannot be the major driver of votes.[17]

6. Variation in Voter Composition at the Firm Level

In the previous section, we showed that an individual investor tends to vote relatively consistently across her votes and to discriminate fairly little across different proposals. This raises the question: are company voting results determined by who their shareholders are, rather than anything about the firm or the proposal?

[17] We note that such results may reflect multiple dimensions of quality, negatively correlated with each other and each valued by different investors—but this would be theoretically indistinguishable from ideology.

Because firms aggregate the votes of many individuals, we might expect most differences across individuals to wash out at the firm level. If different firms randomly drew from the same pool of individual investors, then, by the law of large numbers, firms would have very similar voter bases.[18] However, if firms differ in the ideological composition of their investors, it is possible that variation in proposal voting outcomes across firms are explained mostly by this difference and not by qualities of the firm or proposal.

We proceed as follows. First, we look at how much variation across firms there is in proposal outcomes. Then, we look to see how much variation across firms there is in the aggregate ideology of firm's individual investors. Then, we look at how much of the variation in proposal outcomes is explained by variation in the aggregate ideology of firm's individual investors. Finally, we look to why some firms have shareholders with different ideology than other firms.

A. Variation in Proposal Outcomes

We begin by looking towards how much variation there is in proposal outcomes, separately for individual investors and among funds.

Define the "retail proposal outcome" and the "institutional proposal outcome" as the fraction of votes cast in favor by retail or institutional investors, respectively. We display histograms of the frequency of proposal outcomes in Figure 6, equal-weighting voters.[19] We limit to proposals with 10 or more votes.[20] The consistency showed in Section 5 section has implications for proposal outcomes in Figure 6: specifically, individual investor proposal outcomes vary relatively little across proposals. The results are the inverse of Figure 5: individual voting results are massed in towards the center, and fund voting results have relatively more mass on the edges. We can see this especially strongly on shareholder ES and governance proposals. Whereas funds strongly discriminate between different proposals, individual investor support for a given proposal tends to be more consistent within a category.

[18] Even allowing that voting investors of a given firm are not a random draw from the voting investor population, differences between the voting investors of firms would only affect voting outcomes if the differences correlate with voter ideology.

[19] Because our focus has been on individual decision-making, we equal-weight voters for consistency with earlier tables and graphs. In Online Appendix Figure A.1, we weight voters by shares, with qualitatively similar results.

[20] As a robustness check, Online Appendix Figure A.2 replicates Figure 6 with a 1,000-vote requirement for inclusion; the figures look quite similar. This higher inclusion criterion eliminates many funds. There are 60,753 proposals with 10 funds voting on them and 61,480 with 10 individuals voting on them. If we increase the threshold to 1,000, there are only 659 proposals with 1,000 funds voting on them, compared to 30,898 proposals with 1,000 individuals.

What explains why some proposals perform more strongly among individual investors than others? One possibility is that individuals discriminate between proposals enough to generate some variation. Another possibility is that the ideology of the individual investors who comprise different firm' investment base varies enough to produce different proposal outcomes. The latter is only possible if different individuals systematically sort into different funds, which we turn to next.

B. Voter Composition

How much do firms vary in the ideology of their voting bases? To assess this question, we look at investors who have voted at more than one firm and calculate their leave-one-out ideology: that is, to assess the ideology of investor i at firm c, we are interested in her votes at firm's *other* than c. We calculate $\bar{Y}_{i(-c)}$ as the investor's votes in the same category (ES proposals, governance proposals, or management proposals) at other firms. Then, for a given proposal at a given firm, we calculate the ideology of the firm's investment base as:

$$Y_{pc}^{-1} = \frac{1}{|Number\ of\ investors\ voting\ on\ p|} \sum_{i\ voting\ on\ p} \bar{Y}_{i(-c)}$$

That is, we average the votes at other firms ($\bar{Y}_{i(-c)}$) for each investor voting on proposal p, equal-weighting each investor. To avoid random variation, we limit to proposals that have at least 1,000 voters with at least one vote in the same category at other firms. In Figure 7, we plot histograms at the proposal level of the leave-one-out voting ideology. In Online Appendix Figure A.3, we weight investors by their number of shares, with qualitatively identical results.

If investors select firms orthogonally to their ideologies, there should be little variation in the ideological composition of different firms. To the contrary, Figure 7 shows a considerable degree of variation across proposals in their voter's votes at other firms. Proposals' voter ideology does not vary as widely as their voting results (shown in Figure 6), but even aggregating 1,000 or more voters, proposals still show considerable range. For ES proposals, a range across proposals of 20% to 33% in favor is common, meaning that a substantial number of proposals have voters who average as little as 20% in favor at other firms, and a substantial number of proposals have voters who average as much as 33% in favor at other firms.

C. What Determines Proposal Outcomes?

We have shown that different firms have voting bases that are, even in the aggregate, ideologically different from each other. Next, we turn to how this impacts proposal outcomes. Our question: if one firm's proposal earns, say, an 80% vote in favor among individual investors and another firm's proposal earns, say, 60%, how much of that difference can be explained by variation in the composition of the voters?

We estimate:

$$\bar{Y}_{pck} = \kappa_0 + \kappa_1 Y_{pck}^{-1} + \varepsilon_{ipc}$$

In which $\bar{Y}_{pc}$ is the average individual investor vote on proposal p for company c in category k—as plotted in Figure 6—and Y_{pck}^{-1} is proposal p's average of its individual investors' votes on *other* firms in category k (excluding those investors who have no votes in the category at other firms). That is, we regress the performance of a proposal among individual investors on how those investors vote at other firms, to determine how much of the proposal's performance can be explained by the investor composition.

Table 5 contains the result. We focus on the R^2 number. Columns 1 and 2 regress the outcomes of shareholder-sponsored ES proposals on the average, across investors voting on the proposal, of their ES votes at different firms. Columns 3 and 4 do the same for shareholder-sponsored governance proposals, and columns 5 and 6 do the same for management-sponsored proposals. In columns 1, 3, and 5, we limit to proposals with at least 10 investors who have cast votes at other firms on ES, governance, or management, respectively. In columns 2, 4, and 6, we limit to proposals with at least 1,000 such investors. Online Appendix Table B.7 presents the results weighted by shares, with qualitatively similar results.

For shareholder proposals, both ES and governance, more than half the variation in overall individual investor voting outcomes is explained by the composition of voters. For management, a bit over one third of the variation is explained by the composition of voters. These results may be underestimates, since many voters have not cast a vote at another firm on ES, governance, or management proposals and therefore their votes are not included on the right-hand side, and yet their votes are included on the left-hand side.

These results underscore the importance of investor ideology: knowing nothing about a proposal except how its shareholders have voted on other proposals in the same category at other firms explains much or most of its results among investors.

D. Determinants of Variation in a Firm's Voter Base

Having determined that, for ES and governance proposals, most of the variation in proposal outcomes among individual investors is determined by variation in the composition of the firm's investors, we next turn to determinants of the variation in the composition of the firm's investors. Consider two firms with ES proposals. One has an individual investor voter base that votes, say, 20% in favor of ES proposals elsewhere; the other has an individual investor voter base that votes, say, 33% in favor of ES proposals elsewhere. Management in the first firm has an advantage in defeating the proposal (at least among individual investors). In this subsection, we explore factors associated with such a split in voters emerging between the two firms.

We hypothesize that voters who vote ideologically may also purchase and divest from stocks ideologically. In that case, the firms that are strongest on ES metrics may have shareholders who are most likely to vote in favor of shareholder-sponsored ES proposals.

Following Hong and Kostovetsky (2012), we focus on firms in politically charged industries: oil and gas, tobacco, firearms and military, and renewable energy. For each proposal, we regress its mean shareholder-vote-in-other-firms on firm characteristics, including whether the firm is in one of those politically charged categories:

$$Y_{pck}^{-1} = \rho_0 + \rho_1 Z_{pc} + \varepsilon_{pck}$$

Where Z_{pc} is a vector of proposal and firm characteristics.

Table 6 contains the results. In the first three columns, we equal-weight investors. We see that at oil and gas companies and companies in the military/firearms industries, the shareholders are significantly less likely to vote in favor of ES proposals at *other* firms. At renewable energy companies, they are more likely to vote in favor of ES proposals at other firms.

The result suggests an ironic potential implication: an environmental proposal at a brown firm might do worse than one at a green firm among individuals, since the green firm might have individual investors who systematically vote more in favor of environmental firms. An oil company, for example, has individual investors who are systematically more likely to vote with management recommendations in defeating ES proposals. Because individual investors invest ideologically and vote ideologically, they might undermine their votes with their divestment.[21]

[21] Table 6, columns 4 through 6 weight investors by shares. Here, the results are less strong, only showing occasional significance. Because the largest investors are not sorting ideologically into firms, only oil and gas and firearm and military firms have a significantly different share-weighted individual investor base.

7. What Explains Differences Across Investors?

We have established, in the previous sections, that individuals vote quite differently from each other, particularly in the degree to which they follow management. In this section, we explore correlates of those differences. Who are the pro-management voters and who are the anti-management voters?

We estimate equations of the form:

$$\bar{Y}_i = \beta_0 + \beta_1 X_i + \varepsilon_i$$

In which $\bar{Y}_i$ is investor i's voter-level aggregate vote and X_i is a vector of investor i's observable characteristics. As discussed in Section 2, the only personal information we observe about an investor (outside of her investments and votes) is her zip code, X_i consists of information about the investor's portfolio (her log account value) and about her zip code.

How should one interpret coefficients with respect to variables that are at the zip code level rather than the individual level? We include one variable that describes a characteristic of the zip code itself—the population density per square mile—and several that describe characteristics of the residents of the zip code: average log adjusted gross income, the fraction of the two-party vote that went for Donald Trump in the 2016 U.S. presidential election, fraction over 65 years old, fraction with Bachelor's degrees, and fraction with post-Bachelor's degrees. For this latter group of variables, if we assume that shareholder voters are random draws from the zip code, then one could interpret the variables as one would interpret ordinary individual-level variables. For example, if the outcome variable is the percentage voting with management and the coefficient on the zip code's fraction over 65 years old was 5.89 (as in Table 6, column 1), then that would imply that a voter over 65 years old is 5.89 percentage points more likely to vote with management.[22]

Our results are in Table 7. In Column 1, we include as the outcome variable the voter's percentage agreement rate with management on all votes; in Columns 2, 3, and 4, we include her percentage voting in favor of shareholder-sponsored ES proposals, in favor of shareholder-sponsored governance proposals, and on management-sponsored proposals, respectively.

[22] Of course, our assumption is unlikely to be true, and individual investor voters certainly systematically differ from the other residents of their zip code, which could bias our results if there are also systematic differences across zip codes in the extent of differences between voters and non-voters. For example, if support for management among those who are not 65 or older is substantially stronger in zip codes with a greater fraction of 65-or-older residents than in zip codes with a smaller fraction of 65-or-older residents, that would bias our coefficient.

We find that all variables associated with U.S. political leanings appear to be correlated with investor location on the ideological spectrum. A voter is likely to vote in favor of shareholder ES and governance proposals and against management proposals if she lives in a zip code that voted for Hillary Clinton, particularly one that is denser, younger, poorer, and better educated. The coefficients are large. Assuming a random draw from the zip code, an ES vote is 13.3 percentage points more likely for a Clinton voter, 5.0 percentage points more likely for an under-65 individual, and 20.3 percentage points more likely for an individual with a graduate degree.[23]

It is hardly surprising that U.S. liberals are more likely to vote in favor of shareholder-sponsored ES (environmental and social) proposals, but it is more surprising that they are similarly more likely to vote in favor of shareholder-sponsored governance proposals. Omitting all covariates (that is, running a univariate regression of the vote on the Republican presidential vote share), a Clinton voter is 13.9 percentage points more likely to vote in favor of an ES proposal and 12.3 percentage points more likely to vote in favor of a governance proposal.

8. Why Do Individuals Sometimes Vary in How They Vote?

In this section, we turn to a more speculative question: does (limited) within-individual variation in voting—specifically, sensitivity to recent stock performance—reflect sensitivity to proposal quality?

We have shown that individual investor voting is marked by consistency within-investor and across proposals and by variation within-proposal and across investors, consistent with a Downs (1957) investor ideology framework. However, there exists some within-individual variation in voting. In fact, Brav, Cain, and Zytnick (2022) show that individual investor votes are sensitive to recent stock performance, with a 100% increase in yearly abnormal return predicting a 2.5 percentage point increase in management support. One explanation could be that individuals are sensitive to recent stock performance because recent stock performance is informative about the quality of a proposal: it can indicate to an investor whether to reelect a director, approve the executive compensation package, or permit shareholder governance reform. However, there may be other possible mechanisms. For example, individuals may vote with or

[23] The R^2's in Table 6 are low; this is at least partially due to our use of zip code-level rather than individual-level variables—our variables cannot explain any within-zip code variation in voting.

against management's recommendation based on their sentiments towards management, and recent stock returns might affect an individual's sentiments towards management.

In this section, we test the mechanism by which individual votes are sensitive to recent stock performance. If such sensitivity is fully explained by stock performance's signal about proposal quality, then investors should not be sensitive to recent stock performance on proposals for which recent stock performance provides no signal as to the quality of the proposal.

We begin with ES proposals. During this time period, ES proposals pushed for disclosures and policy changes related to environmental and social harms, the merits of which are arguably be unrelated to recent performance. We look at whether individual investors vote for with management on ES proposals based on recent stock performance. We estimate regressions of the form:

$$Y_{ipckt} = \beta_0 + \beta_1 Z_{pct} + \psi_{ic} + [\phi_{it}] + \left[\theta_{i_g}\right] + \varepsilon_{ipcgt} \quad (4)$$

In which Y_{ipckt} is individual i's vote on proposal p, which belongs to company c, topic g, and year t, Z_{pct} is a vector of proposal, company, and time-level variables (including the firm's abnormal stock returns in the year leading up to the record date); and we include various combinations of individual-firm, individual-year, and individual-topic fixed effects.[24] In other words, we compare an individual's vote to how she voted in different years at the same firm; on different firms in the same year; and on how she voted on different proposals of the same sub-type.

Table 8, Panel A contains the results estimating Equation 4. Each column includes different combinations of fixed effects or covariates, though we always include individual-firm fixed effects to capture all firm-individual-level invariance. The results are consistent throughout: individuals are more likely to vote in favor of ES proposals when the firm has been performing poorly.

We view this finding as suggestive that some individual investors assess the merits of proposals—even ones remotely connected to firm performance—based on their view of management, which may increase or decrease with stock performance.

Next, we turn to a proposal type that we believe ought to be even less related to firm performance. Shareholders of a target firm have the right to vote to approve the acquisition

[24] We define topic by ISS's agenda general description field, as in Section 5B.

acquiring their firm. We might expect that such a vote would be based in part on the post-announcement voting premium (the amount the stock price jumps upon the announcement of the merger) or beliefs about the true value of the firm. However, we would not expect that shareholders should vote more in favor of a merger at a firm performing strongly prior to the merger; if anything, it should be just the opposite. Of course, if there were rumors or leaks leading up to the merger announcement, the stock price may rise in advance, so the stock performance immediately before the merger announcement may be correlated with voting results. To ensure we do not include any stock price movement related to a merger, we calculate yearly abnormal returns for each target firm ending two months prior to the merger announcement.

In Table 8, Panel B, we re-estimate Equation 4 using only target firm merger approvals.[25] Again, surprisingly, we find that a stronger stock performance in the year leading up to the merger announcement—which may be many months before the time of the meeting—is significantly correlated with voting in favor of the merger, as compared to other merger proposals in the same individual's portfolio.[26]

These findings are suggestive that, even when individual investors have within-individual variation in their voting choices, such variation may be driven by variation in their view of the firm's current management.

9. Policy Implications

In this section, we describe policy implications of our results.

A. Capturing Individual Investor Preferences

Our results have implications for the practicality of capturing underlying investor preferences about corporate policy, as proposed by Hart and Zingales (2017). The unidimensional nature of individual shareholder voting suggests that it may be relatively easy to ascertain the overall ideological position of one's shareholder base. The shareholder vote on any given topic would be quite revealing of shareholder preferences on *other* topics, making welfare

[25] We omit individual-firm and individual-topic fixed effects, since firms are only acquired once and all the proposals have the same topic.

[26] For target merger approvals, because we cannot include firm fixed effects, we cannot ensure that our results are not driven by differences across firms that are correlated with both recent stock performance and merger approvals. For example, it is possible that acquisitions of firms that have performed strongly in the year prior to the merger are different in nature to acquisitions of firms that have performed weakly.

maximization relatively easy to implement. However, the sweeping nature of shareholder voting suggests a possible limitation of individual voting: to the extent that individual investors vote unidimensionally due to limited information—which is possible, though not the only possible explanation for our results—then corporate managers may be hesitant to draw too much information about individual preferences on a specific policy proposal from voting results on that policy.

Individual investor voting power in recent years begun to evolve. The three largest institutional investors have now instituted programs in which underlying investors have the right to dictate their shares of the fund's votes. Blackrock, 2022; State Street, 2023; Vanguard, 2023. These programs do not give the individuals the ability to direct specific proposal votes; rather, individuals choose through a menu of voting packages. Fisch (2017). These packages for investors in mutual funds resemble Fisch (2017)'s proposal to allow individual investors in equity to issue standing voting instructions on their direct holdings. In either case, the mutual fund holder or direct holder would choose an ideological position (e.g., pro-ESG), an advisor to follow or mimic (e.g., ISS), or some combination.

