Informed Voting*

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Abstract

Information production by shareholders is of fundamental importance for the efficacy of proxy voting. We propose a stock return-based measure to capture informed voting. Our measure, the vote alpha, quantifies the extent to which a shareholder votes in the direction that the market perceives as value increasing. Using data on mutual funds' proxy voting records, we find that the vote alpha is persistent. Our main result shows that the voting pattern of high vote alpha funds positively predicts abnormal stock returns following contentious votes, suggesting that these funds possess information about the shareholder value implication of contentious governance proposals.

JEL Classification: G12, G14

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1 Introduction

A fundamental premise of shareholder democracy is that shareholders make informed voting decisions. Since issues that are up for vote at shareholder meetings are often complicated and can have profound impacts on firm value, shareholders must collect information to evaluate how to vote their shares to maximize the value of their holdings. Thus, information production by shareholders is essential for the voting process to lead to improved collective decisions.[1] Yet, despite the fundamental importance of informed voting for the effectiveness of shareholder voting as a governance mechanism, whether shareholders cast informed votes and how informed voting impacts firms remain underexplored.

In this paper, we propose a stock return-based approach to measure informed voting and examine its valuation effects. We define informed voting as voting in the direction that the market perceives as increasing shareholder value, i.e., voting for proposals that the market views as value-enhancing and against proposals that the market views as value-destroying. We use a shareholder's actual votes and the stock market reaction to the vote outcome to infer whether the shareholder's votes are informed. The idea is that if an informed shareholder votes for a proposal and the proposal passes or if the shareholder votes against a proposal and the proposal fails, the stock market should react positively to the vote outcome. Conversely, if the informed shareholder votes for a proposal but the proposal fails or if the shareholder votes against a proposal but the proposal passes, the market should react negatively to the vote outcome. This predicts that a mimicking portfolio that goes long stocks at which an informed shareholder wins the vote (i.e., the vote outcome goes in the direction of the shareholder's vote) and goes short stocks at which the same shareholder loses the vote (i.e., the vote outcome goes in the opposite direction of the shareholder's vote) should deliver positive abnormal returns. The alpha on the mimicking portfolio essentially captures the

[1] Theoretical models highlight the importance of information production in the voting process (e.g., Malenko and Malenko, 2019; Bar-Isaac and Shapiro, 2020; Levit, Malenko, and Maug, 2020).

extent to which a shareholder votes in the direction that increases stock prices. This is analogous to the tests for informed trading where trade informativeness is captured by the extent to which investors trade in the direction of future stock price movements.

We examine informed voting using data on mutual funds' proxy votes. Mutual funds provide an ideal setting to examine informed voting for three reasons. First, according to Federal Reserve Board Flow of Funds data, mutual funds collectively own about 21.7% of U.S. corporate equities as of the end of 2019, making them an important group of shareholders in corporate proxy voting. Second, mutual funds have to disclose their votes, which allows us to infer the extent to which they vote in the direction that the market perceives as value enhancing. Third, compared to individual investors, mutual funds have the scale and resource to engage in information production.[2]

Using a large sample of proxy votes by mutual funds on contentious governance proposals from 2003 to 2018, we construct a measure of informed voting for individual funds. The measure, vote alpha, captures the abnormal stock return around shareholder meetings when a fund wins a contentious vote relative to when the fund loses one, weighted by the dollar value of the fund's holdings in the stocks. A more positive value of the measure indicates that a fund is better informed about the market's perception of the value implication of the proposals up for vote. We find that the vote alpha has a mean close to zero for our sample of fund-years, suggesting that on average mutual funds do not vote in a way aligned with the market's expectation of the value impact of the proposals up for vote. The vote alpha displays considerable variation across funds. We thus sort our sample mutual funds into quintiles based on the vote alpha in each year and classify those in the top quintile as high

[2] A priori, however, whether mutual funds cast informed votes is unclear. On the one hand, mutual funds have a fiduciary responsibility to cast votes in the best interests of their shareholders. As SEC Acting Chair Allison H. Lee (2021) put it, "the act of voting is itself a critical part of funds' and advisers' fiduciary obligations." To fulfill this responsibility, mutual fund managers may need to conduct costly information production to evaluate the proposals up for vote. On the other hand, mutual funds may vote excessively with management because of conflict of interests (e.g., Davis and Kim, 2007; Butler and Gurun, 2012; Ashraf, Jayaraman, and Ryan, 2012; Cvijanović, Dasgupta, and Zachariadis, 2016) and free-rider problems.

vote alpha funds.

Consistent with the vote alpha capturing a persistent fund characteristic, the one-year lagged value of the vote alpha positively and significantly predicts the current vote alpha. For example, the likelihood of a fund being a high vote alpha fund in a year is about 3.3 to 4.9 percentage points higher if the fund was a high vote alpha fund in the previous year, which represents about 16.5% to 24.5% of the unconditional probability of being a high vote alpha fund. The vote alpha exhibits significant heterogeneity in the cross-section of mutual funds. In particular, funds with a lower turnover rate are associated with a higher vote alpha, suggesting that long-term investors are more likely to produce information in the voting process. Further, there is some evidence that the tendency to follow ISS recommendations negatively predicts the vote alpha. In contrast, the tendency to vote against management does not consistently significantly predict the vote alpha.

We then examine the predictive power of informed voting for abnormal stock returns following contentious votes. Informed shareholders' votes in aggregate may contain information that has not been reflected in stock prices. When informed voters disproportionately vote for a contentious proposal, they likely possess favorable information about the proposal. Thus, the stock price should increase (decrease) following the passage (rejection) of the proposal to reflect the information possessed by informed voters. Conversely, when informed voters disproportionately vote against a contentious proposal, the stock price should increase (decrease) following the rejection (passage) of the proposal. This suggests that abnormal stock returns following a contentious vote should increase with the extent to which the vote outcome goes in the direction favored by informed voters, which we measure by the fractional ownership of informed voters that win the vote relative to those that lose the vote (hereafter referred to as net win of informed voters).

Consistent with the idea that high vote alpha funds' votes contain information about future stock returns, we find that net win of high vote alpha funds positively predicts ab-

normal stock returns at horizons of up to 18 months after the vote on contentious proposals. The economic magnitude is large. For example, a one standard deviation increase in net win of high vote alpha funds is associated with an increase of 1.254 percentage points in the Fama-French-Carhart four-factor adjusted cumulative abnormal return (CAR) over a six-month window after the vote, and the magnitude is roughly the same for longer holding horizons. In contrast, net win of other funds does not possess predictive power for abnormal stock returns following the votes. The difference in the predictive power for abnormal stock returns between net win of high vote alpha funds and that of other funds is statistically significant at the 1% or 5% level when we look at stock returns over three-, six-, and 12-month horizons. These results suggest that high vote alpha funds possess information about the shareholder value implication of contentious governance proposals and that such information is impounded into the stock price over time after the vote.

A fund's ex ante incentive to produce information might vary in the cross-section of proposals. We find that the predictive power of net win of high vote alpha funds for subsequent abnormal stock returns is stronger for proposals on which proxy advisors tend to issue blanket recommendations, suggesting that high vote alpha funds are more likely to conduct independent research when proxy advisors provide less informative recommendations. We also find evidence that the incentive to produce information about a proposal increases with the ex ante likelihood that the proposal will be contentious.

If high vote alpha funds produce information on governance issues, they might play an effective monitoring role and lead to improved firm performance. This predicts that, other things equal, a higher level of ownership by high vote alpha funds should be positively correlated with subsequent firm performance. Consistent with this prediction, we find that informed ownership, defined as the proportion of mutual fund ownership accounted for by high vote alpha funds, positively predicts industry-adjusted return on assets (ROA) and standardized unexpected earnings based on analyst forecasts (SUE). The magnitude of the

effect is economically meaningful. For example, the specification with the full set of controls and fixed effects implies that a one standard deviation increase in informed ownership is associated with an increase of 0.0005 in SUE, representing an increase of 13.2% relative to the interquartile range. The result on earnings surprises also suggests that financial analysts do not fully incorporate the information about high vote alpha funds' ownership in their earnings forecasts.

Given that market participants such as financial analysts underestimate the impact of high vote alpha funds on firm performance, informed ownership may positively predict subsequent stock returns. We use a calendar-time portfolio approach to test this prediction. At the end of each quarter during our sample period, we sort stocks into quintiles based on informed ownership. A long-short portfolio that goes long stocks in the top quintile and goes short stocks in the bottom quintile earns an alpha of 39.3 to 57.3 basis points per month in Fama-French-Carhart four-factor adjusted returns and 28.4 to 41.7 basis points per month in DGTW characteristics-adjusted returns. This result is consistent with high vote alpha funds playing a monitoring role that enhances shareholder value.

Our paper makes four contributions to the literature. First, our paper is the first to show the information content of shareholders' votes. Our finding that the voting pattern of high vote alpha funds contains information about future stock returns highlights the importance of information production in the voting process. Since the outcome of votes can directly impact corporate policies, our results suggest that increased information production in proxy voting can lead to more efficient real decisions. In this respect, our paper contributes to the literature on the effect of shareholder voting on corporate policies and shareholder value (see, among others, Cai, Garner, and Walkling, 2009; Cuñat, Giné, and Guadalupe, 2012, 2016; Ertimur, Ferri, and Oesch, 2013, 2015; Fos and Tsoutsoura, 2014; Larcker, McCall, and Ormazabal, 2015; Malenko and Shen, 2016; Fos, 2017; Fos, Li, and Tsoutsoura, 2018; Holderness, 2018; Aggarwal, Dahiya, and Prabhala, 2019).

