INDIVIDUAL INVESTOR IDEOLOGY

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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 (2021) and Bubb and Catan's (2021) 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, the individual investor's most important dimension, by far, is her sentiment towards management. We show that individual investors display a strong consistency in their voting with respect to management, both within and across proposal types. For mutual funds, the identity of the fund and the identity of the proposal are both strong predictors of votes, consistent with views towards management and proposal quality both playing a role. For individuals, views towards management dominate. In fact, for shareholder-sponsored proposals, most of the variation in voting results across firms is explained by differences in the composition of firms' voters—which is to say, how ideologically sympathetic one's shareholders are to management. Perhaps unsurprisingly, individual investor ideology is strongly correlated with their ideology in political voting. Perhaps more surprisingly, individual investors do not appear to strongly distinguish between social responsibility and governance proposals, and their ideological in political voting is nearly as strongly predictive of the latter as the former. That individuals vote consistently, and that sentiment towards management is the most important dimension determining their vote, leads to counterintuitive consequences. When individuals do change their stance towards management between votes, it is often due to the firm's recent stock price performance. This is true even in unusual contexts: for example, weak stock performance is correlated with greater individual support even for shareholder environment and social proposals. In fact, even on target company merger approvals, the stock performance *prior to* the merger announcement is a strong, significant positive predictor of individual votes in favor of the merger. These findings appear consistent with individual investors voting with or against management's recommendations based not on analysis of the individual proposal but on their view of management.

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1. Introduction

In this article, we use rich microdata to study U.S. individual investor preferences through their votes on their direct holdings.

Individual investors who vote are worth studying both for their impact on the firms they own, at which those votes sometimes determine proposal outcomes (Brav et al. 2022), and because their votes serve as a window into the preferences of individual investors as a whole, including non-voting individuals and individuals indirectly exposed to the market through investments via institutional intermediaries. Academics have proposed several policy proposals that could substantially increase the voting power of individual investors, e.g., (Fisch (2017), Lund (2017), S. Griffin (2019), C. Griffin (2020)), and large mutual funds have begun experimenting with giving underlying investors some ability to cast pass-through votes, which has the potential to dramatically increase the voting power of individuals.

This paper presents the first analysis of individual investor voting ideology—ideology defined, as in Converse (1964), as predictable voting across a wide range of issues. We show that ideological preferences and not proposal characteristics mostly determine the investor's vote. We establish that individual investors have strong and consistent preferences and that voting outcomes among individual investors vary far less across proposals than they do for institutional investors. Delving more deeply into individual investor ideology, we find that the most important ideological dimension that separates and divides individual investors is their overall stance towards management. To predict a fund's vote, one needs to know the voter's history and the proxy advisors' recommendations, but to predict an individual's vote, one needs to know the voter's history and management's recommendation.

Proposals in different proposal categories appear tightly linked together for individual investors. Shareholder-sponsored social responsibility proposals (SRI) have relatively little in common with shareholder-sponsored governance proposals, and perhaps even less with management-sponsored proposals, and yet individual investor voting on any category is highly predictive of their voting on other categories, to a significantly greater extent than for funds. (This tight linkage among individual investors may explain, in part, why the category term ESG lumps governance in together with environmental and social issues in advertising to retail

investors). Variation across individuals in opposition to management recommendations is significantly correlated with variation in individual political ideology, with political liberals providing stronger support for SRI proposals and, perhaps more surprisingly, stronger support for governance proposals to almost the same degree.

Individuals are so consistent in their voting that, for SRI and governance proposals, most of the cross-proposal variation in voting results from individuals is driven by the composition of individual investors. A firm does better in the vote by having more sympathetic investors than with a stronger proposal. This may produce ironic results: we show that firms in weak SRI industries have individual investors who systematically disfavor SRI proposals, giving those firms a small advantage in defeating SRI proposals.

An individual does not always vote consistently. But even when individuals do vary their votes, this may be related to sentiment towards management. Brav et al. (2021) show that individual investor voting is very sensitive to yearly abnormal stock returns at a given firm. We show that individual votes on a proposal are sensitive to recent stock returns even where recent stock returns would appear to have no bearing on the value of the proposal. Individuals are more likely to vote for SRI proposals when the firm has performed poorly. Even when voting on target firm merger approvals, individual investors are more likely to approve the merger when the firm has had better stock returns in the period ending months prior to the merger announcement. It appears that individual investors trust management recommendations more when a firm has been performing well.

These findings should serve as the basis for an understanding of individual investors. Broadly speaking, the results appear more compatible with individuals making vote selections based on the proposal's compatibility with their ideological bliss point, as in Downs (1957), and less compatible with individuals making decisions based on the exogeneous quality of the proposals, as in Stokes (1963), particularly as compared with institutional investors. The Downs (1957) "spatial" model and the Stokes (1963) "valence" model are two principal models of vote choice in the political economy literature; we show that individual investors vote for proposals that fit their ideological preference and mostly do not shift their votes proposal-by-proposal, as the valence model would imply.

Our findings also inform us of the effects of potential policy changes that would increase the power of individual investor preferences. Such policies are designed to either increase the voting turnout of individual investors who directly own stocks, such as through the use of standing voting instructions, or to increase the voice of individual investors who are indirectly exposed to the stock market through institutional intermediaries, such as through pass-through voting. Based on our results, if individual investors were to constitute a larger fraction of the voting electorate, we may expect firm directors to focus not on persuasion but on altering the composition of their shareholder base to win votes.

This paper proceeds as follows. First, we map out individual investor ideology. Extending Bolton et al. (2020) and Bubb and Catan (2020)'s work on mutual fund voting to individual investor voting, we conduct an unsupervised learning analysis to determine the key dimensions of individual voting patterns—that is, what are they most polarized on? We find that a single dimension captures a majority of variation in individual voting. This dimension can be interpreted as the investor's views towards management; individuals split starkly, with a large cluster that votes with management and a dispersed and heterogeneous opposition. We also make methodological innovations, showing how we can project the votes of one group (such as funds) onto the ideological space created by a different group (such as individuals).

Second, we show how individual ideology manifests into voting results. One can imagine a framework in which an investor's votes vary across proposals in a way that mirrors the votes of her fellow investors, so that high-quality proposals perform strongly and low-quality proposals perform poorly, and differences across voters are relatively minimal. In an alternative framework, an investor's votes are consistent across proposals, variation in voting outcomes comes from differences in investors, and proposals (which aggregate the votes of many voters) tend to have consistent outcomes. We show the second framework holds for individual investors, and to a greater extent than for mutual funds. Individuals vote highly consistently across their holdings and over time, and they do so to a much greater extent than do funds, whose votes tend to shift based on the proposal at issue. In shareholder voting, especially individual voting, firm and proposal characteristics are of second order importance as compared to voter tendencies.

Third, we show how different proposals are linked together for individual investors. Proposals differ substantially from each other in terms of their content—even two proposals of

the same category, such as two SRI proposals, differ considerably, and two proposals of different categories, such as an SRI proposal and a governance proposal, differ dramatically. And yet, an individual vote on one proposal is highly predictive of her other votes in the same category for other firms in different years, and it is highly predictive of her other votes in other categories for other firms in different years—each to a far greater extent than for funds.

Fourth, we study, at the proposal-level, how proposal outcomes are determined by the ideological composition of voters versus the characteristics of the proposal itself. We show that variation in the ideological composition of a firm's voters explains much of, or even most of, the variation across proposals in individual voting outcomes.

Fifth, having defined the contours of individual ideology, we explore its correlates. Unexpectedly, we find that individual ideologies are extremely closely tied to political ideologies. It may be no surprise that those in liberal zip codes vote in favor of shareholder-sponsored environmental and social proposals while those in conservative zip codes vote against them. But it is more surprising that political ideology is nearly as predictive of one's votes on shareholder-sponsored governance proposals. Although conventional wisdom holds that the battle between management and activist investors has no clear mapping to U.S. political fault lines, the conventional wisdom is wrong with respect to individual investors: liberals are on the side of shareholders, and conservatives are on the side of management, even on governance proposals and management-sponsored proposals.

Sixth, we look at factors that determine variation within an individual investor's set of votes. Having already found that cross-investor variation appears to be closely connected towards overall sentiment towards management, we find that within-investor variation may have a similar interpretation. We build on Brav et al. (2022), which found that a firm's recent stock performance is a strong predictor of individual investor voting. We find that it is even a predictor for environmental and social proposals and for target company votes on merger approvals, where we would not expect recent stock performance to be relevant. The results are consistent with a model in which individuals do not strongly distinguish between proposals, but rather vote based on overall sentiment towards management—a sentiment that can potentially shift with the performance of the firm.

Seventh, we consider how our findings may influence the incentives that corporate directors may face in trying to win votes, particularly if policy reforms were enacted that increase the voting power of individual investors. We also discuss the implications of our results on what we might expect from such policy reforms.

We consider our results in terms of a simple framework of voting. Consider proposal quality on a vertical axis, where all voters prefer higher quality proposals to lower quality ones, all else equal. And consider ideological position on a horizontal axis, where voters prefer proposals that come as closely as possible to their ideological bliss point, all else equal. Which axis is more important? If quality, then we might expect substantial variation within individual vote records and substantial variation in proposal outcomes (aggregating individuals). If ideology, we might expect substantial variation across individual vote records (aggregating proposals) and substantial variation within proposals. We spell out this framework in greater detail in Section 3. Our results are far more consistent with the latter explanation, especially as compared to institutional investors.

Our results underscore the role of rational apathy and limited attention in voting. Individual investors generally possess limited information on firms and, given the unlikelihood of affecting firm outcomes, little incentive to expend costs to obtain more information. Thus, they appear to use simple heuristics in their voting choices.

However, we note that these features are characteristic of institutional investors as well, though manifested differently. Institutional investors also have little incentive to expend costs to obtain more information, and thus are rationally inattentive (Hu and Zytnick 2022). For institutional investors, however, rational inattention often takes the form of relying on proxy advisor or management recommendations (Malenko and Shen (2016)). We show how, just as institutions use proxy advisor recommendations as a key heuristic, individual investors appear to use management recommendations for the same purpose—but differ from each other in how they interpret those recommendations.

A. Literature Review

There is thin body of empirical work on individual investor voting. Brav, Cain, and Zytnick (2021) study individual investing in a framework focused on whether they monitor firms, with an emphasis on turnout decisions and what company factors affect individual investor

votes. Zytnick (2022), written contemporaneously with this paper, compares the votes of mutual funds to the votes of individual investors who own those mutual funds. This paper differs from both by focusing on the voter and the extent to which votes are determined by proposal or voter characteristics.

This paper extends the literature on mutual fund ideology to individual investors. Matvos and Ostrovsky (2010) first established that mutual funds vote ideologically and that fund ideology has a large effect on voting. We build on their method, and show that individual votes with respect to management recommendations are, as compared to fund votes, significantly more predictive of their other votes.

Because individual investors cast many votes and are identifiable across votes, the data structure resembles a legislative setting. We follow researchers in that space by using a dimension reduction analysis to obtain the ideological dimensions of their preferences (e.g., Poole and Rosenthal (1985)). Bubb and Catan (2020) and Bolton et al. (2020) each extended 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. We extend their methodologies to our study of individual investors, providing a similar picture of individual investors, and extending it to plot funds on the individual investor ideological space and individual investors on the fund ideological space.

This paper also extends a classic dichotomy in the political economy literature to corporate voting. Downs (1957) proposed now-ubiquitous spatial model of political competition, in which voters choosing between candidates maximize utility by selecting the one who comes closer to their ideological bliss point. Stokes (1963) countered with a valence framework, in which candidates have differences in quality and voters choose the higher-quality candidate, with all voters preferring higher quality to lower quality. A vast body of literature has tested these two models against each other 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.