Our results may shed light on what pass-through voting menus or standing voting instructions may communicate from individual investors. A concern about the use of voting menus or standing voting instructions is they will lead to a loss of the use of firm-specific information in individual investor voting—investors may vote, say, in favor of all environmental proposals without engaging with whether a specific proposal is a good fit for a specific firm. Our results suggest that this may be close to how individual investors already vote; standing voting instructions or pass-through voting may thus increase the number of underlying investors who communicate to firms without a loss of firm-specific information.

B. Impact on Firm Incentives

More hypothetically, we consider the implications of our findings in a world in which individual investor turnout is very high, either due to high participation among direct holders (particularly at the minority of companies with high retail ownership) or high pass-through participation among institutional holders. Our findings suggest that corporate directors would face different incentives.

Two in particular stand out. First, corporate directors seeking strong individual investor voting results might focus more on recent stock performance.[27] We have seen, both here and in Brav, Cain, and Zytnick (2022), that recent stock performance stands out as firm characteristic that can alter individual investor votes. We show here that this is true on all proposal types: corporate management can gain support even for defeating, e.g., a proposal to require disclosure of greenhouse gas emissions by improving its recent stock performance.

Second, they might focus on changing the composition of their retail investors. As we describe in Section 6, more than half of the variation in results on ES proposals is driven more by variation in the composition of a firm's investor voter base. This could produce rather paradoxical incentives. A company hoping to win an environmental vote might choose to advertise a poor environmental record rather than a strong one, so that investors who care strongly about the environment exit the firm.[28]

10. Conclusion

In this paper, we decompose individual investor voting into its key dimensions. We find that a single dimension explains roughly 56% of variation in individual investor voting, and we interpret this dimension as sentiment towards management. We elaborate on this unidimensional voting, showing that a given vote by an individual investor is highly predictive of her votes on other topics and entirely different categories of proposals. We also show that this voting is highly correlated with the individual's political voting. Individual voting is predictable enough that the most important determinant of an ES or governance proposal's success with individual investors is the composition of the firm's shareholders. We show that the composition of the firm's shareholders is determined, at least in some small part, by the ideological charge of the firm's industry. Further, we show that even within-individual variation in voting appears not to be driven by proposal quality: investors look to a company's recent stock returns in deciding whether to vote for ES proposals or acquisitions of their company.

[27] Brav, Cain, and Zytnick (2022) shows that funds, in contrast to individual investors, are largely insensitive to recent stock performance.

[28] Of course, even if individual investors do become a large fraction of the voting share, their impact on vote outcomes might be limited by another factor: a failure to coordinate on votes. As shown in Figures 5 and 6, mutual fund votes tend to vary substantially across proposals. When one fund votes against management recommendations on a proposal, it is probable that other funds do as well. The result is that proposals often garner a substantial opposition among funds. Individual investors, by contrast, spread their opposition evenly across companies. This voting pattern makes it more difficult to gain a large voting bloc against management on any given proposal.

Our results recall a long-standing mystery in political science—why political voting is so consistent on such a wide range of seemingly unrelated issues (e.g., Poole and Rosenthal (1991)). Just as political voters have connected beliefs on everything from abortion rights to tax policy, shareholder voters have connected beliefs on everything from executive compensation plans to greenhouse gas reports. Individuals are ideological, and their ideology manifests in their shareholder votes in ways that produce unanticipated results.

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Figures and Tables

Figure 1. Scree Plot of PCA Analysis

This figure contains a scree plot from Principal Components Analyses (PCAs). We conduct PCAs separately for individual investors (in blue) and mutual funds (in red). Each is limited to proposals with at least 1,000 votes cast by individuals and 75 votes cast by funds, which received between 5% and 95% of the vote in favor from each group; the individual PCA is limited to a sample of 4,000 individuals with at least 25 votes cast across at least three separate ballots. The scree plot shows, for each of the 10 dimensions produced by the PCA (in order from the primary dimension to the 10th dimension), how much of the variation in voting is explained by that dimension.

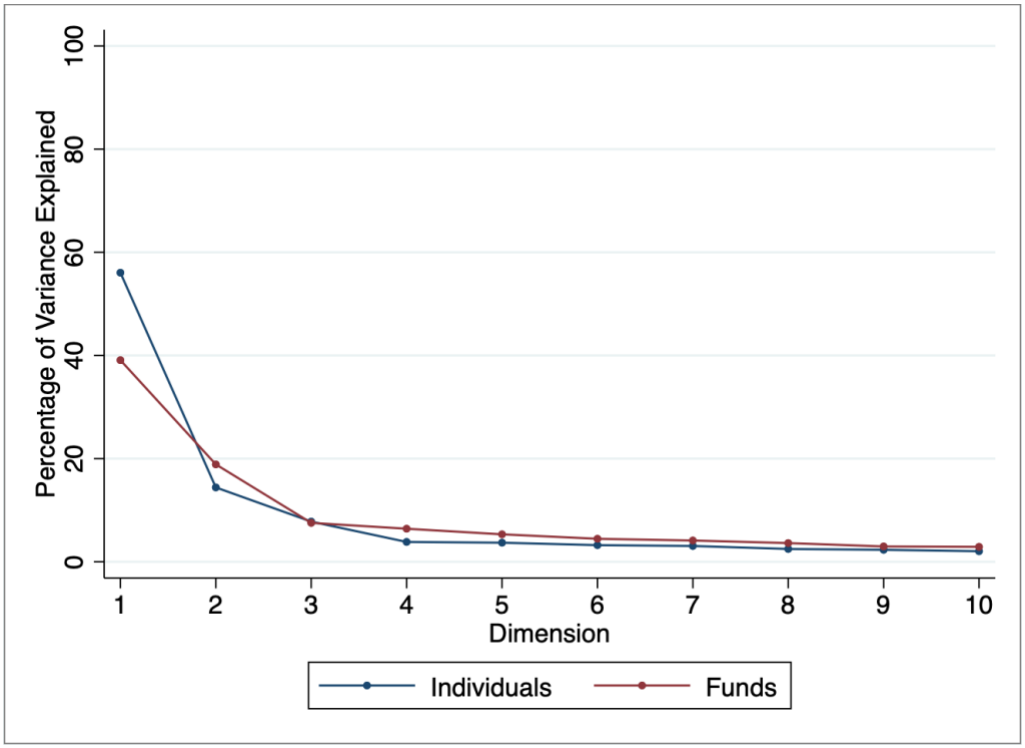
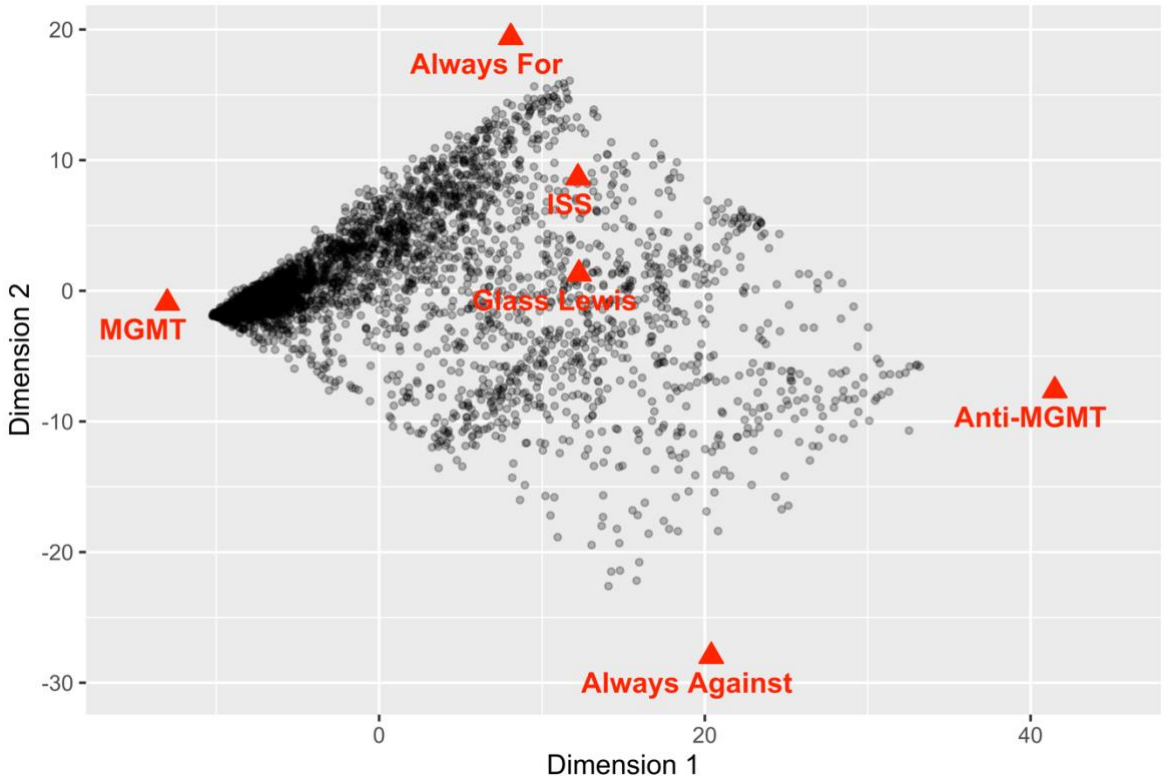


Figure 2. Representation of Shareholder Voting Dimensional Spaces

This figure contains results from a pair of Principal Components Analyses (PCAs). The panels contain scatterplots of voter scores in the two primary dimensions produced by each PCA, where each dot contains an investor. Panel A conducts a PCA on individual investor votes; Panel B conducts a PCA conducted on mutual fund votes. Each is limited to proposals with at least 1,000 votes cast by individuals and 75 votes cast by funds, which received between 5% and 95% of the vote in favor from each group; Panel A is limited to a sample of 4,000 individuals drawn from those with at least 25 votes cast across at least three separate ballots.

Panel A. Individual Voting Dimensional Space



Panel B. Fund Voting Dimensional Space

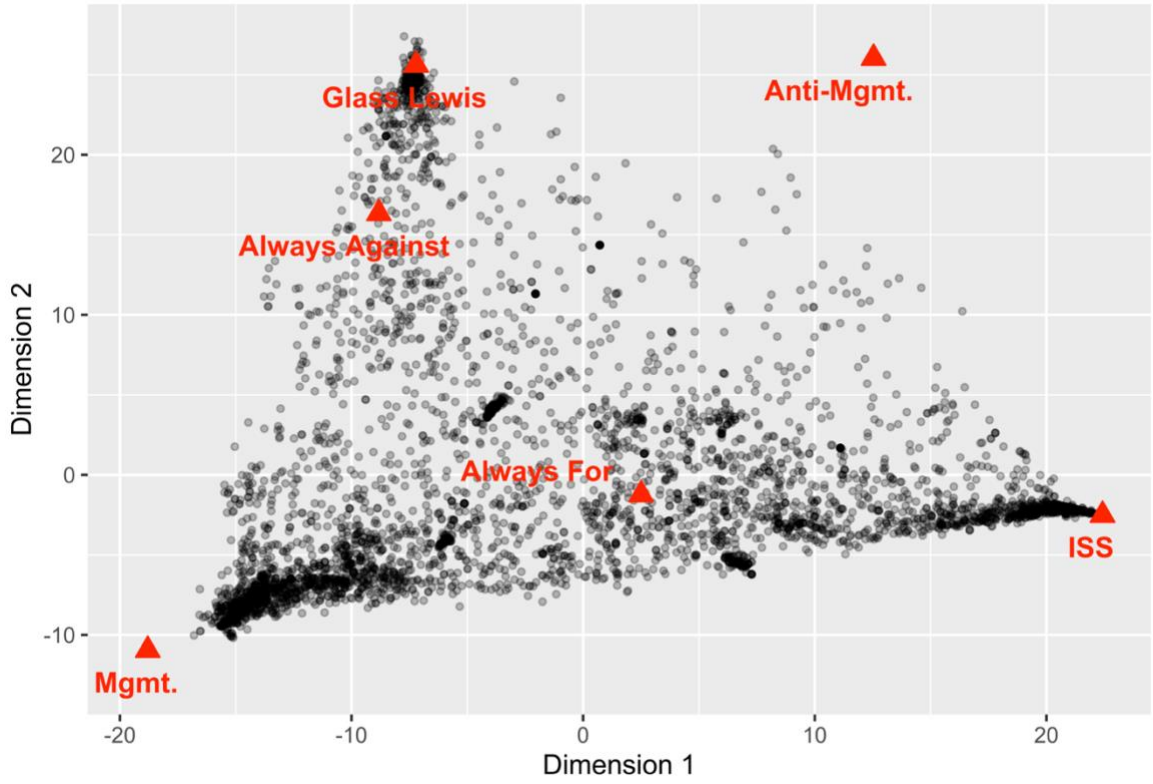


Figure 3. Representation of Proposals in Two-Dimensional Space

This figure contains results on proposals from a Principal Components Analysis (PCA) on individual investor votes. The figure is a scatterplot of proposal scores in the two primary dimensions produced by the PCA, where each dot represents a proposal. We plot shareholder-sponsored proposals in blue and management-sponsored proposals in red. The PCA is limited to proposals with at least 1,000 votes cast by individuals and 75 votes cast by funds, which received between 5% and 95% of the vote in favor from each group; it is further limited to a sample of 4,000 individuals with at least 25 votes cast across at least three separate ballots.

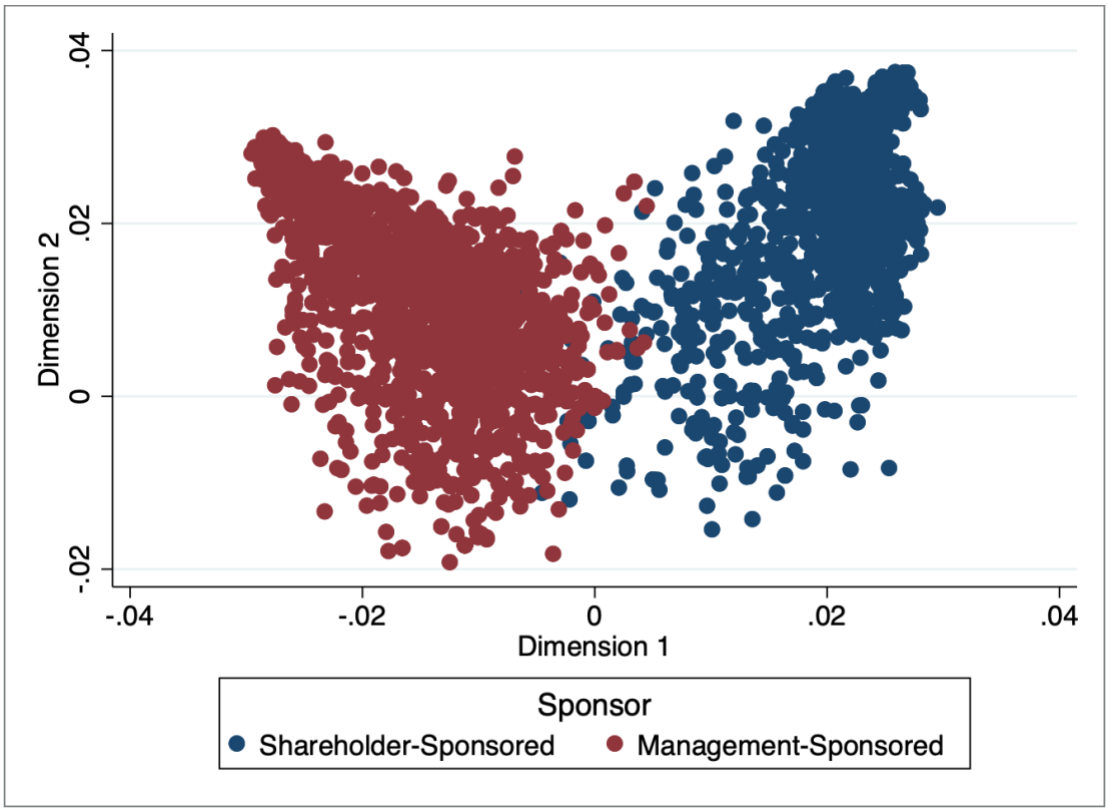
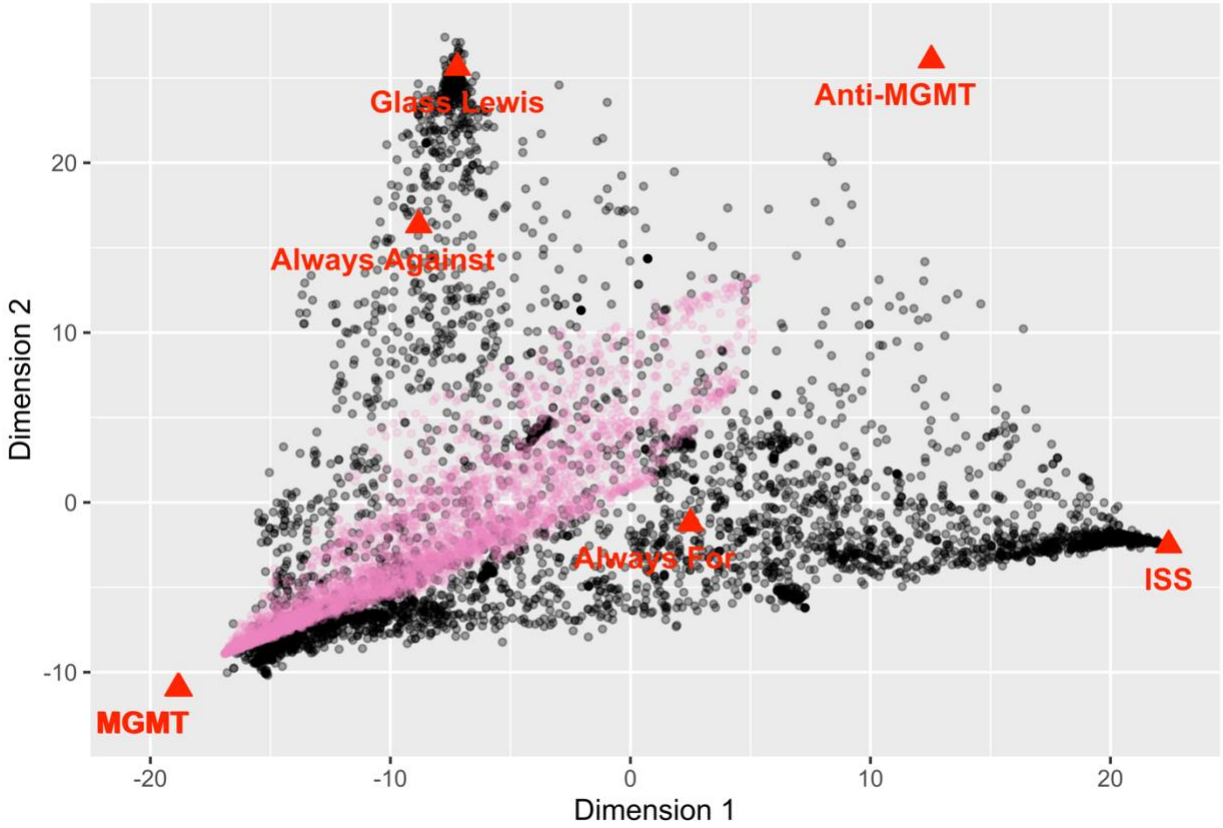


