

How are Shareholder Votes and Trades Related?

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Abstract

We demonstrate that, around the shareholder meeting date, abnormal daily volume increases substantially. This increase is prominent even for routine votes, and it is particularly large for important votes. We further analyze the vote-trade relationship at the investor level, using data on funds' daily trades and their corresponding votes. We find that a fund's trades and votes are positively correlated before the meetings. Funds update their trading patterns after the meeting: a fund is more likely to sell its stock after the meeting if a vote outcome contradicts a vote cast by the fund.

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1. Introduction

Shareholder votes offer shareholders a mechanism to exercise their “voice,” i.e., to exert influence over the company’s management. According to a survey by McCahery, Sautner and Starks (2016), 53% of the institutional investors surveyed view voting against management as an important form of voice. A large theoretical literature emphasizes that a shareholder’s decision on whether to exercise his/her voice is closely related to her trading decisions concerning a stock.¹ Yet, empirically, several questions remain unresolved: Are shareholder votes a sufficient form of voice that catalyzes trades across the board? Are a shareholder’s votes and trades correlated? And does a shareholder update its trading patterns based on the information conveyed by other investors’ votes? We address these questions by examining the relation between votes and trades both at the stock level and at the investor level.

We start by studying how votes and trades are related at the stock level. Ex ante, it is not clear whether shareholder votes are sufficiently important to generate significant trading activity. On the one hand, votes may not generate abnormal trading activity because shareholders rarely oppose management on such votes;² even when they do, the votes are almost always non-binding (Levit and Malenko, 2011), and hence management can ignore the vote outcome. Moreover, prior studies have not documented a clear overall pattern of abnormal returns around shareholder meeting days: some studies find no or negligible price effects around shareholder meetings,³ while other studies document significant abnormal returns around shareholder meeting dates, but typically examine only

¹ See Kahn and Winton (1998), Maug (1998, 1999), Brav and Mathews (2011), Dasgupta and Piacentino (2015), and Back, Collin-Dufresne, Fos, Li, and Ljungqvist (2017). Edmans (2014) provides a comprehensive survey of this literature.

² We estimate that vote outcome contradicts management recommendation in only 6.3% of all proposals.

³ See Karpoff, Malatesta and Walkling (1996) and Gillan and Starks (2000), and Karpoff (2001) for a survey.

a small subset of the votes.⁴ On the other hand, shareholder votes may be associated with high abnormal trading activity across the board, since, as Maug (1999) implies, shareholders can learn from the vote outcomes about firm quality and other shareholders' opinions. This information may catalyze investors to trade.

Prior studies that have examined whether the market responds to shareholder votes have typically measured its response using abnormal returns.⁵ However, Kandel and Pearson (1995) and Hong and Stein (2007) emphasize that, if different investors have heterogeneous priors and interpret information differently, significant trading activity may be captured by volume but not accompanied by price changes. Following these studies, we focus on abnormal daily trading volume to capture the extent to which investors update their beliefs. We complement our analysis by analyzing the abnormal daily number of trades, volatility, and returns.⁶

We document that, on the shareholder meeting date, abnormal volume is equal to 19.4% (i.e., the volume on the meeting date is 19.4% higher than the average volume during pre-voting period). The average daily abnormal volume during the [-6, +6] window around the meeting date is 15.01%. For comparison, we estimate that the corresponding figures surrounding 10-K filings are 34.6% and 15.08%, respectively. Hence, the abnormal volume we document around shareholder meetings is economically high, and comparable to that observed around other major corporate events. In addition, we show that high abnormal volume around meetings exists even for routine meetings, which we define as meetings that include only routine proposals for which all vote

⁴ Cuñat, Gine, and Guadalupe (2012) find positive abnormal returns around governance-related shareholder proposals passed by a small margin. However, as we discuss in this paper, most meetings do not include such proposals.

⁵ See, Karpoff, Malatesta, and Walkling (1996), Gillan and Starks (2000), Alexander, Chen, Seppi, and Spatt (2010), Cuñat, Gine, and Guadalupe (2012), Ertimur, Ferri, and Oesch (2013), and Brochet, Ferri, and Miller (2017).

⁶ We follow Kandel and Pearson (1995), Hong and Stein (2007), DellaVigna and Pollet (2009), Bamber, Barron, and Stevens (2011), and Pan, Wang, and Weisbach (2015), which all use one or more of these variables to capture the extent the market responds to an event.

outcomes are consistent with management recommendation.⁷ This suggests that a clear vote outcome on standard proposals is also associated with abnormal volume.

At the same time, we document that increases in trading activity are particularly prominent (48%-136%) on the dates of particularly important meetings, i.e., special meetings, meetings that involve a vote on a merger, or meetings at which at least one proposal results in an outcome contradicting management recommendation.

We do not find a clear spike in abnormal volume around the record date, the date the proxy statement is filed, the date Institutional Shareholder Services (ISS) issues its recommendation, or the date the vote outcome is formally filed. These findings support the notion that, in most cases, information on the vote outcome is released on the day of the meeting, and it is the release of this information that is associated with high abnormal volume.

To further understand whether votes and trades relate to each other, and if vote outcomes are sufficient to alter trading patterns, we conduct an analysis at the mutual fund level. To our knowledge, we are the first to directly examine how investors' trades before a shareholder meeting relate to their own votes, and whether and how investors update their trading patterns once they observe the aggregate vote outcome. We find shareholder votes a particularly compelling setting for examining how investors trade before and after an event because the vote cast by an investor offers a proxy for the investor's beliefs.

One might expect that, between the proxy filing and the meeting date, votes and trades will be positively correlated because shareholders vote sincerely. In other words, a shareholder votes in favor of proposals for which he has positive information and vice versa (Maug and Rydqvist, 2009), and the shareholder's trades likely reflect his true opinion on the stock. However, it is also possible that shareholders vote strategically (Maug and Rydqvist, 2009; Matvos and Ostrovsky, 2010;

⁷ Routine proposals include approving the firm's auditor, director elections, and the say-on-pay vote.

Brav and Mathews, 2011; and Levit and Malenko, 2011), meaning that shareholders do not simply vote in favor of proposals for which they have positive information. Strategic voting could occur, for example, because a shareholder may gain profits from such voting (Brav and Mathews, 2011).

We find that mutual funds' trades during the period between the proxy filing and the meeting date are positively correlated with their votes. A fund that votes against management recommendation on at least one proposal is more likely to decrease its holdings in the company during this pre-meeting period compared to the companies for which it votes consistently with management recommendations on all proposals. Specifically, when a fund opposes management on at least one proposal, the fund is likely to decrease the net fraction of company and the net fraction of portfolio weight it holds, and the probability that it buys such a stock is lower relative to companies for which it votes in support of management on all proposals. The positive association between funds' votes and trades before the meeting indicates that mutual funds vote sincerely, and that their trades and votes complement each other.

We next demonstrate that funds update their trading patterns if the vote outcome contradicts the fund's own vote. In particular, we find that, if at least one vote outcome contradicts a vote cast by a fund for a given meeting (e.g., the fund voted "for" a proposal, but the proposal failed), after the meeting, the fund is likely to decrease the magnitude of its holding in terms of fraction of company held and portfolio weight, and the probability that the fund sells such a stock increases. Our interpretation of these findings is that the aggregate vote outcome can bring a shareholder to the realization that his or her opinion on which action the company should take differs from the opinions of most other shareholders, which induces the shareholder to sell the stock. Hence, the fund-level analysis indicates that funds update their trading patterns after observing the vote outcomes.

Our paper contributes to the literature on shareholder voting in several ways. Prior studies

have shown that certain types of proposals – typically non-routine proposals, which comprise a small fraction of all proposals – are followed by positive or negative abnormal returns.⁸ We show that, at the stock level, votes are related to trades across the board, and that even routine meetings are associated with high abnormal volume. In addition, of the multiple vote-related events, we are able to demonstrate that the largest jump in abnormal volume occurs on the meeting date, suggesting that it is the vote outcome that conveys meaningful information to investors and catalyzes them to trade.

Second, we contribute to the voting literature by examining, at the investor level, how a shareholder’s trades relate to his or her own votes. Daily fund-level trading data allow us to conduct a detailed analysis on the relation between votes and trades because we can observe funds’ daily trading behavior before each meeting date. By pinpointing the multiple vote-related events, we are able to demonstrate that, after funds observe the proxy statement but before they observe the vote outcome, their votes and trades are positively correlated. This finding is consistent with the interpretation that funds vote sincerely, and that their votes and trades complement each other.

Third, our paper contributes to the literature on exit and voice. This literature argues that shareholders can govern their companies both through voice and through trading—in particular, through exit.⁹ We show that certain vote outcomes (e.g., those that contradict the funds’ votes) are associated with accelerated exit rates, consistent with Admati and Pfleiderer (2009) and Edmans (2009), who argue that shareholders may opt to sell their stocks to express their dissatisfaction with management.

The rest of the paper is organized as follows: Section 2 discusses the data used in the

⁸ See footnotes 3 and 4 above.

⁹ Exit, i.e., selling the company’s shares, governs the company because it drives down the stock price, and hence, induces management to maximize value ex ante (Admati and Pfleiderer, 2009; Edmans, 2009; Dasgupta and Piacentino, 2015; and Levit, 2017). See McCahery, Sautner, and Starks (2016) for institutional investors’ views on their voice and exit decisions.

analyses, Section 3 presents the timeline around shareholder votes, Section 4 examines the relation between votes and trades at the stock level, Section 5 investigates the relation between votes and trades at the investor level, and Section 6 concludes.