The paper proceeds as follows. In Section 2, we provide a brief background on the setting, describe our data, and present summary statistics. In Section 3, we lay out our theoretical framework, and describe how our section-by-section empirical analysis fits into that framework. In Section 4, we lay out the methodology and results of our dimension reduction analysis. In Section 5, we compare the roles of the individual and the proposal in determining the outcome of a given vote. 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 correlated with individual variation in ideology. In Section 8, we look at why, sometimes, an individual investor varies in her voting. In Section 9, we discuss real-world and policy impacts. Section 10 concludes.

2. Background, Data and Summary Statistics

A. Background

We present a brief background of our context and setting. Public company shareholders periodically vote on company issues. Some proposals are sponsored by the company's management for the firm to take certain actions; these include director re-elections, "say-on-pay" votes to approve executive compensation, and merger approvals. Other proposals, which tend to be non-binding, are sponsored by shareholders and are intended to effect change at the firm that management resists. These proposals can be classified as environmental proposals, such as a proposal to require the firm to issue a report on its greenhouse gas emissions; social proposals, such as a proposal to require a certain level of diversity on the board of directors; or governance proposals, such as a proposal to require different individuals to hold the roles of CEO and board chair. Proposals, whether binding or advisory, can influence the direction of firms and are often hotly contested.

B. Data

We use proprietary data on individual investor voting merged with a series of non-proprietary 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 et al. (2022), contain individual investor votes for U.S. shareholder meetings for the

years 2015 through 2017.[1] For each investor-meeting, we observe their number of shares owned, whether they voted, how they voted, and their zip code.

We merged 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 agenda descriptions. We classify proposals as shareholder-sponsored SRI proposals (consisting of environmental and social proposals), shareholder governance proposals, and management-sponsored proposals following Brav et al (2021).

Following Zytnick (2022), we obtain mutual fund votes from ISS Voting Analytics and merge them with CRSP Open-End Mutual Funds dataset. For open-end funds, we treat funds at the CRSP Class Group level (i.e. combining all share classes of a single fund using). 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.

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 Bachelors or post-Bachelors 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 6, we look at firms in politically charged industries. We follow the definitions used by Hong and Kostovetsky (2012), who create four categories of such industries: natural resources, firearm or military, tobacco, and other vices (alcohol and gaming). Using standard industry codes (SICs) and data from KLD, we define the categories as Hong and Kostovetsky (2012) do. We classify natural resource firms as those with an SIC code between 0800 and 0899, 1000 and 1499, 4600 and 4699, or 4900 and 4999. We classify tobacco firms as those with an SIC code between 2011 and 2199 or a tobacco designation by KLD. We classify as gun or defense firms as those with an SIC code between 3760 and 3769, equal to 3795, or between 3480 and 3489, or those with a firearm or military designation by KLD. We classify firms with other vices as ones with an SIC code equal to 2080 or between 2082 and 2085 or an alcohol

[1] The data do not include proxy contests and do not include some shareholders who own shares as registered shareholders. As described in Brav et al (2021), the way that Broadridge defines individual investors may permit some small family investment offices to be included, though the number of these appears to be trivial. The data also exclude investors who are the only one in their zip code, to maintain anonymity. Our data includes more proposals than Brav et al. (2021) because they excluded proposals that did not match to a second Broadridge dataset that is not used here.

designation from KLD, or those with "Gaming" in their firm name or a gaming designation from KLD.

In Section 7, 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 our data coverage.

3. Hypothesis Development

To understand the questions we seek to answer in this paper, consider a two-dimensional cartesian coordinate system. Each proposal has two points in the coordinate system—the location of the proposal passing and the location of the proposal failing. Each voter has a location on the x-axis, and this location is her bliss point: all else equal, she always prefers the option that is closer to her bliss point on the x-axis. This axis contains voter ideology—what separates and divides different voters.

Voters do not have a location on the y-axis. Instead, all else equal, all voters prefer the option that scores higher on the y-axis. This axis represents proposal quality, and, all else equal, voters always prefer a high-quality option to a low-quality option. Combining the axes, voter i chooses option v (yes or no) on proposal p that maximizes her utility, which might be written as:

$$U_{ip}(v) = g_i\left(\left|B_i - I_p^v\right|\right) + Q_p^v + \epsilon_{ip}^v \qquad (1)$$

That is, the utility from voting choice v is given by some decreasing function g of the distance between voter i's bliss point, B_i, and the ideological (x-axis) location of the voting choice, I_p^v, plus the (y-axis) quality of the voting choice, Q_p^v.

This setup provides the framework for the questions we explore in this paper. Our main focus is the x-axis, ideology. First, in Section 4, we use an unsupervised learning process to learn what the axis represents; that is, how might we best label the x-axis. The process produces a series of dimensions, each with less importance than the one before. We find the first dimension in this process—the best label for the x-axis—corresponds closely to management's recommendation, and we shift focus to this as our measure of ideology.

Then, in Section 5, we consider two types of related questions. First, we assess the relative importance of the two axes to each other. Consider the x-axis, ideology. It might be spread out or scrunched together—the latter would mean that voters have similar objectives and

beliefs as to how to obtain those objectives, stronger proposals outperform weaker proposals, and a factor that makes some voters more likely to vote for a proposal does not make other voters less likely to vote for it. Similarly, consider the y-axis, quality. It might be spread out or scrunched together (relative to the x-axis)—scrunched together would mean that voters choose based on ideology, and that proposals perform similarly to each other.

Second, also in Section 5, we assess the contours of individual ideology. If some individuals are on one side of the axis and others are on the other side, how does that manifest in their voting choices? We show how dramatically different proposals, which share little but their management recommendation, perform very similarly among individual investors, particularly as compared to funds.

The results of Section 5 show that variation on the x-axis, not the y-axis, determines the outcome of a given vote. In Section 6, we aggregate at the proposal level, showing how proposal results (among individuals) are largely determined by the ideological composition of the firm's individual investors, which varies from firm to firm—in other words, even at the proposal level rather than the individual vote level, location on the x-axis is key.

Next, in Section 7, we look for the factors that explain why some individuals locate on the left side of the axis and others locate on the right side. Finally, in Section 8, we explore the features of proposals that are higher up on the vertical axis.

Our results in each section appear to be highly consistent with a model of individual investors who use a simple heuristic—their general affinity towards management—to make voting decisions. Section 4 shows that shareholders differ on whether they vote in favor of management proposals and against shareholder proposals, or vice versa. Section 5 shows how this predilection is strong—stronger than for funds—and how it governs voting behavior on all sorts of disparate proposals. An individual investor's vote on, say, a shareholder environmental proposal is predictive of their vote on—in increasing order of surprisingness—all other shareholder environmental proposals, shareholder social proposals, shareholder governance proposals, and management-sponsored proposals. Section 7 shows that we can connect this affinity heuristic towards with other behaviors: specifically, one's votes are highly correlated with one's political voting ideology. It may not be surprising that those who vote for Democrats in political elections would also tend to favor shareholder environmental and social proposals,

but it is more surprising that they also tend to favor shareholder governance proposals and oppose management proposals.

Section 8 helps interpret our results in this lens. Individual investors are more likely to vote with management when the firm's recent stock returns have been strong. This captures an aspect of quality—voters are happy to stay the course with management that is doing a good job. Recent stock returns impact individual investor votes even when they appear unrelated to the proposal. Specifically, investors are more likely to oppose a company's shareholder-sponsored social responsibility proposals if the firm has had strong recent stock performance. They are even more likely to support a takeover (as the target shareholders) if the firm performed well in the lead-up to the announcement. These oddities strike us as consistent with individual investors who vote with management when they have a positive view of management—which is mostly driven by voter characteristics, but which for at least some shareholders can be affected by recent performance.

4. Individual and Institutional Investor Ideology

A. Overview

In this section we explore individual investor ideology by conducting a dimension reduction analysis on their votes.

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 element of ideology—and those disagreeing groups of voters are at different ends of the ideological spectrum. Dimension reduction analysis (i) finds the most important dimensions of difference, and (ii) identifies where voters and proposals are situated within those dimensions. It is a method solely interested in conflict, not consensus.

We conduct dimension reduction on the space of individual investor votes. Following Bubb and Catan (2020), 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?

The analysis yields answers to these questions. First, more than half of variation in individual investor voting choices can be captured by just one dimension, moreso than for funds.

Second, the dominant dimension dividing individual investors is their stance towards management. Management recommendations are the most important aspect determining how individuals will vote with respect to a proposal—not, as with funds, the proxy advisor recommendation. And third, retail investors can largely be categorized into one voting party which always votes with management recommendations, with a dispersed opposition that votes against management recommendations.

B. Principal Components

Two different dimension reduction analysis techniques have been used in the recent shareholder voting literature: PCA, in Bubb and Catan (2020), 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.[2]

PCA can be summarized as follows. For an $N \times P$ matrix of votes Y, with voters $1, \dots, N$ 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 $N \times K$ matrix Z, which contain the scores for each of the N 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. In Appendix C, we describe in detail the methodology we use in conducting PCA. For any given voter n, her score in dimension k, Z_{nk}, is simply the product of the (demeaned) $1 \times P$ vector of her votes $Y_n - M_n$ and the $P \times 1$ vector of proposal weights in dimension k, A_k.

In words: 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 which score highly in the first dimension. The second dimension is orthogonal to the first, and by construction cannot capture as much disagreement.

[2] In Appendix D, we repeat the exercise with W-NOMINATE and reach identical conclusions. W-NOMINATE has the benefit of being explicitly designed with a utility interpretation: voters have a bliss point B, and utility is given by $\beta e^{(-\frac{1}{2}(B-I_v))} + Q_v$, where $I \in \{I_{yes}, I_{no}\}$ 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. Although it is better known and more standard in political science, it lacks the flexibility of PCA.

C. Brief Methodology of PCA

A 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 (for, against, or missing, the contents of each cell). Because PCA relies on comparing votes of different voters on the same proposal, we begin by limiting to proposals with a sufficient number of votes (1000 from individuals and 25 from funds) and individuals 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.[3]

Most individual shareholders do not vote on most proposals, so most cells are missing. Following Bubb and Catan (2021), 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.[4]

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) would place on the dimensional space created by individual investors. We can also use it to place hypothetical voters, like ones who always vote with management or proxy advisor recommendations. By creating the space using individual investors, and projecting other investors onto the dimensional space, we avoid having those other investors alter the space. If there were a group of voters whose votes were given by $\ddot{Y}$, then their scores can be imputed as $(\ddot{Y} - M) \times A$.

We describe our methodology in greater detail in Appendix C. As we show in that appendix, although our method requires imputation of investor votes on proposals where the investor did not vote, the imputation error for individual investors is lower than that for funds.

[3] 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. 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.

[4] In Appendix C and Appendix Figure C1, we describe various measures of imputation error. A natural benchmark is to funds. We show lower imputation errors for individual investors than for funds.

Appendix D shows the results of a W-NOMINATE analysis, *a la* Bolton et al. The conclusions are qualitatively identical to the conclusions here.

D. Ideological Dimensions of Funds

Before presenting results on individual investors, we begin by establishing a point of comparison: the ideological space of funds. Figure 1, Panel A, contains the first two dimensions from PCA using fund votes over our sample period, and its results closely resemble the fund ideological spaces found in Bubb and Catan (2022) Figure 1.[5] Each dot represents a single fund. As do Bubb and Catan (2022), we include the locations of three hypothetical voters: one who always votes with Management, one who always votes with Institutional Shareholder Services (ISS), and one who always votes with Glass Lewis. ISS and Glass Lewis are proxy advisory firms that make recommendations to institutional investors on how to vote. We find, as they find, that management and these two proxy advisors serve as focal points for fund voting and define the axes in the space—Dimension 1 nearly captures voting in agreement with ISS recommendations, Dimension 2 nearly captures voting in agreement with Glass Lewis recommendations.