Second, our paper contributes to the literature on the role of mutual funds, and institutional investors more generally, as information producers in financial markets. Prior studies have examined the information production role of institutional investors through their trades (e.g., Chen, Jegadeesh, and Wermers, 2000; Sias, Starks, and Titman, 2004; Chemmanur, Hu, and Huang, 2010, 2015). Our paper sheds new light on this role by looking at their proxy votes. Like stock trading, proxy voting is an important mechanism to aggregate diverse information of investors.[3]

Third, we propose a novel approach to infer information production by investors in proxy voting. By relying on the stock market's reaction to vote outcomes, our approach yields a direct measure of the extent to which a fund casts informed votes. Our paper thus complements existing studies on institutional investors' proxy voting behavior that focus on *active* voting behavior such as voting against management's or proxy advisors' recommendations (e.g., Davis and Kim, 2007; Matvos and Ostrovsky, 2008, 2010; Butler and Gurun, 2012; Iliev and Lowry, 2015; Cvijanović, Dasgupta, and Zachariadis, 2016; Duan and Jiao, 2016; Dimmock, Gerken, Ivković, and Weisbenner, 2018; Calluzzo and Kedia, 2019; He, Huang, and Zhao, 2019; Gantchev and Giannetti, 2021; Huang, 2021).[4] For example, Iliev and Lowry (2015) consider voting against ISS's recommendations as a form of active voting. Gantchev and Giannetti (2021) use the tendency to vote independently of ISS recommendations and proposal types as a proxy for mutual fund companies' active information acquisition. Given the central importance of informed voting to the efficacy of proxy voting as a corporate governance mechanism, our paper provides a necessary first step towards promoting informed

[3]See Bond, Edmans, and Goldstein (2012) for a review of the literature on information production in financial markets. A number of theories emphasize the role of proxy voting in aggregating investors' information (e.g., Maug, 1999; Maug and Yilmaz, 2002; Bond and Eraslan, 2010; Levit and Malenko, 2011; Malenko and Malenko, 2019; Bar-Isaac and Shapiro, 2020; Levit, Malenko, and Maug, 2020).

[4]See Yermack (2010) for a review of the literature on shareholder voting. More broadly, our paper adds to the literature on shareholder activism and the role of institutional investors in corporate governance (see, e.g., Brickley, Lease, and Smith, 1988; DeAngelo and DeAngelo, 1989; Carleton, Nelson, and Weisbach, 1998; Gillan and Starks, 2000; Huson, Parrino, and Starks, 2001; Parrino, Sias, and Starks, 2003; Chen, Harford, and Li, 2007; Brav, Jiang, Partnoy, and Thomas, 2008; Greenwood and Schor, 2009; Aghion, Van Reenen, and Zingales, 2013; Appel, Gormley, and Keim, 2016, 2018).

voting.

Last, our analysis indicates substantial heterogeneity in informed voting across mutual funds and across proposals. While mutual funds on average appear uninformed in their voting decisions, funds with a long-term focus tend to cast informed votes. Also, in the cross-section of proposals, information production by shareholders is particularly pronounced when proxy advisors produce less precise information and when the proposal up for vote has a high ex ante likelihood of being contentious. These findings shed light on the forces shaping shareholders' incentive to produce information on governance issues (e.g., Kahn and Winton, 1998; Malenko and Malenko, 2019).

Our study has important implications for the policy debate about increasing shareholder power (e.g., Bebchuk, 2005; Bratton and Wachter, 2010). Our evidence of significant valuation effects associated with informed voting suggests that information production by shareholders in the proxy voting process can lead to more efficient outcomes. Since informed voting is a public good, regulations that aim to increase shareholders' incentive to become informed voters are likely to improve the effectiveness of the proxy voting process as a governance mechanism. For example, timely disclosure of mutual funds' voting records can help investors assess whether a fund casts informed votes, which could discipline fund managers and induce them to produce information about the proposals up for vote. Also, allowing retail investors to authorize the voting of their shares in accordance with the votes of informed voters can enhance the influence of informed voters in corporate voting and hence increase the ex ante incentive of institutional investors to become informed.[5]

The rest of the paper is organized as follows. Section 2 introduces the vote alpha as a measure of informed voting for mutual funds and constructs the net win measures at the proposal level. Section 3 describes sample selection and reports summary statistics. Section

[5]Current SEC rules on proxy voting prohibit brokers or other intermediaries from soliciting voting instructions from retail investors (Fisch, 2017).

4 presents empirical results, and Section 5 concludes.

2 Measuring informed voting

Making voting decisions on governance proposals often requires information production, because a governance arrangement that maximizes shareholder value for one firm may not maximize value for another firm. For example, whether a firm should declassify its board likely depends on firm-specific factors. While a classified board could entrench managers by shielding them from the market for corporate control, it could promote board stability and allow firms to pursue long-term projects. Since there is no one-size-fits-all in corporate governance, information production by shareholders is essential for the voting process to lead to efficient outcomes.

We use the vote alpha to capture informed voting and evaluate its impacts. We rely on the stock market's reaction to vote outcomes and mutual funds' votes to infer informed voting. The intuition is that an informed fund should vote for proposals that increase shareholder value and vote against proposals that decrease shareholder value. In other words, if an informed fund votes for a proposal and the proposal passes or if the fund votes against a proposal and the proposal fails, the stock price should react positively to the vote outcome. Conversely, if the informed fund votes for a proposal but the proposal fails or if the fund votes against a proposal but the proposal passes, the stock price should react negatively to the vote outcome. This suggests that, for an informed fund, a mimicking portfolio that goes long stocks at which the fund wins the vote (i.e., the vote outcome goes in the direction of the fund's vote) and goes short stocks at which the fund loses the vote (i.e., the vote outcome goes in the opposite direction of the fund's vote) should deliver a positive alpha. This is analogous to the tests for informed trading where trade informativeness is captured by the extent to which investors trade in the direction of future stock price movements.

Formally, for a fund f that votes on P contentious proposals in a given year, the vote alpha of the fund-year is defined as follows,

$$Vote\ \alpha_f = \sum_{p=1}^{P} CAR_p \times I_{p,f} \times \frac{v_{p,f}}{\sum_{p=1}^{P} v_{p,f}}, \tag{1}$$

where CAR_p is the cumulative market-adjusted return around the vote on proposal p; $I_{p,f}$ is a win/lose indicator, which equals $+1$ if fund f wins the vote and -1 if fund f loses the vote; $v_{p,f}$ is the dollar value of fund f's holdings in the stock at which proposal p is held before the vote.[6] The vote alpha is essentially a weighted average CAR associated with winning relative to losing votes. Since the stock market reaction to the vote outcome of a contentious proposal is commonly employed as a measure of the impact of the proposal on shareholder value (e.g., Cai and Walkling, 2011; Cuñat, Giné, and Guadalupe, 2012, 2016; Ertimur, Ferri, and Oesch, 2015; Gantchev and Giannetti, 2021),[7] a more positive value of the vote alpha indicates that the mutual fund is better informed about the market's perception of the shareholder value implications of the proposals.

To illustrate, consider a fund that casts votes on four contentious proposals at four different firms, winning the vote on the first two proposals and losing that on the other two. The stock price reaction to the outcome of the four proposals is 1%, -0.5%, -0.25%, and -0.75%, respectively. Suppose the fund's dollar value of holdings is the same across the four stocks, the vote alpha of the fund is calculated as $1.0\% \times 1 \times \frac{1}{4} + (-0.5\%) \times 1 \times \frac{1}{4} + (-0.25\%) \times (-1) \times \frac{1}{4} + (-0.75\%) \times (-1) \times \frac{1}{4} = 0.375\%$.

We focus on contentious votes to construct the vote alpha for two reasons. First, since

[6] If a firm has multiple contentious proposals at a given shareholder meeting, we divide the fund's holdings in the stock of the firm equally across the proposals.

[7] The stock return around the vote on a contentious proposal may reflect other factors than the direct value of the proposal. For example, the passage of a proposal opposed by management may reveal to the market that more shareholders have adopted an activist stance and could change the status quo in the future, which may lead to a positive stock market reaction regardless of the merit of the current proposal. To the extent that such factors are not systematically correlated with the value of the proposal up for vote, they are likely to introduce noise into our vote alpha measure and lead to attenuation bias in our results.

the outcome of contentious votes is generally unanticipated, the stock returns around such votes provide a reasonably clean measure of the market's perception of the impact of the vote outcome on stock value. In contrast, the outcome of non-contentious votes is generally well anticipated, and accordingly the stock returns are unlikely to convey much information about non-contentious votes. Second, contentious proposals, compared to non-contentious ones, are likely to require a greater amount of information production by shareholders. Thus, mutual funds' votes on contentious proposals can provide useful information about the extent to which they make informed voting decisions.

Two comments are in order regarding our measure. First, the vote alpha measure is intended to capture the extent to which a shareholder is informed about the price impact of a proposal up for vote. There is substantial uncertainty about the price impact of contentious proposals, which is why the proposals are contested. The price impact can*not* be common knowledge for contentious proposals, because otherwise shareholders would just vote in the direction indicated by the price impact, thereby resulting in uncontested votes. That is, if all shareholders know that the passage of a proposal would be greeted by positive (negative) market reactions, they should all vote for (against) the proposal, in which case the proposal would pass (fail) with little uncertainty and hence would not enter our sample of contentious proposals.

Second, since the vote alpha is based on the stock market reaction around the shareholder meeting where a contentious vote is held, it may underestimate the informativeness of a fund's votes if the fund discloses its votes before the shareholder meeting *and* can sway the vote outcome. In this case, the stock market would react to the information possessed by the fund before the shareholder meeting, i.e., when the fund's intended votes are made public, leading to a muted market reaction around the shareholder meeting when the vote outcome is released. In practice, however, only a small number of mutual funds, most of which have a socially responsible investing focus, announce their proxy votes in advance of shareholder

meetings. Also, the vast majority of mutual funds seem unlikely to influence the outcome of contentious votes, because they tend to hold small stakes in their portfolio companies due to diversification requirements. For example, the median fractional ownership of a fund in a stock with a contentious proposal is 0.009%, and the 95th and 99th percentiles are 0.49% and 1.66%, respectively. Thus, the vote alpha is likely to be a valid measure of informed voting for a large majority of funds.

With the vote alpha defined at the fund level, we now turn to the construction of net win measures at the proposal level. We partition mutual funds into two groups and construct net win measures separately for each group. Specifically, at the end of the month before a contentious proposal is put to a vote, we compute the vote alpha for each fund using its votes during the most recent 12 months. We then sort mutual funds into quintiles by the vote alpha and classify those in the top quintile as high vote alpha funds, which are likely informed voters. To extract the information possessed by high vote alpha funds about the proposal, we define $NetWin(Informed)$ as the difference between the fractional ownership of high vote alpha funds that win the vote and that of high vote alpha funds that lose the vote. We similarly define $NetWin(Uninformed)$ as net win of funds not in the top quintile of the vote alpha. These measures essentially capture the extent to which the vote outcome goes in the direction favored by each of the two groups of funds.