Figure 4. Overlays Onto Shareholder Voting Dimensional Spaces

This figure contains results from a pair of Principal Components Analyses (PCAs). The panels contain scatterplots of voter scores in the two primary dimensions produced by each PCA. Panel A conducts individual votes (in pink) overlaid onto the dimensional space created by fund votes (in black); Panel B contains fund votes (in pink) overlaid onto the dimensional space created by individual investors (in black). Each is limited to proposals with at least 1,000 votes cast by individuals and 75 votes cast by funds, which received between 5% and 95% of the vote in favor from each group; Panel A is limited to individuals with at least 25 votes cast across at least three separate ballots.

Panel A. Individuals Overlaid onto Fund Dimensional Space



Panel B. Funds Overlaid onto Individual Investor Dimensional Space

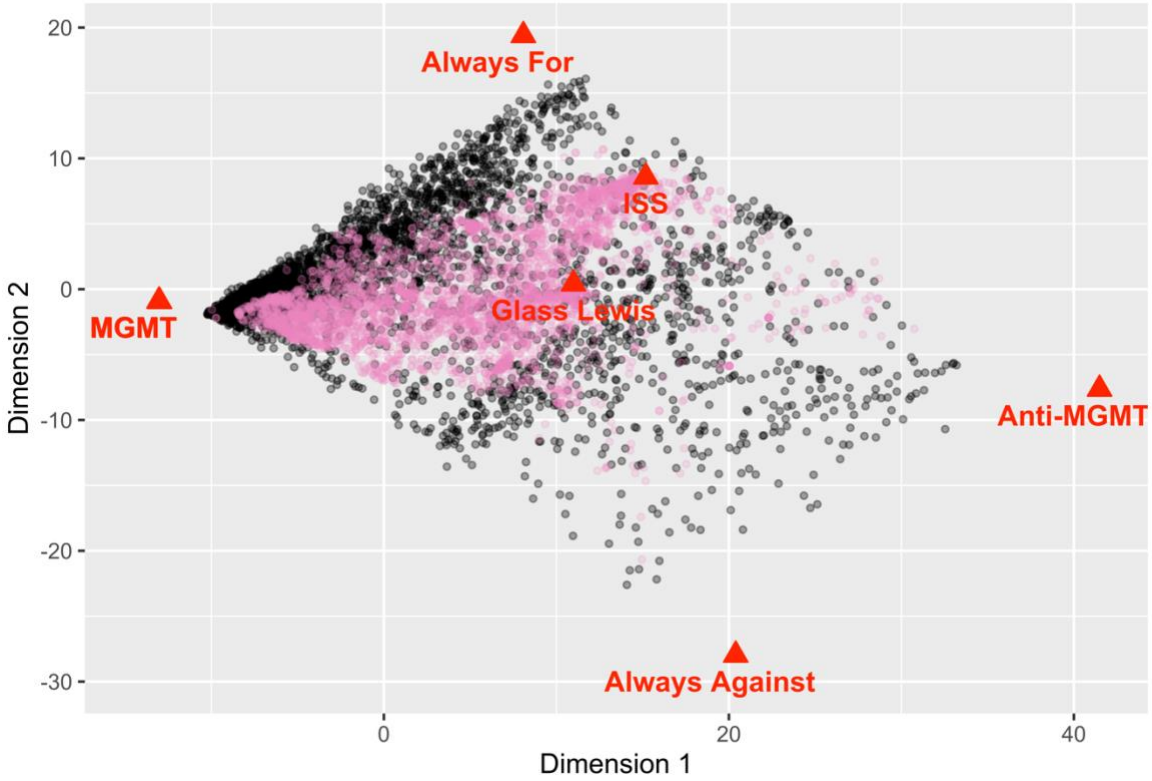
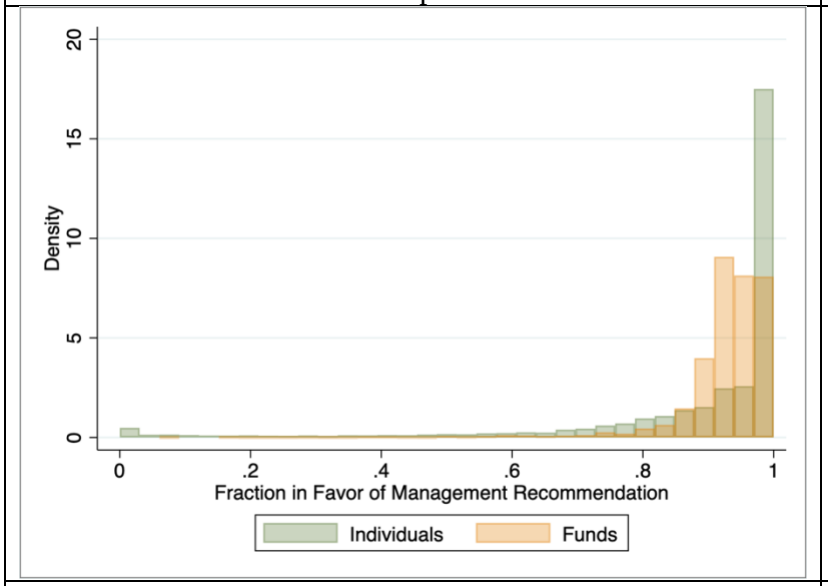


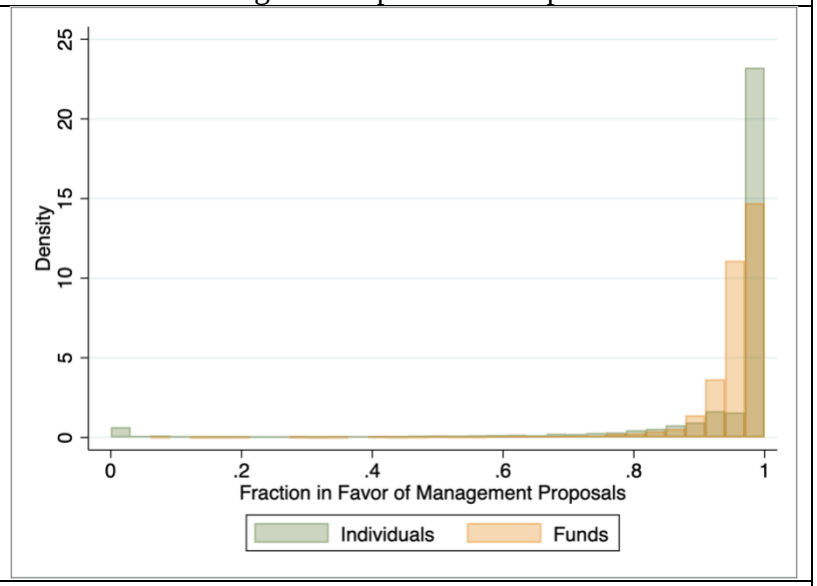
Figure 5. Voter Consistency

In this figure, we plot histograms of the voting choices of individual investors and funds. For each voter (individual or fund), we aggregate their votes across proposals on an equal-weighted basis. In the upper left quadrant, we include both management-sponsored and shareholder-sponsored proposals and plot the agreement with management. In the other three quadrants, we limit to a specific proposal category and plot votes in favor. For each of individuals and funds, we limit to voters with ten or more votes in the given category.

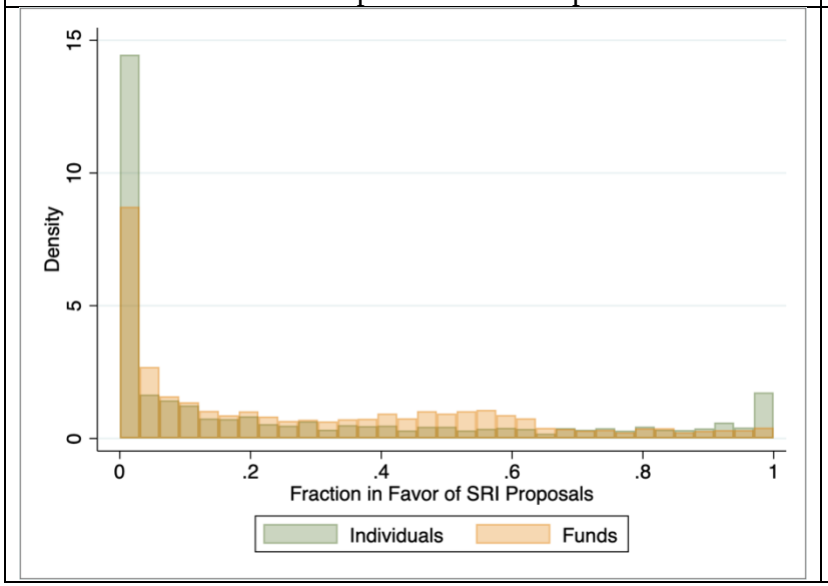
All Proposals



Management-Sponsored Proposals



Shareholder-Sponsored ES Proposals



Shareholder-Sponsored Governance Proposals

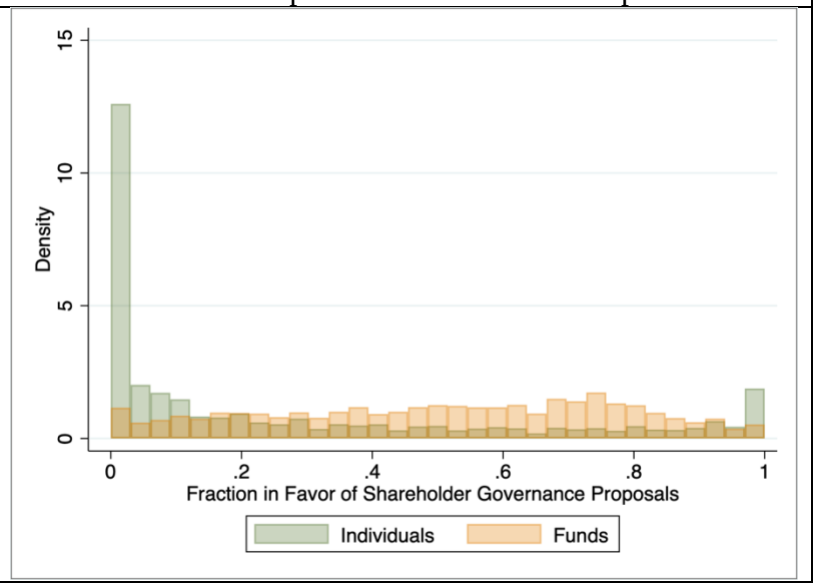
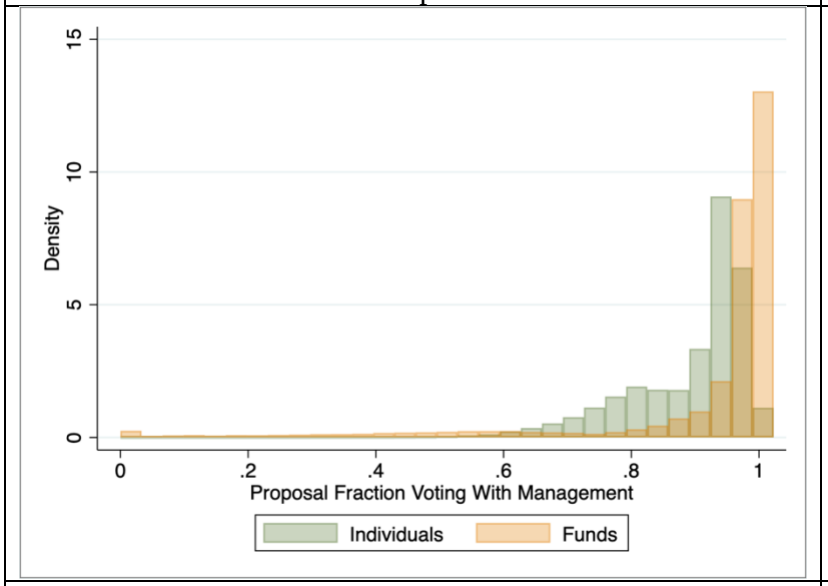


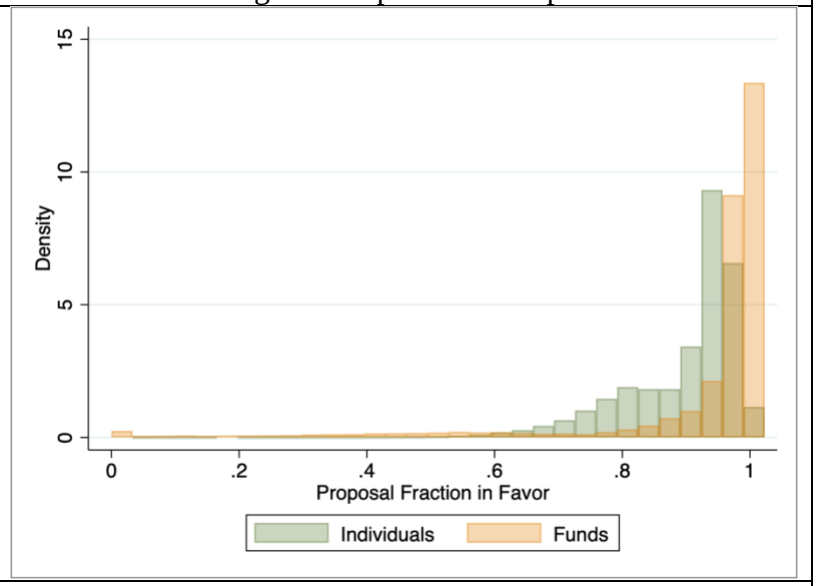
Figure 6. Consistency of Proposal Outcomes

In this figure, we plot histograms of the voting outcomes of proposals among individual investors and mutual funds. For each proposal, we separately aggregate the votes of individuals and funds on an equal-weighted basis. In the upper left quadrant, we include both management-sponsored and shareholder-sponsored proposals and plot the agreement with management. In the other three quadrants, we limit to a specific proposal category and plot votes in favor. For each of individuals and funds, we limit to proposals with ten or more votes.