We add to the figure three additional hypothetical voters in red: one who votes always against management recommendations, one who votes always in favor of any proposal, and one who votes against any proposal. The hypothetical voters provide a bit of insight about proxy advisor recommendations: where ISS and management disagree, it tends to be on shareholder-sponsored proposals (which management opposes), so a voter who always votes in favor of all proposals would locate towards ISS on the graph. Where Glass Lewis disagrees with management and ISS, it tends to be on management-sponsored proposals (which management favors), so a shareholder who always votes against all proposals would locate towards Glass Lewis on the graph. However, these hypothetical voters do not appear to capture anything about fund ideology—as we'll see later, this starkly contrasts with individual investors.

[5] Our methodology differs in several small ways from that of Bubb and Catan (2021), leading to various small differences, but the pictures are qualitatively identical. It also resembles Bolton et al. (2020) Figure 3B, which uses W-Nominate instead of PCA.

E. Capturing Variation in Voting

We next run PCA using a sample of individual investors.

A non-trivial question in studying ideology is whether variation in voting can be well-captured by a small number of dimensions. Recall that decision-making on ideology, as in Downs's (1963) spatial reasoning model, is just one possible model of decision-making. If each proposal has a different group of supporters, then a dimension reduction analysis would not be able to explain much variation in voting.

In Figure 2, we present a scree plot, which is a figure that contains the dimensions produced by PCA on the x-axis and the percentage of total variation captured by that dimension on the y-axis. By the construction of the dimensions, the percentages are necessarily decreasing. We present results separately for our separate estimations of mutual fund voting and individual investor voting.

A key conclusion of Bubb and Catan (2021) is that mutual-fund voting was well-captured by just two dimensions. Indeed, Figure 2 shows that, for 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.

The scree plot shows that individual investor votes are captured to a much greater extent 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%.

F. Ideological Dimensions of Individual Investors

We next examine the dimensional space created by the votes of individual investors. Figure 1, Panel B shows a scatterplot of individuals on the first two dimensions. We label, as before, a hypothetical voter 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.

We observe the following: first, the factors that divide individual investors are different from those that divide funds. Once you know a given voter's PCA scores, the most important thing to know about a proposal to predict a fund's vote is ISS's recommendation; the most important thing to predict an individual's vote is management's recommendation.

The x-axis of Figure 1, Panel B corresponds quite well the line between a pure management and a pure anti-management voter.[6] 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 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 has nothing to do with the fact that most shareholders vote in favor 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."[7] 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.[8]

Second, variation in Dimension 2 arises from differences in *how* voters oppose management. 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. The graph features a cluster of individuals on its top, on the left. A

[6] 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. 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. In Appendix Table A[2], we present factors associated with higher and lower scores in the first two dimensions, beyond management recommendations. A pro-management voter is *most* pro-management, and an anti-management voter is *most* anti-management, on shareholder proposals, at large firms, and at firms with poor Tobin's q and return on assets.

[7] Suppose we flipped the votes on all shareholder-sponsored proposals, so that a "1" was a vote with management's recommendation and a "0" was a vote against it, while leaving votes on management-sponsored proposals as is. Then the voter scores in Figure 1, Panel B would be unchanged. A voter's ideologically is unaffected by which direction is yes and which direction is no. The only difference is that the proposal scores for shareholder-sponsored proposals would be flipped from positive to negative in Figure 3. The conclusion would be the same—any vote against management's recommendation drives a voter's dimension 1 score lower.

[8] 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 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.

Third, the Principal Components Analysis yields the party structure of individual votes: a concentrated "Management" party (left side of Figure 2 Panel A), 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).

As we will see, a recurrent feature of individual voting is a failure to coordinate on what proposals to oppose management on—in contrast to funds, who tend to oppose management in coordination.

We conclude that individual investors do have predictable voting ideologies that correspond to a small number of interpretable factors. The process takes in no information about the proposals or voters other than the votes themselves. Given that individual investors may vote with little information or attention, and that they have no parties (or proxy advisors), there is no guarantee that their votes are structured into interpretable ideologies. Instead, we see very clean and interpretable results: the (negative) sign of the first dimension virtually always equals the management recommendation, and virtually all proposals have positive dimension 2 scores.

G. Using Dimension Reduction Results to Understand Investor Voting

While the dimension reduction analysis yielded certain insights on investor voting, we note its limitations. First are the technical limitations: we were limited in this section to a relatively small sample of individual investors who had cast sufficient votes to allow for the process to work, whereas we are interested in the investor population as a whole. Furthermore, the process requires imputation of missing votes. Second are interpretative limitations: we would like to understand and interpret investor behavior in terms of describable characteristics, not latent dimensions.

We view the analysis performed in this section as exploratory, and we used it to reveal the main dimension of individual investor ideology. In all subsequent sections, we will focus our

attention on investor agreement with management recommendations—closely related to individual investor's dimension 1—as our variable of interest.

How does our approach going forward connect to our approach in this section? Return to the voter's utility from Equation 1. By focusing on agreement with management recommendations, which are a simple binary for all proposals, we remove all proposal-specific aspects from the first term on the right-hand side. Thus, we can write the utility difference between a vote with management and a vote against management as the sum of an investor-specific component and a proposal-specific component:

$$U_{ip}(1) - U_{ip}(0) = [g_i(|B_i - 1|) - g_i(|B_i + 1|)] + \left[Q_p^1 - Q_p^0\right] + [\epsilon_{ip}^1 - \epsilon_{ip}^0] = \psi_i + \phi_p + \varepsilon_{ip}$$

That is, by focusing on a single dimension of ideology for which we know the location of each choice for each proposal, we transform our analysis of ideology into a more interpretable and digestible form, which we elaborate on in the next several sections.

In the next section, we will show that individuals are more consistent than funds with respect to voting with or against management recommendations—or, to put it another way, in the individual investor ideological framework, individuals are more ideological than funds. However, funds, as we saw in Figure 1, Panel A, have a different ideological framework, built around proxy advisors. How do individuals fare in that ideological framework?

Figure 6 shows individuals and funds in the space created by the other voting group. Panel A contains the individual scores from the individual investor dimension reduction analysis originally presented in Figure 1, Panel B, but this time overlays the fund scores in the dimensional space created by individuals. We can see that, by and large, and consistent with our results in this section, that funds are less consistent (or less extreme) than individuals.

Figure 6, Panel B contains the fund scores from the fund dimension reduction analysis presented in Figure 1, Panel A, but this time overlays the individual investor scores in the dimensional space created by funds. Perhaps unsurprisingly, in the fund's dimensional space, individuals appear to be less ideological—that is, they are less consistent (or less extreme) with respect to voting with or against proxy advisors recommendations. In fact, proxy advisor recommendations appear to capture very little of the variation in individual investor votes. This is unsurprising, since we would not expect individual investors to vote all the time with proxy advisors.

These results underscore that, for a given arbitrary ideological dimension, individuals or funds might be more ideological varied in that dimension. But the scree plot in Figure 2 shows that individuals are more ideological with respect to their primary dimension of ideology than funds are with funds' primary dimension of ideology. Based on our results thus far, we focus in the rest of the paper on the individuals' primary dimension of ideology, agreement with management recommendations, and compare the consistency of the two voting groups in that respect.

5. Determinants of a Vote: Voter Identity and Proposal Identity

A. Relative Importance of Voter and Proposal

In the previous section, we described the ideological axis on which individual investors disagree. The results orient shareholders on a spectrum from pro-management to anti-management. In this section, we evaluate how important one's position on that ideological spectrum is to voting choices, as compared to qualities of the proposal. In other words, we ask, what is more important in investor voting: variation across proposals or variation across shareholders?

Consistent with the results in the previous section, our outcome variable is whether a vote agrees with management's recommendation. To predict a given voter's vote on a given proposal, what information would be helpful to the researcher? if ideology is relatively important, we would wish to observe the same voter's votes on other proposals; if ideology is relatively unimportant, we would wish to observe other voters' votes on the same proposal.

Consider the following model of voting:

$$Y_{ip} = \delta_0 + \psi_i + \phi_p + \varepsilon_{ip} \qquad (2)$$

i indexes investors, p indexes proposals, Y_{ip} is i's vote on proposal p (equaling 1 for agreement with management), and ψ_i and ϕ_p are investor and proposal fixed effects, respectively.

We could deconstruct the variance in voting choices into component parts:

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

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

In Table 2, we estimate regressions of the form of Equation 2.[9] 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. We observe the following:

- 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);
- 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 votes were purely on merit among voters with identical information, beliefs, and objectives, and variation within a proposal driven purely by random noise, then we should see no voter fixed effects.[10] Instead, we see significant voter fixed effects for both individuals and funds, but with far greater explanatory power for individuals.

Of course, since we have more individual investors than funds, there are more voter fixed effects for individuals, potentially explaining their greater explanatory power. In the next subsection, we correct any such defect with a different approach.

B. Predictability of Voting Within a Category

We have decomposed variation in voting into its component parts and showed that the voter identity is more important than proposal identity, and that this difference appears to be

[9] Unlike in the dimension reduction of the previous section, where we were forced to limit to a small group of accounts that voted many times, our work in this and all other sections contains no sample restrictions on individual investors.

[10] In Appendix Table [1], we repeat the exercise dividing the data by category into management, governance, and SRI proposals; unsurprisingly, since proposals are more similar, both individual and fund votes are more explained by individual variation.

greater for individuals than for funds. In this subsection, we deepen the analysis, with a focus on the question, do individual investors distinguish between different proposal types?

We can re-frame the fixed effects results from Table 2 as a difference in predictability: voter identity appears to better predict vote outcome for individuals than for funds. Framing in this way allows us to evaluate consistency from a different angle: to what extent does a vote on one proposal predict a vote on another proposal? There are several advantages to this sort of analysis. First, it allows for a formal comparison, with significance tests, between individuals and funds. Second, it allows us to look at how a vote on one proposal predicts votes for the same or different meeting, firm, and/or proposal category. Third, the approach in this section treats all voters the same regardless of their 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:

$$Y_{ipct} = \beta_0 + \beta_1 Y_{i(-c)(t-1)} + \phi_t + \varepsilon_{ipct} \qquad (3)$$

i indexes investors, c indexes firms (and $-c$ denotes firms other than c), and t indexes years. The left hand side contains the investor's vote on a particular proposal, and the right hand side contains her vote on a randomly drawn proposal from a *different* firm in the *previous* year.[11] ϕ_t represents time fixed effects.

We estimate regressions in the form of Equation 3 and present the results in Table 3. For this regression, we draw a sample of 500,000 individual investors who cast a ballot at different firms in consecutive years. In column 1, we include our results for individuals. In column 2, we include our results for funds. In column 3, we estimate on a joint sample, and interact each variable with a fund indicator variable so we can estimate the difference between the two groups of voters. We focus on a vote last year on an SRI proposal.

Table 3, column 1 shows that an individual vote on one SRI proposal in year $t-1$ is highly predictive of her votes on SRI proposals at different firms in year t. An individual's vote in favor of a single randomly drawn SRI proposal increases her likelihood of voting in favor of

[11] Studying mutual fund voting, Matvos and Ostrovsky regressed a fund's votes on its *average* vote in the year prior, and concluded from the significantly positive coefficient that funds were systematically heterogeneous in voting choices. I modify Matvos and Ostrovsky 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 avoid having greater precision in the right-hand side variable for those voters who cast more ballots last year. Using the average of all the shareholder's votes last year yields virtually identical results.

an SRI proposal at a different company the next year by 47.5 percentage points. Column 2 contains the same results for firms, showing it is also quite predictive, with a pro-SRI vote contributing to a 36.4 percentage point increase in voting for SRI this year. Column 3 shows that one SRI vote is more than 10 percentage points more predictive for individuals than for funds. Individuals, then, are consistent on SRI proposals, and more consistent than are funds.

C. Predictability of Voting on Different Category

What does a vote on an SRI proposal tell us about their votes on other types of proposals? The dimension reduction results of Section 4 suggest that individuals have some degree of predictability from one proposal type to another with respect to voting with management recommendations. However, it is not obvious that one's opinion on an environmental or social proposal should have anything to do with whether one supports shareholder changes to the firm governance or management's proposals on, e.g., executive compensation or director elections.