A more positive value of $NetWin(Informed)$ indicates that a contentious proposal passes (fails) when high vote alpha funds disproportionately vote for (against) the proposal. If high vote alpha funds possess information about the proposal up for vote that has not been incorporated into stock prices, $NetWin(Informed)$ should positively predict future abnormal stock returns. In contrast, $NetWin(Uninformed)$ should not have such predictive power.

3 Data and Sample

3.1 Data on mutual funds' votes

We obtain data on mutual funds' votes on governance proposals during the period from July 2003 through June 2018 from the Institutional Shareholder Services (ISS) Voting Analytics database. The detailed voting information becomes available following the Securities and Exchange Commission's Rule 30b1-4, which requires all mutual funds registered in the U.S. to report their proxy votes in all shareholder meetings of their portfolio companies using Form N-PX starting from 2003. For each proposed agenda item (i.e., proposal) voted on by each mutual fund, the data report the firm that receives the proposal, the date of the shareholder meeting during which the proposal is considered, the issue being voted upon (e.g., board declassification, managerial compensation policies, or the elimination of poison pills), the sponsor of the proposal (i.e., management or shareholders), management's recommendation, ISS's recommendation, and the fund's vote (i.e., "for", "against", or "abstain"). We obtain data on vote outcomes (i.e., whether a proposal passes or fails) from the ISS Voting Results dataset.

We merge the voting data with CRSP Survivor-Bias-Free US Mutual Fund Database. The CRSP database provides detailed information on fund characteristics, such as size, turnover, loads, expenses, and returns. Because there is no common identifier for mutual funds across the two databases, we use a name-matching procedure to match funds in the two datasets. We are able to identify $11,976$ funds in the voting database that are in the CRSP database. These mutual funds cast about 87.4% of the votes covered by the voting database during the sample period. We then link a fund's vote on a proposal at a firm to the fund's holdings in the firm's stock using the most recent quarterly holdings report before the vote. We retrieve holdings from Thomson Reuters Mutual Fund Holdings Database and complement the data

with holdings from the CRSP Mutual Fund database.

Panel A of Table 1 reports summary statistics on mutual funds' votes on governance proposals. As described above, computing a mutual fund's vote alpha in a year requires a portfolio of votes on contentious governance proposals. We define contentious governance proposals as those that pass or fail within ±20% around the majority threshold.[8] A ±20% cutoff allows us to have a reasonably large sample of funds with a sufficient number of contentious votes. Panel A shows that votes on contentious governance proposals account for about 10.5% of all mutual fund votes on governance proposals. We define *Win vote* as an indicator that equals one if a fund's vote is in the direction of the vote outcome (e.g., a fund votes for a proposal and the proposal passes). Consistent with the contested nature of contentious proposals, the average *Win vote* for mutual funds' votes on contentious proposals is 55.9%. Thus, it is roughly equally likely for a fund to win or lose a vote on contentious proposals. In contrast, the average *Win vote* for the sample of non-contentious proposals is 94.7%, suggesting that there is little uncertainty about the outcome of non-contentious proposals. Also, 51.5% of the votes on contentious proposals go against management recommendations and 63.7% follow ISS recommendations, as compared to 6.2% and 94.8%, respectively, for votes on non-contentious proposals. Therefore, while votes on contentious proposals represent a relatively small fraction of the votes by mutual funds, such proposals likely require a greater degree of information production.

Panel B of Table 1 lists the top 10 contentious governance proposal types ranked by the number of votes by mutual funds. The most common types are advisory votes to ratify named executive officers' compensation (which accounts for 17.81% of the votes on contentious proposals), followed by proposals to enhance shareholders' ability to call a special meeting (8.36%), to require an independent board chairman (8.27%), and to amend omnibus stock

[8] Cvijanović, Dasgupta, and Zachariadis (2016) use ±10% and ±20% around the majority threshold to define contentious proposals. In robustness tests reported in Section 4.2.B, we use a cutoff of ±10% and obtain qualitatively similar results.

plan (7.62%). Taken together, votes on the top 10 contentious governance proposal types account for 69.65% of the votes on all contentious governance proposals.

[Insert Table 1 about here]

3.2 Summary statistics on the sample of mutual funds

We first construct a sample of mutual funds to examine persistence in the vote alpha and its cross-sectional determinants. We conduct our analyses at the fund level rather than the fund family level, because mutual funds appear to exercise considerable independence in their votes on contentious proposals.[9] To be included in our sample, we require that the fund be classified by CRSP as a domestic equity fund, have a TNA of at least $5 million, and cast votes on more than 10 contentious governance proposals in the year. The sample consists of 13,521 fund-years.

We compute the vote alpha for each fund-year in our sample using the market's reaction to vote outcomes over a 12-day window around the vote (from day -1 to $+10$, with day 0 being the date of the vote).[10] Panel A of Table 2 shows that the vote alpha has a mean close to zero at -0.043%, suggesting that mutual funds on average do not vote in an informed manner. Since information production is privately costly but the gain from the vote outcome going in a certain direction accrues to all shareholders, this result is consistent with the average fund manager having limited incentives to produce information on governance issues. Moreover, fund managers' information production incentives could be undermined

[9] Specifically, 38.1% of the fund family-contentious proposal pairs have only one fund within a family voting on a proposal. Among the fund family-contentious proposal pairs with more than one fund within a family voting on a proposal, 16.8% have divergent votes by funds within the same family. Existing voting studies that conduct analyses at the fund level include Matvos and Ostrovsky (2008, 2010), Morgan, Poulsen, Wolf, and Yang (2011), Butler and Gurun (2012), and Dimmock, Gerken, Ivković, and Weisbenner (2018).

[10] We use a 12-day window in our main specifications because, as Li, Maug, and Schwartz-Ziv (2020) show, trading volume remains at an elevated level in the few weeks following shareholder meetings. We perform a robustness check using a three-day window (day -1 to $+1$) in Section 4.2.B.

by conflicts of interest (e.g., Davis and Kim, 2007; Butler and Gurun, 2012), thereby leading to uninformed votes.

Importantly, the vote alpha exhibits considerable cross-sectional variation across funds with a standard deviation of 1.453 percentage points. We thus sort our sample mutual funds into quintiles based on the vote alpha in each year and classify those in the top quintile as high vote alpha funds, which are likely informed voters.

Panel A also shows that the average sample fund has a TNA of about $3.2 billion, belongs to a fund family with a TNA of $333.5 billion, has been in existence for about 188 months, and has 237 stocks in its portfolio. These numbers are much larger than those for the average domestic equity fund in the CRSP database during the same period (e.g., the latter has a TNA of about $1.3 billion). Thus, our sample is tilted towards larger funds, which is expected given that we require a fund to vote on more than 10 contentious governance proposals in a given year. The average fund in our sample has an annual turnover ratio of 73.9%, an expense ratio of 0.9%, and a total load of 1.3% of TNA. Following Kacperczyk, Sialm, and Zheng (2005), we calculate the value-weighted size, value, and momentum scores for each fund-year in our sample. The scores range from 1 to 5. The average fund has a size score of 4.3, a value score of 2.3, and a momentum score of 3.5, suggesting that the average fund tilts its portfolio heavily towards large-cap stocks and slightly towards growth stocks and winner stocks.

We also construct three measures to capture mutual funds' voting behavior on contentious governance proposals. *% Vote against management* is the fraction of a fund's votes on contentious governance proposals in a year that go against management's recommendations. *% Vote with ISS* is the fraction of a fund's votes on contentious governance proposals in a year that are in line with ISS recommendations. *% Independent from family* is the fraction of a fund's votes on contentious proposals that are independent from other funds within the same family. We define a vote cast by a fund on a proposal as independent from other

same-family funds if the fund is the only fund in the family that votes on the proposal or if the vote differs from the vote of the majority of same-family funds. Panel A of Table 2 shows that, for the average fund-year in our sample, about 51.0%, 63.6%, and 20.2% of the votes on contentious governance proposals are against management's recommendations, in line with ISS's recommendations, and independent from other same-family funds, respectively.

3.3 Summary statistics on the sample of contentious proposals

To examine the valuation impact of informed voting, we use a sample of 7,443 contentious governance proposals that are voted on by at least one mutual fund in our sample. We use ex ante information to construct the net win measures for each proposal. As described in Section 2, at the end of the month before the vote on a contentious proposal, we compute the vote alpha for each fund using its votes during the most recent 12 months. We then sort mutual funds into quintiles by the vote alpha and classify those in the top quintile as high vote alpha funds. We compute $NetWin(Informed)$ by taking the difference between the aggregate fractional ownership of high vote alpha funds that win the vote and that of high vote alpha funds that lose the vote. Panel B of Table 2 shows that $NetWin(Informed)$ has a mean of 0.614 percentage points and a standard deviation of 2.469 percentage points. The median of $NetWin(Informed)$ is close to zero at 0.052 percentage points, and about 54.9% of the sample have a positive value of $NetWin(Informed)$. This suggests that, on net, high vote alpha funds as a whole are roughly equally likely to win or lose a vote on a contentious proposal. We similarly compute $NetWin(Uninformed)$ using the fractional ownership of other funds, i.e., those not in the top quintile of the vote alpha. $NetWin(Uninformed)$ has a mean of 3.079 percentage points and a standard deviation of 6.473 percentage points. Both $NetWin(Informed)$ and $NetWin(Uninformed)$ are positively skewed, which is expected because a group of shareholders voting a large number of shares in the same direction on a proposal are more likely to win the vote on the proposal by tilting the outcome of the vote

in their direction.