2. Data

In this section, we describe the datasets used in the paper. The Glossary of Variables provides variable definitions.

Voting data. Voting outcomes are obtained from the ISS Voting Analytics database. This dataset documents the aggregate vote outcomes for each proposal that came up for a vote at a shareholder meeting. These outcomes are reported in 8-K, 10-Q, and 10-K filings. In addition, the ISS Voting Analytics database includes data on the votes cast by mutual funds reported in the N-PX form that mutual funds submit annually to the SEC. For each issue discussed at a shareholder meeting, the ISS dataset also includes ISS's and management's recommendations on how shareholders should vote.

Mutual fund holding data. Data on mutual fund holdings are obtained from the CRSP mutual fund holding files. Appendix A of Schwartz-Ziv and Wermers (2016) describes the multiple procedures we follow to match this data to the ISS Voting Analytics dataset.

Mutual fund daily trading data. ANcerno Ltd. provides institutional trading data with fund identification for the period between January 1, 1999 and September 30, 2011 (ANcerno dropped the fund identification variable after September 2011). ANcerno is a consulting firm that works with institutional investors to monitor execution costs. Puckett and Yan (2011) estimate that, while the institutions included in ANcerno are larger than the average 13F institution, they are similar to 13F institutions with respect to stock holdings, stock trades, and return characteristics. The ANcerno database captures clients' complete transaction histories, including date of execution, execution

price, number of shares traded, and whether the transaction is a buy or sell. Since the database does not disclose the actual identities of the funds, we follow the matching procedures adopted by Busse, Chordia, Jiang, and Tang (2017) to match the mutual funds in ANcerno to the quarterly holdings data of mutual funds in Thomson Reuters Mutual Fund Holdings (formerly CDA/Spectrum S12) over the period from January 1999 to September 2011. We further match these S12 funds to the CRSP mutual fund data through the MFLINK data provided by WRDS (see Wermers, 2000) and are able to identify 1,169 unique WFICNs over the period from January 1999 to September 2011. Our final sample includes only funds for which we can observe at least one trade from 15 months before to 9 months after a meeting date.

Daily trading measures. The TAQ (Trade and Quote) database provides the trades for all individual securities listed on the NYSE, NASDAQ, and AMEX stock exchanges. We use TAQ to estimate daily volatility and number of trades and use CRSP to obtain data on daily volume and returns.

Company data. Data on stock and accounting performance at the company level are obtained from CRSP and Compustat, respectively.

Event Dates. We obtain shareholder meeting dates from the ISS Voting Analytics dataset. We manually collect the dates the vote outcomes are filed, the proxy filing dates,¹⁰ and the 8-K, 10-Q, and 10-K filing dates (see Appendix A for further details). For each of these filings, we track the exact time when the form was filed. If the filing time is between 4:00 PM and 5:30 PM, we classify the filing date as the next trading day when investors are able to start trading on the information.¹¹

Record dates were generously provided to us by Daniel Metzger.

¹⁰ In cases when the firm filed a preliminary proxy statement before filing a definitive proxy statement, we use the date of the preliminary proxy statement as the proxy filing date because preliminary proxy filings typically include almost all the information in the definitive proxy statement.

¹¹ Filings filed after 5:30 PM are automatically assigned to the following trading day by the SEC, and thus we do not need to adjust their filing dates.

ISS recommendation date. These dates are obtained from ISS (this data is not included in the ISS Voting Analytics dataset).

3. Timeline Around Shareholder Votes

Companies typically hold one shareholder meeting per year, during which they vote for the slate of directors proposed by management, approve the auditors proposed by management, and, since 2011, vote on say-on-pay. Shareholders also vote on additional non-routine proposals, sponsored by management or shareholders, if such proposals are submitted.

Figure 1 reports the typical timeline around shareholder meetings during the February 28, 2010-June 30, 2013 period. It documents that the average (median) number of trading days from the record date (the date used to determine which shareholders are eligible to vote) to the date the proxy is filed is 9 (9), and from the proxy filing date to the annual shareholder meeting date is 30 (29). We note that proxy filings include substantial information (e.g., the proposed slate of directors and the executive compensation awarded). Figure 1 also reports that there are on average 13 (12) trading days between the date ISS issues its recommendation on how shareholders should vote and the meeting date.

As reported in Figure 1, the average (median) number of trading days between the shareholder meeting date and the date the vote outcome is formally filed (“outcome date”) is equal to 2 (2). We estimate that during the January 1, 2006-February 27, 2010 period, this figure is equal to 51 (55). The timespans differ substantially between the two periods because, for meetings held before February 28, 2010, companies report the vote outcome in a 10-K or a 10-Q filing (the annual or quarterly financial report, respectively) for the quarter in which the shareholder meeting is held. This practice typically resulted in a long lag in reporting the vote outcome. For meetings held on or after February 28, 2010, companies were required to report the outcome in an 8-K form within 4

days of the meeting.¹² Accordingly, all analyses in this paper are for the period after February 27, 2010, for which we can be almost certain that the market observed the vote outcome on, or shortly after, the meeting date.

Between the meeting date and the filing of the vote outcome, companies are permitted to issue a press release announcing the voting results.¹³ It is common for companies to issue such a press release (Garner, Geissinger, and Woodley, 2017). However, the information included in the press release may vary. For example, in the 2017 proxy season, both General Motors (GM) and Walmart issued press releases on their shareholder meeting dates. Walmart specified the support rate for each vote outcome. On the other hand, GM only noted that the proposals passed, but did not reveal the support rates, which were relatively low compared to those of other companies and were only revealed in the 8-K filing.¹⁴

Investment advisors, which include mutual funds, typically cast their votes electronically through their proxy advisor. Once the vote is cast, Broadridge (the company that manages electronic voting), the proxy advisor, and the firm can observe the vote cast, but they are all required to keep the observed votes confidential. Nevertheless, it is possible that information pertaining to the votes already cast leaks before the meeting date. Shareholders may also infer the expected vote outcome if management reaches out to them before the meeting in an attempt to persuade them to vote in a certain direction. Such situations may catalyze trading ahead of the meeting date.

¹² The requirement to file the vote outcome in an 8-K within 4 trading days is further described here: <https://www.perkinscoie.com/en/news-insights/happy-holidays-from-the-sec-new-rules-require-enhanced.html>.

¹³ The SEC notes in its Final Rule on Proxy Disclosure Enhancement that “our amendments to Form 8-K are not intended to preclude a company from announcing preliminary voting results during the meeting of shareholders at which the vote was taken and before filing the Form 8-K, without regard to whether the company webcast the meeting” (see Final Rule (<https://www.sec.gov/rules/final/2009/33-9089.pdf>), p.62, footnote 173). We thank Kobi Kastiel for clarifying this to us.

¹⁴ For example, see Walmart’s press release in the 2017 proxy season here: https://markets.ft.com/data/announce/detail?dockey=600-201706021450BIZWIRE_USPRX_BW5797-1, and its subsequent filing: <https://www.sec.gov/Archives/edgar/data/104169/000010416917000031/form8-kx6617.htm>, as compared to GM’s initial press release here: <http://media.gm.com/media/us/en/gm/news.detail.html/content/Pages/news/us/en/2017/jun/0606-proxy.html>, and its subsequent filing: <https://www.sec.gov/Archives/edgar/data/1467858/000119312517201530/d395090d8k.htm>.

4. Relation Between Votes and Trades at the Stock Level

4.1. Shareholder Votes and Abnormal Volume

Should we expect to observe a relation between shareholder votes and trades? One possibility is that votes are not associated with significant trading activity. We estimate that vote outcomes are consistent with management recommendation for 93.7% of all proposals, indicating that shareholders quite rarely attempt to govern management through shareholder votes. Moreover, according to footnote 1 in Levit and Malenko (2011), 98% of shareholder proposals are non-binding. Hence, management can completely ignore the vote outcomes of almost all shareholder proposals, including proposals that received substantial majority support from shareholders. Given that it is unusual for shareholders to vote against management, and that when they do so, management has extreme discretion regarding whether to respond, it is not obvious that shareholder votes will be correlated with trading. Thus, we may posit that, perhaps, after excluding a small number of unusual special votes such as a vote on a merger or a proxy fight, shareholder votes should not be correlated with abnormal trading.

This possibility may further be supported by the findings of prior literature that do not document a consistent pattern of abnormal stock returns around shareholder meetings. Some studies find no or negligible abnormal returns around shareholder meeting dates (Karpoff, Malatesta, and Walkling, 1996; Gillan and Starks, 2000; and as reported in Table 3 of Karpoff, 2001), which may suggest that shareholder votes are not related to trades. Cuñat, Gine, and Guadalupe (2012) document positive abnormal returns for governance-related proposals that passed by a small margin. However, we estimate that only approximately 18.1% of the meetings in our sample include a governance-related proposal, and at most 2% include a governance-related proposal that passed by

a small margin.¹⁵

In contrast, other studies imply that shareholder votes are likely to be associated with significant trading activity. Multiple economic models assume a relation exists between votes and trades (Maug, 1999 and Brav and Mathews, 2011), or, more generally, between voice and trades (Maug, 1999; Kahn and Winton, 1998; Dasgupta and Piacentino, 2015; and Back, Collin-Dufresne, Fos, Li, and Ljungqvist, 2017). These models analyze a diverse set of scenarios, and at times make different predictions on the nature of the relation between votes (or voice, depending on the model) and trades. However, all of these models predict that, conditional on votes being a sufficient form of voice, a relation exists between votes and trades. In addition, in a recent study, Brochet, Ferri, and Miller (2017) demonstrate that, when a contentious vote is expected, abnormal returns are positive and large *before* the shareholder meeting. This suggests that abnormal volume may be particularly high before the meeting. Hence, following these studies, we examine whether we observe substantial abnormal volume around one or more of the vote-related events.