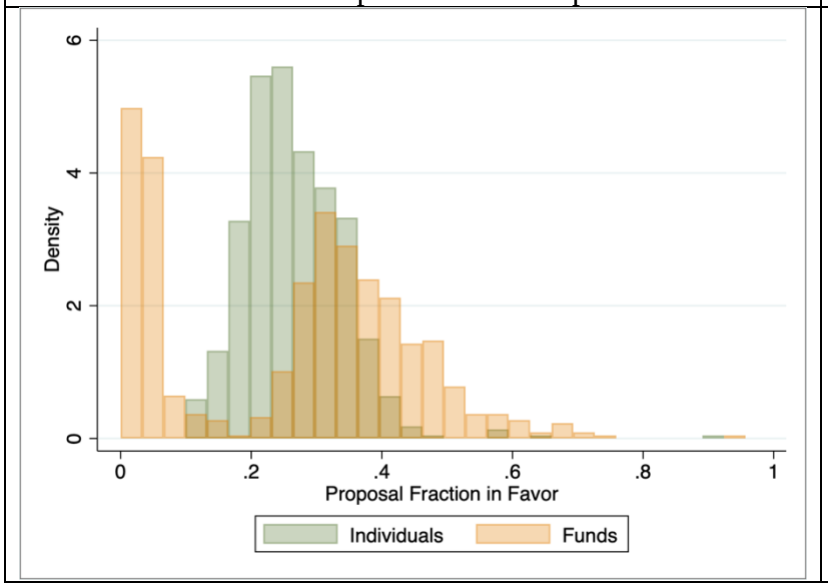
All Proposals



Management-Sponsored Proposals



Shareholder-Sponsored ES Proposals



Shareholder-Sponsored Governance Proposals

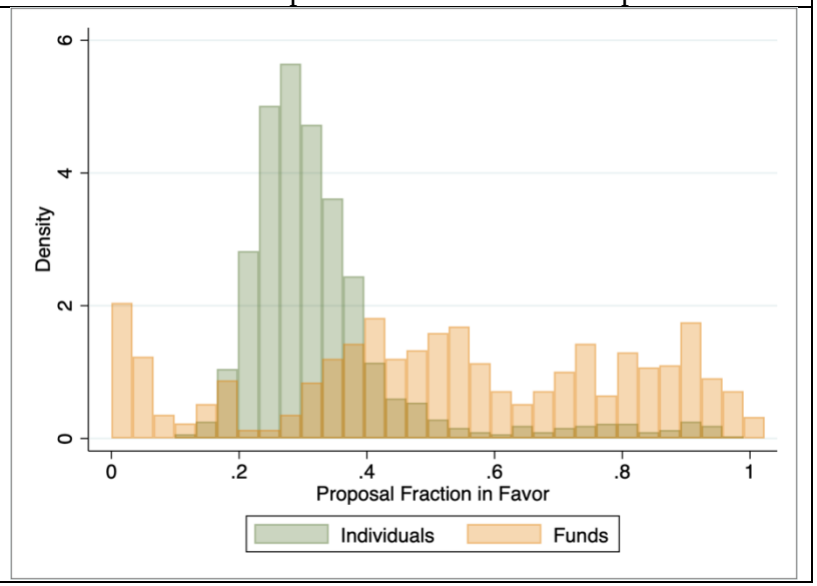
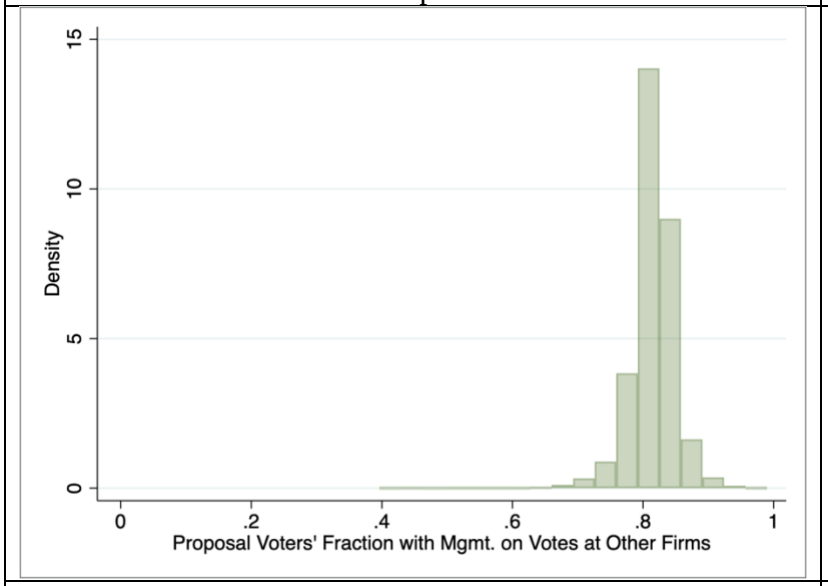


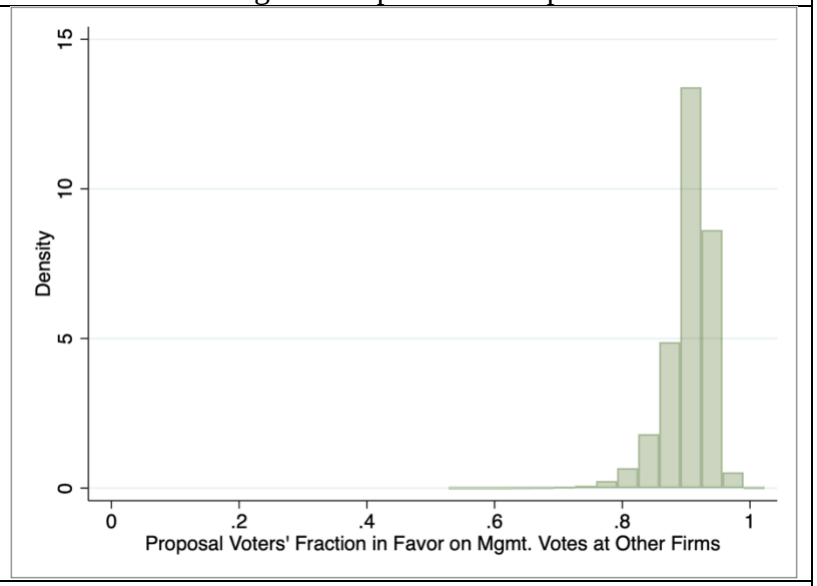
Figure 7. Variation Across Proposals in Ideology of Voting Base

In this figure, we plot proposal-level histograms of the leave-one-out ideology of its voters. For each voter on each proposal, we average her votes at *other* firms on proposals in the same category to calculate her leave-one-out ideology (where "leave-one-out" refers to the fact that we exclude the company in question in calculating ideologies at a company). Then, for each proposal, we average the leave-one-out ideologies of each voter. We limit to proposals with 1,000 such voters. In the upper left quadrant, we include both management-sponsored and shareholder-sponsored proposals and plot the leave-one-out agreement with management. In the other three quadrants, we limit to a specific proposal category and plot the leave-one-out votes in favor.

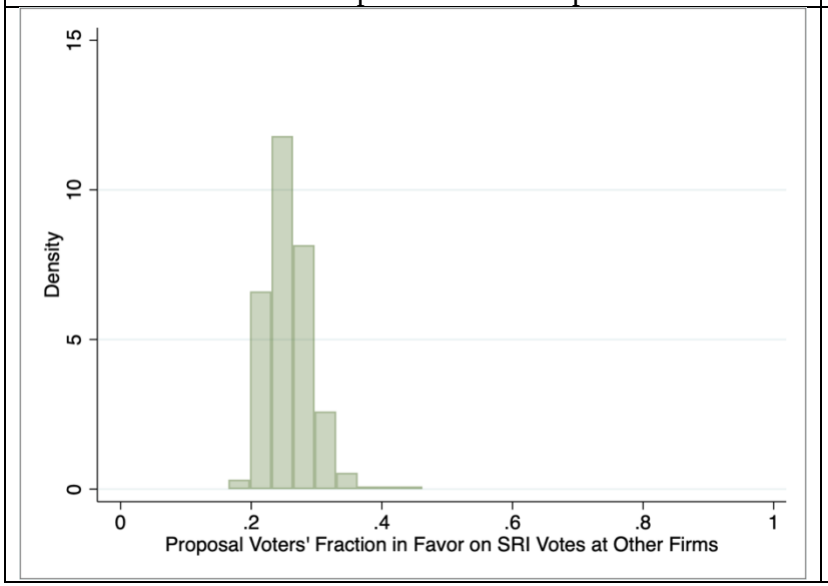
All Proposals



Management-Sponsored Proposals



Shareholder-Sponsored ES Proposals



Shareholder-Sponsored Governance Proposals

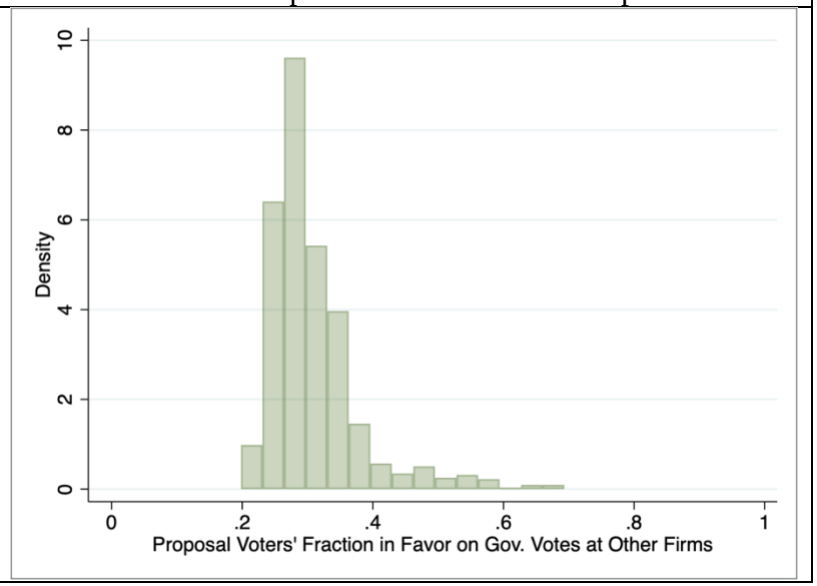


Table 1. Summary Statistics

This table presents summary statistics on variables used in the paper. The first section is at the individual level. Equity Portfolio Value is calculated as the individual's number of shares in a firm multiplied by share price, summed across firms in her portfolio, and averaged across her years in the data. 2016 U.S. presidential election results at the county level come from CQ Voting and Elections; zip code percentages with Bachelor's or post-Bachelor's degrees come from the Bureau of Labor Statistics; zip code adjusted gross income comes from the IRS website; and other zip-code demographic characteristics from the U.S. Census Bureau. The second section is at the firm level. *Tobacco* is defined as SIC Codes 2100-2199; *Military/Firearms Industries* are defined as SIC Codes 3760-3769, 3795, and 3480-3489; *Oil and Gas Industries* are defined as SIC Codes 1300-1399 and 2911; *Renewable Energy Firms* are those that appear in NASDAQ's Clean Edge Green Energy index or Wilderhill's New Energy Global Innovation Index.

	Mean	Standard Dev.	P25	P50	P75	Count
Individual-Level Variables						
Voting with Management (%)	87.50	23.84	86.99	100.00	100.00	6,508,772
Voting in Favor of ES (%)	29.82	39.68	0.00	0.00	62.50	3,651,669
Voting in Favor of Governance (%)	31.30	40.08	0.00	0.00	66.67	3,740,019
Voting in Favor of Management Proposals (%)	89.98	23.35	94.74	100.00	100.00	6,484,368
Equity Portfolio Value (Average Across Years)	937,643.41	77,697,279.53	20,687.55	95,677.01	365,287.69	6,830,234
Zip Code Adjusted Gross Income	102,024.93	90,220.96	55,909.92	75,223.79	109,311.59	6,631,543
County 2016 Republican Vote Share	0.47	0.15	0.37	0.46	0.56	6,725,992
Zip Code Fraction Over 65	0.15	0.08	0.11	0.14	0.17	6,637,238
Zip Code Density (Number of People Per Sq. Mile Divided By 1000)	1.50	4.35	0.16	0.58	1.31	6,637,238
Zip Code Fraction with Bachelor's Degree	0.43	0.19	0.28	0.41	0.57	6,634,826
Zip Code Fraction with Post-Bachelor's Degree	0.18	0.11	0.09	0.16	0.24	6,634,826
Firm-Level Variables						
Tobacco Industry (%)	4.37	20.44				53,495
Military/Firearms Industries (%)	0.26	5.11				52,326
Oil and Gas Industry (%)	0.24	4.94				52,326
Renewable Energy Firm (%)	0.96	9.77				61,865
Lagged Log(ME)	7.72	2.25	6.29	7.88	9.32	51,300
Lagged ROA	0.04	0.81	0.03	0.09	0.15	49,801
Lagged Tobin's Q	2.09	4.42	1.06	1.45	2.20	51,164

Table 2. Individual and Fund Variation in Voting

In this table, we estimate the following specification:

$$Y_{ip} = \delta_0 + \psi_i + \phi_p + \varepsilon_{ip}$$

i indexes investors, p indexes proposals, Y_{ip} is i's vote on proposal p (equaling 100 for agreement with management), and ψ_i and ϕ_p are investor and proposal fixed effects, respectively. Columns 1, 3, and 5 are for individuals; Columns 2, 4, and 6 are for funds. The sample of individuals consists of a randomly drawn subset of 100,000 individuals who vote at least once. For funds, the sample consists of all fund votes. Below columns 5 and 6, we include the variance of voter fixed effects, the variance of proposal fixed effects, and the ratio of the former to the latter. Standard errors clustered at the firm meeting and voter level are in parentheses. *, **, and *** represent significance at the 0.05, 0.01, and 0.001 levels, respectively.

	(1) Individuals	(2) Funds	(3) Individuals	(4) Funds	(5) Individuals	(6) Funds
Constant	90.09***	92.82***	90.09***	92.82***	90.10***	92.82***
	(0.12)	(0.13)	(0.00)	(0.00)	(0.00)	(0.00)
R^2	0.38	0.07	0.09	0.41	0.45	0.48
N	8,205,068	16,720,084	8,207,205	16,719,400	8,201,584	16,719,278
Number of Meetings	13,160	12,654	11,862	12,372	11,716	12,370
Voter Fixed Effects	Yes	No	Yes	Yes	Yes	Yes
Proposal Fixed Effects	No	Yes	Yes	No	Yes	Yes
Variance of Voter FE					327.51	44.03
Variance of Proposal FE					70.47	276.82
Ratio of Variances					4.65	0.16

Table 3. Predictability of ES Votes Last Year on ES Votes

In this table, we estimate how a randomly selected ES vote from last year predicts an ES vote this year. We estimate the following specification, following Matvos and Ostrovsky (2010):

$$Y_{ipct} = \beta_0 + \beta_1 Y_{i(-c)(t-1)} + \phi_p + \psi_t + \varepsilon_{ipct}$$

In which i indexes investors, c indexes firms (and $-c$ denotes firms other than c), and t indexes time. Y_{ipct} is the investor's vote on a particular ES proposal (multiplied by 100 for ease of interpretation). The right-hand side contains the same investor's (randomly selected) vote on an ES proposal at a different firm in the previous year, along with proposal and year fixed effects. In columns 1 through 3, we draw from all ES proposals; in columns 4 through 6 we draw from proposals with the same topic, defined as those with the same *agendageneraldesc* field in ISS Voting Analytics; in columns 7 through 9, we draw from proposals with different topics (but still ES proposals). For individuals, we draw samples of 500,000 random accounts who cast at least one ES vote in the observation year. Standard errors clustered at the firm meeting level and voter level are in parentheses. *, **, and *** represent significance at the 0.05, 0.01, and 0.001 levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Proposals:		**All ES Proposals**		**ES Proposals with Same Topic**			**ES Proposals with Different Topic**		
Investors:	Individuals	Funds	Both	Individuals	Funds	Both	Individuals	Funds	Both
Last year's ES vote	47.58***	36.22***	47.58***	60.39***	58.49***	60.39***	46.97***	33.99***	46.96***
	(0.74)	(1.45)	(0.74)	(0.53)	(1.60)	(0.53)	(0.68)	(1.45)	(0.68)
Fund			2.25*			2.30*			2.61**
			(0.95)			(0.90)			(0.94)
Last year's ES vote			-10.36***			-1.15			-12.41***
× Fund			(1.47)			(1.58)			(1.53)
Constant	15.16***	19.42***	15.19***	12.48***	15.64***	12.49***	15.39***	19.81***	15.41***
	(0.20)	(0.46)	(0.20)	(0.16)	(0.54)	(0.16)	(0.18)	(0.45)	(0.18)
Proposal FE									
R^2	0.25	0.34	0.25	0.37	0.45	0.37	0.24	0.32	0.24
N	7,261,987	264,932	7,526,919	2,842,409	174,292	3,016,701	7,216,913	264,281	7,481,194
Number of Meetings	295	294	295	265	264	265	295	294	295

Table 4. Predictability of ES Votes Last Year on Governance and Management Votes

In this table, we estimate how a randomly selected ES vote from last year predicts a governance or management vote this year. We estimate the following specification, following Matvos and Ostrovsky (2010):

$$Y_{ipct} = \beta_0 + \beta_1 Y_{i(-c)(t-1)} + \phi_p + \psi_t + \varepsilon_{ipct}$$

In which i indexes investors, c indexes firms (and $-c$ denotes firms other than c), and t indexes time. Y_{ipct} is the investor's vote on a particular governance (columns 1 through 3) or management (columns 4 through 6) proposal (multiplied by 100 for ease of interpretation). The right-hand side contains the same investor's (randomly selected) vote on an ES proposal at a different firm in the previous year, along with proposal and year fixed effects. For individuals, we draw samples of 500,000 random accounts who cast at least one ES vote in the observation year. Standard errors clustered at the firm meeting level and voter level are in parentheses. *, **, and *** represent significance at the 0.05, 0.01, and 0.001 levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Proposals:		**Gov. Votes**			**Mgmt. Votes**	
Investors:	Individuals	Funds	Both	Individuals	Funds	Both
Last year's ES vote	43.57***	23.51***	43.57***	-10.64***	-1.56***	-10.65***
	(0.45)	(1.04)	(0.45)	(0.21)	(0.28)	(0.21)
Fund			21.66***			0.77*
			(1.67)			(0.33)
Last year's ES vote			-18.69***			9.22***
× Fund			(1.19)			(0.37)
Constant	17.46***	43.95***	17.52***	94.65***	94.44***	94.34***
	(0.12)	(0.44)	(0.12)	(0.06)	(0.14)	(0.10)
Proposal FE	0.20	0.38	0.20	0.11	0.39	0.15
R^2	5,686,291	267,728	5,954,019	13,444,429	10,014,835	23,460,489
N	453	446	453	8,061	4,135	8,705
Number of Meetings	43.57***	23.51***	43.57***	-10.64***	-1.56***	-10.65***

Table 5. Variation in Proposal Outcomes Explained by Variation in Individuals

In this table, we evaluate the extent to which variation in proposal outcomes across individual investors can be explained by the proposal's aggregate individual investor vote on *other* firms. We estimate:

$$\bar{Y}_{pck} = \kappa_0 + \kappa_1 Y_{pck}^{-1} + \varepsilon_{ipc}$$

In which $\bar{Y}_{pck}$ is the average individual investor vote on proposal p for company c in category k—as plotted in Figure 6—and Y_{pck}^{-1} is proposal p's average of its individual investors' votes on other firms in category k (excluding those investors who have no votes in the category at other firms). To produce the right-hand-side variable, for each individual-firm combination, we aggregated the individuals votes across all proposals, then subtracted the individual's votes at the firm in question to produce the individual's leave-one-out voting total. Then, for each proposal, we aggregated the leave-one-out-voting totals of all individuals at the firm. The outcome variable is the proposal-level aggregate individual investor vote (as a percentage, i.e., multiplied by 100). Columns 1 and 2 are limited to shareholder-sponsored ES proposals; 3 and 4 are shareholder-sponsored governance proposals; and columns 5 and 6 are management-sponsored proposals. Odd-numbered columns limit to proposals with 10 investors who cast votes in other firms in the given category; even-numbered columns limit to proposals with 1,000 such investors. Standard errors clustered at the firm meeting level are in parentheses. *, **, and *** represent significance at the 0.05, 0.01, and 0.001 levels, respectively.