Table 3, Columns 4 through 9 contain the results. A vote last year on SRI proposals is highly predictive of a vote this year on governance proposals or on management proposals at a different firm, and to a significantly greater degree than at funds.

Column 4 shows that for an individual, a single vote in favor of a shareholder-sponsored SRI proposal at a different firm last year increases one's likelihood of voting in favor of a shareholder governance proposal by 43.5 percentage points. For individuals, the predictability of an SRI proposal last year at a different firm on a governance proposal (43.5) is nearly as much as the predictability of an SRI proposal last year a different firm on an SRI proposal (47.5, from column 1). This cross-category predictability is not as nearly as high for funds: column 5 shows that a vote in favor of SRI at a different firm last year increases the likelihood of voting for a governance proposal by only 23.3 percentage points. The difference between funds and individuals is also stark on management-sponsored proposals. In column 7, a single vote in favor of an SRI proposal at a different firm last year decreases the individual investor's likelihood of voting in favor of management-sponsored proposal by 10.4 percentage points—taking total opposition to management-sponsored proposals from 5.5% to 15.9%. In column 8, for funds, by

contrast, there is only a 1.5 percentage point difference between those voting in favor of, and opposed to, an SRI proposal at a different firm last year.[12]

We have shown that individuals exhibit strong consistency in voting that extends across firms, years, and even proposal types. This cross-proposal type consistency may provide insight into a question that has been of recent interest to academics (e.g., Pollman (2022)): why, in virtually all descriptions of social investment, is "G" (governance) included with "E" (environment) and "S" (social)? That is, why is the term ESG so ubiquitous, when corporate governance issues would appear to differ substantially from environmental and social issues? 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. We cannot say the origins of this association, but it may help explain why mutual funds targeting pro-SRI shareholders tend to claim strength in all of E, S, and G.

D. Consistency of Individual Votes and Proposal Results

As a simple visual representing our results in this section, 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.

Because most proposals are management-sponsored, and because both individuals and funds vote in favor of management-sponsored proposals in high numbers, the greater consistency of individuals can be hard to see when including all proposals. In the other three quadrants of Figure 5, we separate out proposals by category, and graph votes in favor or opposed. We can see that for management-sponsored proposals, shareholder-sponsored SRI proposals, and shareholder-

[12] Appendix Table [2] repeats Table 3, but, instead of using an SRI vote last year, uses a governance vote (in panel A) and a management vote (in panel B), with highly similar results. Of note: a management vote last year is highly predictive of a management vote for individuals but is barely predictive for funds.

sponsored governance proposals, individual investors have more probability mass on the edges and funds have more probability mass in the middle.

The consistency we have shown throughout this section has implications for proposal outcomes. We aggregate the votes by proposal from individuals and funds, and display histograms of the frequency of proposal outcomes in Figure 6 (equal-weighting all voters, and limiting to proposals with 10 or more votes).[13] 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 SRI and governance proposals. Whereas funds strongly discriminate between different proposals, individual investors tend to provide unvarying support for all proposals in a category.

The results of this section suggest that proposal voting results, among individual investors as compared with mutual funds, have relatively little to do with the merits of the specific proposal once accounting for management recommendations.

6. Variation in Voter Composition at the Firm Level

A. Voter Composition

In the previous section, we showed that an individual investor tends to vote rather consistently across her votes. Thus, to predict a given voter's vote on a given proposal (with respect to management's recommendation), it is far more helpful to know the voter's identity rather than that of the proposal. This raises the question: does this hold true when we aggregate all of a proposal's votes together? Or, to put another way, are company voting results determined by who their shareholders are, rather than anything about the firm or the proposal?

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. And even allowing that voting investors of a given firm are not a random draw from the voting investor population, we would not necessarily see differences between the voting investors of firms that would affect voting outcomes. If the differences between different firms in their voter

[13] We require only 10 votes on a proposal because most proposals don't have many funds voting on them. 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. As a robustness check, Appendix Figure [B1] replicates Figure 6 with a 1,000 vote requirement for inclusion; the figures look quite similar.

base do not correlate with voter ideology, then different firms should have ideologically similar voting bases.

We begin this section by assessing how much variation across firms there is in the ideology of their voting bases. To do this, we look at investors who have voted at more than one firm. To assess the ideology of investor i at firm c, we are interested in her votes at firm's *other* than c. We calculate $\bar{Y}_{i(-c)k}$ as the investor's votes on other firms in category k, where k represents SRI proposals, governance proposals, management proposals, or all proposals. Then, for a given proposal, we calculate the ideology of the investment base as:

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

That is, we average $\bar{Y}_{i(-c)k}$ for each investor voting on proposal p. To ensure the law of large numbers has a chance to operate, 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.

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, they still show considerable range. For SRI 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.

B. 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 is, if one firm's proposal earns an 80% vote among individual investors and another firm's proposal earns a 60% vote, how much of that difference can be explained by variation in the composition of the voters?

Even though, in determining an individual investor's vote, the individual identity dominates the proposal identity, we wouldn't necessarily expect to find the same result for the aggregate proposal outcome. First, we have a measurement limitation: only some individual investors have votes on other firm's proposals, so the average individual investor vote on other

firms' proposals excludes some investors. Second, as we described in the previous subsection, the law of large numbers washes out much of the individual variation at the proposal level.

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).

Table 4 contains the result. We focus on the R^2 number. Columns 1 and 2 regress the outcomes of shareholder-sponsored SRI proposals on the average, across investors voting on the proposal, of their SRI 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 SRI, governance, or management, respectively. In columns 2, 4, and 6, we limit to proposals with at least 1,000 such investors.

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

We find these results surprising. 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.

The results imply that corporate directors interested in winning votes among individual investors may do better affecting the composition of their voter base rather than operating a persuasion campaign, though of course the marginal investor may differ from the average investor.

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

Consider two firms with SRI proposals. One has an individual investor voter base that votes 20% in favor of SRI proposals elsewhere; the other has an individual investor voter base that votes 33% in favor of SRI 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 SRI metrics may have shareholders who are most likely to vote in favor of shareholder-sponsored SRI proposals.

Following Hong and Kostovetsky (2012), we focus on firms in politically charged industries, using their four controversial industries defined as they define them: natural resources, tobacco, firearms and military, and other vices (alcohol and gaming). We describe how firms are assigned to these industries in Section 2. Of course, these industries do not each have identical political valences—alcohol and gaming firms, and perhaps tobacco, are not regarded as particularly conservative in the United States. For each proposal, we regress its mean shareholder vote on other firms on firm characteristics, including whether the firm is in one of those categories:

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

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

Table 5 contains the results. Unsurprisingly, we see that at natural resources companies and companies in the military/firearms industries, the shareholders are significantly less likely to vote in favor of SRI proposals at *other* firms.

The result yields an ironic 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 SRI proposals. Because individual investors invest ideologically and vote ideologically, they might undermine their votes with their divestment.

7. What Explains Differences Across Investors?

We have established, in the previous sections, that individuals vote quite differently from each other. 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. Because 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 Bachelors degrees, and fraction with post-Bachelors 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 they would ordinary individual 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 point more likely to vote with management.[14]

Our results are in Table 6. 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 SRI proposals, in favor of shareholder-sponsored governance proposals, and on management-sponsored proposals, respectively.

We note the following:

- Again, we see a signs of the consistency of voting across categories. All coefficients have one sign in columns 1 and 4 (agreement with management and votes in favor of management-sponsored proposals) and the opposite sign in columns 2 and 3 (votes in favor of shareholder-sponsored proposals).
- 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 SRI and governance proposals and against management proposals if she lives in a zip code

[14] Of course, our assumption is unlikely to be true, and individual investor voters certainly systematically differ from the other residents of their zip code; but for the coefficient's sign to be wrong, it would require support for management among those who are *not* 65 or older to be 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 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 SRI 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.[15]

It is hardly surprising that U.S. liberals are more likely to vote in favor of shareholder-sponsored SRI (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 SRI proposal and 12.3 percentage points more likely to vote in favor of a governance proposal.

These results, combined with the results in Section 6 that the ideological composition of one's voting base explains much or most of the variation in voting outcomes, suggest that corporate directors trying to win votes might do well to appeal to U.S. conservatives (or those who live in rural, older, conservative locations) to purchase stock, and appeal to U.S. liberals to sell their stock.

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

In this section, we present an odd result that we believe underscores that individual votes are largely driven by sentiment towards management.

We have shown that individual investors tend to be consistent in their voting: the primary determinant of a vote by one investor on one proposal, as compared to a vote by a different investor on a different proposal, is those investors' different stances towards management. What's more, we have seen that such individual-level variation dominates variation across proposals: an individual's vote on, say, a shareholder-sponsored SRI proposals strongly predicts her vote on another SRI proposal, a governance proposal, or a management-sponsored proposal. But this description does not fully account for all voting behavior; many individual investors do

[15] 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.

vote one way on some proposals and another way on others, whether on the same ballot, at different years, or at different firms. What explains such within-individual variation?

Some within-individual variation in voting is explained by variation in recent stock performance. Brav et al. (2022) observe that individual investors are highly sensitive to variation in the abnormal stock returns in the year leading up to the record date.

Why do individual investors look to recent stock returns? One explanation would be that stock returns speak to proposal quality. A vote to re-elect a director may be value-increasing if the firm has performed well; a vote to require an independent board chairperson is value-increasing if the firm has performed poorly.

There may be another possibility, however. Individuals may vote with or against management's recommendation based on their view of management, and recent stock returns might affect an individual's view of management.

To distinguish between these hypotheses, we look at whether individual investors vote for with management based on recent stock performance, even when it would seem to be irrelevant, such as on environmental and social proposals. We limit to shareholder-sponsored SRI proposals and estimate regressions of the form:

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

In which Y_{ipckt} is individual i's vote on proposal p, which belongs to company c, agenda item k, 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-agenda description fixed effects.[16] 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 7, 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

[16] The agenda description, provided by ISS voting analytics, provides a general description of the proposal. For SRI proposals, common agenda descriptions include "Report on Sustainability," "Political Lobbying Disclosure," and "Report on Climate Change."

throughout: individuals are more likely to vote in favor of SRI 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 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). If there were rumors or leaks leading up to the announcement, the stock price may rise in advance, so the stock performance immediately before the merger announcement may be correlated with voting results. However, we would not expect that voting results on the merger would be at all correlated with firm performance prior to that. 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 7, Panel B, we re-estimate Equation 4 using only target firm merger approvals.[17] 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.[18]

We conclude that even when individual investors have within-individual variation in their voting choices, such variation appears to be at least partially driven by variation in their view of the firm's current management.

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

[18] 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 pereformed weakly.

9. Discussion

A. Impact on Firm Incentives

Our focus in this paper has been understanding the model used by individual investors to make voting decisions. But our findings also have implications for the incentives facing corporate directors who seek ballot box victories.

These incentives may be present for two reasons. First, some firms have large retail shareholder bases, including meme stocks such as Game Stop and AMC. Second, some reforms, including proposed policy changes and certain trends in mutual fund investing, would potentially greatly increase the fraction of votes cast by individual investors. These potential reforms include: (i) standing ballot instructions, which would allow individual investors to designate, on some sort of category basis, how they want their shares voted, rather than having to make a selection for each specific proposal at each specific firm (Fisch (2017)); (ii) prohibitions on voting by passively managed mutual funds, which would dramatically increase the voting power of all other voters (Lund (2017), S. Griffin (2019)); and (iii) pass-through voting at institutional investors, which would give investors in institutional investors the ability to vote on proposals of firms owned by their funds (Fisch 2022, C. Griffin (2020)). Several institutional investors, including BlackRock and Vanguard, have recently experimented with variations of pass-through voting, creating the potential for a dramatic increase in the voting power of individual investors (see, e.g., Benjamin (2022), Fink (2022), and Rosenbaum (2022) for examples).