4.2. Market Response Measures

Kandel and Pearson (1995) and Hong and Stein (2007) emphasize that, since investors have heterogeneous priors and interpret information differently, there can be significant trading activity even without accompanying price changes. For example, if new information is observed by two investors who each have different priors, this may lead one investor to increase her estimate of the company's value relative to her prior and a second investor to decrease his estimate of the company's value relative to his prior. In this case, the first investor will purchase the stock, while the

¹⁵ Cuñat, Gine, and Guadalupe (2012) examine 3,984 proposals submitted over an 11-year period (1997-2007). Their sample includes "the S&P 1500, plus another sample of 500 widely held firms." Assuming that their sample includes approximately 2,000 companies per year (which, after examining the majority of their data, we believe is a reasonable assumption), and that each company has no more than one governance proposal submitted (an assumption that inflates our estimation), and that only one meeting is held per year (an additional assumption that inflates our estimation), only 18.1% ($3,984/(2,000*11)$) of the firms have a governance-related proposal submitted at a given meeting. Moreover, Cuñat, Gine, and Guadalupe's (2012) primary analysis includes only the 450 proposals that passed or failed by a 5% margin, which, according to our estimation, represents approximately 2% ($450/(2,000*11)$) of the meetings.

second investor will sell the stock. Hence, these updates will induce both investors to trade, albeit in different directions, which ultimately leads to no or little change in prices but higher trading volume. Thus, to accurately capture the market response, we focus on abnormal daily trading volume. We complement our analysis by analyzing abnormal daily number of trades, volatility, and returns.

Data on daily volume (number of shares traded during the day) and returns are obtained from CRSP. We calculate daily abnormal returns using the Fama-French-Carhart four-factor model (following Savor, 2012). We use the TAQ database to estimate the daily number of trades and volatility. To estimate daily realized volatility, we gather minute-by-minute price data by applying the cleaning rules of Barndorff-Nielsen, Hansen, Lunde, and Shephard (2009) and Bollerslev, Li, and Todorov (2016). We compute the daily realized volatility as the sum of squared 5-minute returns within a day. Since the TAQ transaction prices are raw prices without adjustments for share splits, we use the daily *Cumulative factor to adjust price* and *Dividend cash amount* variables from CRSP to adjust for splits and dividends.

We use two measures to estimate the abnormal value for daily volume, volatility and number of trades. The first “simple” measure is defined as the daily value / average value during pre-voting period – 1 (as in Barber and Odean, 2008 and Ben-Rephael, Da, and Israelsen, 2017). The average value for volume and number of trades during pre-voting period is the simple average of daily value over the [-252, -21] trading day window prior to the record date that corresponds to the meeting. The average value for volatility during pre-voting period is the exponential moving average of daily volatility over the [-252, -21] trading day window, which allows us to put more weight on more recent observations.¹⁶ We use the period prior to the record date for all five vote-related dates we examine, to assure that no vote-related information impacts our estimates.

¹⁶ This is motivated by the fact that volatility has a long memory. The half-life of the exponential moving average is set to five days, following Bollerslev, Hood, Huss, and Pedersen (2017).

The second measure is the “log-transformed” measure which accounts for the skewed distribution of volume, volatility and number of trades. It is equal to the difference between daily log value and the average log value during pre-voting period (similar to Chae, 2005, DellaVigna and Pollet, 2009, and Hirshleifer, Lim, and Teoh, 2009). The average log value is measured as the simple average of daily log value during the [-252, -21] trading day window prior to the record date for volume and number of trades, and as the exponential moving average of daily log value for volatility. In the paper, we report results using the first, i.e., “simple” measure. To demonstrate the robustness of our findings, we report in the appendixes the results using the second “log-transformed” measure.¹⁷

We are interested in investors’ trading patterns once they observe the vote outcome. This requires identifying the date on which investors learn about the vote outcome. As discussed in Section 3, starting from February, 28 2010, firms have been required to report the outcome of the vote within 4 trading days of the meeting. Hence, it is only after that date we can be virtually certain that investors have learned the vote outcome at the meeting or very shortly thereafter. Accordingly, our analyses start from February 28, 2010, and include all meetings held until June 30, 2013. We point out that confining our analysis to the February 28, 2010-June 30, 2013 period offers a more conservative estimate of abnormal volume because volume consistently increases during the 2006-2009 period, which inflates the estimation of the abnormal volume measure over that period.¹⁸ As reported in Panel A of Table 1, our sample includes 10,701 unique meetings held by 3,421 unique companies. Panel B of Table 1 reports descriptive statistics of the main variables.

¹⁷ In unreported analyses, we document similar results using the log-transformed abnormal volatility and number of trades.

¹⁸ Because the average daily volume increases consistently and substantially during the 2006-2009 period, the average daily abnormal volume during the January 1, 2006–June 30, 2013 period is approximately 7.6% higher than the average daily abnormal volume during the February 28, 2010–June 30, 2013 period. The high abnormal volume observed in the 2006-2009 period results from comparing a higher current volume to a lower historical average, which, by construction, results in a positive abnormal volume.

4.3. Market Response Around Shareholder Meetings

In this section, we focus on the market response around the meeting date during the February 28, 2010 – June 30, 2013 period. In Panel A of Figure 2, we report the “simple” daily abnormal volume, number of trades, and volatility (i.e., using the first set of measures specified in the previous section). The corresponding average values using the log-transformed abnormal volume (i.e., using the second measure specified in the previous section) are reported in Appendix Table B.1.

Panel A of Figure 2 shows that abnormal volume on the meeting day jumps to 19.4% (i.e., the volume on the meeting day is 19.4% higher than the average volume during the pre-voting period). In addition, the average abnormal daily volume during the [-6, +6] window around the meeting date is 15.01%.¹⁹ Columns 1-2 of Table 2 report the abnormal volume for the [-20, 20] trading days around shareholder meetings, estimated by regressing daily abnormal volume on 41 dummy variables corresponding to each of these trading days (without a constant), with standard errors clustered at the company and the trading day levels. Hence, the coefficients in Column 1 represent the abnormal volume for the days around shareholder meetings (mirroring Panel A of Figure 2), demonstrating that abnormal volume on the days within the [-20, +20] window around the meeting date is significantly different from that in the pre-voting window. Importantly, abnormal volume jumps on the meeting date, and continues to increase slightly on the day following the meeting. In Table B.1 of Appendix B, we repeat this analysis using the log-transformed abnormal volume measure (as defined above) around the shareholder meeting. Using this measure, we find that abnormal volume peaks on the meeting date, as indicated by the highest coefficient reported in

¹⁹ This number is obtained by estimating the average abnormal volume in the [-6, +6] window around the meeting date (as reported in Table 2).

Column 5 (i.e., 0.100) which corresponds to the meeting date. In addition, Panel A of Figure 2 and Columns 3-6 of Table 2 demonstrate that both the abnormal number of trades and the abnormal volatility jump on the meeting date. Taken together, these findings all suggest that shareholder votes are associated with significant trading activity around the meeting date.

In contrast, Panel A of Figure 2 and Columns 7-8 of Table 2 do not exhibit a clear pattern of abnormal returns around the meeting date. We note that (only) returns are reported in percentage points, hence, for example, a reported 5% abnormal return (in percentage points) reflects only a 0.05% abnormal return. The unclear pattern observed for abnormal returns emphasizes the importance of examining other variables beyond abnormal returns that capture the market response around the meeting date.

It is possible that votes catalyze trades only for a small subset of meetings that include unusual or important votes, but that routine votes are not sufficient to generate abnormal volume. To address this possibility, we define a “routine meeting” as a meeting that includes only the basic proposals companies are required to include on their agenda, i.e., appointing directors, approving the company’s auditors, and/or voting on say-on-pay. To further focus on the most mundane votes, we require that, for all proposals voted on at a routine meeting, the vote outcome be consistent with management recommendation. All other meetings are defined as *Non-routine meetings*.

In Panel B of Figure 2, we report the abnormal volume for routine meetings versus non-routine meetings around meeting dates. As this figure indicates, abnormal volume peaks on the meeting date for non-routine meetings, reaching 22.66%.²⁰ Post-meeting abnormal volume for

²⁰ When we define a routine meeting as a meeting that includes only votes on director elections and/or auditor approval, and do not require that the vote outcome is consistent with management recommendation, the results remain almost identical to those reported in Figure 2, Panel B.

routine meetings peaks 2 days after the meeting date, reaching 18.08%.²¹ This panel demonstrates that while abnormal volume for non-routine meetings is on average higher than that of routine meetings, even the most routine shareholder meetings are associated with substantial trading activity.