We compute cumulative abnormal returns following the shareholder meetings at which contentious proposals are voted on using the Fama-French-Carhart four-factor model and DGTW characteristics benchmarks. We consider four relatively long holding horizons after the vote on contentious proposals, i.e., three months (i.e., day +1 to +63, with day 0 being the date of the vote), six months (+1 to +126), 12 months (+1 to +252), and 18 months (+1 to +378). The use of relatively long holding horizons allows us to focus on the permanent change in stock prices due to information production and minimize the noise introduced by noninformational factors, such as temporary price pressure and liquidity effects. Another reason for focusing on relatively long-horizon returns is that it may take time for the market to react to the information contained in $NetWin(Informed)$. Because mutual funds' votes and holdings are disclosed with a lag,[11] investors do not know in real time which funds are likely informed or how informed funds have voted on a given proposal. Thus, the market is unlikely to impound the information possessed by high vote alpha funds within a short period of time.

Panel B of Table 2 shows summary statistics on the stock return measures. For example, the six-month Fama-French-Carhart four-factor adjusted (DGTW characteristics-adjusted) CARs have a mean of -0.405% (-0.511%) and a standard deviation of 31.962 (28.152) percentage points.

Panel B of Table 2 also reports summary statistics of various proposal and firm characteristics. *Management wins* is an indicator that equals one if the outcome of the vote goes in the same direction as management's recommendation and zero otherwise. Similarly, *ISS wins* is an indicator that equals one if the outcome of the vote goes in the same direction as ISS's recommendation and zero otherwise. Management and ISS win 80.7% and 40.5%

[11] In particular, mutual funds are required to disclose their proxy voting records only once a year, i.e., votes cast during the 12-month period ending June 30 of each year have to be filed by August 31 of that year. Also, mutual funds' quarterly holdings are disclosed with a lag of up to 60 days.

of the contentious votes, respectively. We also construct control variables, including total assets, market-to-book ratio, prior stock return, leverage, capital expenditures, an indicator for S&P 500 firms, mutual fund ownership, and the number of analysts covering the firm. All of the control variables are measured using the most recent information publicly available to investors at the time when a given proposal is voted on.

3.4 Summary statistics on the sample of firms

We construct a sample of firm-years to examine the performance implications of ownership by high vote alpha funds. We include all common stocks traded on the NYSE, Nasdaq, and AMEX with non-missing data in the sample. To capture the influence of informed voters on firms, we define *Informed ownership* as the fraction of a firm's mutual fund ownership accounted for by high vote alpha funds. Panel C of Table 2 shows that *Informed ownership* has a mean of 18.1% and a standard deviation of 0.165.

We use two measures of operating performance. The first is the industry-adjusted return on assets (ROA), computed as the difference between the firm's ROA and the median ROA of firms in the same four-digit SIC industry. The second performance measure is the standardized unexpected earnings based on analyst forecasts (SUE), calculated as the difference between reported annual earnings per share (EPS) and the median of the most recent EPS forecasts of all analysts issued over the one-year period prior to the earnings announcement, scaled by the stock price. The industry-adjusted ROA has a mean of 0.0082 and a standard deviation of 0.152, and the SUE has a mean of -0.0038 and a standard deviation of 0.038.

For each firm-year, we compute the fraction of governance proposals for which the vote outcome is in the direction of management's recommendation (*% Management wins*) as well as that in the direction of ISS's recommendation (*% ISS wins*). Management and ISS on average win the vote on 98.1% and 91.5% of the proposals, respectively. These numbers are

considerably higher than those for contentious proposals, because a large majority (about 92%) of the proposals are non-contentious. Panel C of Table 2 also reports summary statistics of the same set of firm characteristics as in Panel B. The two panels show that firms with contentious proposals tend to be larger, more likely to be in the S&P 500 index, and have a higher market-to-book ratio, than the average firm in the sample of firm-years.

[Insert Table 2 about here]

4 Empirical Tests

In this section, we first examine the persistence and determinants of the vote alpha among mutual funds. We then examine the information content of the voting pattern of high vote alpha funds using the sample of contentious proposals. Last, we examine the relation between informed ownership and subsequent operating and stock performance.

4.1 Persistence and determinants of the vote alpha

We analyze the persistence and determinants of the vote alpha using a panel regression. Specifically, we run the following regression using the sample of fund-years:

$$Y_{f,t} = \alpha + \beta \times Y_{f,t-1} + \gamma \times \mathbf{X}_{f,t-1} + \varepsilon_{f,t}, \tag{2}$$

where $Y_{f,t}$ is either the vote alpha or the high vote alpha indicator for fund f in year t; $\mathbf{X}_{f,t-1}$ consists of a comprehensive set of fund characteristics measured in year $t-1$, including fund size, fund family size, fund age, an indicator for index funds, past style-adjusted fund return and return volatility, past style-adjusted fund flow and flow volatility, number of stocks, turnover rate, expense ratio, load, size score, value score, momentum score, the tendency

to vote against management, the tendency to vote with ISS, and the tendency to vote independently of other same-family funds. We additionally control for style fixed effects and year fixed effects in all regressions. We use CRSP objective code to classify mutual funds into different investment styles. We cluster standard errors at the fund family level to allow for arbitrary within-family correlation in residuals.

The results, reported in Table 3, show that the vote alpha is persistent. A high vote alpha for a fund in the previous year suggests that the fund's vote alpha in the current year is likely to be high. In terms of economic magnitudes, columns 3 and 4 show that the likelihood that a fund ranks in the top quintile of the vote alpha in a year is about 3.3 to 4.9 percentage points higher when the fund ranks in the top quintile of the vote alpha in the previous year, which represents about 16.5% to 24.5% of the unconditional probability of being in the top quintile. This result suggests that the vote alpha captures a relatively stable characteristic of mutual funds' voting behavior.

In terms of fund characteristics, the turnover rate significantly negatively predicts the vote alpha. For example, column 4 shows that an increase from the 25th percentile to the 75th percentile in the turnover rate is associated with a decrease of roughly 1.4 percentage points in the likelihood of being a high vote alpha fund (or a 7.0% decrease relative to the unconditional probability). This result suggests that long-term investors are more likely to produce information in the voting process, which is consistent with the view that such investors play a monitoring role (e.g., Chen, Harford, and Li, 2007). Also, the tendency to vote independently of other same-family funds is a positive and significant (at the 10% level) predictor of the vote alpha, suggesting that funds conducting independent research on governance proposals are more likely to be informed. Further, there is some evidence that funds with fewer stocks in their portfolios, funds with low return volatility, high load funds, and funds that tilt their portfolios towards small stocks and growth stocks, are associated a higher vote alpha, although these results are not consistently significant across different

specifications.

Table 3 also shows that the tendency to vote against management's recommendations on contentious proposals is insignificant in predicting the vote alpha. Thus, while voting against management represents active monitoring actions, mutual funds with a greater tendency to vote against management do not seem to be better informed in their votes. This result is expected, because governance proposals can have profound implications for firms and a blanket voting policy is unlikely to be effective. Moreover, the tendency to vote with ISS's recommendations on contentious proposals is negative and marginally significant in predicting the likelihood of being a high vote alpha fund, although it is insignificant in predicting the vote alpha. This result provides some evidence that active voters, i.e., those that rely less on ISS, are informed.

[Insert Table 3 about here]

4.2 The information content of shareholders' votes

If high vote alpha funds are informed about the shareholder value implications of a contentious proposal up for vote, their aggregate votes may contain information that has not been reflected in stock prices. Specifically, when high vote alpha funds disproportionately vote for a contentious proposal, they likely possess favorable information about the proposal. As such, the stock price should increase following the passage and decrease following the rejection of the proposal to reflect the information. Conversely, when high vote alpha funds disproportionately vote against a contentious proposal, they likely possess unfavorable information about the proposal. In this case, the stock price should increase following the rejection and decrease following the passage of the proposal. Hence, abnormal stock returns following the vote should increase with the extent to which the vote outcome goes in the direction favored by high vote alpha funds, which is measured by net win of these funds, i.e.,

$NetWin(Informed)$. In contrast, net win of other funds should not significantly predict abnormal stock returns following contentious votes. Therefore, the predictive power of net win of high vote alpha funds for subsequent abnormal stock returns should be stronger than that of net win of other funds.

A. Baseline specification. We run the following regression using the panel of contentious proposals to examine the information content of votes cast by the two groups of funds:

$$CAR_p = \alpha + b_1 \times NetWin(Informed)_p + b_2 \times NetWin(Uninformed)_p + \varphi \times \mathbf{X}_p + \varepsilon_p, \quad (3)$$

where CAR_p is the Fama-French-Carhart four-factor adjusted return or the DGTW characteristics benchmark-adjusted return after the vote on contentious proposal p over four different horizons, i.e., three, six, 12, and 18 months, all starting from the first day after the vote. As discussed above, the use of relatively long horizons allows us to focus on the permanent change in stock prices due to information effects. Also, since the information about mutual funds' votes and holdings is made available to the public with a lag, it may take time for the stock market to fully incorporate the information contained in the voting patterns of informed funds. $NetWin(Informed)_p$ is the aggregate fractional ownership by high vote alpha funds that win the vote on proposal p minus that by high vote alpha funds that lose the vote. We use strictly ex ante information to construct the net win measure. Specifically, the fractional ownership is based on the most recent quarterly holdings reports of the mutual funds before the proposal is put to a vote, and the vote alpha for each fund is computed using its votes on contentious governance proposals in the 12 months before the vote. We construct $NetWin(Uninformed)_p$ in a similar fashion for funds other than high vote alpha funds. $\mathbf{X}_p$ consists of various proposal and firm characteristics, including an indicator for management winning the vote, an indicator for ISS winning the vote, firm size, market-to-book ratio, prior stock return, leverage, capital expenditure, an indicator for S&P

500 firms, mutual fund ownership, and analyst coverage. We also include year fixed effects, proposal type fixed effects, and industry fixed effects in all regressions. We cluster standard errors by firm to allow for within-firm correlation in residuals.

The results, reported in Table 4, show that the coefficient estimate on $NetWin(Informed)$ is positive and significant across all specifications, whereas that on $NetWin(Uninformed)$ is insignificant. The difference between the two coefficients is significant at the 1% or 5% level when we look at abnormal returns during the three-, six-, and 12-month windows. These results suggest that high vote alpha funds possess information about the shareholder value implications of contentious governance proposals and that such information is impounded into the stock price over time after the vote. These results also suggest that shareholders can contribute to more efficient corporate decision-making through informed voting.