If individual investors become a large fraction at the voting base, what incentives might corporate directors face? Two in particular stand out. First, corporate directors seeking strong individual investor voting results might focus more on recent stock performance.[19] We have seen, both here and in Brav (2021), 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, and more impactfully, 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 SRI

[19] Brav et al (2020) shows that funds, in contrast to individual investors, are largely insensitive to recent stock performance.

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.[20]

B. Designing Standing Voting Instructions

In the previous subsection, we mentioned potential reforms that would increase individual investor turnout. Some of those reforms are built around the idea of standing voting instructions, like those used by institutional investors. An institutional investor delivers instructions for its proxy service provider directing it on how the fund's votes should be cast on a general basis; then, for a given ballot, the institutional investor has the ability to override its instructions with specific selections. Generally, institutional investor standing instructions take the form of (potentially customized) recommendations from their proxy advisor (Hu and Zytnick (2022)).

Proposed reforms would create a similar option for individual investors, although such investors likely would not have access to, or a willingness to pay for, proxy advisor recommendations. Investors who own stocks could indicate to their broker, in a general way, how they want their votes cast. Such instructions could take the form of category instructions (e.g., "always vote in favor of shareholder environmental proposals.") Or they could take the form of mimicry, (e.g., "cast my ballot identically to party X's recommendations.") Such voting instructions may feature for owners of mutual funds as well, as institutional investors experiment with pass-through voting. Mutual fund voting reforms that would give individual investors in funds the ability to submit votes on the fund's holdings would likely work on the same principles, since it would be impractical for individual investors to cast ballots on all firms in, say, the S&P 500.

We believe our results may shed light on how such policy reforms may work in practice. A concern about 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

[20] 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 Figure 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 are have 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.

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 may thus increase turnout without a loss of use of firm-specific information. In fact, well-designed voting instructions may improve on this dimension by overcoming an individual's lack of information about a particular firm. A voter could instruct a vote in favor of proposals to require greenhouse gas emission disclosures at firms designated by a third party as potential heavy emitters. Such instructions would likely be a substantial improvement, in terms of turning information into votes, over current voting practices. A "mimicry" approach, in which individual investors choose to follow the votes or recommendations of some party (whether management or a third party), may provide similar benefits, to the extent the party that is being mimicked has engaged in firm-specific research. Overall, we believe our results suggest that, if a policy goal is to increase the voice of individual investors, or if mutual funds seek to do so for business reasons, standing voting instructions and pass-through voting may accomplish this goal without reducing the degree to which individuals use firm-specific information in their votes.

10. Conclusion

[TO BE WRITTEN]

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[Benjamin, https://www.investmentnews.com/schwab-responds-to-investor-activism-by-giving-fund-shareholders-more-say-in-proxy-voting-227783]

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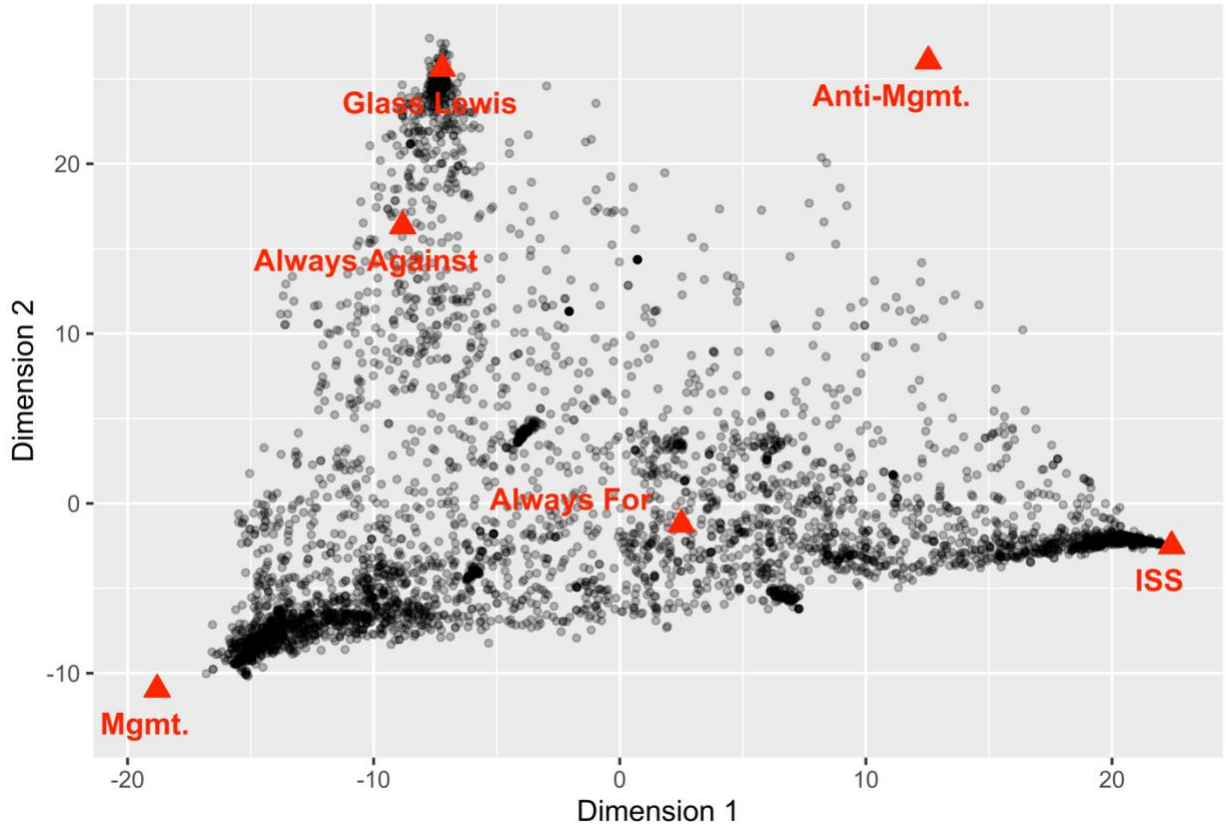
Figures and Tables

Figure 1. 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. Panel A conducts a PCA conducted on mutual fund votes; Panel B conducts a PCA on individual investor votes. In each case, an investor's missing votes (i.e., proposals that the investor did not vote on, regardless of whether it owned a stake in the firm) are imputed through an iterative process. First, the missing votes are imputed as the average vote among other voters in the sample. Second, after running a PCA, we impute missing votes as the product of the individual's (demeaned) score matrix and the proposal's score. Where an actual vote was cast, we always replace the imputed vote with the actual vote, and we cap imputed votes at 0 or 1. In both panels, we run 1,000 simulations. 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. Fund Voting Dimensional Space



Panel B. Individual Voting Dimensional Space

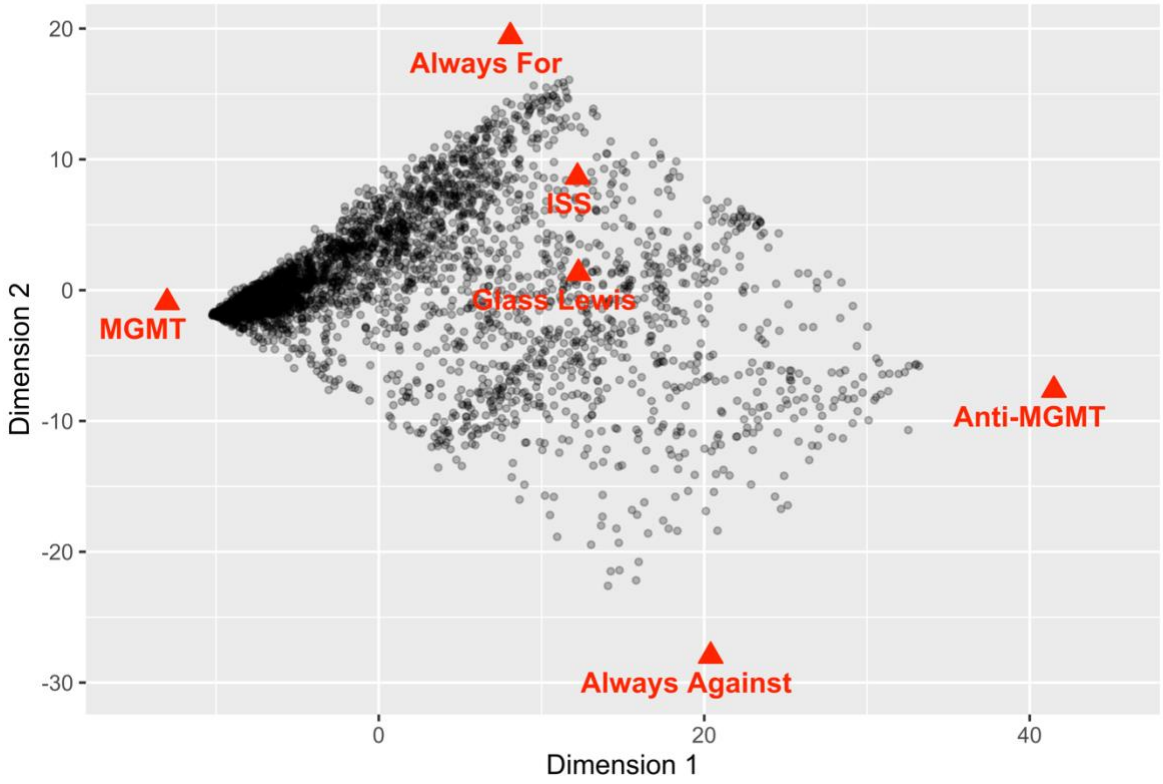


Figure 2. Scree Plot of PCA Analysis

This figure contains a scree plot from our Principal Components Analysis. A scree plot shows, for each of the 10 dimensions (in order from the primary dimension to the 10th dimension), how much of the variation in voting is explained by that dimension. It is produced from the attribute of the *R prcomp* function. We plot the individual investor analysis in blue and the fund analysis in red.

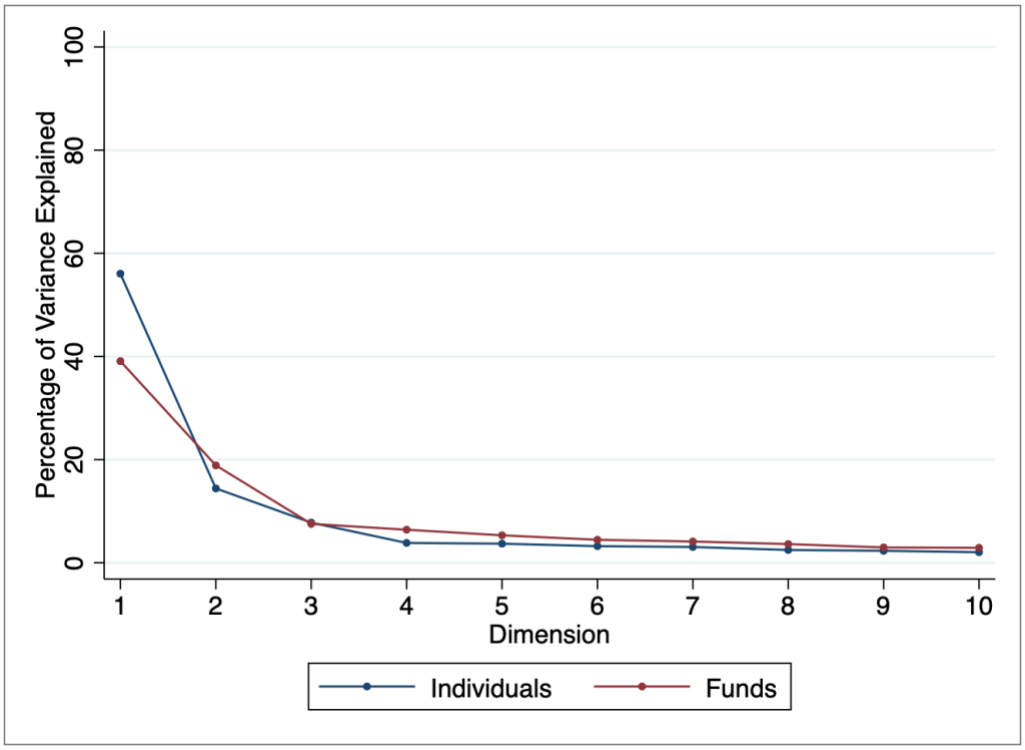


Figure 3. Representation of Proposals in Two-Dimensional Space

This figure contains results from Principal Components Analysis on individual investor votes. The figure is a scatterplot of proposal scores in the two primary dimensions produced by each PCA. We plot management-sponsored proposals in red and shareholder-sponsored proposals in blue.