In Table 4, we formally examine the abnormal volume during the [0, +4] window around routine versus non-routine meeting dates. We focus our attention on this window because companies are permitted to disclose the vote outcome starting from the meeting date and up to 4 trading days following the meeting date. Regression 1 reports that abnormal volume is equal to 13.39% for routine votes (this magnitude is significant at the 1% level) and 19.36% (13.39%+5.97%) for non-routine votes. Hence, consistent with Panel B of Figure 2, Regression 1 demonstrates that both routine and non-routine votes are associated with significant abnormal volume, though non-routine votes are associated with higher abnormal volume.

Following this observation, we next examine whether abnormal trading around the shareholder meeting date is particularly high when an important vote takes place. Panel C of Figure 2 distinguishes among three types of potentially important meetings: 1) meetings pertaining to a shareholder vote on a merger, 2) meetings in which shareholders vote against management recommendation on at least one proposal, and 3) special meetings.²² The figure also includes a fourth category of meetings, which serves as a control group: meetings that do not fall into any of the three prior categories. Panel C of Figure 2 reveals that abnormal volume around each of the three “important” meetings is significantly higher relative to the meetings in the fourth category: the abnormal volume on the meeting day is 136%, 130%, and 48% for special meetings, meetings involving a merger vote, and meetings with one or more vote outcomes opposite of management

²¹ The delayed peak for routine meetings suggests that companies act faster to reveal vote outcomes of non-routine votes.

²² Special meetings are typically held to approve a merger agreement or an acquisition, or to authorize the issuance of shares (regular or in connection with an acquisition).

recommendation, respectively. In contrast, for meetings that do not fall into any of these three categories, the abnormal volume is only 15%.

Table 4 further demonstrates the significant difference between the abnormal volume for each of the “important” meeting categories and the regular meetings. For example, Regression 2 of Table 4 shows that, in the $[0, +4]$ window after the meeting date, the average abnormal volume following a *Merger vote* is approximately four times higher ($0.6615/0.1611$) than the average abnormal volume following a meeting without a merger vote. Hence, while even “non-important” shareholder meetings are associated with substantial positive abnormal volume, important meetings generate particularly high abnormal volume.

To get a sense of whether the magnitudes we document in this section are large and how they compare to other events that have been studied in the literature, we repeat our analysis by examining the market response around 10-K filings (e.g., Atiase and Bamber, 1994). Panel D of Figure 2 and Columns 9-10 of Table 3 report companies’ abnormal trading volume around 10-K filings. The average volume, number of trades, and volatility are computed over the $[-252, -21]$ window prior to each observation day. The corresponding log-transformed abnormal volume is reported in Columns 11-12 of Table B.1 in Appendix B. While the abnormal volume on 10-K filing dates is higher than that observed on shareholder meeting dates (34.6% vs. 19.4%, respectively), the average daily abnormal volume in the $[-6, +6]$ window around the 10-K filing is 15.08%,²³ which is almost identical to the magnitude observed during the $[-6, +6]$ window around shareholder meetings (15.01%). These numbers indicate that the abnormal volume around shareholder votes is comparable to that observed around other important corporate events.

Finally, in Appendix C, we examine whether abnormal trading around the meeting date is particularly high under certain conditions. First, consistent with the predictions of Kim and

²³ This number is the average of abnormal volume over days $[-6, +6]$, as reported in Table 3 for 10-K filings.

Verrechia (1991) and Harris and Raviv (1993), we find that abnormal volume is particularly high when the price reaction to the vote outcome is high (Appendix Table C.1). Second, consistent with the prediction of Kim and Verrechia (1991), we show that abnormal volume is particularly high when information asymmetry is high, i.e., when the number of analysts following the stock is small and company size is small (Appendix C, Table C.2).

In sum, this section demonstrates that, on and around the shareholder meeting date, abnormal volume is high across the board, and it is particularly high for meetings with important proposals.

4.4. Market Response Around Other Vote-related Events

In this section, we examine whether a peak in abnormal volume is observed on the other four vote-related dates (i.e., record, proxy filing, ISS recommendation, and outcome filing dates). We investigate these dates because they may mark the release of important information with the potential to alter investors' trading patterns (proxy filing, ISS recommendation, and outcome filing dates), or because investors may wish to change their voting power as a vote approaches (record date).

We find no spike in trading activity around the record date (Panel A of Figure 3 and Columns 1-2 of Table 3),²⁴ consistent with the finding of Christoffersen, Geczy, Musto, and Reed (2007)²⁵ indicating that for a typical record date, there does not seem to be an abnormal demand for

²⁴ It usually takes three days to settle a securities transaction; hence, an investor interested in becoming a shareholder on the record date must purchase stock at least three days prior to the record date. However, Panel A of Figure 3 does not report a spike in volume 3 days prior to the record date.

²⁵ Christoffersen, Geczy, Musto, and Reed (2007) find no change in trading volume in the spot market around the record date. However, they do document, around the record date, a large spike in loan volume in the equity lending market without a corresponding increase in price. They explain this pattern by uninformed voters effectively abstaining from voting and passing their votes to other investors, hoping that the latter are more informed and share their preferences. Bethel, Hu, and Wang (2009) focus on merger-related record dates and institutional-investor trading data in the spot market around these record dates. They document that, in aggregate, institutions in their sample are net buyers in the spot market around the record date, and that there is a negative association between aggregate institutional net buying around the record date and future shareholder support for the merger.

shareholder voting rights in the spot market. Similarly, Panel B of Figure 3 and Columns 3-4 of Table 3 show no significant spike in trading activity on the proxy filing date. This suggests that the information revealed by management in the proxy filing has limited effect on trading. Hence, in contrast to 10-K filings which are associated with substantial abnormal volume, when the filing is accompanied by a vote (as is the case with shareholder votes), it is the vote outcome, rather than the filing, that is associated with positive abnormal volume.

In Panel C of Figure 3 and Columns 5-6 of Table 3, we examine abnormal trading around the date ISS issues a recommendation. Alexander, Chen, Seppi, and Spatt (2010), and Ertimur, Ferri, and Oesch (2013) find that ISS recommendations on proxy contests and on say-on-pay votes, respectively, predict abnormal returns on the day ISS issues its recommendation. This may suggest that abnormal volume will be high around the day ISS issues its recommendation. As Panel C indicates, perhaps somewhat surprisingly, we do not find a peak in abnormal volume on the day ISS issues its recommendation. Nevertheless, in unreported specifications, we find that, for close-call votes (i.e., 45%-55% ex-post support rate) or meetings that include proposals submitted by shareholders, volume tends to increase after ISS issues a recommendation in support of management for these proposals.

In Panel D of Figure 3 and Columns 7-8 of Table 3, we examine the abnormal volume around the date the vote outcome is filed. While we observe a small and gradual peak in abnormal volume around the filing date, the magnitude is substantially smaller than that observed on the meeting date. Hence, in terms of abnormal volume, the most prominent peak is observed on the meeting date.

Taken together, our analysis of the different vote-related events (reported in Sections 4.3 and 4.4) demonstrates that as the meeting date approaches and expectations on the vote outcome build up, abnormal volume gradually increases and jumps on the meeting date and then drops

shortly after. Since the vote outcome is released on or shortly after the meeting date, the pattern we document suggests that the spike of abnormal volume on the meeting date is driven by the vote outcome, which seems to be made public frequently on the meeting date.

However, it is also possible that investors learn other information on the meeting date. For example, shareholders may attend the shareholder meeting and trade based on the body language of the CEO or explicit information shared at the meeting. While this possibility may indeed occur, we note that, as Ilian (2013) and Duggan (2017) point out, very few shareholders attend most shareholder meetings. In fact, some of the corporations we have spoken with informed us that they have had shareholder meetings in which not a single shareholder attended. Nevertheless, we cannot completely rule out the possibility that some shareholders attend the shareholder meeting and trade on the information they observe at the meeting. However, we believe we can address the question of whether shareholders make their trading decisions based on the vote outcome. To do this, in Section 5.2.2 we investigate if shareholders update their trading patterns after they observe the vote outcome (we find that they do, which supports our interpretation).

5. Relation Between Votes and Trades at the Investor Level

5.1. Funds' Pre-Meeting Trading Patterns

5.1.1. Are a Shareholder's Pre-Meeting Trades Positively Associated with His Votes?

Should we expect an investor's trades between the proxy filing and the meeting date to be positively correlated with his votes for the same stock? One possibility is that *no relation* exists between trades and votes, because votes are not sufficiently important to be associated with an

investor's trades (as discussed in Section 4.1).²⁶ A second possibility is that a shareholder's trades before the meeting are *positively associated* with his or her votes, meaning that a shareholder who votes in support of management is also likely to increase his holdings in the company before the meeting. This should occur if investors vote sincerely (which Maug and Rydqvist, 2009 define as "vote in favor whenever your own signal is good"), because investors' trades are likely to reflect their true opinions of the stock.

A third possibility is that, before the vote outcome is observed, a shareholder's votes and trades are *negatively correlated*, suggesting that a shareholder who votes in support of management is likely to decrease his or her holdings in the company. This may occur if shareholders vote strategically, which, according to Maug and Rydqvist (2009), means that they "do not simply cast their votes in favor of proposals about which they have positive information and against all other proposals." Shareholders may vote strategically because they may gain profits from such an approach (Brav and Mathews, 2011); or because opposing management is costly, and therefore shareholders are likely to do so only if other shareholders do the same (Matvos and Ostrovsky, 2010); or if opposing management is likely to change management's decision to accept a shareholder proposal (Levit and Malenko, 2011).