The economic magnitude of the predictive power of high vote alpha funds' net win is nontrivial. For example, a one standard deviation increase in $NetWin(Informed)$ is associated with an increase of 0.558 and 1.254 percentage points in the Fama-French-Carhart four-factor adjusted CAR over the three- and six-month windows after the vote, respectively. The magnitude of the coefficient on $NetWin(Informed)$ is fairly stable across holding horizons of six, 12, and 18 months, indicating that the information possessed by high vote alpha funds gets completely incorporated into the stock price within about six months and the price stays roughly flat after that. The stability in the coefficient also suggests that the results are driven by permanent changes in stock prices due to information effects rather than by temporary price pressure.

Table 4 also shows that proposal and firm characteristics are generally insignificant in predicting the abnormal stock returns following the vote on contentious proposals.[12] These nonresults are expected, given that the proposal and firm characteristics are public informa-

[12] We obtain qualitatively similar coefficient estimates on the net win measures if we drop proposal and firm controls from the regressions.

tion at the time of the vote and we look at stock returns after the vote.

[Insert Table 4 about here]

B. Robustness checks. We perform three robustness checks of the baseline results reported in Table 4. First, as Levit, Malenko, and Maug (2020) point out, stock price reactions to vote outcomes and shareholder welfare may move in opposite directions when the firm's stock is illiquid, in which case the shareholder base is more heterogeneous. We thus restrict our sample of contentious governance proposals to those received by firms with more liquid stock, i.e., those whose stock ranks in the bottom tercile of Amihud illiquidity ratio. We reconstruct the vote alpha and the net win measures and repeat the regression of Eq. (3) using this restricted sample of proposals. Firms whose stock is in the bottom tercile of Amihud illiquidity ratio account for about 57% of the contentious proposals. The first two columns of Table 5 report the results using the six-month CAR as the dependent variable. The results for CARs over other windows are qualitatively similar. Despite a significant reduction in sample size, the coefficient on $NetWin(Informed)$ continues to be positive and significant. Further, F-tests reject the null that the coefficients on $NetWin(Informed)$ and $NetWin(Uninformed)$ are equal at the 1% level. These findings mitigate the concern that our results are contaminated by the potential divergence between stock prices and welfare.

Second, we confine contentious governance proposals to those that pass or fail within $\pm 10\%$ around the majority threshold and repeat our analysis. This change reduces the sample size by about 55%. Columns 3 and 4 of Table 5 show that the results continue to hold with very similar magnitudes, suggesting that our results are robust to the choice of the cutoff value used to define contentious proposals.

Third, we recalculate the vote alpha using stock market reactions to vote outcomes over a three-day window (from one day before to one day after the vote) and repeat the analysis. The last two columns of Table 5 show that the results are qualitatively un-

changed relative to the baseline results reported in Table 4. For example, the coefficients on $NetWin(Informed)$ in the regressions with the Fama-French-Carhart four-factor adjusted and DGTW characteristics-adjusted six-month CAR as the dependent variable are 0.649 and 0.494, respectively, as compared to 0.508 and 0.430 in the baseline specification.

[Insert Table 5 about here]

C. Cross-sectional tests. A fund's ex ante incentive to produce information may vary across proposals. We consider two cross-sectional predictions, the first of which concerns the quality of proxy advisors' recommendations. A common criticism of proxy advisors is their one-size-fits-all approach to governance (e.g., Malenko and Shen, 2016; Malenko and Malenko, 2019). We hypothesize that a fund is more likely to conduct independent research on a proposal type if proxy advisors tend to issue blanket recommendations on the proposal type. We consider a proposal type as receiving blanket recommendations if ISS almost always recommends voting for or almost always recommends voting against proposals of that type. Specifically, $I(Blanket\ recommendations)$ is an indicator that equals one if the proposal up for vote belongs to a proposal type on which ISS recommends voting for at least 95% of the time or recommends voting against at least 95% of the time in the past 12 months and zero otherwise. About 28.8% of the contentious proposals in our sample belong to proposal types that are classified as receiving blanket recommendations from ISS.

We add $I(Blanket\ recommendations)$ and its interaction terms with $NetWin(Informed)$ and $NetWin(Uninformed)$ to Eq. (3). The first two columns of Table 6 report the regression results using the six-month CAR as the dependent variable. The results for CARs over other windows are qualitatively similar. The coefficient on the interaction term combining $NetWin(Informed)$ and $I(Blanket\ recommendations)$ is positive and significant at the 5% level in both columns, suggesting that blanket recommendations by proxy advisors induce more information production by high vote alpha funds. Interestingly, the coefficient on the

interaction term between $NetWin(Uninformed)$ and $I(Blanket\ recommendations)$ is negative and significant. Since, as Table 3 indicates, uninformed funds (i.e., those not in the top quintile of the vote alpha) are more likely to rely on ISS's recommendations, this result suggests that institutional investors' reliance on proxy advisors' low-quality recommendations can be detrimental to shareholder value. Importantly, the difference between the coefficients on the two interaction terms is significant at the 1% level in both columns. These results are consistent with the view that mutual funds are more likely to produce information about a proposal when proxy advisors produce less precise information about the proposal.

The second cross-sectional prediction concerns the ex ante likelihood that the proposal will be contested.[13] A fund's incentive to produce information on a proposal is likely higher when the proposal is more likely to be contentious, in which case the value of having an informed marginal voter is particularly high. In contrast, information production is likely of little value to a fund when the outcome is highly likely to go a certain way. We use the contentiousness of a firm's past governance proposals to capture the likelihood that the current proposal will be contentious. $I(Contested\ votes)$ is an indicator that equals one if a firm has at least one governance proposal in the past 12 months that pass or fail within a $\pm 20\%$ margin and zero otherwise. The indicator has a mean of 35.5% in our sample. The likelihood of a firm receiving a contentious governance proposal is highly persistent.[14] For example, a regression of $I(Contested\ votes)$ on its lagged value using the panel of firm-years yields a coefficient on the lag of 0.255 with a t-statistic of 25.56 based on standard errors clustered by firm. Thus, we hypothesize that mutual funds are more likely to produce information about a firm's proposals when the firm had contentious proposals in the past.

We add $I(Contested\ votes)$ and its interaction terms with $NetWin(Informed)$ and

[13] Note that all proposals in our sample are ex post contentious proposals, which may differ in the ex ante likelihood of being contentious.

[14] The contentiousness of a firm's proposals can be driven by relatively stable firm characteristics, such as the degree of agency conflicts and uncertainty in the valuation impact of governance proposals, giving rise to persistence in the contentiousness of proposals.

$NetWin(Uninformed)$ to Eq. (3). The last two columns of Table 6 show that the coefficient on the interaction term combining $NetWin(Informed)$ and $I(Contested\ votes)$ is positive and significant at conventional levels, whereas that on the interaction term between $NetWin(Uninformed)$ and $I(Contested\ votes)$ is negative and insignificant. The difference between the coefficients on the two interaction terms is significant at the 5% level. These results are consistent with the idea that the incentive to produce information about a proposal increases with the likelihood that the proposal will be contentious.

[Insert Table 6 about here]

4.3 The performance implications of ownership by high vote alpha funds

If high vote alpha funds produce information on governance issues, they might play an effective monitoring role and lead to improved firm performance. Besides casting informed votes, high vote alpha funds might actively engage with portfolio companies through, e.g., behind-the-scenes discussions with firm management (e.g., Carleton, Nelson, and Weisbach, 1998; McCahery, Sautner, and Starks, 2016) and the threat of exit (e.g., Parrino, Sias, and Starks, 2003; Admati and Pfleiderer, 2009). This predicts that, other things equal, ownership by high vote alpha funds should be positively correlated with subsequent firm performance.

We run the following regression using the panel of firm-years to examine the relation between informed ownership and firms' operating performance:

$$Perf_{i,t+1} = \alpha + \delta \times Informed\ ownership_{i,t} + \nu \times Perf_{i,t} + \phi \times \mathbf{X}_{i,t} + \varepsilon_{i,t}, \qquad (4)$$

where $Perf_{i,t+1}$ is either industry-adjusted ROA or earnings surprises of firm i in year $t+1$; $Informed\ ownership_{i,t}$ is the proportion of firm i's mutual fund ownership accounted for

by high vote alpha funds at the end of year t; $\mathbf{X}_{i,t}$ consists of various firm characteristics, including the fraction of governance proposals of which the outcome goes in the direction of management's recommendation, the fraction of governance proposals of which the outcome goes in the direction of ISS's recommendation, firm size, market-to-book ratio, prior stock return, leverage, capital expenditure, an indicator for S&P 500 firms, mutual fund ownership, and analyst coverage. We control for lagged performance in all regressions. In some regressions, we additionally include year fixed effects and industry fixed effects. We again cluster standard errors by firm to allow for arbitrary within-firm correlation in residuals.

Table 7 reports the regression results. The coefficient on $Informed\ ownership$ is positive and significant across all specifications. In terms of economic magnitudes, the specifications with the full set of controls and fixed effects, i.e., columns 2 and 4, show that a one standard deviation increase in informed ownership is associated with an increase of 0.0016 in industry-adjusted ROA and 0.0005 in SUE. These numbers are economically meaningful, representing an increase of 2.2% and 13.2% of the interquartile range, respectively. These results are consistent with high vote alpha funds improving corporate performance by playing the role of informed monitors. The result on earnings surprises also suggests that financial analysts do not fully incorporate the information about high vote alpha funds in their earnings forecasts.

[Insert Table 7 about here]

Given that market participants such as financial analysts underestimate the impact of high vote alpha funds on firm performance, informed ownership may positively predict subsequent stock returns. We use a calendar-time portfolio approach to test this prediction. At the end of each quarter from the second quarter of 2004 to the second quarter of 2018, we sort stocks into quintiles based on informed ownership. Stocks in the bottom quintile have an average informed ownership of 0.80%, whereas those in the top quintile have an average informed ownership of 53.8%. We then form a long-short portfolio that goes long stocks in the

top quintile of informed ownership and goes short stocks in the bottom quintile. We track the monthly performance of the portfolios over the following three months and rebalance thereafter. We use the Fama-French-Carhart four-factor model and DGTW characteristics benchmarks to adjust returns. For the Fama-French-Carhart four-factor model, we obtain the alpha estimates by regressing monthly portfolio excess returns on the monthly returns on the risk factors.