	(1) ES	(2) ES	(3) Gov.	(4) Gov.	(5) Mgmt.	(6) Mgmt.
Aggregate Individual Investor ES Vote on Other Firms	174.15***	177.09***				
	(5.68)	(6.63)				
Aggregate Individual Investor Gov. Vote on Other Firms			166.70***	192.46***		
			(5.63)	(8.28)		
Aggregate Individual Investor Mgmt. Vote on Other Firms					159.25***	203.01***
					(1.45)	(2.54)
Constant	-18.30***	-18.98***	-18.06***	-25.15***	-54.38***	-94.83***
	(1.40)	(1.63)	(1.59)	(2.25)	(1.33)	(2.34)
R^2	0.63	0.60	0.69	0.64	0.38	0.36
N	665	635	955	786	59,553	28,184
Number of Meetings	433	404	736	585	14,195	4,069
Minimum Number of Investors	10	100	10	100	10	100

Table 6. Proposal-Level Individual Ideology by Controversial Industry

In this table, we evaluate the extent to which a proposal's aggregate individual investor vote on *other* firms is correlated with firm characteristics, including whether the firm is in a controversial industry. We estimate:

$$Y_{pck}^{-1} = \rho_0 + \rho_1 Z_{pc} + \varepsilon_{pck}$$

To produce the left-hand-side variable, for each individual-firm combination, we aggregate the individuals votes across all proposals, then subtracted the individual's votes at the firm in question to produce the individual's leave-one-out voting total. Then, for each proposal, we aggregated the leave-one-out-voting totals of all individuals at the firm. In columns 1, 2, and 3, we use the leave-one-out vote on ES proposals, governance proposals, and management proposals, respectively. We limit to proposals with at least 1,000 individual investor votes in the category. On the right-hand side, we include dummy variables for firms in natural resources, military or firearms, tobacco, and other vices (alcohol and gaming), as defined in Hong and Kostovetsky (2012). Standard errors clustered at the firm level are in parentheses. *, **, and *** represent significance at the 0.05, 0.01, and 0.001 levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Share-Weighted			Equal-Weighted		
	ES	Gov.	Mgmt..	ES	Gov.	Mgmt..
Natural Resources Firm	-1.43***	-0.64*	-0.69***	-2.73**	-0.06	-0.05
	(0.24)	(0.28)	(0.16)	(0.91)	(1.38)	(0.41)
Tobacco Firm	-3.82***	-1.96***	-0.27	-1.26	0.92	-1.17*
	(0.54)	(0.48)	(0.21)	(1.15)	(1.59)	(0.49)
Firearm / Military Firm	-1.37*	-0.87	-0.03	0.99*	2.37**	-0.74
	(0.66)	(0.82)	(0.36)	(0.42)	(0.85)	(0.40)
Renewal Energy Firm	4.27**	3.41**	-0.54	1.79	1.12	0.11
	(1.43)	(1.11)	(0.37)	(2.84)	(2.65)	(0.67)
Log Market Cap (Year Before Record Date)	-0.73***	-1.18***	0.58***	-1.65***	-2.57***	0.66***
	(0.06)	(0.07)	(0.03)	(0.16)	(0.21)	(0.06)
Return on Assets (Year Before Record Date)	-3.54***	-2.98**	2.37***	-4.07*	-4.50*	2.77***
	(0.68)	(0.92)	(0.41)	(1.90)	(2.22)	(0.60)
Tobin's Q (Year Before Record Date)	0.30***	0.22**	0.01	0.52***	0.28	-0.06
	(0.06)	(0.07)	(0.03)	(0.15)	(0.19)	(0.05)
Constant	33.18***	40.49***	86.08***	32.53***	47.08***	87.97***
	(0.56)	(0.66)	(0.31)	(1.46)	(1.86)	(0.58)
R^2	0.23	0.31	0.35	0.13	0.15	0.13
N	22,131	22,393	23,465	22,131	22,393	23,465
Number of Meetings	1,097	1,120	1,236	1,097	1,120	1,236

Table 7. Correlates of Individual Variation

In this table, we present regression results estimating individual-level voting on individual-level characteristics. The data sample consists of all individual investors who cast at least one vote and for whom we have data on all covariates. In column 1, the outcome variable is the individual's number of votes cast in line with management recommendations divided by her total number of votes cast. In columns 2, 3, and 4, the outcome variable is the individual's number of votes in favor of ES, governance, and management proposals, respectively, divided by the number of times the individual cast votes on ES, governance, and management proposals. Robust standard errors are in parentheses. *, **, and *** represent significance at the 0.05, 0.01, and 0.001 levels, respectively.

	(1) All (Votes with Management)	(2) ES	(3) Gov.	(4) Mgmt.
Log Equity Portfolio Value	0.85***	-2.57***	-2.31***	0.79***
	(0.00)	(0.01)	(0.01)	(0.00)
Log Zip Code Adjusted Gross Income	1.07***	-5.46***	-3.43***	0.41***
	(0.03)	(0.07)	(0.07)	(0.03)
County 2016 Republican Vote Share	3.44***	-13.20***	-10.09***	2.21***
	(0.08)	(0.17)	(0.17)	(0.08)
Zip Code Fraction Over 65	6.24***	-6.11***	-8.23***	6.02***
	(0.12)	(0.27)	(0.27)	(0.12)
Zip Code Density (Number of People Per Sq. Mile Divided By 1000)	-0.05***	0.14***	0.12***	-0.03***
	(0.00)	(0.01)	(0.01)	(0.00)
Zip Code Fraction with Bachelor's Degree	-3.29***	4.11***	5.31***	-2.80***
	(0.18)	(0.39)	(0.39)	(0.18)
Zip Code Fraction with Post-Bachelor's Degree	-1.96***	17.77***	10.44***	0.35
	(0.29)	(0.64)	(0.63)	(0.29)
Constant	64.89***	124.32***	99.25***	75.61***
	(0.33)	(0.72)	(0.73)	(0.32)
R^2	0.01	0.02	0.02	0.01
N	6,187,711	3,554,931	3,637,731	6,163,951

Table 8. Within-Individual Variation in Voting

In this table, we evaluate the relationship between yearly abnormal returns and individual investor votes in favor. In panel A, we start by limiting to the 37,000,000 votes on shareholder ES proposals in our data. For firm meetings with more than 50,000 votes, we randomly draw 50,000 votes. Observations are weighted by the inverse of the sampling probability. In Panel A, yearly abnormal returns are calculated for the month ending before the month of the record date. In Panel B, yearly abnormal returns are calculated for the month ending two months before the merger announcement date. In Panel A, "Agenda Item" refers to ISS's *agendageneraldesc* field. Standard errors clustered at the firm meeting level and voter level are in parentheses. *, **, and *** represent significance at the 0.05, 0.01, and 0.001 levels, respectively.

Panel A. ES Proposals

	(1)	(2)	(3)	(4)	(5)
Yearly Abnormal Returns in Year Before Record Date	-2.53***	-2.91***	-2.72***	-2.19***	-2.15***
	(0.63)	(0.69)	(0.49)	(0.52)	(0.41)
Log Market Cap (Year Before Record Date)	0.24	0.25	0.07		0.36
	(0.76)	(0.70)	(0.47)		(0.46)
Return on Assets (Year Before Record Date)	-1.73	-2.53	0.08		-1.58
	(1.35)	(1.58)	(1.26)		(0.97)
Tobin's Q (Year Before Record Date)	-0.68*	-0.97***	0.21		-0.17
	(0.29)	(0.25)	(0.21)		(0.20)
Constant	18.59	20.04	20.86	24.01***	13.76
	(18.87)	(17.41)	(11.86)	(0.06)	(11.33)
Year FE	No	Yes	No	No	No
Agenda Item FE	No	Yes	Yes	Yes	No
Voter-Firm FE	Yes	Yes	Yes	Yes	Yes
Voter-Year FE	Yes	No	Yes	No	Yes
Voter-Agenda Item FE	No	No	No	Yes	Yes
R^2	0.88	0.86	0.88	0.86	0.94
N	5,005,600	2,481,505	5,005,600	2,481,608	1,674,820
Number of Meetings	391	389	391	393	389

Panel B. Target Firm Merger Proposals

	(1)	(2)	(3)	(4)	(5)
Yearly Abnormal Returns in Year Ending Two Months Before the Month of Merger Announcement	1.62***	1.64***	1.97***	2.05***	1.56**
	(0.45)	(0.45)	(0.46)	(0.49)	(0.48)
Log Market Cap (Year Before Record Date)		-0.02	-0.05	-0.10	-0.14*
		(0.05)	(0.05)	(0.06)	(0.06)
One-Day Merger Premium			4.20***	4.07***	3.93***
			(0.84)	(0.81)	(0.80)
Return on Assets (Year Before Record Date)				2.61	3.44*
				(1.41)	(1.43)
Tobin's Q (Year Before Record Date)				-0.08	-0.07
				(0.11)	(0.12)
Constant	90.98***	91.47***	90.89***	91.94***	92.95***
	(0.13)	(0.97)	(0.95)	(1.24)	(1.19)
Year FE	Yes	Yes	Yes	Yes	No
Voter FE	Yes	Yes	Yes	Yes	No
Voter-Year FE	No	No	No	No	Yes
R^2	0.70	0.70	0.70	0.70	0.77
N	219,312	218,959	215,890	202,814	115,312
Number of Meetings	308	306	300	276	276

Online Appendix

"INDIVIDUAL INVESTOR IDEOLOGY"

Robert J. Jackson, Jr. and Jonathon Zytnick*

This Online Appendix provides supplemental and robustness tests to accompany the results in the paper.

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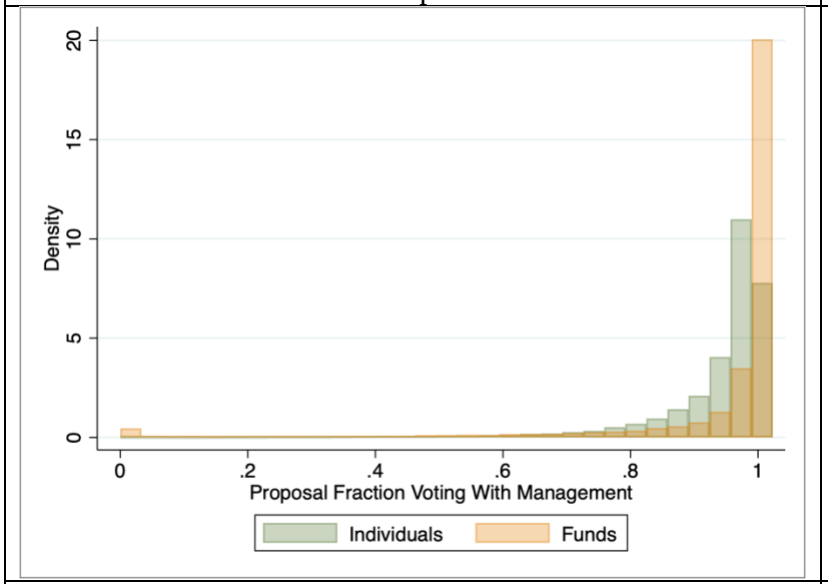
Section A. Appendix Figures

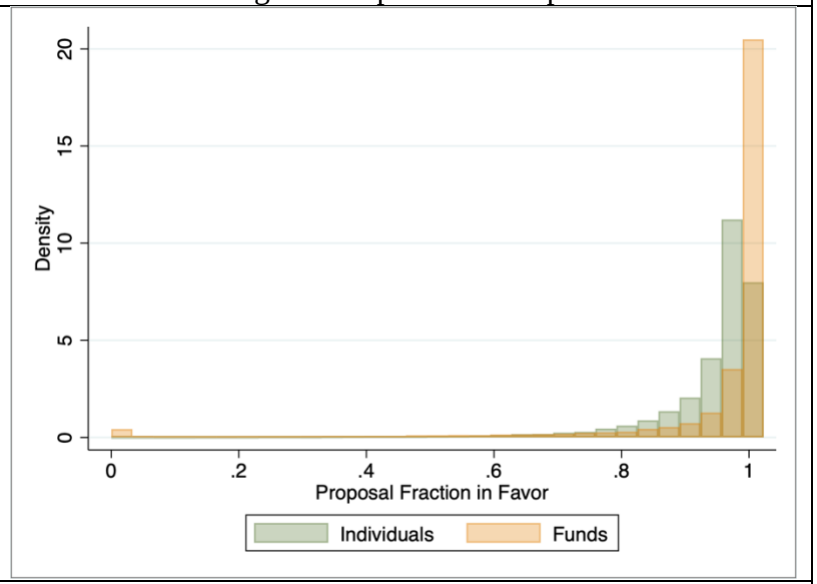
Figure A.1. Consistency of Proposal Outcomes—Share-Weighted

In this figure, we plot histograms of the voting outcomes of proposals among individual investors and mutual funds. For each proposal, we separately aggregate the votes of individuals and funds on a share-weighted basis. In the upper left quadrant, we include both management-sponsored and shareholder-sponsored proposals and plot the agreement with management. In the other three quadrants, we limit to a specific proposal category and plot votes in favor. For each of individuals and funds, we limit to proposals with ten or more votes.