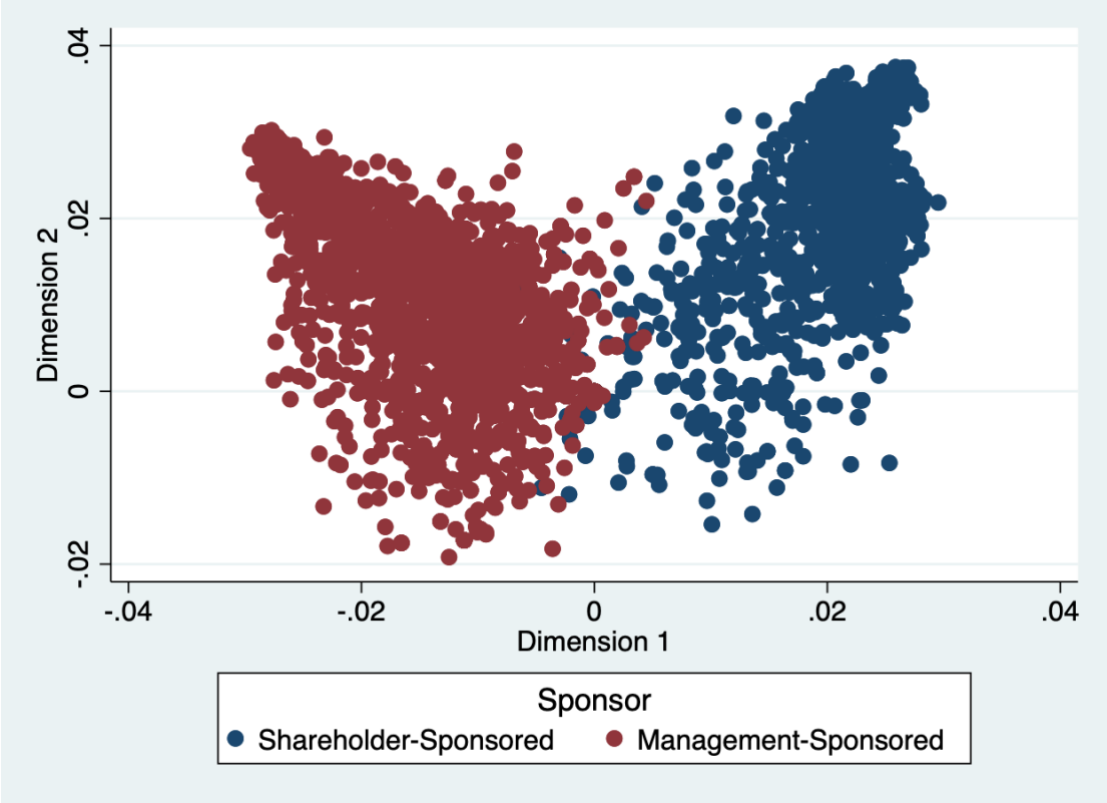
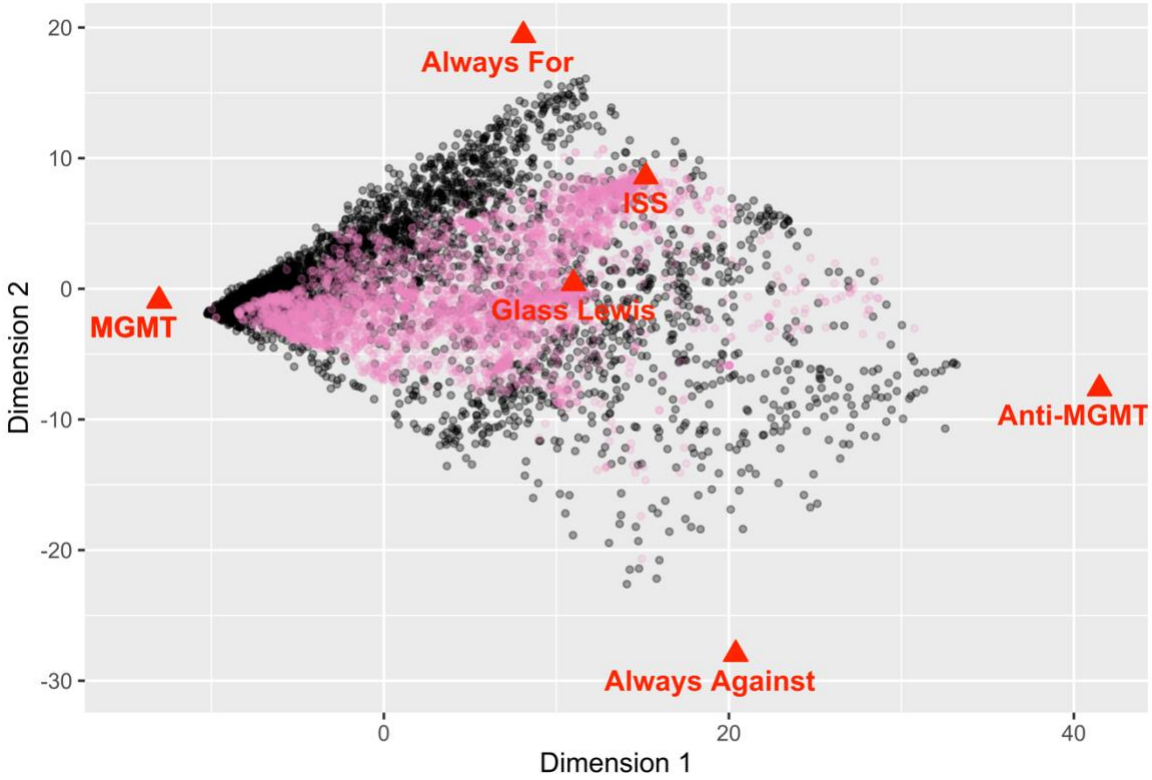


Figure 4. Overlays Onto Shareholder Voting Dimensional Spaces

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 contains fund votes (in pink) overlaid onto the dimensional space created by individual investors (in black); Panel B conducts individual votes (in pink) overlaid onto the dimensional space created by fund votes (in black).

Panel A. Funds Overlaid Onto Individual Investor Dimensional Space



Panel B. Individuals Overlaid Onto Fund Dimensional Space

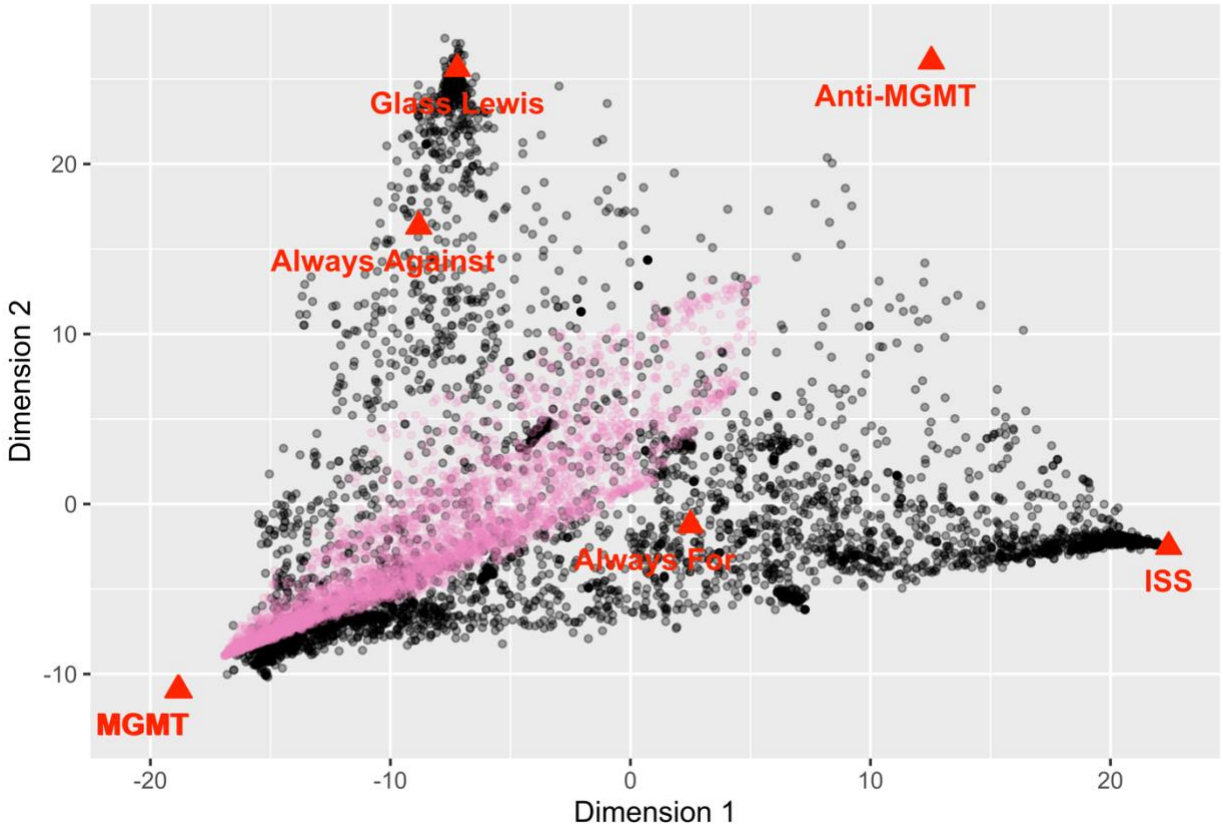
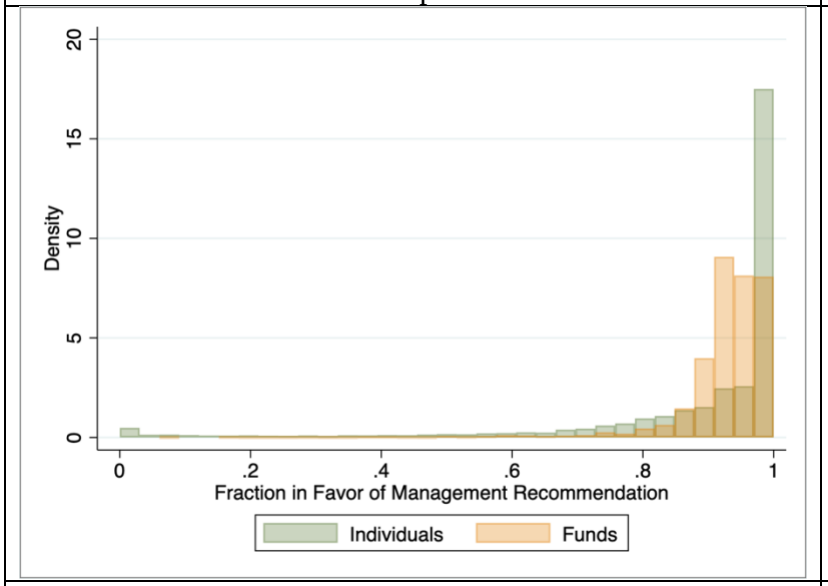


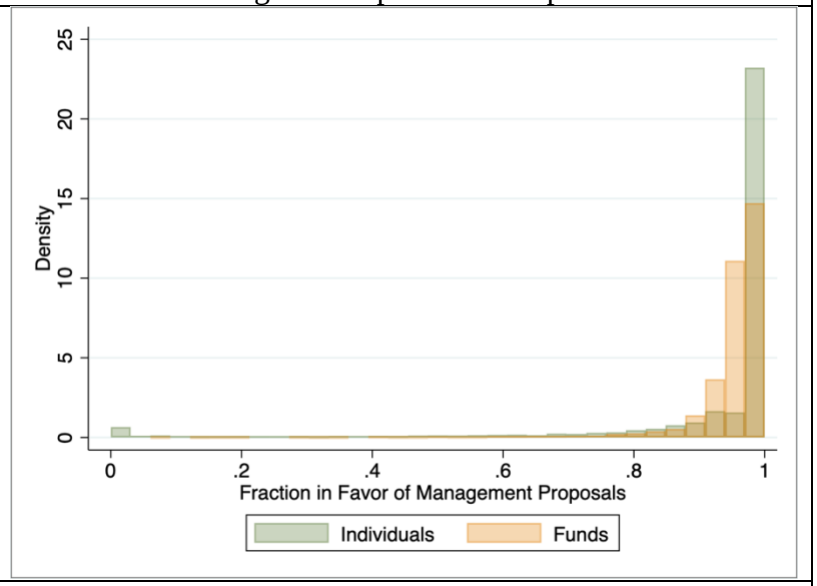
Figure 5. Voter Consistency

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.