5.1.2. The Mutual Fund Setting

To examine the relation between votes and trades at the investor level, we focus on mutual funds' votes. Mutual funds are required to vote (Bew and Fields, 2012), and their votes constitute 37% of all votes cast at shareholder meetings (Schwartz-Ziv and Wermers, 2017), suggesting that mutual funds are major players with respect to shareholder votes. Mutual fund managers not only make investment decisions pertaining to the funds they manage, but are also involved in deciding

²⁶ In addition, the mere prospect of a vote may serve as a threat (Kahn and Fos, 2017), and shareholders may use this threat to govern firms in private (McCahery, Sautner, and Starks, 2016). This type of governance would not be observable in vote cast.

how their funds should vote: RR Donnelley, Equilar, and the Rock Center for Corporate Governance (2015) survey asset managers and report that 68% of portfolio managers are involved in establishing proxy guidelines, and 76% of portfolio managers are involved in votes on specific proxy items. Our data provides further support for the argument that voting decisions are made, at least to some extent, at the fund level. We estimate that for the institutions within the top 75th percentile in terms of number of votes cast in a given proxy year (which are the institutions that cast 99% of the votes), 84% of these institutions have funds that vote inconsistently with each other on at least one proposal during a proxy year.²⁷ Hence, this figure demonstrates that funds can and do deviate from the votes of other funds advised by the same institution, or from the institution's voting policy (if such a policy exists).

Similar to the stock-level analysis, our sample of mutual funds' votes and trades begins from February 28, 2010, because from this date companies are required to file the vote outcome within 4 days after the meeting, which ensures that investors are aware of the outcome on the meeting date or shortly thereafter. Since our matched ANcerno sample ends in September 2011,²⁸ the analysis in this section is confined to the period between February 28, 2010 and September 30, 2011. This gives us almost two full years of data, because the majority of the shareholder meetings are held in the spring between March and May.

In the analysis reported, we include only actively managed funds because these are the funds that have discretion over their trades. Nevertheless, we describe in the text the results for index funds.²⁹ Brav, Jiang, and Li (2018) provide further analysis on how votes of index funds differ

²⁷ The percentage of all institutions that have funds voting inconsistently with each other on at least one proposal is 41%. However, the full sample includes small institutions that cast a relatively low number of votes, and hence usually do not have funds that vote against each other.

²⁸ ANcerno no longer includes the fund identification variable required to match the dataset to S12 after September 2011.

²⁹ We follow Appel, Gormley and Keim (2016) to classify funds as index vs. actively managed funds. Specifically, we define a fund as an index fund if the CRSP Mutual Fund Database classifies it as a "Pure Index fund" (category "D") or

from those of actively managed funds. As reported in Panel A of Table 1, for the February 28, 2010-September 30, 2011 period, our data includes 201 actively managed funds that are advised by 57 unique financial institutions. Almost all large financial institutions are covered in our dataset. The data include 18,381 unique fund-meeting combinations. Hence, although the number of actively managed funds in our sample is limited, the detailed data on the fund-meeting level is sufficient to examine the relation between votes and trades.

5.1.3. Funds Voting Against Management and Their Pre-Meeting Trades

In this section, we examine the relation between a fund's votes and trades for a given stock *after* the fund observes the vote-related information provided in the proxy statement but *before* the fund observes the vote outcome. To capture whether a fund's votes are unsupportive of management, we define the dummy variable *Fund opposes mgmt. on at least one proposal*, which equals one if, at a given meeting, the fund votes in the opposite direction of management recommendation on at least one proposal, and zero if it votes consistently with management recommendation on all proposals. On average, shareholders vote on 7 proposals at each meeting, and the average fund opposes management on at least one proposal in 37% of meetings.

We use four measures to capture the magnitude of a fund's daily trades: (1) *Net fraction of company bought* (in basis points, henceforth "bps"), which is equal to the net number of the firm's shares bought by the fund on a given day * 10,000/number of firm shares outstanding; (2) *Net fraction of portfolio bought* (in bps), which is equal to the net dollar value of the firm's shares bought by the fund on a given day * 10,000/total dollar value of the fund's overall portfolio at the end of the most recent quarter; (3) *Buy*, which is equal to one if the fund buys the stock on the observation day,

if its fund name includes a string that identifies it as an index fund. The strings we use to identify index funds are: bloomberg, composite, dj, dow, dow, etf, exchange-traded fund, ftse, holdrs, idx, ind, index, indx, ishares, jones, kbw, market, mkt, morningstar, msci, nasdaq, nyse, powershares, russ, russell, s&p, sandp, sp, spdr, streettracks, stox, wilshire, 100, 1000, 1500, 2000, 3000, 400, 4000, 500, 5000, 600, and 900. We exclude from our analysis a small number of funds which we are unable to match to a fund name.

and zero otherwise; and (4) *Sell*, which is equal to one if the fund sells the stock on the observation day, and zero otherwise. Because funds do not execute any trades on most days, the average values of these variables are very small. We present the analysis at the fund-company-day level and confine the sample to the days between the proxy filing (including the proxy filing date) and the meeting date (excluding the meeting date).

We also include controls for the fund's assets under management, fraction of outstanding shares held by the fund (in bps), the company's weight in the fund's overall portfolio (in bps), the fund's expense and turnover ratios, the firm's market capitalization, and the firm's book-to-market ratio. All specifications in Table 5 include a fund fixed effect to account for the unobserved tendency of a given fund to trade in a particular manner across stocks (e.g., certain funds may tend to buy stocks while others may be more likely to sell stocks). We also include a meeting fixed effect to account for the possibility that certain types of meetings may be associated with a particular trading pattern (e.g., meetings with a large number of proposals may be associated with more frequent trading). We point out that if a fund decides to sell its stock after it observes the proxy filing, it would nevertheless vote, because the voting rights are determined on the record date, which typically occurs before the proxy filing (see Figure 1).

Our findings in Table 5 demonstrate that a fund which votes against management on at least one proposal is particularly likely to sell its stock in the period between the proxy filing and the meeting date. Regression 1 of Table 5 indicates that a fund opposing management on at least one proposal is likely to decrease the net fraction of the company bought by 0.022 bps relative to the fund's holdings for which it voted in support of management on all proposals. This magnitude is large relative to the unconditional mean of *Net fraction of company bought* over the period included in

Table 5, which is equal to -0.0119 (as reported in the last row of Table 5).³⁰ Hence, while the average fund in our sample is a net seller, funds are likely to sell substantially more if they oppose management on at least one proposal. Similarly, Regression 2 reports that a fund's *Net fraction of portfolio bought* is expected to be 0.873 bps smaller when a fund opposes management on at least one proposal, as compared to when the fund votes in support of management on all the proposals. This magnitude is substantially large relative to the unconditional mean of *Net fraction of portfolio bought* for the observations included in the Table, which is equal to -0.2348.

Regressions 3 and 4 report OLS regressions with binary dependent variables *Buy* and *Sell*, respectively, which allow a simple interpretation of the magnitudes. Regression 3 documents that when funds oppose management on at least one proposal, they are less likely to buy the stock compared to companies for which they voted in support of management on all proposals. The coefficient of *Fund opposes mgmt. on at least one proposal* equals 0.003, which is non-negligible relative to the unconditional mean of *Buy* which equals 0.0249. Regression 4 does not exhibit a significant relation between funds' voting against management and their tendency to *sell* a stock. Because the dependent variables in Regressions 3 and 4 are binary, in Table D.1 of Appendix D, we repeat these two regressions using logistic regression and obtain very similar results.

Put differently, we document that between the proxy filing and the meeting, funds are less likely to purchase a stock if they vote against management on at least one proposal, but are not significantly more likely to sell such a stock, which implies that the degree of dissatisfaction does not seem to be sufficient to catalyze funds to sell their stock before the meeting.

Overall, the findings in Table 5 suggest that between the proxy filing and the meeting date, funds' votes and trades are positively correlated, indicating that funds vote sincerely. We note,

³⁰ The unconditional means of the dependent variables in Table 5 are small because funds do not trade a given stock on most days.

however, that our evidence applies only to mutual funds, and it is possible that other types of shareholders such as hedge funds may vote strategically.

To test the robustness of our findings, in unreported specifications, we repeat the analysis for the 30 trading days preceding the proxy filing as a falsification test. In addition, we repeat the analysis for index funds.³¹ In both of the analyses, none of the regressions present significant negative coefficients (at the 10% level or lower) for the variable *Fund opposes mgmt. on at least one proposal* in Regressions 1-3, or a positive and significant coefficient in Regression 4. These results point out that the pattern we document applies uniquely to trades of actively managed funds, during the period between the proxy filing and the meeting date. In other words, during this period, trades and votes are positively correlated for mutual funds that have discretion over their trades and therefore can choose to trade and vote in the same direction (e.g., buy stock and support management when voting). In sum, our results suggest that mutual funds vote sincerely, supporting the notion that their trades and votes complement each other.