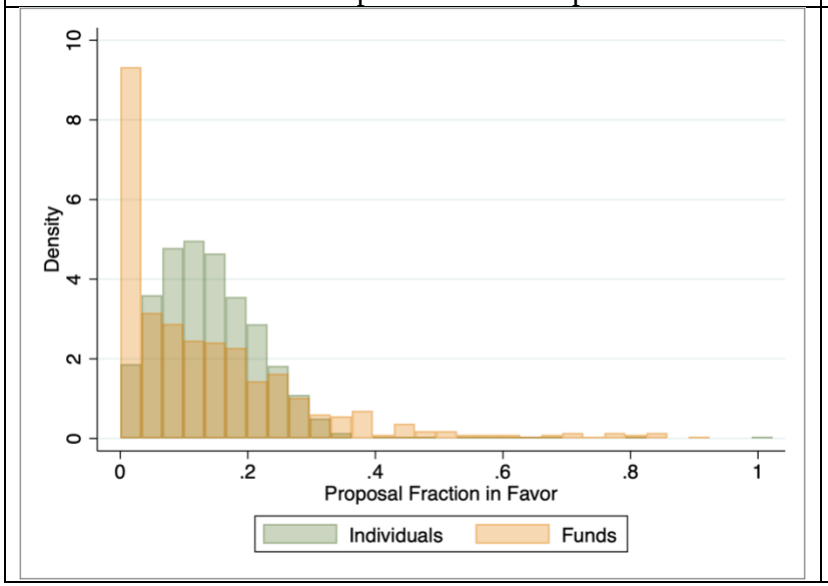
All Proposals



Management-Sponsored Proposals



Shareholder-Sponsored ES Proposals



Shareholder-Sponsored Governance Proposals

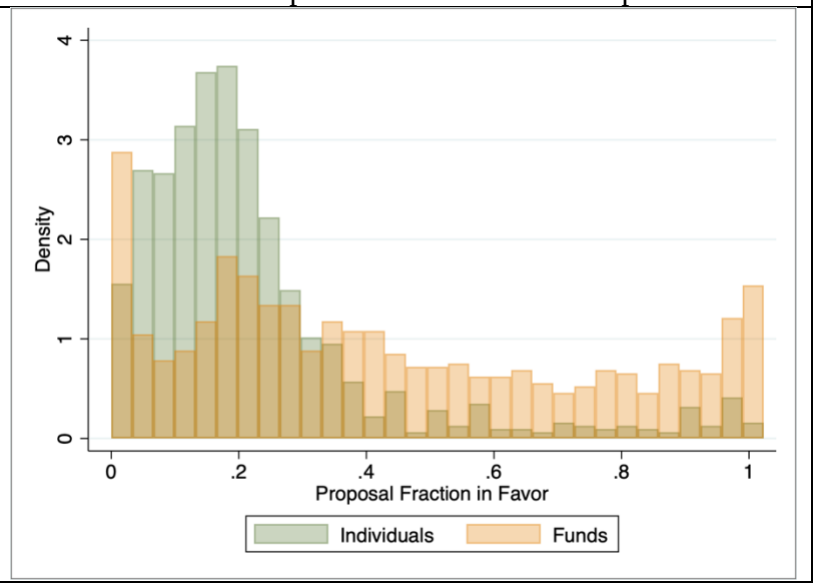
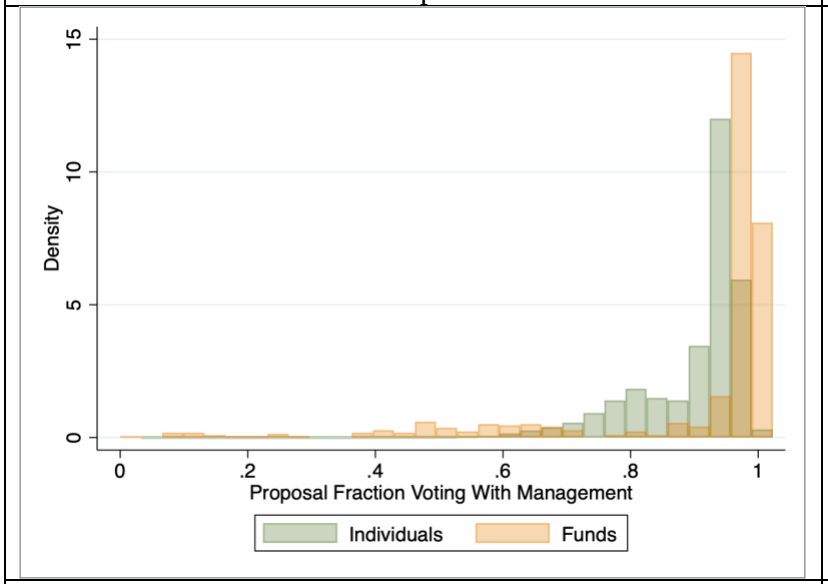


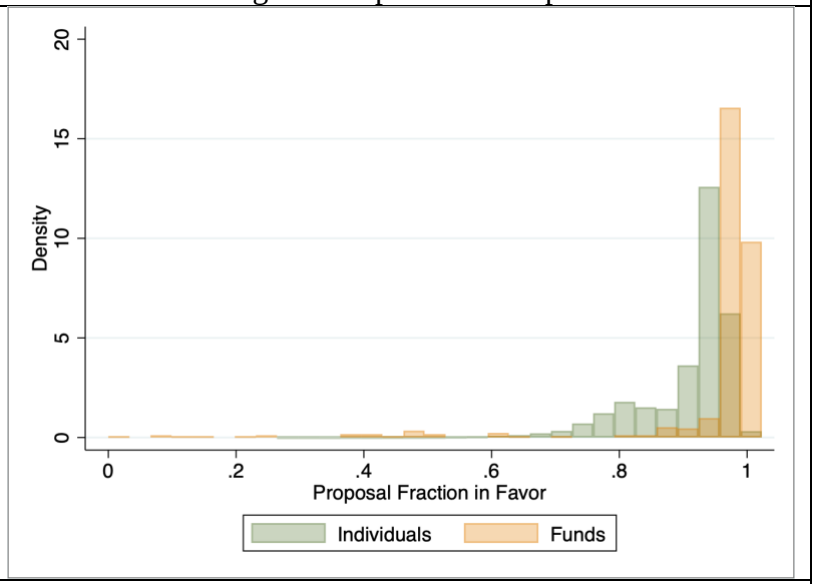
Figure A.2. Consistency of Proposal Outcomes, Different Cutoff Threshold

In this figure, we plot histograms of the voting outcomes of proposals among individual investors and mutual funds. For each proposal, we separately aggregate the votes of individuals and funds on an equal-weighted basis. In the upper left quadrant, we include both management-sponsored and shareholder-sponsored proposals and plot the agreement with management. In the other three quadrants, we limit to a specific proposal category and plot votes in favor. For each of individuals and funds, we limit to proposals with one thousand or more votes.

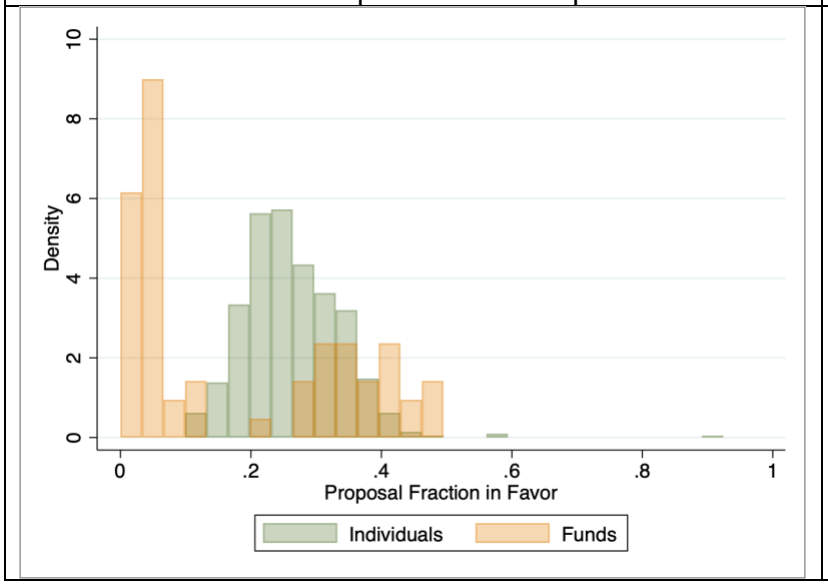
All Proposals



Management-Sponsored Proposals



Shareholder-Sponsored ES Proposals



Shareholder-Sponsored Governance Proposals

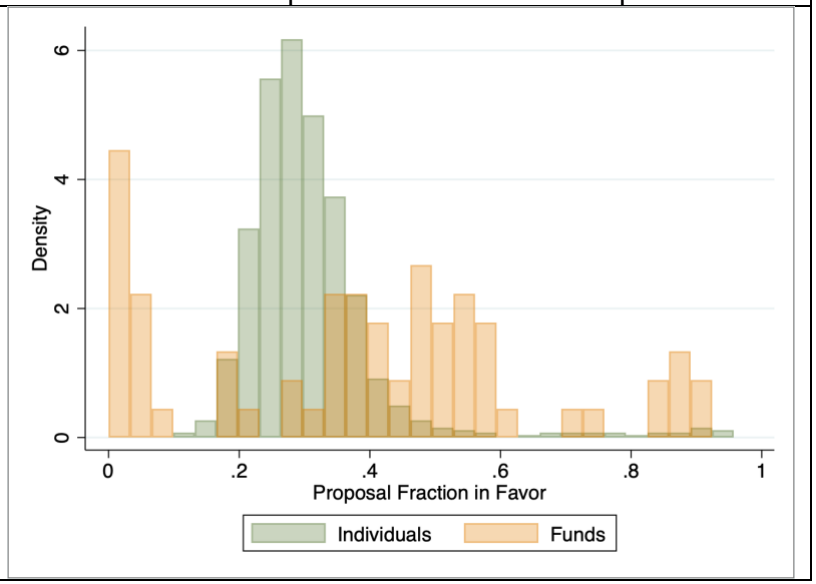
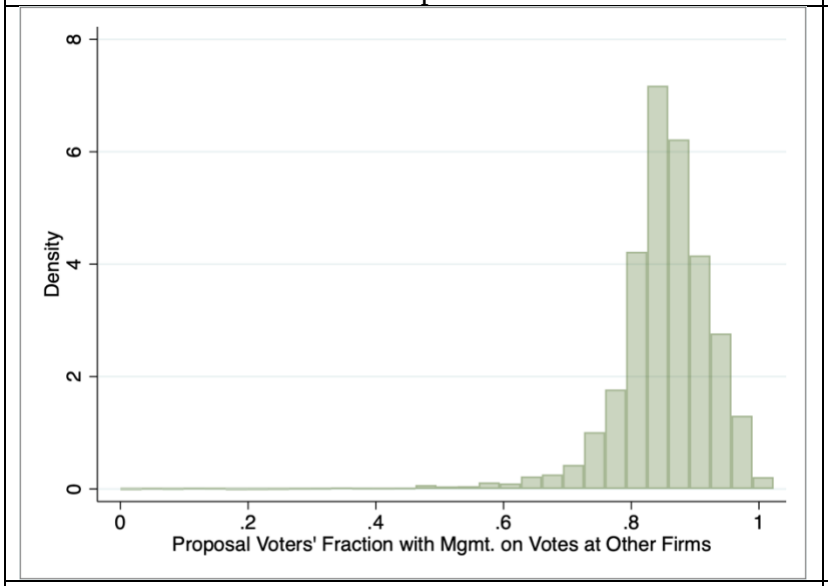


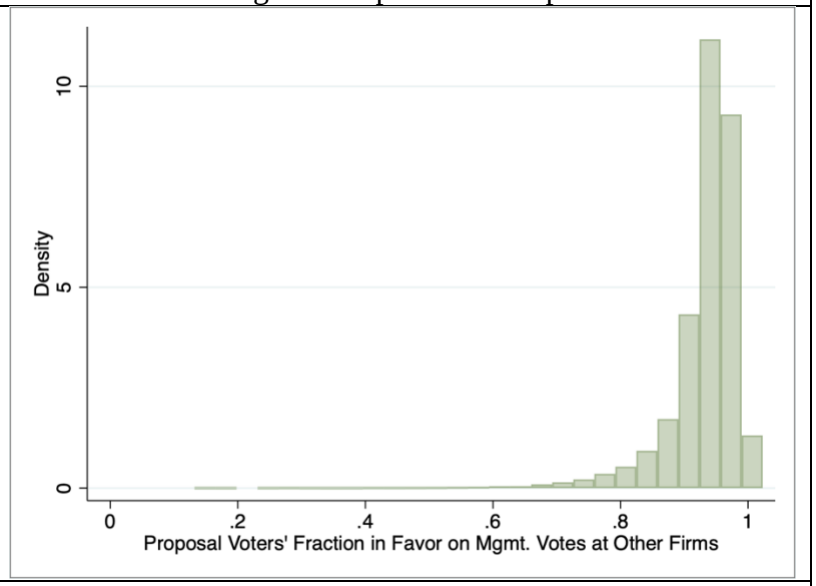
Figure A.2. Variation Across Proposals in Ideology of Voting Base—Share-Weighted

In this figure, we plot proposal-level histograms of the leave-one-out ideology of its voters. For each voter on each proposal, we average her votes at *other* firms on proposals in the same category to calculate her leave-one-out ideology (where "leave-one-out" refers to the fact that we exclude the company in question in calculating ideologies at a company). Then, for each proposal, we average the leave-one-out ideologies of each voter, weighting by the voter's number of shares in the firm. We limit to proposals with 1,000 such voters. In the upper left quadrant, we include both management-sponsored and shareholder-sponsored proposals and plot the leave-one-out agreement with management. In the other three quadrants, we limit to a specific proposal category and plot the leave-one-out votes in favor.

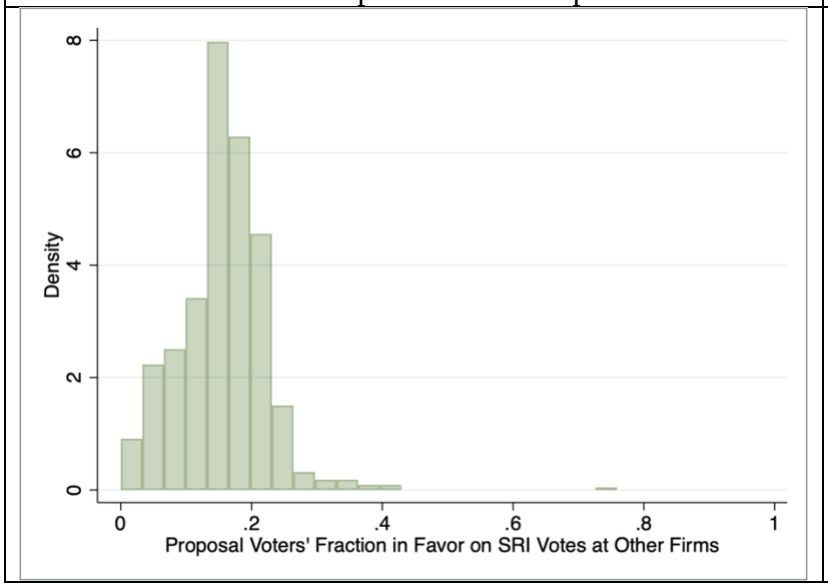
All Proposals



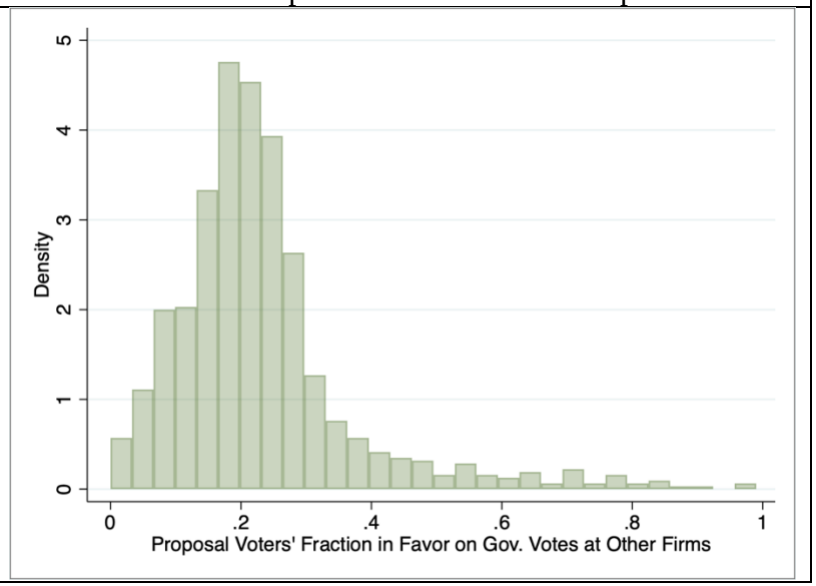
Management-Sponsored Proposals



Shareholder-Sponsored ES Proposals



Shareholder-Sponsored Governance Proposals



Section B. Appendix Tables

Table B.1. Individual and Fund Variation in Voting, by Proposal Category

In this table, we estimate the following specification:

$$Y_{ip} = \delta_0 + \psi_i + \phi_p + \varepsilon_{ip}$$

i indexes investors, p indexes proposals, Y_{ip} is i's vote on proposal p (equaling 100 for agreement with management), and ψ_i and ϕ_p are investor and proposal fixed effects, respectively. Columns 1, 3, and 5 are for individuals; Columns 2, 4, and 6 are for funds. The sample of individuals consists of a randomly drawn subset of 100,000 individuals who vote at least once. For funds, the sample consists of all fund votes. Below columns 5 and 6, we include the variance of voter fixed effects, the variance of proposal fixed effects, and the ratio of the former to the latter. Panel A limits to shareholder-sponsored ES proposals; Panel B limits to shareholder-sponsored governance proposals; Panel C limits to management-sponsored proposals. In some columns of some panels, due to the multiple-clustering, the *reghdfe* was unable to calculate standard errors on the intercepts; this has no consequences on interpretation. Standard errors clustered at the firm meeting and voter level are in parentheses. *, **, and *** represent significance at the 0.05, 0.01, and 0.001 levels, respectively.