Table 8 reports calendar-time abnormal returns for each quintile portfolio and the long-short portfolio. The quintile portfolios are equally weighted in odd-numbered columns and weighted by market capitalization in even-numbered columns. Portfolio returns generally increase as we move from low to high informed ownership quintiles. Stocks in the top quintile of informed ownership tend to outperform stocks in the bottom quintile. The long-short portfolio that goes long stocks in the top quintile and goes short stocks in the bottom quintile earns an alpha of 39.3 to 57.3 basis points per month in Fama-French-Carhart four-factor adjusted returns and 28.4 to 41.7 basis points per month in DGTW characteristics-adjusted returns. This result suggests that a greater presence of high vote alpha funds improves stock valuation. It also indicates that high vote alpha funds can benefit from their monitoring activities through an increase in the value of their portfolio companies.

Combined with the finding that high vote alpha funds tend to have a low turnover ratio, the positive correlation between informed ownership and firms' future operating and stock performance is consistent with the hypothesis that high vote alpha funds, because of their long-term focus, improve firm performance by playing a monitoring role. We note, however, that we cannot rule out the possibility that these firm performance results are driven by high vote alpha funds being better stock pickers with long-lived information.

[Insert Table 8 about here]

5 Conclusion

Information production by shareholders is essential for proxy voting to produce efficient outcomes. In this paper, we propose a stock return-based approach to measure informed voting and examine its valuation effects. Our measure, the vote alpha, quantifies the extent to which a shareholder votes in the direction that the market perceives as value increasing. Using a large dataset of proxy votes by mutual funds on contentious governance proposals, we find that the vote alpha is highly persistent, suggesting that it captures a relatively stable characteristic of mutual funds' voting behavior. Consistent with the notion that long-term shareholders are more likely to exert monitoring effort, we find that mutual funds with a relatively long holding horizon are associated with a higher vote alpha.

Our main finding is that net win of high vote alpha funds positively predicts abnormal stock returns at horizons of up to 18 months following the vote on contentious proposals, suggesting that high vote alpha funds possess information about the shareholder value implications of contentious governance proposals and that such information is impounded into the stock price over time after the vote. Cross-sectional tests suggest that the predictive power of net win of high vote alpha funds is stronger for proposals about which proxy advisors produce less precise information and for proposals with a high ex ante likelihood of being contested. Further, consistent with high vote alpha funds playing a valuable monitoring role, we find evidence that ownership by high vote alpha funds positively predicts firms' operating and stock performance.

This paper contributes to our understanding of information production in the proxy voting process. A well-functioning shareholder democracy requires that shareholders actively produce information about the proposals up for vote such that their collective choice leads to better outcomes. Our evidence of significant valuation effects associated with informed voting highlights the importance of information production to the efficacy of proxy voting as

a corporate governance mechanism. Future research should investigate how best to promote informed voting and the effects of informed voting on corporate policies.

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Appendix A. Definition of variables

Variable	Definition
Fund-level variables	
Vote α	The weighted average cumulative market-adjusted return on an event-time portfolio that goes long stocks at which the fund wins a contentious vote and goes short stocks at which the fund loses a contentious vote over a 12-day window (i.e., one day before to ten days after the vote). Stocks in the portfolio are weighted by the fund's dollar holdings before the vote. See Eq. (1) for a formal definition.
I(*High vote α*)	An indicator that equals one if the vote alpha of the fund is in the top quintile and zero otherwise.
Fund size	The total net asset (TNA) of the fund.
Family size	The sum of the TNAs of all funds in the fund's family.
Fund age	The number of months since the fund enters the CRSP mutual fund database.
Index fund	An indicator that equals one if the fund is an index fund and zero otherwise.
Past style-adj. return	The fund's mean monthly style-adjusted return during the past 12 months.
Past style-adj. return volatility	The standard deviation of the fund's monthly style-adjusted return during the past 12 months.
Past style-adj. flow	The mean monthly style-adjusted percentage net flow to the fund during the past 12 months.
Past style-adj. flow volatility	The standard deviation of the fund's monthly style-adjusted net flow during the past 12 months.
Number of stocks	The number of stocks in the fund's portfolio.
Turnover	The minimum of aggregate purchases or sales of securities during the year, divided by the average TNA.
Expense ratio	The percentage of total investment that shareholders pay for the fund's operating expenses.
Total load	The sum of the maximum front- and rear-end load fees.
Size score	Weighted average of the quintile number of the market capitalization of stocks in the fund's portfolio (ranging from 1 to 5), weighted by the dollar value of holdings.
Value score	Weighted average of the quintile number of the book-to-market ratio of stocks in the fund's portfolio (ranging from 1 to 5), weighted by the dollar value of holdings.
Momentum score	Weighted average of the quintile number of the return of stocks in the fund's portfolio over the prior 12 months (ranging from 1 to 5), weighted by the dollar value of holdings.
% Vote against management	The fraction of the fund's votes on contentious proposals that go against management's recommendations.
% Vote with ISS	The fraction of the fund's votes on contentious proposals that are in line with ISS recommendations.
% Independent from family	The fraction of the fund's votes on contentious proposals that are independent from other funds within the same family. We define a vote cast by a fund on a proposal as independent from other same-family funds if the fund is the only fund in its family that votes on the proposal or if the vote differs from the vote of the majority of same-family funds.

Proposal- and firm-level variables

NetWin(*Informed*)	The difference between the total number of shares held by high vote alpha funds that win the vote and that by high vote alpha funds that lose the vote, divided by the number of shares outstanding.
NetWin(*Uninformed*)	The difference between the total number of shares held by uninformed voters (i.e., those not in the top quintile of the vote alpha) that win the vote and that by uninformed voters that lose the vote, divided by the number of shares outstanding.
Informed ownership	The proportion of mutual fund ownership accounted for by high vote alpha funds.
FFC CAR	Fama-French-Carhart four-factor adjusted cumulative abnormal returns over four holding horizons, i.e., three months (i.e., day +1 to +63, with day 0 being the meeting date), six months (+1 to +126), 12 months (+1 to +252), and 18 months (+1 to +378).
DGTW CAR	DGTW characteristics-adjusted cumulative abnormal returns over four holding horizons, i.e., three months (i.e., day +1 to +63, with day 0 being the meeting date), six months (+1 to +126), 12 months (+1 to +252), and 18 months (+1 to +378).
Industry adj. ROA	The difference between the firm's ROA and the median ROA of firms in the same four-digit SIC industry. ROA is defined as income before extraordinary items divided by total assets.
SUE	The difference between reported annual earnings per share (EPS) and the median of the most recent EPS forecasts of all analysts issued during the one-year period prior to the earnings announcement date, scaled by the stock price.
Management wins	An indicator that equals one if the vote outcome of the proposal is in line with management's recommendation and zero otherwise.
ISS wins	An indicator that equals one if the vote outcome of the proposal is in line with ISS's recommendation and zero otherwise.
% Management wins	The fraction of the firm's governance proposals in the past 12 months for which the vote outcome is in line with management's recommendation.
% ISS wins	The fraction of the firm's governance proposals in the past 12 months for which the vote outcome is in line with ISS's recommendation.
Total assets	The total assets of the firm.
Market-to-book	The market value of common equity divided by the book value of common equity.
Prior stock return	The cumulative market-adjusted abnormal stock returns during a 12-month window before the shareholder meeting for the sample of contentious proposals or the fiscal year-end for the sample of firm-years.
Leverage	The book leverage of the firm.
CapEx	Capital expenditure divided by total assets.
S&P 500	An indicator that equals one if the firm is included in the S&P 500 index and zero otherwise.
Mutual fund ownership	The total number of shares held by our sample mutual funds as a fraction of outstanding shares.
Number of analysts	The number of distinct financial analysts that issue annual earnings forecasts for the firm in the year.

Table 1: Summary statistics of mutual funds' votes on governance proposals

This table reports summary statistics for mutual funds' votes on governance proposals. Panel A partitions the votes into those on contentious proposals and those on non-contentious proposals. Contentious proposals are those that pass or fail within ±20% around the majority threshold, and non-contentious proposals are those that pass or fail with an absolute margin greater than 20%. We report the number of votes for all votes as well as for the two subsamples. We also report the mean of the following variables: *Win vote*, which is an indicator that equals one if the vote outcome goes in the direction of the mutual fund's vote and zero otherwise, *Vote against management*, which is an indicator that equals one if the fund votes against management's recommendation and zero otherwise, and *Vote with ISS*, which is an indicator that equals one if the fund votes with ISS's recommendation and zero otherwise. Panel B lists top 10 contentious proposal types ranked by the number of votes. For each proposal type, we provide the ISS agenda item ID, a description of the proposal type, and the number and percentage of votes.

Panel A: Contentious vs. non-contentious proposals

	All votes	Votes on contentious proposals	Votes on non-contentious proposals
Number of votes	12,818,587	1,345,818	11,406,178
Win vote	0.902	0.559	0.947
Vote against management	0.110	0.515	0.062
Vote with ISS	0.915	0.637	0.948

Panel B: Top 10 contentious proposal types ranked by the number of votes

ISS agenda item ID	Proposal description	Number of votes	Percent of votes
M0550	Advisory vote to ratify named executive officers' compensation	239,633	17.81%
S0235	Amend articles/bylaws/charter—call special meetings	112,487	8.36%
S0107	Require independent board chairman	111,350	8.27%
M0524	Amend omnibus stock plan	102,617	7.62%
S0238	Provide right to act by written consent	88,253	6.56%
S0517	Advisory vote to ratify named executive officers' compensation	74,836	5.56%
S0212	Require a majority vote for the election of directors	66,521	4.94%
S0221	Proxy access	56,902	4.23%
M0608	Reduce supermajority vote requirement	42,935	3.19%
M0522	Approve omnibus stock plan	41,791	3.11%

Table 2: Summary statistics on mutual funds, contentious proposals, and firms

This table presents the summary statistics for the samples of mutual fund-years (Panel A), contentious governance proposals (Panel B), and firm-years (Panel C). All variables are defined in Appendix A. For each variable in each sample, we report the mean, standard deviation, 25th, 50th, and 75th percentiles.