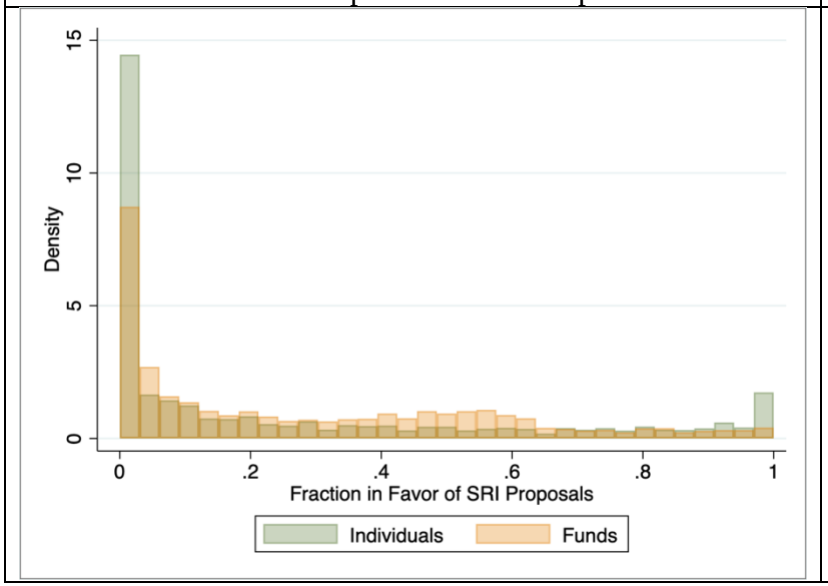
All Proposals



Management-Sponsored Proposals



Shareholder-Sponsored SRI Proposals



Shareholder-Sponsored Governance Proposals

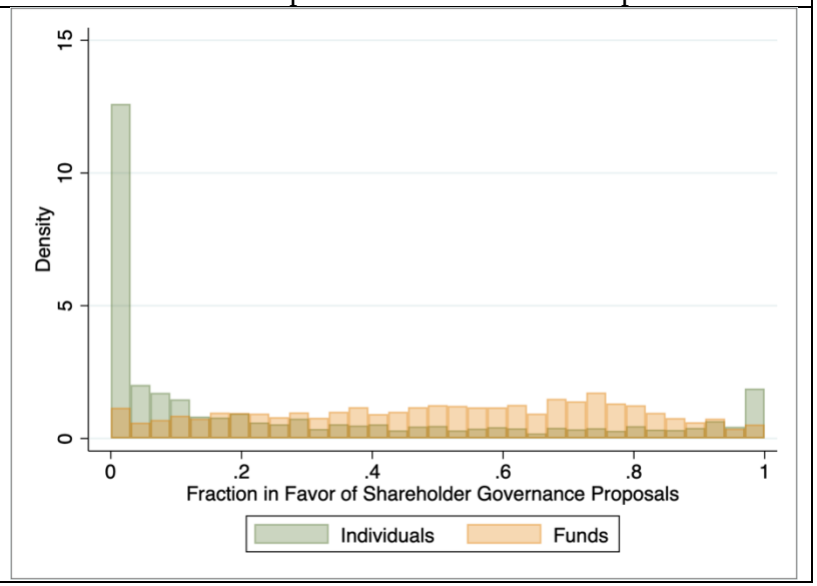
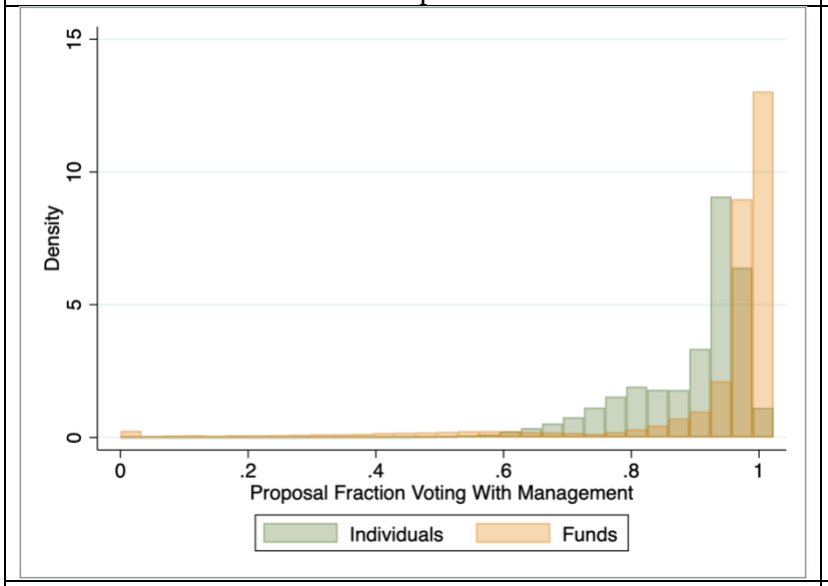


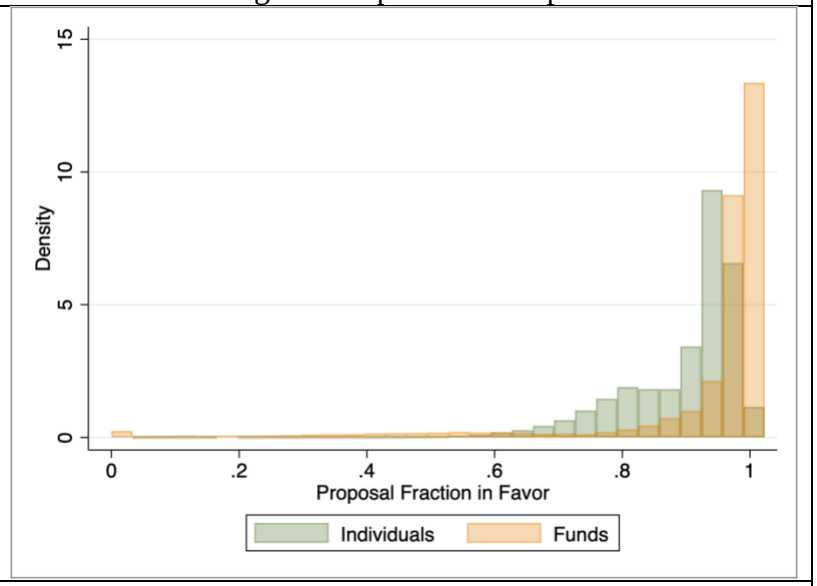
Figure 6. Consistency of Proposal Outcomes

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.

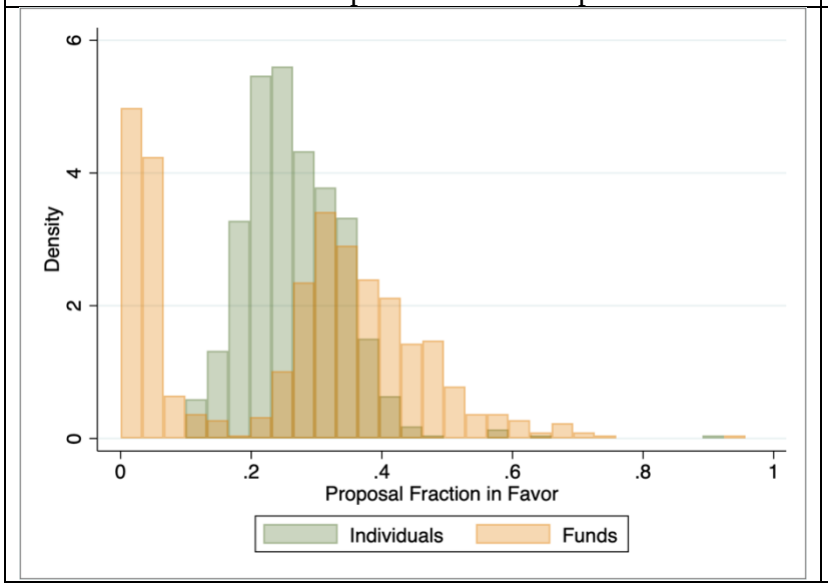
All Proposals



Management-Sponsored Proposals



Shareholder-Sponsored SRI Proposals



Shareholder-Sponsored Governance Proposals

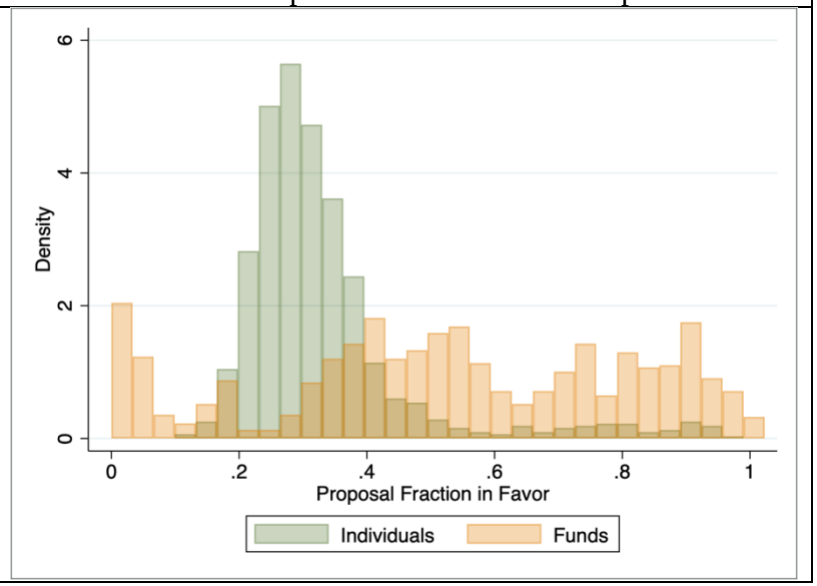
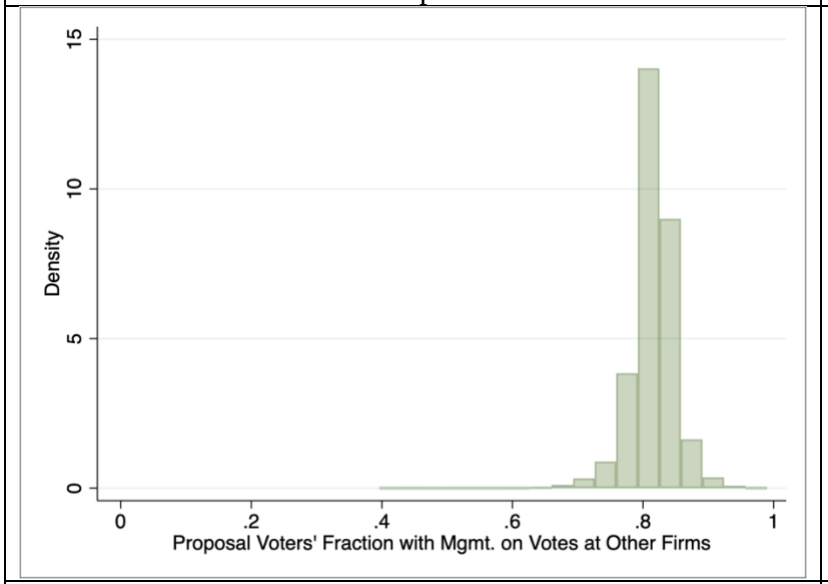