Panel A. ES Proposals Only

	(1) Individuals	(2) Funds	(3) Individuals	(4) Funds	(5) Individuals	(6) Funds
Constant	75.42***	76.00***	75.26***	75.98***	75.42	76.00
	(0.33)	(0.79)	(0.23)	(0.62)	(.)	(.)
R^2	0.62	0.36	0.03	0.18	0.63	0.53
N	552,851	394,436	563,705	394,793	552,849	394,436
Number of Meetings	432	432	431	432	430	432
Voter Fixed Effects	Yes	No	Yes	Yes	No	Yes
Proposal Fixed Effects	No	Yes	Yes	No	Yes	Yes
Variance of Voter FE					1130.46	657.19
Variance of Proposal FE					31.42	332.87
Ratio of Variances					35.98	1.97

Panel B. Governance Proposals Only

	(1) Individuals	(2) Funds	(3) Individuals	(4) Funds	(5) Individuals	(6) Funds
Constant	73.53***	52.88***	73.28***	52.87***	73.53	52.88
	(0.29)	(1.12)	(0.23)	(0.56)	(.)	(.)
R^2	0.60	0.25	0.03	0.30	0.62	0.53
N	501,528	470,952	513,524	471,252	501,519	470,952
Number of Meetings	725	727	722	727	717	727
Voter Fixed Effects	Yes	No	Yes	Yes	No	Yes
Proposal Fixed Effects	No	Yes	Yes	No	Yes	Yes
Variance of Voter FE					1153.6	573.91
Variance of Proposal FE					39.8	765.5
Ratio of Variances					28.98	0.75

Panel C. Management Proposals Only

	(1) Individuals	(2) Funds	(3) Individuals	(4) Funds	(5) Individuals	(6) Funds
Constant	92.48***	94.44***	92.48***	94.44***	92.48	94.44
	(0.05)	(0.10)	(0.14)	(0.15)	(.)	(.)
R^2	0.47	0.09	0.06	0.39	0.51	0.47
N	7,125,644	15,850,257	7,128,347	15,849,573	7,122,171	15,849,451
Number of Meetings	13,154	6,519	11,856	6,639	11,710	6,519
Voter Fixed Effects	Yes	No	Yes	Yes	No	Yes
Proposal Fixed Effects	No	Yes	Yes	No	Yes	Yes
Variance of Voter FE					323.09	44.24
Variance of Proposal FE					31.91	203.88
Ratio of Variances					10.12	0.22

Table B.2. Individual and Fund Variation in Voting—Equal Number of Voters

In this table, we estimate the following specification:

$$Y_{ip} = \delta_0 + \psi_i + \phi_p + \varepsilon_{ip}$$

i indexes investors, p indexes proposals, Y_{ip} is i's vote on proposal p (equaling 100 for agreement with management), and ψ_i and ϕ_p are investor and proposal fixed effects, respectively. Columns 1, 3, and 5 are for individuals; Columns 2, 4, and 6 are for funds. The sample of individuals consists of a randomly drawn subset of 6,641 individuals who vote at least once (same as the number of funds). For funds, the sample consists of all fund votes. Below columns 5 and 6, we include the variance of voter fixed effects, the variance of proposal fixed effects, and the ratio of the former to the latter. Standard errors clustered at the firm meeting and voter level are in parentheses. *, **, and *** represent significance at the 0.05, 0.01, and 0.001 levels, respectively.

	(1) Individuals	(2) Funds	(3) Individuals	(4) Funds	(5) Individuals	(6) Funds
Constant	89.79***	92.82***	89.79***	92.82***	89.80	92.82
	(0.11)	(0.13)	(0.51)	(0.15)	(.)	(.)
R^2	0.38	0.07	0.12	0.41	0.48	0.48
N	552,586	16,720,084	542,358	16,719,400	542,027	16,719,278
Number of Investors	6,316	6,519	3,649	6,639	3,607	6,519
Voter Fixed Effects	Yes	No	Yes	Yes	Yes	Yes
Proposal Fixed Effects	No	Yes	Yes	No	Yes	Yes
Variance of Voter FE					347.59	44.03
Variance of Proposal FE					90.36	276.82
Ratio of Variances					3.85	0.16

Table B.3. Predictability of Governance Votes Last Year on Governance Votes

In this table, we estimate how a randomly selected governance vote from last year predicts a governance vote this year. We estimate the following specification, following Matvos and Ostrovsky (2010):

$$Y_{ipct} = \beta_0 + \beta_1 Y_{i(-c)(t-1)} + \phi_t + \psi_p + \varepsilon_{ipct}$$

In which i indexes investors, c indexes firms (and $-c$ denotes firms other than c), and t indexes time. Y_{ipct} is the investor's vote on a particular governance proposal (multiplied by 100 for ease of interpretation). The right-hand side contains the same investor's (randomly selected) vote on an ES proposal at a different firm in the previous year, along with proposal and year fixed effects. In columns 1 through 3, we draw from all governance proposals; in columns 4 through 6 we draw from proposals with the same topic, defined as those with the same *agendageneraldesc* field in ISS Voting Analytics; in columns 7 through 9, we draw from proposals with different topics (but still governance proposals). For individuals, we draw samples of 500,000 random accounts who cast at least one governance vote in the observation year. Standard errors clustered at the firm meeting level and voter level are in parentheses. *, **, and *** represent significance at the 0.05, 0.01, and 0.001 levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Proposals:	**All Governance Proposals**			**Governance Proposals with Same Topic**			**Governance Proposals with Different Topic**		
Investors:	Individuals	Funds	Both	Individuals	Funds	Both	Individuals	Funds	Both
Last year's governance vote	46.15***	21.35***	46.14***	55.38***	49.84***	55.37***	45.52***	19.56***	45.51***
	(0.52)	(0.88)	(0.52)	(0.81)	(1.23)	(0.81)	(0.51)	(0.86)	(0.51)
Fund			18.85***			6.39***			20.27***
			(1.61)			(1.15)			(1.65)
Last year's governance vote × Fund			-23.43***			1.24			-25.68***
			(1.11)			(1.32)			(1.11)
Constant	15.61***	39.66***	15.67***	12.83***	25.91***	12.91***	15.76***	40.77***	15.83***
	(0.15)	(0.55)	(0.15)	(0.22)	(0.74)	(0.22)	(0.15)	(0.54)	(0.15)
R^2	0.24	0.38	0.24	0.32	0.48	0.32	0.23	0.38	0.23
N	5,784,719	268,442	6,053,162	2,599,203	192,558	2,791,764	5,733,202	268,037	6,001,240
Number of Meetings	453	446	454	382	384	387	453	446	454

Table B.4. Predictability of Governance Votes Last Year on ES and Management Votes

In this table, we estimate how a randomly selected governance vote from last year predicts an ES or management vote this year. We estimate the following specification, following Matvos and Ostrovsky (2010):

$$Y_{ipct} = \beta_0 + \beta_1 Y_{i(-c)(t-1)} + \phi_p + \psi_t + \varepsilon_{ipct}$$

In which i indexes investors, c indexes firms (and $-c$ denotes firms other than c), and t indexes time. Y_{ipct} is the investor's vote on a particular ES (columns 1 through 3) or management (columns 4 through 6) proposal (multiplied by 100 for ease of interpretation). The right-hand side contains the same investor's (randomly selected) vote on a governance proposal at a different firm in the previous year, along with proposal and year fixed effects. For individuals, we draw samples of 500,000 random accounts who cast at least one governance vote in the observation year. Standard errors clustered at the firm meeting level and voter level are in parentheses. *, **, and *** represent significance at the 0.05, 0.01, and 0.001 levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Proposals:		**ES Votes**			**Mgmt. Votes**	
Investors:	Individuals	Funds	Both	Individuals	Funds	Both
Last year's governance vote	40.82***	18.69***	40.81***	-13.18***	-0.82**	-13.18***
	(0.70)	(1.01)	(0.70)	(0.21)	(0.26)	(0.21)
Fund			1.14			-0.25
			(0.94)			(0.37)
Last year's governance vote × Fund			-21.23***			12.47***
			(1.14)			(0.34)
Constant	15.98***	19.39***	16.01***	95.50***	94.24***	95.14***
	(0.20)	(0.57)	(0.21)	(0.06)	(0.20)	(0.11)
Proposal FE	0.20	0.26	0.20	0.13	0.40	0.17
R^2	7,010,120	264,097	7,274,217	13,255,272	10,283,449	23,539,790
N	295	294	295	8,085	4,446	8,728
Number of Meetings	40.82***	18.69***	40.81***	-13.18***	-0.82**	-13.18***

Table B.5. Predictability of Management Votes Last Year on Management Votes

In this table, we estimate how a randomly selected management vote from last year predicts a management vote this year. We estimate the following specification, following Matvos and Ostrovsky (2010):

$$Y_{ipct} = \beta_0 + \beta_1 Y_{i(-c)(t-1)} + \phi_p + \psi_t + \varepsilon_{ipct}$$

In which i indexes investors, c indexes firms (and $-c$ denotes firms other than c), and t indexes time. Y_{ipct} is the investor's vote on a particular management proposal (multiplied by 100 for ease of interpretation). The right-hand side contains the same investor's (randomly selected) vote on a management proposal at a different firm in the previous year, along with proposal and year fixed effects. In columns 1 through 3, we draw from all management proposals; in columns 4 through 6 we draw from proposals with the same topic, defined as those with the same *agendageneraldesc* field in ISS Voting Analytics; in columns 7 through 9, we draw from proposals with different topics (but still management proposals). For individuals, we draw samples of 100,000 random accounts who cast at least one management vote in the observation year. Standard errors clustered at the firm meeting level and voter level are in parentheses. *, **, and *** represent significance at the 0.05, 0.01, and 0.001 levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Proposals:	**All Management Proposals**			**Management Proposals with Same Topic**			**Management Proposals with Different Topic**		
Investors:	Individuals	Funds	Both	Individuals	Funds	Both	Individuals	Funds	Both
Last year's management vote	34.48***	7.68***	34.49***	55.43***	13.30***	55.35***	24.94***	5.29***	24.90***
	(0.46)	(0.99)	(0.46)	(0.57)	(1.18)	(0.56)	(0.33)	(0.69)	(0.33)
Fund			27.19***			41.04***			20.26***
			(1.20)			(1.41)			(0.87)
Last year's management vote			-26.54***			-41.56***			-19.36***
			(1.10)			(1.33)			(0.77)
Constant	59.85***	86.18***	59.43***	40.99***	81.72***	40.70***	69.09***	88.56***	68.73***
	(0.43)	(0.99)	(0.44)	(0.53)	(1.18)	(0.54)	(0.31)	(0.71)	(0.33)
Proposal FE	0.22	0.43	0.25	0.37	0.38	0.34	0.18	0.43	0.22
R^2	11,407,315	10,556,274	21,964,541	10,347,063	10,281,459	20,630,031	11,397,095	10,556,138	21,954,183
N	8,386	5,063	8,898	8,114	4,990	8,761	8,375	5,057	8,884
Number of Meetings	34.48***	7.68***	34.49***	55.43***	13.30***	55.35***	24.94***	5.29***	24.90***

Table B.6. Predictability of Management Votes Last Year on ES and Governance Votes

In this table, we estimate how a randomly selected management vote from last year predicts an ES or governance vote this year. We estimate the following specification, following Matvos and Ostrovsky (2010):

$$Y_{ipct} = \beta_0 + \beta_1 Y_{i(-c)(t-1)} + \phi_p + \psi_t + \varepsilon_{ipct}$$

In which i indexes investors, c indexes firms (and $-c$ denotes firms other than c), and t indexes time. Y_{ipct} is the investor's vote on a particular ES (columns 1 through 3) or governance (columns 4 through 6) proposal (multiplied by 100 for ease of interpretation). The right-hand side contains the same investor's (randomly selected) vote on a management proposal at a different firm in the previous year, along with proposal and year fixed effects. For individuals, we draw samples of 100,000 random accounts who cast at least one management vote in the observation year. Standard errors clustered at the firm meeting level and voter level are in parentheses. *, **, and *** represent significance at the 0.05, 0.01, and 0.001 levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Proposals:		**ES Votes**			**Governance Votes**	
Investors:	Individuals	Funds	Both	Individuals	Funds	Both
Last year's management vote	-26.83***	-6.84***	-26.82***	-35.24***	-5.60***	-35.24***
	(0.65)	(1.49)	(0.65)	(0.47)	(1.18)	(0.47)
Fund			-20.84***			-11.82***
			(2.03)			(2.37)
Last year's management vote			20.59***			29.71***
			(1.75)			(1.50)
Constant	53.68***	36.31***	53.72***	62.59***	56.46***	62.68***
	(0.59)	(1.48)	(0.59)	(0.43)	(1.16)	(0.44)
Proposal FE	0.06	0.23	0.06	0.08	0.33	0.08
R^2	6,292,626	270,625	6,563,251	5,084,935	275,106	5,360,042
N	295	294	295	454	446	454
Number of Meetings	-26.83***	-6.84***	-26.82***	-35.24***	-5.60***	-35.24***

Table B.7. Variation in Proposal Outcomes Explained by Variation in Individuals—Share-Weighted

In this table, we evaluate the extent to which variation in proposal outcomes across individual investors can be explained by the proposal's aggregate individual investor vote on *other* firms. We estimate:

$$\bar{Y}_{pck} = \kappa_0 + \kappa_1 Y_{pck}^{-1} + \varepsilon_{ipc}$$

In which $\bar{Y}_{pck}$ is the average individual investor vote, weighted by shares, on proposal p for company c in category k, and Y_{pck}^{-1} is proposal p's average of its individual investors' votes on other firms in category k (excluding those investors who have no votes in the category at other firms), weighed by shares. To produce the right-hand-side variable, for each individual-firm combination, we aggregated the individuals votes across all proposals, then subtracted the individual's votes at the firm in question to produce the individual's leave-one-out voting total. Then, for each proposal, we aggregated the leave-one-out-voting totals of all individuals at the firm. The outcome variable is the proposal-level aggregate individual investor vote (as a percentage, i.e., multiplied by 100). Columns 1 and 2 are limited to shareholder-sponsored ES proposals; 3 and 4 are shareholder-sponsored governance proposals; and columns 5 and 6 are management-sponsored proposals. Odd-numbered columns limit to proposals with 10 investors who cast votes in other firms in the given category; even-numbered columns limit to proposals with 1,000 such investors. Standard errors clustered at the firm meeting level are in parentheses. *, **, and *** represent significance at the 0.05, 0.01, and 0.001 levels, respectively.

	(1) ES	(2) ES	(3) Gov.	(4) Gov.	(5) Mgmt.	(6) Mgmt.
Aggregate Individual Investor ES Vote on Other Firms	104.51***	101.72***				
	(6.35)	(4.98)				
Aggregate Individual Investor Gov. Vote on Other Firms			101.19***	109.68***		
			(6.22)	(7.91)		
Aggregate Individual Investor Mgmt. Vote on Other Firms					93.42***	108.97***
					(2.63)	(9.10)
Constant	-1.81*	-1.40*	-0.79	-3.17*	6.51**	-8.21
	(0.88)	(0.69)	(1.45)	(1.40)	(2.49)	(8.60)
R^2	0.52	0.51	0.52	0.52	0.28	0.30
N	665	635	955	786	59,553	28,184
Number of Meetings	433	404	736	585	14,195	4,069
Minimum Number of Investors	10	100	10	100	10	100

Section C. Principal Components Analysis

A. Detailed Methodology

In this appendix, we describe the methodology for our Principal Components Analysis (PCA).

A PCA has, as its input, a vote matrix with voters as the rows and proposals as the columns. Because voters do not vote on all proposals—and in the case of individual investors, they do not vote on most proposals—the matrix is fairly sparse. The PCA process requires us to impute votes where there are none. Thus, we require voters and proposals with a sufficient number of votes cast to impute; the more votes for a given voter or proposal, the less the imputation relies on guesswork.

We begin by selecting the subset of proposals we will use. We limit to annual meetings, though this restriction is of no consequence to the results. We further limit to proposals that garnered 75 votes from different funds in our data, with at least 5% of votes in favor and at least 5% of votes opposed. We further limit to proposals that garnered 1,000 votes from individual investors in our data, with at least 5% of votes in favor and 5% of votes opposed. This results in a set of 4,758 proposals.

We next limit the subset of individual investors we will use. We restrict to individual investors who, in our three-year data period, vote on at least three separate ballots and cast votes on at least 25 (eligible) proposals. Because our PCA method is computationally intensive, we then draw a random sample of 4,000 individual investors who meet these criteria.[1]

We run the PCA process separately for individuals and for funds. First, we convert each vote on each proposal into a 1 (in favor), 0 (opposed), or missing (did not vote). Then, we express all the votes as an $N \times P$ matrix where N is the number of voters, P is the number of proposals, and each matrix cell contains a vote.

As an initial imputation, we replace all missing votes with the average vote on that proposal (again, separately for individuals and for funds). We designate this initial vote matrix as Y_0, and the $N \times P$ matrix with each proposal average as M_0 (all the rows of M_0 are identical).

This PCA analysis itself is conducted using R's *prcomp* function, with Y_0 as its input, to conduct a PCA analysis. We set "scale" to "False" and limit to 10 dimensions. The *prcomp* function outputs the results of the initial PCA in the form of two matrices: an $N \times 10$ matrix Z_1, with the PCA scores in each of the 10

[1] We choose different thresholds for individuals and funds because funds tend to vote more than individuals, and we seek to limit the selection bias from our inclusion criteria. Since we have vastly more individuals than funds in the data, we include all eligible funds in the PCA but include only a random sample of eligible individuals.

dimensions for each of the N voters, and a $P \times 10$ matrix A_1 with the PCA scores in each of the 10 dimensions for each of the P proposals.