Panel A: The sample of mutual fund-years (N = 13,521)

	Mean	S.D.	25th	50th	75th
Main variables					
Vote α (%)	-0.043	1.453	-0.824	-0.047	0.700
I(*High vote* α)	0.200	0.400	0.000	0.000	0.000
Fund characteristics					
Fund size ($ millions)	3,197.490	14,582.250	118.900	483.800	1,803.100
Fund family size ($ billions)	333.513	628.134	18.835	67.954	294.470
Fund age (months)	187.740	138.467	92.000	157.000	240.000
Index fund	0.233	0.423	0.000	0.000	0.000
Past style-adj. return (%)	0.041	0.584	-0.232	0.007	0.263
Past style-adj. return volatility	0.014	0.013	0.007	0.011	0.015
Past style-adj. flow	0.013	0.085	-0.012	-0.003	0.012
Past style-adj. flow volatility	0.073	0.234	0.011	0.022	0.049
Number of stocks	237.391	392.353	60.000	99.000	238.000
Turnover	0.739	1.041	0.230	0.490	0.900
Expense ratio	0.009	0.005	0.006	0.009	0.012
Total load	0.013	0.018	0.000	0.002	0.020
Size score	4.251	0.891	4.027	4.669	4.872
Value score	2.318	0.548	1.877	2.292	2.682
Momentum score	3.502	0.442	3.209	3.511	3.808
% Vote against management	0.510	0.301	0.250	0.502	0.760
% Vote with ISS	0.636	0.304	0.385	0.667	0.962
% Independent from family	0.202	0.310	0.000	0.020	0.300

Panel B: The sample of contested governance proposals (N = 7,443)

	Mean	S.D.	25th	50th	75th
Main variables					
NetWin(*Informed*) (%)	0.614	2.469	-0.177	0.052	1.286
NetWin(*Uninformed*) (%)	3.079	6.473	-0.231	2.020	7.092
FFC CAR[+1, +63] (%)	-0.160	21.509	-8.685	0.274	8.374
FFC CAR[+1, +126] (%)	-0.405	31.962	-12.741	0.146	12.413
FFC CAR[+1, +252] (%)	0.163	42.543	-15.903	1.448	18.319
FFC CAR[+1, +378] (%)	-1.049	53.263	-20.624	2.671	23.576
DGTW CAR[+1, +63] (%)	-0.407	19.120	-6.974	-0.121	6.482
DGTW CAR[+1, +126] (%)	-0.511	28.152	-11.422	-0.179	10.277
DGTW CAR[+1, +252] (%)	-0.379	38.160	-15.091	0.417	16.069
DGTW CAR[+1, +378] (%)	-1.315	46.616	-18.469	1.031	20.213
Proposal/firm characteristics					
Management wins	0.807	0.395	1.000	1.000	1.000
ISS wins	0.405	0.491	0.000	0.000	1.000
Total assets ($ millions)	47,791.910	214,526.350	531.632	3,052.430	16,846.590
Market-to-book	3.343	4.461	1.340	2.128	3.659
Prior stock return	0.029	0.405	-0.151	0.022	0.203
Leverage	0.546	0.240	0.372	0.544	0.722
CapEx	0.042	0.052	0.008	0.025	0.055
S&P 500	0.399	0.490	0.000	0.000	1.000
Mutual fund ownership	0.177	0.114	0.088	0.179	0.257
Number of analysts	14.719	11.024	6.000	13.000	22.000

Panel C: The sample of firm-years (N = 33,435)

	Mean	S.D.	25th	50th	75th
Main variables					
Informed ownership	0.181	0.165	0.059	0.138	0.253
Industry adj. ROA (×100)	0.822	15.173	-2.307	0.136	4.924
SUE (×100)	-0.384	3.822	-0.140	0.042	0.239
Stock characteristics					
% Management wins	0.981	0.088	1.000	1.000	1.000
% ISS wins	0.915	0.195	1.000	1.000	1.000
Total assets ($ millions)	8,535.730	25,213.000	353.808	1,320.060	4,909.000
Market-to-book	2.850	4.767	1.201	1.942	3.395
Prior stock return	0.027	0.400	-0.175	0.020	0.221
Leverage	0.555	0.275	0.348	0.537	0.758
CapEx	0.041	0.054	0.008	0.024	0.052
S&P 500	0.178	0.382	0.000	0.000	0.000
Mutual fund ownership	0.146	0.102	0.057	0.140	0.222
Number of analysts	10.493	9.109	4.000	8.000	15.000

Table 3: Predicting the vote alpha

This table presents regression analysis of the persistence and determinants of the vote alpha. The dependent variable is the vote alpha in the first two columns and an indicator for high vote alpha funds in the last two columns. All independent variables are lagged by one year. See Appendix A for variable definitions. All regressions include year fixed effects and style fixed effects. We use CRSP objective code to classify mutual funds into different investment styles. Numbers in parentheses are *t*-statistics based on standard errors clustered by fund family. Significance at the 10% (*), 5% (**), or 1% level (***) is indicated.

Dependent variable =	*Vote α*		*I(High vote α)*	
	(1)	(2)	(3)	(4)
Lagged vote α	0.016	0.015		
	(2.27)**	(2.13)**		
Lagged I(High vote α)			0.049	0.033
			(4.82)***	(2.94)***
Log(Fund size)		-0.006		0.003
		(0.62)		(1.30)
Log(Fund family size)		-0.002		-0.001
		(0.19)		(0.39)
Log(Fund age)		-0.003		0.000
		(0.18)		(0.07)
Index fund		-0.012		-0.007
		(0.30)		(0.59)
Past style-adj. return		0.760		0.331
		(0.24)		(0.41)
Past style-adj. return volatility		-2.991		0.207
		(2.00)**		(0.41)
Past style-adj. flow		-0.038		-0.028
		(0.09)		(0.26)
Past style-adj. flow volatility		0.208		0.072
		(1.19)		(1.65)*
Log(Number of stocks)		-0.010		-0.043
		(0.46)		(7.01)***
Log(Turnover)		-0.034		-0.010
		(2.24)**		(2.24)**
Expense ratio		-3.488		1.165
		(0.63)		(0.62)
Total load		1.908		0.092
		(1.76)*		(0.33)
Size score		0.007		-0.050
		(0.14)		(3.88)***
Value score		0.013		-0.029
		(0.39)		(2.27)**
Momentum score		0.064		0.008
		(1.08)		(0.48)
% Vote against management		0.034		-0.003
		(0.30)		(0.13)
% Vote with ISS		-0.118		-0.048
		(1.02)		(1.79)*
% Independent from family		0.117		0.030
		(1.81)*		(1.84)*
Year FEs	Yes	Yes	Yes	Yes
Style FEs	Yes	Yes	Yes	Yes
Observations	13,521	13,521	13,521	13,521
Adjusted R-squared	0.02	0.02	0.02	0.03

Table 4: The predictive power of informed voting for abnormal stock returns after contentious votes

This table presents regression analysis of the predictive power of informed voting for abnormal stock returns after contentious votes. Panels A and B use the Fama-French-Carhart four-factor model and DGTW characteristics benchmark, respectively, to adjust stock returns. See Appendix A for variable definitions. Numbers in parentheses are *t*-statistics using standard errors clustered by firm. Numbers in square brackets are *p*-values for the null that the coefficients on *NetWin*(*Informed*) and *NetWin*(*Uninformed*) are equal. Significance at the 10% (*), 5% (**), or 1% (***) level is indicated.

Panel A: Fama-French-Carhart four-factor adjusted returns

Dependent variable =	$FFC\ CAR_{[+1,\ +63]}$	$FFC\ CAR_{[+1,\ +126]}$	$FFC\ CAR_{[+1,\ +252]}$	$FFC\ CAR_{[+1,\ +378]}$
	(1)	(2)	(3)	(4)
NetWin(*Informed*) (b_1)	0.226	0.508	0.465	0.532
	(2.27)**	(3.39)***	(2.30)**	(1.97)**
NetWin(*Uninformed*) (b_2)	-0.019	-0.045	0.010	0.083
	(0.46)	(0.69)	(0.11)	(0.69)
Management wins	-0.008	-0.009	-0.005	0.000
	(0.95)	(0.70)	(0.28)	(0.00)
ISS wins	0.005	0.006	0.013	0.005
	(0.63)	(0.48)	(0.79)	(0.26)
Firm size	-0.002	-0.002	-0.006	0.001
	(0.56)	(0.54)	(1.06)	(0.14)
Market-to-book	-0.001	-0.002	-0.004	-0.006
	(0.91)	(1.78)*	(2.02)**	(2.59)***
Prior stock returns	-0.021	-0.028	-0.001	0.015
	(1.61)	(1.62)	(0.04)	(0.55)
Leverage	0.010	-0.007	-0.034	-0.109
	(0.47)	(0.22)	(0.82)	(2.02)**
CapEx	0.139	-0.135	-0.169	-0.114
	(1.39)	(0.86)	(0.88)	(0.48)
S&P 500	0.012	0.006	0.026	0.013
	(1.11)	(0.35)	(1.25)	(0.48)
Mutual fund ownership	0.057	0.058	0.098	0.171
	(1.51)	(0.98)	(1.21)	(1.62)
Log(1+*Number of analysts*)	-0.014	-0.024	-0.029	-0.038
	(2.49)**	(2.88)***	(2.54)**	(2.56)**
Year FEs	Yes	Yes	Yes	Yes
Proposal type FEs	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes
F-test: $b_1 = b_2$	[0.030]**	[0.001]***	[0.046]**	[0.139]
Observations	7,422	7,422	7,422	7,422
Adjusted *R*-squared	0.01	0.01	0.02	0.03