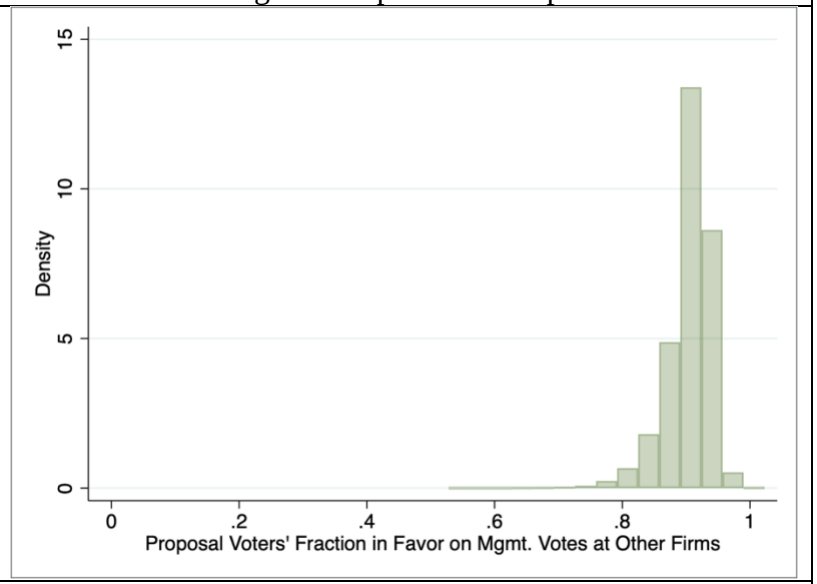
Figure 7. Variation Across Proposals in Ideology of Voting Base

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.

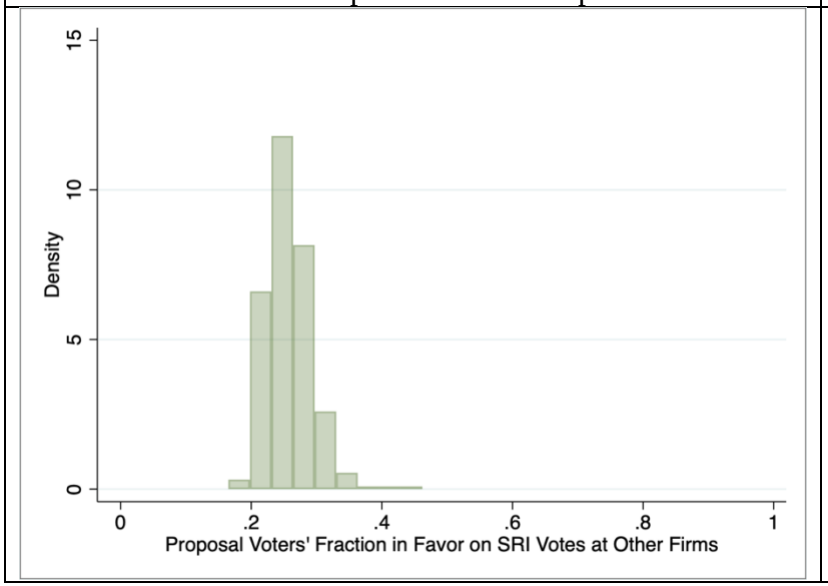
All Proposals



Management-Sponsored Proposals



Shareholder-Sponsored SRI Proposals



Shareholder-Sponsored Governance Proposals

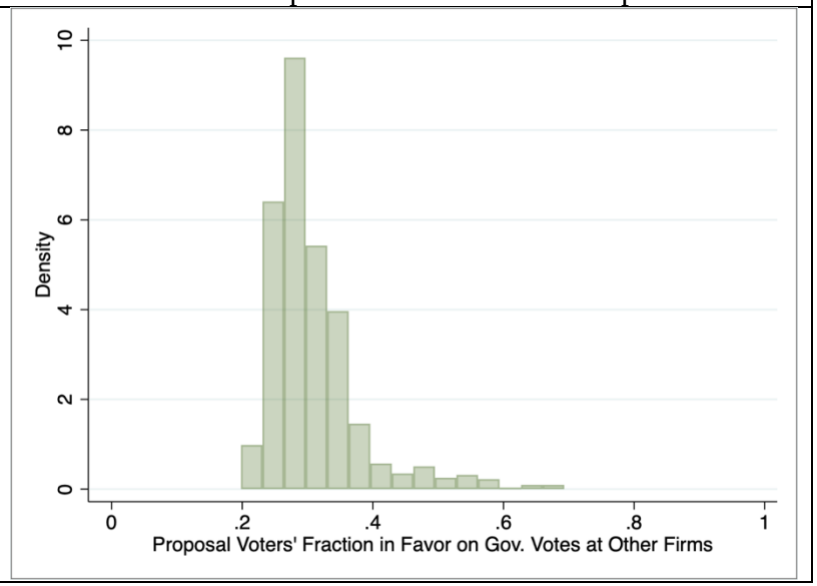


Table 1. Summary Statistics

This table presents summary statistics on our data. The total number of proposals is three greater than the combined number of shareholder-sponsored SRI proposals, shareholder-sponsored governance proposals, and number of management-sponsored proposals because of a small number of shareholder-sponsored proposals that do not have a category.

Panel A. Data Universe

	Individuals	Funds
Number of Voters	6,963,640	6,641
Number of Firms	5,829	5,829
Number of Meetings	15,145	15,145
Number of Cast Ballots	52,189,099	2,144,994
Number of Proposals	72,489	72,489
Number of Proposal Votes	550,249,456	16,780,019
Number of SRI Proposals	669	669
Number of Shareholder Governance Proposals	957	957
Number of Management-Sponsored Proposals	70,860	70,860

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. Systematic Heterogeneity in Voting

In this table, I estimate the following specification, following Matvos and Ostrovsky (2010):

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

In which i indexes investors, c indexes firms (and $-c$ denotes firms other than c), and t indexes time. Y_{ipct} is whether the investor's vote on a particular proposal matches management's recommendation (multiplied by 100 for ease of interpretation). The right hand side contains the same investor's (randomly selected) vote on an SRI proposal at a different firm in the previous year. Columns 1, 4, and 7 contain individual votes; columns 2, 5, and 8 contain fund votes; and columns 3, 6, and 9 contain both, with an interaction term capturing the difference between them. For both groups, we limit to those who have at least one SRI vote at a different firm last year. In columns 1 through 3, we look at votes on shareholder SRI proposals; columns 4 through 6, votes on shareholder governance proposals; and columns 7 through 9, votes on management-sponsored proposals. For individuals, we draw samples of 500,000, 500,000, and 100,000 random accounts who cast at least one SRI vote, governance vote, or 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)
		SRI Votes			**Gov. Votes**			**Mgmt. Votes**	
	Individuals	Funds	Both	Individuals	Funds	Both	Individuals	Funds	Both
Last year's SRI vote	47.48***	36.43***	47.47***	43.49***	23.32***	43.48***	-10.37***	-1.51***	-10.39***
	(0.73)	(1.46)	(0.73)	(0.43)	(1.03)	(0.43)	(0.22)	(0.28)	(0.22)
Fund			2.02*			21.59***			0.76*
			(0.96)			(1.69)			(0.34)
Last year's SRI vote × Fund			-10.17***			-18.95***			9.02***
			(1.49)			(1.15)			(0.38)
Constant	15.15***	19.40***	15.19***	17.41***	43.97***	17.50***	94.58***	94.43***	94.20***
	(0.20)	(0.46)	(0.20)	(0.12)	(0.44)	(0.11)	(0.06)	(0.14)	(0.13)
Proposal FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.25	0.34	0.25	0.20	0.38	0.20	0.11	0.39	0.17
N	7,241,151	264,932	7,506,083	5,703,151	267,728	5,970,879	13,467,733	10,014,835	23,483,856
Number of Meetings	295	294	295	454	446	454	8,018	4,135	8,727

Table 4. 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 SRI 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) SRI	(2) SRI	(3) Gov.	(4) Gov.	(5) Mgmt.	(6) Mgmt
Aggregate Individual Investor SRI 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

Table 5. 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 SRI 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) SRI	(2) Gov.	(3) Mgmt..
Natural Resources Firm	-1.30***	-1.80***	0.05
	(0.22)	(0.25)	(0.14)
Firearm / Military Firm	-0.81**	-0.94**	-0.06
	(0.30)	(0.31)	(0.12)
Tobacco Firm	-2.30***	-1.78***	0.22
	(0.50)	(0.45)	(0.17)
Other Vices	1.75***	1.34**	-0.25
	(0.46)	(0.46)	(0.16)
Log Market Cap (Year Before Record Date)	-0.80***	-1.23***	0.58***
	(0.06)	(0.07)	(0.03)
Return on Assets (Year Before Record Date)	-3.86***	-3.42***	2.48***
	(0.69)	(0.91)	(0.40)
Tobin's Q (Year Before Record Date)	0.26***	0.14*	0.02
	(0.06)	(0.07)	(0.03)
Constant	34.11***	41.38***	85.98***
	(0.57)	(0.66)	(0.31)
R^2	0.24	0.34	0.34
N	23,607	23,886	25,050
Number of Meetings	1,118	1,140	1,261

Table 6. 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 SRI, governance, and management proposals, respectively, divided by the number of times the individual cast votes on SRI, 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) SRI	(3) Gov.	(4) Mgmt.
Log Account 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***	-5.40***	-3.35***	0.41***
	(0.03)	(0.07)	(0.07)	(0.03)
County 2016 Republican Vote Share	3.56***	-13.32***	-10.44***	2.28***
	(0.07)	(0.16)	(0.16)	(0.07)
Zip Code Fraction Over 65	5.89***	-5.00***	-7.29***	5.79***
	(0.12)	(0.27)	(0.27)	(0.12)
Zip Code Density (Number of People Per Sq. Mile Divided By 1000)	-0.05***	0.13***	0.11***	-0.03***
	(0.00)	(0.01)	(0.01)	(0.00)
Zip Code Fraction with Bachelors Degree	-2.35***	0.57	2.44***	-2.19***
	(0.18)	(0.40)	(0.40)	(0.18)
Zip Code Fraction with Post-Bachelors Degree	-2.62***	20.34***	12.37***	-0.09
	(0.29)	(0.63)	(0.63)	(0.28)
Constant	64.70***	124.61***	99.35***	75.49***
	(0.34)	(0.74)	(0.75)	(0.33)
R^2	0.01	0.02	0.02	0.01
N	6,187,593	3,554,861	3,637,658	6,163,834

Table 7. 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 SRI 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. SRI 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)
Yearly Abnormal Returns in Year Ending Two Months Before the Month of Merger Announcement	1.62***	1.64***	1.97***	2.05***
	(0.45)	(0.45)	(0.46)	(0.49)
Log Market Cap (Year Before Record Date)		-0.02	-0.05	-0.10
		(0.05)	(0.05)	(0.06)
One-Day Merger Premium			4.20***	4.07***
			(0.84)	(0.81)
Return on Assets (Year Before Record Date)				2.61
				(1.41)
Tobin's Q (Year Before Record Date)				-0.08
				(0.11)
Constant	90.98***	91.47***	90.89***	91.94***
	(0.13)	(0.97)	(0.95)	(1.24)
Year FE	Yes	Yes	Yes	Yes
Voter FE	Yes	Yes	Yes	Yes
R^2	0.70	0.70	0.70	0.70
N	219,312	218,959	215,890	202,814
Number of Meetings	308	306	300	276