5.2. Funds' Post-Meeting Trading Patterns

5.2.1. Do Shareholders Update their Trading Patterns after Meetings?

Will a fund update its trading patterns if it observes a vote outcome that contradicts its own vote? The first possibility is that shareholders ignore the vote outcome (for the reasons mentioned in Section 4.1), meaning that shareholders *do not update* their trading patterns after the vote outcome is observed. A second possibility is that, after the vote outcome is observed, shareholders are likely to *exit* when their votes contradict other shareholders' votes. As Maug (1999) argues, shareholders may have different opinions on what is best for the company. Once an investor

³¹ Our sample includes 41 index funds. Index funds hold a large number of assets, and accordingly, the number of unique fund-meeting combinations is 11,631 during the February 28, 2010-June 30, 2011 period, comparable to the number of fund-meeting combinations for actively managed funds.

observes a vote outcome, he may realize that his opinion on an action the company is considering differs from the opinions of most other shareholders. This may catalyze the shareholder's exit, consistent with Admati and Pfleiderer (2009) and Edmans (2009), which both stress that a dissatisfied shareholder may opt to sell his shares.

A third possibility is that, after the vote outcome is observed, shareholders will *update their trading patterns in the direction of the vote outcome*. Maug (1999) stresses that investors learn from the votes cast by other shareholders. For example, they may learn about the quality of management based on the vote outcome. This suggests that, if a shareholder votes sincerely and the vote outcome does not match his or her vote, the shareholder will alter his trading pattern and align it in the direction of the vote outcome.

5.2.2. Funds Voting Against Management and their Post-Meeting Trades

We next examine whether funds update their trading patterns once they observe the vote outcomes. We focus on cases in which a fund's own vote and the aggregate vote outcome differ, since these situations allow us to determine whether funds update their trading patterns once they observe that other shareholders' votes contradict their own vote.

Our findings on fund's post-meeting trades are illustrated in Figure 4. In this figure, we define three categories, each of which captures vote outcomes that differ from funds' votes. Category A is defined as a vote outcome that contradicts a fund's vote concerning at least one proposal discussed at a meeting; Category B is defined as a vote outcome for which the fund votes consistently with management recommendation, but the vote outcome of that proposal is against management recommendation (for at least one proposal voted upon at the meeting); finally, Category C is defined as a vote outcome for which the fund votes inconsistently with management recommendation, but the vote outcome of that proposal is consistent with management recommendation (for at least one proposal voted upon at the meeting). We point out that funds in

Categories B and C are not mutually exclusive, because a fund can vote consistently with management recommendation on one proposal and against management recommendation on a different one, while for both proposals the fund's vote ultimately contradicts the aggregate vote outcome. Our analysis includes the period from the proxy filing to 30 trading days after the meeting, and contrasts funds' trades before versus after the meeting. When examining the 30 trading days following the meeting, a period during which we project that funds will sell stocks, we exclude observations of funds that (based on our estimation) have already sold all their stock as of the observation day, since mutual funds do not typically take short positions.³² Panel A of Figure 4 reports the daily average *Net fraction of company bought* (in bps), while Panel B reports the average *Net fraction of portfolio bought* (in bps).

Both panels of Figure 4 demonstrate that, when a vote outcome differs from the votes cast by a fund (as captured by each of Categories A-C), a fund is likely to decrease its holdings in terms of *Net fraction of company bought* (in bps) and *Net fraction of portfolio bought* (in bps) after the meeting, relative to its trades before the meeting. These findings support the argument that, when a fund observes a vote outcome that contradicts its own vote, the fund is more likely to sell.

In Table 6, we conduct a formal analysis of funds' trades before and after meetings at which at least one vote outcome contradicts the fund's own vote. The specifications include a meeting X fund fixed effect to allow us to contrast a given fund's trading patterns for a given meeting, before versus after the meeting, i.e., after the vote outcome is observed. In all of the odd-numbered regressions, the dependent variable is *Net fraction of company bought* (in bps); in all the even-numbered regressions, it is *Net fraction of portfolio bought* (in bps). All controls reported in Table 5 are included in Table 6, but are not reported for brevity.

³² We estimate the number of stocks held on a given day by a given fund for a given company using the number of stocks held by that fund at the most recent date for which the data is available in CRSP, and adding to that number the net number of stocks bought since that date based on ANcerno.

Regressions 1-2 of Table 6 examine whether funds trade differently before versus after a meeting at which at least one of the vote outcomes contradicts the fund's vote (i.e., Category A in Figure 4). We consider Regressions 1-2 to be the primary regressions of Table 6 since they focus on *all* meetings for which the vote outcome contradicts the fund's vote for at least one proposal. Regression 1 (Regression 2) of Table 6 reports that when a fund votes against management on at least one proposal, a fund's *Net fraction of company bought* (*Net fraction of portfolio bought*) is expected to be 0.015 (0.086) lower after the meeting (as indicated by the coefficient of *Vote outcome contradicts fund vote for at least one proposal X After meeting*) relative to its trades before the meeting. The former magnitude (-0.015) is very large relative to the unconditional mean of *Net fraction of company bought* which is equal to -0.0183, and thus is economically meaningful.

Consider, for example, a fund that chooses to vote in support of declassifying a board. If the same fund later observes that most other shareholders voted against declassifying the board, which decreases the chance that the proposal will be implemented (Ertimur, Ferri, and Stubben, 2010), the fund may then conclude that the board is not likely to declassify and opt to exit. Regressions 1-2 of Table 6 suggest that, once a fund observes a vote outcome that contradicts its own vote, the fund is likely to decrease its holding in terms of fraction of the company held and portfolio weight, relative to the fund's trades before the meeting.

Similarly, funds are likely to sell a larger amount of the stock after a meeting that includes at least one proposal for which the fund votes with management but the vote outcome is against management (Regressions 3-4 of Table 6, which correspond to Category B in Figure 4). We do not find evidence that funds update their trading patterns after a meeting including at least one proposal for which the fund votes against management recommendation, but the vote outcome is consistent with management recommendation (Regressions 5 and 6 of Table 6, corresponding to Category C in Figure 4). However, the latter situation is relatively unusual: Category B is almost 2.5 times more

common than Category C (our sample includes 6,023 and 2,448 unique fund-meeting combinations for these two categories, respectively). Moreover, the subsequent analysis demonstrates that funds are more likely to sell their stocks after they experience a situation under Category C.

In Table 7, we repeat the analysis of Table 6, but replace the dependent variables with the binary variable *Buy* (*Sell*) in the odd (even)-numbered regressions. Because in the even-numbered regressions, our goal is to examine whether funds sell their stock following certain vote outcomes, we exclude in these specifications observations of funds that (based on our estimation) have already sold all of their stock as of the observation day, since mutual funds do not typically take short positions. All controls reported in Table 5 are included in Table 7, but are not reported for brevity. We use OLS regressions to allow for a clear interpretation of the magnitudes. In Table D.2 of Appendix D, we repeat the analysis reported in Table 7 using logistic regression and obtain very similar results.

Regression 1 of Table 7 reports that, relative to a fund's trades before the meeting, the average fund is 0.1% less likely to buy a stock after observing a vote outcome that contradicts its own vote for at least one proposal (*Vote outcome contradicts fund vote for at least one proposal X After meeting*). Regression 2 further reports that the average fund is 0.8% more likely to sell a stock in this scenario and the magnitude is statistically significant at the 1% level. The latter magnitude is equivalent to an increase of 28.4% ($=0.008/0.0281$) relative to the unconditional mean of the probability that a fund sells a stock (reported at the bottom of Table 7) and thus is economically meaningful.

Similarly, funds are less likely to buy and more likely to sell a stock after a meeting with at least one proposal for which the fund votes with management but the vote outcome is against management recommendation (Regressions 3-4, corresponding to Category B in Figure 4), or after a meeting including at least one proposal for which the fund votes against management but the vote outcome is consistent with management recommendation (Regressions 5-6, corresponding to

Category C of Figure 4).

In Table 7, the coefficients indicating the likelihood that the fund sells its stock (Regressions 2, 4, and 6) after a meeting (i.e., the variables including the component “X After meeting”) are consistently higher and statistically more significant than the coefficients indicating the likelihood that the fund buys the stock (Regressions 1, 3, and 5). Taken together, the findings of Table 7 suggest that, when a fund observes at least one vote outcome that contradicts its own vote, the fund is somewhat less likely to buy the stock, and particularly more likely to sell it.

Shareholders may also use ISS recommendation to determine how to trade. Using quarterly holdings data, Iliev and Lowry (2015) show that funds disagreeing with ISS recommendation decrease their quarterly holdings after the meeting date. In unreported regressions, we do not find a clear pattern with respect to funds’ post-meeting trades when their votes contradict ISS recommendation. Nevertheless, we find some evidence indicating that, when funds observe an ISS recommendation contradicting its own vote, funds are more likely to sell a stock after the date ISS issues its recommendation, relative to the fund’s trades before that date. However, this result is not robust when we use *Net fraction of company bought* and *Net fraction of portfolio bought* to measure the magnitude of the trade.

Lastly, if we repeat the analyses of Table 6 and Table 7 for index funds, only one of the twelve specifications (the one parallel to Regression 4 of Table 6) documents that index funds are significantly more likely to sell their stocks after a meeting which includes a vote outcome that contradicts the index fund’s vote. Once again, these results emphasize that the relation we document between funds’ trades and votes applies almost exclusively to funds that have discretion over their trades.