Panel B: DGTW characteristics-adjusted returns

Dependent variable =	$DGTWCAR_{[+1,\,+63]}$	$DGTWCAR_{[+1,\,+126]}$	$DGTWCAR_{[+1,\,+252]}$	$DGTWCAR_{[+1,\,+378]}$
	(1)	(2)	(3)	(4)
NetWin(*Informed*) (b_1)	0.239	0.430	0.450	0.519
	(2.85)***	(3.44)***	(2.49)**	(2.22)**
NetWin(*Uninformed*) (b_2)	-0.027	-0.044	-0.073	0.050
	(0.77)	(0.76)	(0.88)	(0.46)
Management wins	-0.006	-0.006	-0.007	-0.006
	(0.77)	(0.54)	(0.43)	(0.29)
ISS wins	0.004	0.006	0.006	0.005
	(0.56)	(0.62)	(0.43)	(0.29)
Firm size	-0.003	-0.003	-0.003	-0.001
	(0.97)	(0.84)	(0.61)	(0.10)
Market-to-book	-0.001	-0.001	-0.002	-0.002
	(0.84)	(0.56)	(0.94)	(0.83)
Prior stock returns	-0.014	-0.031	-0.012	-0.030
	(1.15)	(1.92)*	(0.60)	(1.27)
Leverage	0.008	-0.008	-0.036	-0.084
	(0.42)	(0.30)	(0.99)	(1.82)*
CapEx	0.152	0.025	0.156	0.210
	(1.73)*	(0.19)	(0.89)	(0.99)
S&P 500	0.011	0.011	0.016	0.013
	(1.20)	(0.75)	(0.84)	(0.56)
Mutual fund ownership	0.042	0.087	0.148	0.204
	(1.27)	(1.72)*	(2.11)**	(2.24)**
Log(1+*Number of analysts*)	-0.007	-0.019	-0.019	-0.025
	(1.49)	(2.63)***	(1.88)*	(2.06)**
Year FEs	Yes	Yes	Yes	Yes
Proposal type FEs	Yes	Yes	Yes	Yes
Industry FEs	Yes	No	Yes	Yes
F-test: $b_1 = b_2$	[0.006]***	[0.001]***	[0.013]**	[0.084]*
Observations	7,422	7,422	7,422	7,422
Adjusted R-squared	0.01	0.01	0.01	0.01

Table 5: The predictive power of informed voting for abnormal stock returns after contentious votes: Alternative specifications

This table presents regression analysis of the predictive power of informed voting for abnormal stock returns after contentious votes using alternative specifications. The first two columns use contentious proposals held at firms with more liquid stock, i.e., those whose stock ranks in the bottom tercile of Amihud illiquidity ratio. The middle two columns confine contentious proposals to those that pass or fail within ±10% around the majority threshold. The last two columns use a three-day window (i.e., day −1 to +1 with day 0 being the date of the vote) to compute the vote alpha. The coefficients of the control variables are omitted for brevity. Numbers in parentheses are *t*-statistics using standard errors clustered by firm. Numbers in square brackets are *p*-values for the null that the coefficients on *NetWin*(*Informed*) and *NetWin*(*Uninformed*) are equal. Significance at the 10% (*), 5% (**), or 1% (***) level is indicated.

Dependent variable =	*FFC CAR*$_{[+1,\,+126]}$	*DGTW CAR*$_{[+1,\,+126]}$	*FFC CAR*$_{[+1,\,+126]}$	*DGTW CAR*$_{[+1,\,+126]}$	*FFC CAR*$_{[+1,\,+126]}$	*DGTW CAR*$_{[+1,\,+126]}$
	(1)	(2)	(3)	(4)	(5)	(6)
NetWin(*Informed*) (b_1)	0.415	0.313	0.620	0.419	0.649	0.494
	(2.37)**	(2.19)**	(2.90)***	(2.08)**	(2.93)***	(2.42)**
NetWin(*Uninformed*) (b_2)	-0.160	-0.137	0.031	0.002	-0.050	-0.029
	(2.00)**	(1.93)*	(0.27)	(0.02)	(0.49)	(0.32)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Proposal type FEs	Yes	Yes	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes	Yes	Yes
F-test: $b_1 = b_2$	[0.004]***	[0.001]***	[0.026]**	[0.094]*	[0.011]**	[0.039]**
Observations	4,221	4,221	3,299	3,299	7,421	7,421
Adjusted *R*-squared	0.04	0.04	0.02	0.02	0.02	0.01

Table 6: The predictive power of informed voting for abnormal stock returns after contentious votes: Cross-sectional tests

This table presents regression analysis of how the predictive power of informed voting for abnormal stock returns after contentious votes varies across proposals. *I*(*Blanket recommendations*) is an indicator that equals one if the proposal up for vote belongs to a proposal type on which ISS recommends voting for at least 95% of the time or recommends voting against at least 95% of the time in the past 12 months and zero otherwise. *I*(*Contested votes*) is an indicator that equals one if the firm has at least one governance proposal in the past 12 months that pass or fail within ±20% around the majority threshold and zero otherwise. See Appendix A for variable definitions. The coefficients of the control variables are omitted for brevity. Numbers in parentheses are *t*-statistics using standard errors clustered by firm. Numbers in square brackets are *p*-values for the null that the coefficients on the two interaction terms are equal. Significance at the 10% (*), 5% (**), or 1% (***) level is indicated.

Dependent variable =	$FFC\ CAR_{[+1,\ +126]}$	$DGTW\ CAR_{[+1,\ +126]}$	$FFC\ CAR_{[+1,\ +126]}$	$DGTW\ CAR_{[+1,\ +126]}$
x =	*I*(*Blanket recommendations*)		*I*(*Contested votes*)	
	(1)	(2)	(3)	(4)
NetWin(*Informed*) × x (c_1)	0.557	0.559	0.494	0.534
	(2.10)**	(2.38)**	(1.93)*	(2.35)**
NetWin(*Uninformed*) × x (c_2)	-0.364	-0.214	-0.150	-0.147
	(3.43)***	(2.30)**	(1.37)	(1.53)
NetWin(*Informed*)	0.293	0.251	0.235	0.192
	(1.75)*	(1.71)*	(1.29)	(1.27)
NetWin(*Uninformed*)	0.030	-0.016	-0.013	-0.019
	(0.42)	(0.26)	(0.18)	(0.31)
x	0.014	0.015	0.006	0.002
	(1.14)	(1.45)	(0.68)	(0.22)
Controls	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes
Proposal type FEs	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes
F-test: $c_1 = c_2$	[0.002]***	[0.004]***	[0.033]**	[0.012]**
Observations	7,422	7,422	7,422	7,422
Adjusted *R*-squared	0.02	0.01	0.02	0.01

Table 7: Informed ownership and operating performance

This table presents regression analysis of the relation between informed ownership and operating performance. The dependent variable is industry-adjusted ROA in the first two columns and standardized unexpected earnings based on analyst forecasts (SUE) in the last two columns. All independent variables are lagged by one year. See Appendix A for variable definitions. Numbers in parentheses are *t*-statistics using standard errors clustered by firm. Significance at the 10% (*), 5% (**), or 1% (***) level is indicated.

Dependent variable =	*Industry-adj. ROA*		*SUE*	
	(1)	(2)	(3)	(4)
Informed ownership	1.134	0.978	0.494	0.315
	(3.49)***	(2.81)***	(3.18)***	(1.94)*
Lagged industry-adj. ROA	0.775	0.767		
	(82.72)***	(84.35)***		
Lagged SUE			0.128	0.123
			(6.48)***	(6.37)***
% Management wins	0.017	-0.075	0.461	0.426
	(0.03)	(0.15)	(1.22)	(1.16)
% ISS wins	0.569	0.618	0.039	0.086
	(1.92)*	(2.09)**	(0.28)	(0.63)
Firm size	0.124	0.334	-0.048	0.010
	(1.86)*	(4.70)***	(2.22)**	(0.43)
Market-to-book	0.053	0.030	0.008	0.010
	(2.79)***	(1.56)	(1.91)*	(2.37)**
Prior stock returns	1.245	1.324	0.892	0.809
	(6.30)***	(6.62)***	(10.14)***	(9.70)***
Leverage	1.015	1.090	-0.274	-0.247
	(2.90)***	(2.86)***	(2.54)**	(2.04)**
CapEx	0.748	4.852	-1.274	-0.901
	(0.66)	(3.35)***	(1.94)*	(1.03)
S&P 500	0.333	0.027	0.299	0.128
	(2.00)**	(0.16)	(4.67)***	(1.95)*
Mutual fund ownership	3.539	4.071	2.198	0.825
	(7.34)***	(6.80)***	(10.19)***	(3.49)***
Log(1+*Number of analysts*)	0.216	0.047	0.175	0.204
	(2.81)***	(0.58)	(4.32)***	(4.59)***
Year FEs	No	Yes	No	Yes
Industry FEs	No	Yes	No	Yes
Observations	33,435	33,434	27,442	27,441
Adjusted *R*-squared	0.66	0.66	0.03	0.07

Table 8: Calendar-time portfolio returns

This table reports calendar-time portfolio returns. At each quarter-end during the 2004Q2–2018Q2 period, we sort stocks into quintiles based on informed ownership, i.e., the fraction of mutual fund ownership accounted for by high vote alpha funds. The quintile portfolios are equal-weighted in odd-numbered columns and weighted by market capitalization in even-numbered columns. We then form a long-short portfolio that goes long stocks in the top quintile and goes short stocks in the bottom quintile. We track the monthly performance of the portfolios over the following three months and rebalance thereafter. We use the Fama-French-Carhart four-factor model (the first two columns) and DGTW characteristics benchmarks (the last two columns) to adjust returns. Numbers in parentheses are t-statistics. Significance at the 10% (*), 5% (**), or 1% level (***) is indicated.

	Fama-French-Carhart 4-factor α		*DGTW α*	
	EW	VW	EW	VW
	(1)	(2)	(3)	(4)
Q1 (Low informed ownership)	-0.335	-0.315	-0.180	-0.155
	(1.84)*	(2.18)**	(1.29)	(1.51)
Q2	0.035	-0.178	0.087	-0.066
	(0.49)	(2.05)**	(1.50)	(1.06)
Q3	-0.021	-0.030	0.030	-0.066
	(0.31)	(0.36)	(0.63)	(1.13)
Q4	0.134	-0.030	0.110	-0.006
	(1.71)*	(0.32)	(1.89)*	(0.08)
Q5 (High informed ownership)	0.282	0.088	0.237	0.116
	(2.32)**	(0.76)	(2.68)***	(1.37)
Long/short (Q5 – Q1)	0.573	0.393	0.417	0.284
	(3.46)***	(2.20)**	(2.71)***	(2.19)**