Next, we use the results of the initial PCA to impute missing votes: $\tilde{Y}_1 = Z_1 \times A_1' + M_0$. To put another way, an imputed vote for voter i on proposal p is equal to the cross product of the individual's scores in each dimension, z^i, and the proposal's scores in each dimension, a^p, plus the average vote on that proposal. We cap each imputation in $\tilde{Y}_1$ to be within $[0,1]$.[2] Then, we create the updated imputed voted matrix Y_1 by replacing all imputed cells in Y_0 with the corresponding cells in $\tilde{Y}_1$ while leaving the actual votes in place. We repeat this process 1,000 times. At the end of all trials, the process produces the final matrix of voter scores, Z_{1000}, the final matrix of proposal scores, A_{1000}, and the final matrix of imputed votes, Y_{1000}. We omit subscripts going forward because they are no longer relevant.

B. Projecting Other Voters onto the Dimensional Space

Our method permits imputing one group of voters onto the space created by another group of voters. This is useful for placing hypothetical voters onto the space, such as a voter who always agrees with management, ISS, or Glass Lewis recommendations. It can also be used to place funds onto the individual voter space, after first running the PCA process on funds to impute their missing votes. For some groups P and Q, where we have created the dimensional space using the votes of Q, we calculate group P's scores on group Q's space as $\left(Y_P - M_Q\right) \times A_Q$.

C. Measuring Error

As mentioned, the PCA analysis requires imputing votes that were not cast. Therefore, it is worth measuring, reporting, and testing the error rate of our imputations. Fortunately, there is a natural test group: for proposals on which an individual cast a ballot, we can compare the true vote to the imputed vote.

We begin by reporting results using Bubb and Catan's (2022) measures of error, then report our own.

Bubb and Catan (2022) report two metrics of error, which rely on "classifying" an imputation as a 0 or 1 based on whether it is below or above 0.5, respectively. They then compare imputed classifications to actual votes. They define the classification percentage (CP) as the percentage of votes that the model classifies correctly:

[2] Bubb and Catan (2022) do not cap their cells in this way when doing imputations. The results look very similar either way, and qualitatively make no difference, but we believe that capping the imputations produces more realistic imputations (because a vote cannot be greater than 1 or less than 0).

$$CP = 1 - \frac{Number\ of\ Classification\ Errors}{Number\ of\ Classifications}$$

The average proportional reduction in error (APRE) is calculated as:

$$APRE = \frac{Number\ of\ Minority\ Votes\ on\ Proposals - Number\ of\ Classification\ Errors}{Number\ of\ Minority\ Votes\ on\ Proposals}$$

The APRE represents a comparison to a model that imputes all votes as the majority vote on a proposal. An APRE of 60% means that the error rate of such a model is reduced by 60% by using the imputation instead of imputing all votes as the majority vote.

Bubb and Catan (2022)'s interest is different from ours, however. They seek to validate the notion that the first two dimensions produced by fund votes are highly predictive. To that end, they test the CP and APRE produced using only the first two dimensions of their results. They report a CP of 87% and an APRE of 50%. We find similar results from our own analysis of funds, with a CP of 87.8% and an APRE of 46.7% from the first two dimensions. In our analysis of individuals, the error rates are slightly better: the first two dimensions have a CP of 91.6% and an APRE of 56.2%.

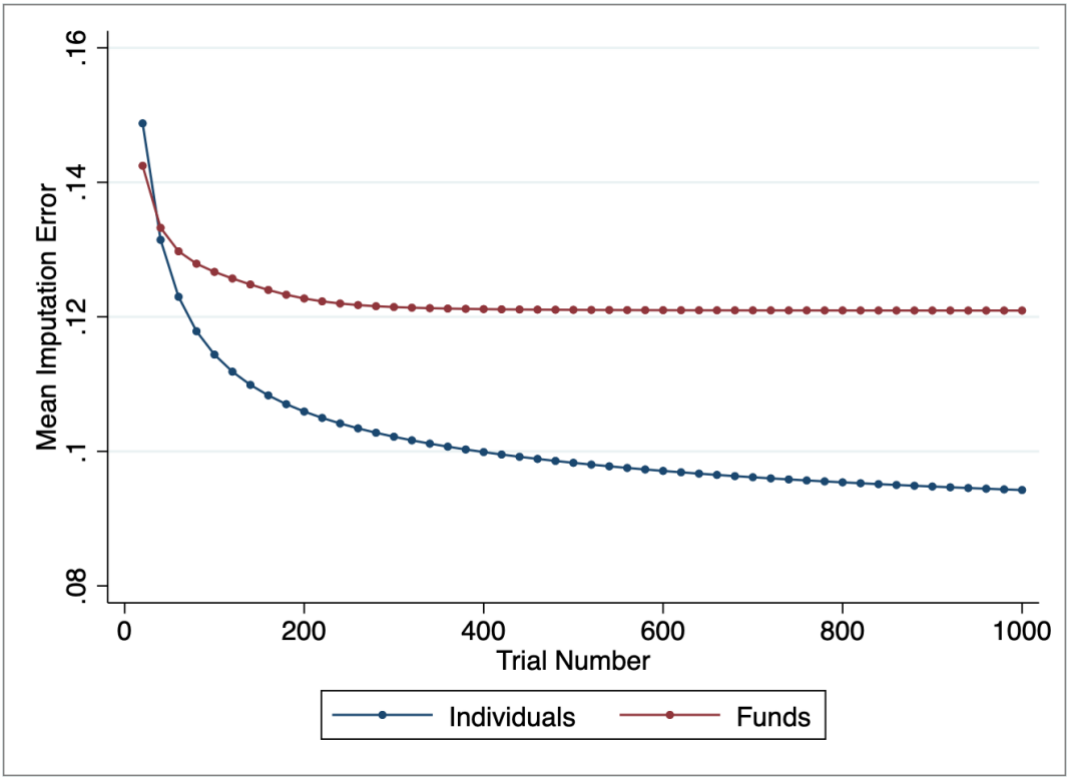
Our aim here, however, is not to demonstrate the predictive power of the first dimensions produced by PCA. The scree plot, Figure 1 in the main text, is sufficient for that purpose. Rather, our interest is confirming that our imputations are accurate. To that end, we believe the better error measure is the error rate using all dimensions for prediction, not just the first two. For funds, we find a CP and APRE of 94.5% and 76.0%, respectively. For individuals, we find a CP and APRE of 96.0% and 79.4%, respectively. In both cases, the imputations are quite accurate.

Our preferred measure of error does not use CP or APRE at all but rather looks at the difference between the fractional imputed vote and the true vote. Classifying an imputed vote as a 1 or a 0 based on whether it is above or below 0.5 throws away lots of information: an imputed vote of 0.51 is very different from an imputed vote of 0.99. We calculate the average difference, for observations in which we have the actual vote, between the true vote and what we would have imputed for that cell. Rather than "classify" a vote as a 1 or a 0 depending on whether it is above or below 0.5, we take the imputation as a fraction: if the true vote is 1 and we impute a vote of 0.51, we record the error as 0.49.

We plot the average error every 20 trials. The measurable error in imputations decreases and asymptotes, as the number of iterations grow large. At the end, for the outputs we use in our analysis, the measurable error among individuals is 9.4%: that means that, for actual votes in favor, our imputation process estimates them at 0.906 on average, and for actual votes opposed, our imputation process estimates them at 0.094 on average. For funds, the equivalent number of 12.4%.

Figure C.1. Imputation Error from Principal Components Analysis

This figure contains a measure of the imputation error throughout our iterative PCA process. In each trial, we impute all votes by all voters; since, for some votes we know the voter's true vote, we can calculate the imputation error as the mean of the absolute difference between imputed votes and actual votes. The x-axis represents which trial in the iterative process; we plot every 20th trial. Our PCA results use the results of the 1,000th trial. We conduct PCA separately for individuals and for funds.



Section D. W-Nominate Analysis

In the main paper, we run a Principal Components Analysis (PCA), following Bubb and Catan (2022). An alternative form of dimension reduction analysis, used by Bolton et al. (2020), is W-Nominate. Although they use different methods, PCA and W-Nominate are fundamentally similar and produce similar results. We conduct a W-Nominate analysis as a robustness check of our PCA results.[3] In this Appendix, we describe our methodology and results.

We begin with the same subset of 4,000 individuals and 4,758 proposals used in the PCA analysis, as described in Online Appendix C. Because W-Nominate is computationally intensive and our aim is only to show that W-Nominate produces similar results to PCA, we limit to the 800 proposals that receive the most votes from our 4,000 investors. We also drop investors who do not vote at least 20 times on these 800 proposals, leaving 3,405 individual investors.

Because W-Nominate does not allow us to project additional voters onto the space created by a set of voters, we conduct the analysis twice. First, we use only our sample of 3,405 voters, and then we add an additional four hypothetical voters: one that always votes with management, one that always votes against management, one that always votes in favor, and one that always votes against. These four hypothetical voters help craft the dimensional space, which is why we compare the results of the analysis that includes them to the analysis that does not include to show that the hypothetical voters do not have a large impact.

We use the *wnominate* function in R to conduct our analysis.

Figure D.1 shows the individual voters on the two-dimensional space created in W-Nominate, a la Figure 2 in the main paper. In Panel A, we include and label the four hypothetical voters. In Panel B we present the results from the analysis that did not include them, to show that it is essentially similar.

Comparing Panel A to Figure 2 of the main paper, we see that W-Nominate and PCA produce qualitatively identical results, with a primary dimension defined by sentiment towards management and a second dimension defined by voting in favor of or opposed to proposals.

Figure D.2 shows the proposal scores on the two-dimensional space created in W-Nominate, a la Figure 3 in the main paper. Like in Figure 3 of the main paper, we again see a sharp divide in the first dimension between management and shareholder proposals.

We conclude that PCA and W-Nominate produce substantially similar conclusions, justifying our focus in the main paper on PCA.

[3] We note that using PCA (as did Bubb and Catan (2022)) and W-Nominate (as did Bolton et al. (2020)) for mutual funds also produces similar results.

Figure D.1 Representation of Shareholder Voting Dimensional Spaces, W-Nominate

This figure contains results from a pair of W-Nominate analyses. The panels contain scatterplots of voter scores in the two primary dimensions produced by W-Nominate, where each dot contains an investor. Panel A conducts a PCA on individual investor votes including four hypothetical investors labeled in red; Panel B conducts a PCA conducted on individual invest votes without the hypothetical voters. The sample of proposals is limited to those with at least 1,000 votes cast by individuals and 75 votes cast by funds, which received between 5% and 95% of the vote in favor from each group, and further limited to the 600 proposals with the most votes in the sample of investor. The voters are limited to a sample of 4,000 individuals with at least 25 votes cast across at least three separate ballots, and further limited to the 3,405 with at least 20 votes cast on the 600 proposals.

Panel A. Individual Voting Dimensional Space with Hypothetical Voters

Panel B. Individual Voting Dimensional Space without Hypothetical Voters

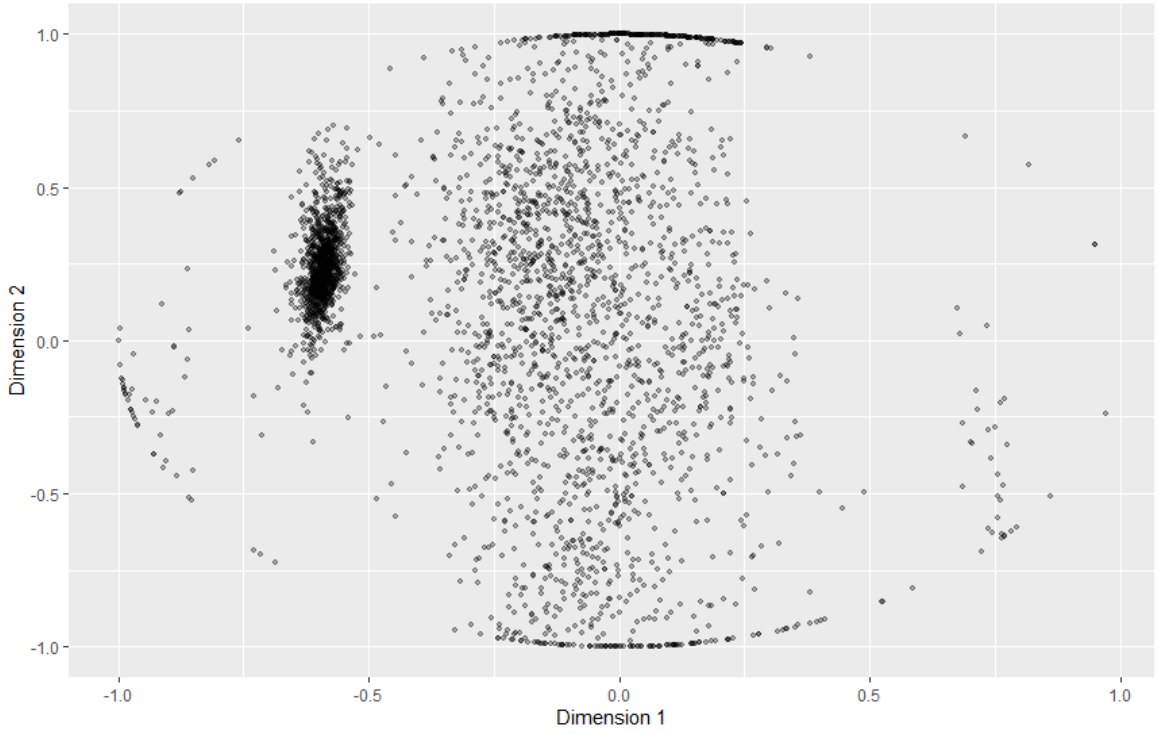
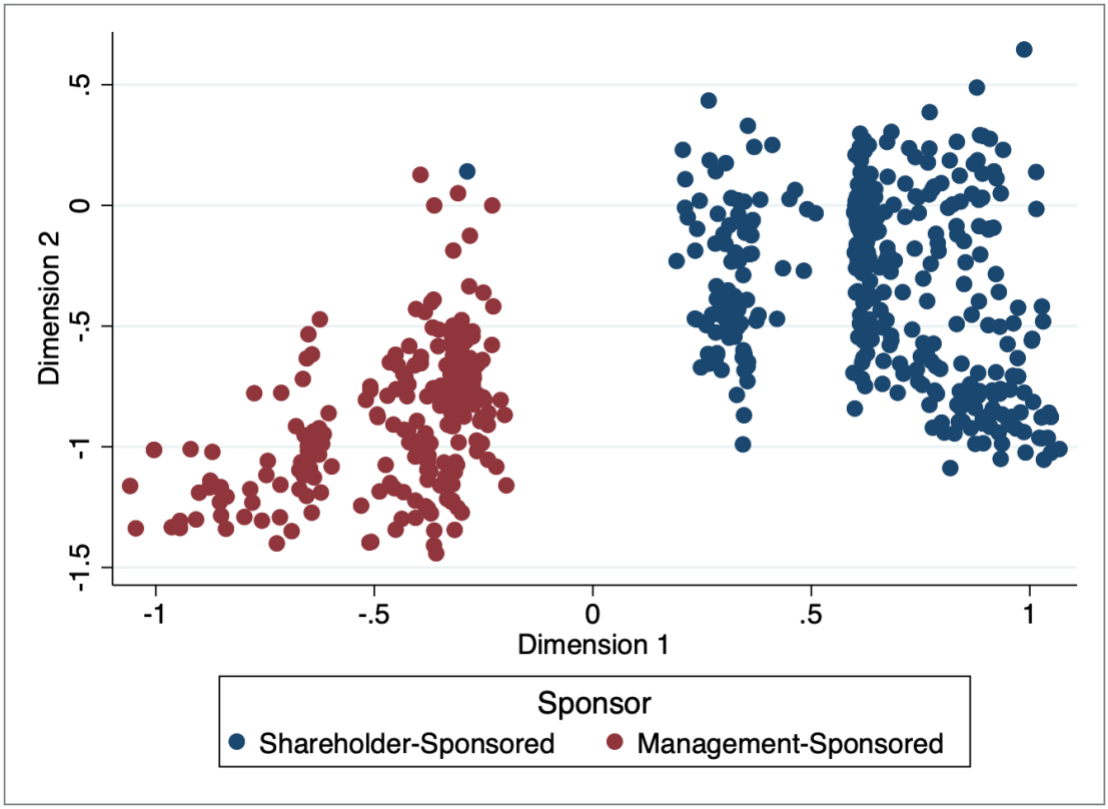


Figure D.2. Representation of Proposals in Two-Dimensional Space, W-Nominate

This figure contains results on proposals from a W-Nominate analysis of individual investor votes. The figure is a scatterplot of proposal scores in the two primary dimensions produced by the analysis, where each dot represents a proposal. We plot shareholder-sponsored proposals in blue and management-sponsored proposals in red. The sample of proposals is limited to those with at least 1,000 votes cast by individuals and 75 votes cast by funds, which received between 5% and 95% of the vote in favor from each group, and further limited to the 600 proposals with the most votes in the sample of investor. The voters are limited to a sample of 4,000 individuals with at least 25 votes cast across at least three separate ballots, and further limited to the 3,405 with at least 20 votes cast on the 600 proposals.



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