In unreported specifications we find some evidence in support of the possibility that shareholders learn about the quality of the firm from the vote outcome. In an unreported analysis

we focus our attention on the say-on-pay vote because it is often viewed as a general vote of confidence and a way for shareholders to express dissatisfaction with management's performance (e.g., Cuñat, Gine, and Guadalupe, 2016, and Fisch, Palia, and Solomon, 2017). We find evidence demonstrating that if a fund votes against management recommendation on the say-on-pay vote, but then observes that most votes are supportive of management, it is less likely to sell the stock after the shareholder meeting relative to the fund's trades before the meeting. Conversely, a fund that votes in favor of say-on-pay, but later observes low support from other shareholders, is less likely to buy that stock after the meeting relative to its trades before the meeting. These findings suggest that, as Maug (1999) argues, funds garner information (in our case, information about the quality of management) from the vote outcome, and adjust their trading patterns in the direction of the vote outcome once they observe this information. However, these patterns are not as robust as what we report in the paper.

In sum, this subsection presents evidence demonstrating that, when a fund learns that the vote outcome is inconsistent with the vote it casts, the fund is more likely to sell the stock.

6. Conclusion

This paper examines the relation between shareholders' voting and trading decisions both at the stock and at the investor levels. At the stock level, we document that abnormal trading volume is substantially higher around the shareholder meeting date compared to the pre-voting period. The increase in abnormal volume exists even for routine votes and is economically significant. Of the multiple vote-related events (record date, proxy filing, ISS recommendation date, meeting date, and filing of the vote outcome), the most prominent jump in abnormal volume occurs on the meeting date, suggesting that the vote outcome is often revealed on the meeting date, and this information catalyzes investors to trade.

At the fund level, we further demonstrate that vote outcomes are meaningful to investors. We first document that, before vote results are disclosed, mutual funds' trades and votes are positively correlated (i.e., a fund is more likely to sell a stock if it votes against management on at least one proposal). After the meeting date, a fund is likely to sell the stock if the aggregate vote outcome contradicts the fund's own vote on at least one proposal. Taken together, our study suggests that funds' trades are positively associated with their votes before the meeting, and that funds update their trading patterns once they observe the aggregate vote outcomes.

Glossary of Variables

Variable	Definition	Data source
Abnormal number of trades	Daily number of trades / average daily number of trades during pre-voting period – 1. The pre-voting period is defined as the [-252, -21] window (in trading days) before the record date.	TAQ
Abnormal return (in percentage points)	Abnormal returns as estimated using the Fama-French-Carhart four-factor model following Savor (2012). Betas for market excess return, SMB, HML and UMD are estimated by OLS regressions for a 255 trading day-period starting 31 trading days before the event day with at least 30 data points.	CRSP, data library of Kenneth French
Abnormal volatility	Daily realized volatility / exponential moving average of daily realized volatility during pre-voting period with half-life of 5 days – 1. The pre-voting period is defined as the [-252, -21] window (in trading days) before the record date.	TAQ
Abnormal volume	Daily volume / average daily volume during pre-voting period – 1. The pre-voting period is defined as the [-252, -21] window (in trading days) before the record date.	CRSP
Abnormal log number of trades	Daily log number of trades – average daily log number of trades during pre-voting period. The pre-voting period is defined as the [-252, -21] window (in trading days) before the record date.	TAQ
Abnormal log volume	Daily log volume – average daily log volume during pre-voting period. The pre-voting period is defined as the [-252, -21] window (in trading days) before the record date.	CRSP
Abnormal log volatility	Daily log volatility – exponential moving average of daily log volatility during pre-voting period with half-life of 5 days. The pre-voting period is defined as the [-252, -21] window (in trading days) before the record date.	TAQ
After meeting	Variable equals one if the observation corresponds to the days on or after the meeting, and zero if it corresponds to the days before the meeting.	ISS Voting Analytics
Book-to-market ratio	Book-to-market in June of year t = (book value of stockholders' equity + balance sheet deferred taxes and investment tax credit, if available - book value of preferred stock for fiscal year t-1)/market value of equity in December of year t-1.	CRSP and Compustat
Buy	A binary variable which equals one if the fund buys the stock on the observation day, and zero otherwise.	ANcerno
Few Analyst	Dummy variable which equals one if the number of analysts following the company is below the sample median (seven analysts or less), and zero otherwise.	I/B/E/S
Fraction of company held by the fund (in bps)	Number of shares held * 10000/number of shares outstanding.	CRSP US Mutual Fund Database
Fund against mgmt., outcome with mgmt. for at least one proposal	For at least one proposal voted upon at a given meeting, the fund does not vote consistently with management recommendation, but the vote outcome of that proposal is consistent with management recommendation.	ISS Voting Analytics
Fund asset under management (in millions)	Total assets minus total liabilities as of month-end.	CRSP US Mutual Fund Database

Variable	Definition	Data source
Fund expense ratio (in fraction)	Ratio of total investment that shareholders pay for the fund's operating expenses, which include 12b-1 fees.	CRSP US Mutual Fund Database
Fund opposes mgmt. on at least one proposal	Dummy variable that equals one if, at a given meeting, the fund votes inconsistently with management recommendation on at least one proposal, and zero if it votes consistently with management recommendation on all proposals. The former would apply if management recommended to vote "Against" a proposal, but the fund voted "For", or if management recommended to vote "For", but the fund voted "Against" or "Withhold", or if the fund did not vote consistently with management recommendation of the SOP frequency vote.	ISS Voting Analytics
Fund turnover ratio	Turnover ratio of the fund.	CRSP US Mutual Fund Database
Fund with mgmt., outcome against mgmt. for at least one proposal	For at least one proposal voted upon at a given meeting, the fund voted consistently with management recommendation, but the vote outcome of that proposal was against management recommendation.	ISS Voting Analytics
Market capitalization (in millions)	Price * number of shares outstanding/1,000.	CRSP
Merger vote	Variable is equal to one if the meeting features a vote on a merger (issagendaitemid=M0405), and zero otherwise.	ISS Voting Analytics
Net fraction of company bought (in bps)	Net number of the firm's shares bought by the fund on a given day * 10,000/number of firm shares outstanding.	ANcerno and CRSP
Net fraction of portfolio bought (in bps)	Net dollar value of the firm's shares bought by the fund on a given day * 10,000/total dollar value of the fund's overall portfolio at the end of the most recent quarter.	ANcerno and CRSP US Mutual Fund Database
Non-routine meeting	A meeting that is not defined as a routine meeting.	ISS Voting Analytics
Outcome against mgmt.	Variable is equal to one if the outcome of at least one proposal contradicts management recommendation, and zero otherwise.	ISS Voting Analytics
Portfolio weight (in bps)	Security's percentage of the total net assets in the portfolio * 100.	CRSP US Mutual Fund Database
Routine meetings	Routine meetings are defined as meetings (i) that involve only the standard proposals companies are required to put forward annually, i.e., proposals on appointing directors, approving the company's auditors, and/or voting on say-on-pay, and (ii) for which the vote outcome is consistent with management recommendation for all proposals.	ISS Voting Analytics
Sell	A binary variable which equals one if the fund sells the stock on the observation day, and zero otherwise.	ANcerno
Small company	A dummy variable which equals one if the company's market capitalization is below the sample median, and zero otherwise.	CRSP
Special meeting	Variable is equal to one if "meetingtype" is different from "annual."	ISS Voting Analytics
Vote outcome contradicts fund vote for at least one proposal	The vote outcome contradicts the fund's vote for at least one proposal voted upon at a given meeting.	ISS Voting Analytics

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Figure 1: Timeline around Shareholder Meetings

The numbers on the timeline represent the average (median) number of trading days between events. All numbers correspond to the February 28, 2010-June 30, 2013 period.

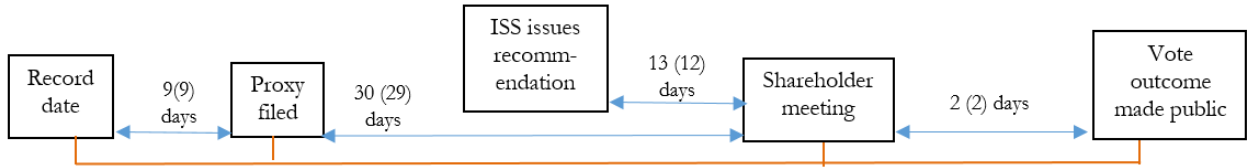
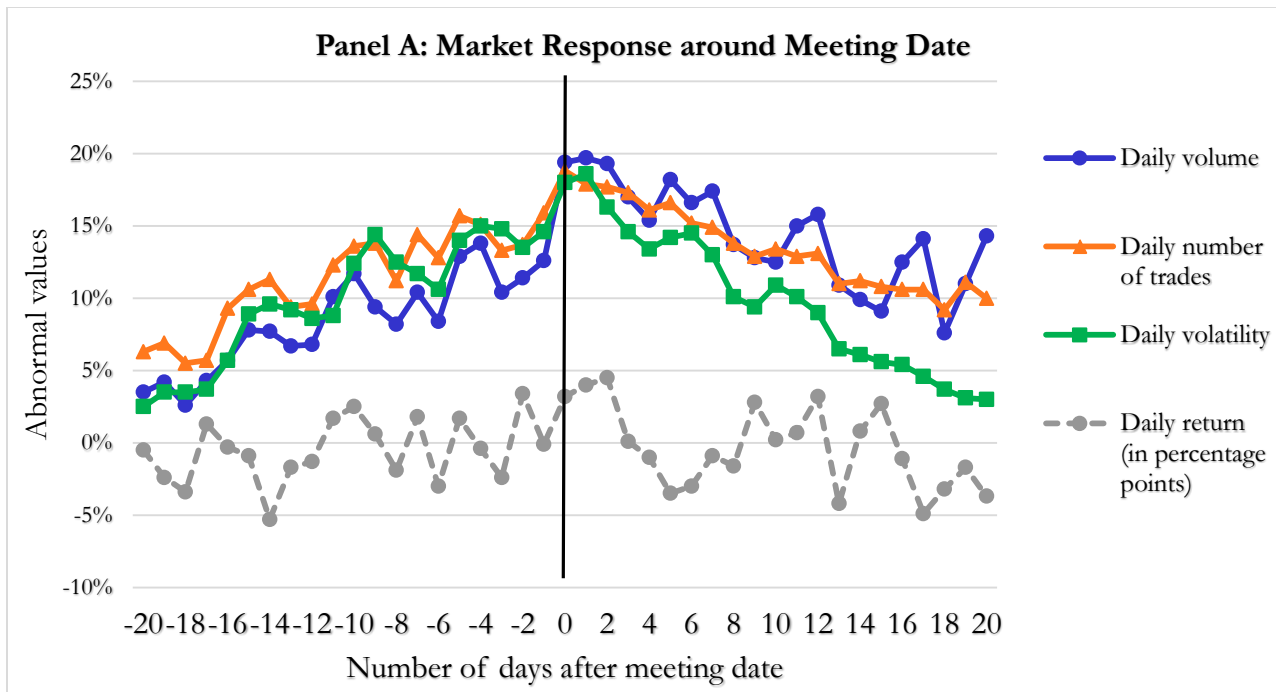
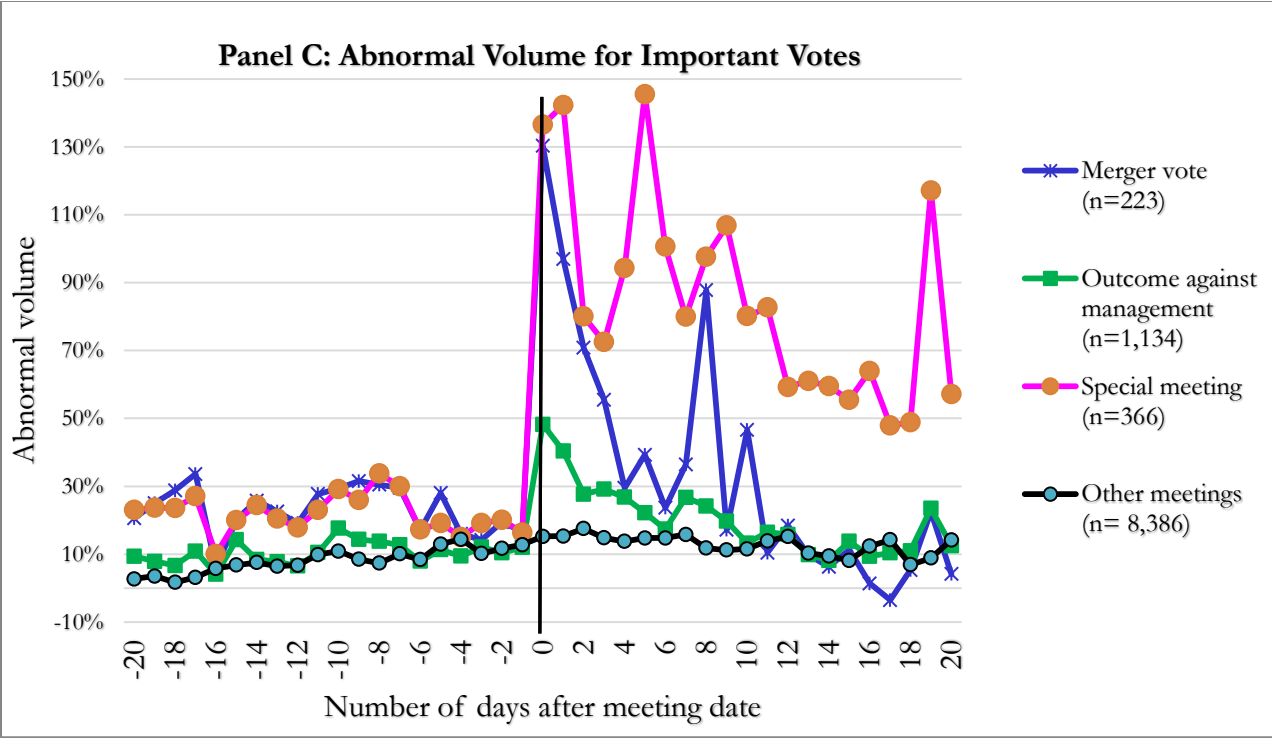
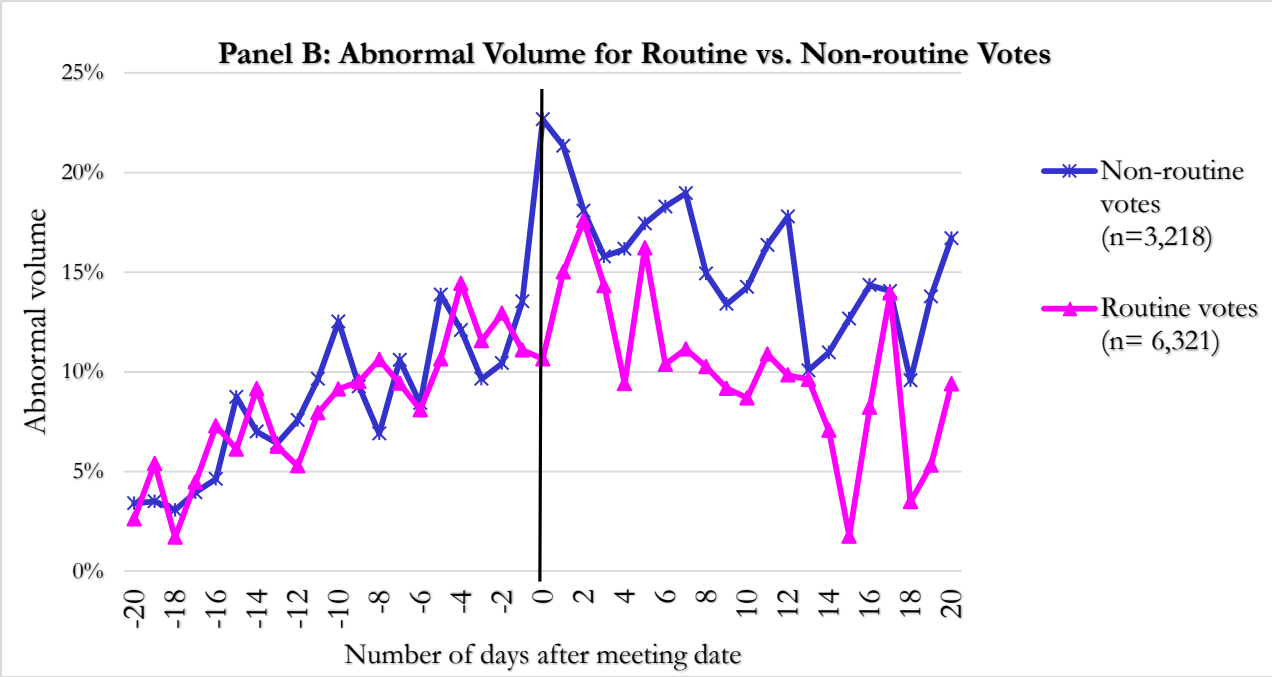


Figure 2: Market Response around Shareholder Meetings and 10-K Filing Dates

Panel A reports companies' average abnormal daily volume, daily number of trades, daily volatility, and daily return on days around shareholder meetings. *Panel B* reports abnormal volume around routine versus non-routine meetings. Routine meetings are defined as meetings (i) that involve only the standard proposals companies are required to put forward annually, i.e., proposals on appointing directors, approving the company's auditors, and/or voting on say-on-pay, and (ii) for which the vote outcome is consistent with management recommendation for all proposals. All other meetings are defined as non-routine meetings. *Panel C* reports the daily average abnormal volume for four types of shareholder meetings: meetings involving a vote on a merger, special meetings, meetings with at least one vote outcome that contradicts management recommendation, and meetings that cannot be classified as any of the three prior types ("None of the above"). *Panel D* reports companies' average abnormal daily volume, daily number of trades, daily volatility, and daily return around 10-K filings. Panels A-C report observations for meetings held during the February 28, 2010-June 30, 2013 period, while Panel D reports observations for 10-K filings filed during this period. In Panels A-C, values for abnormal volume and abnormal number of trades are estimated as the daily value / average daily value during pre-voting period - 1. The pre-voting period is defined as the [-252, -21] window before the record date. Abnormal volatility is computed similarly, but divided by an exponential moving average of daily volatility over the same period with a half-life of five days. The number of observations reported in Panels B and C pertains to unique meetings that fall into each category. Abnormal returns are measured in percentage points and are calculated using the Fama-French-Carhart four-factor model. For Panel D, the abnormal values are estimated using the method noted above; however, the pre-voting period is defined as the [-252, -21] window before the 10-K.





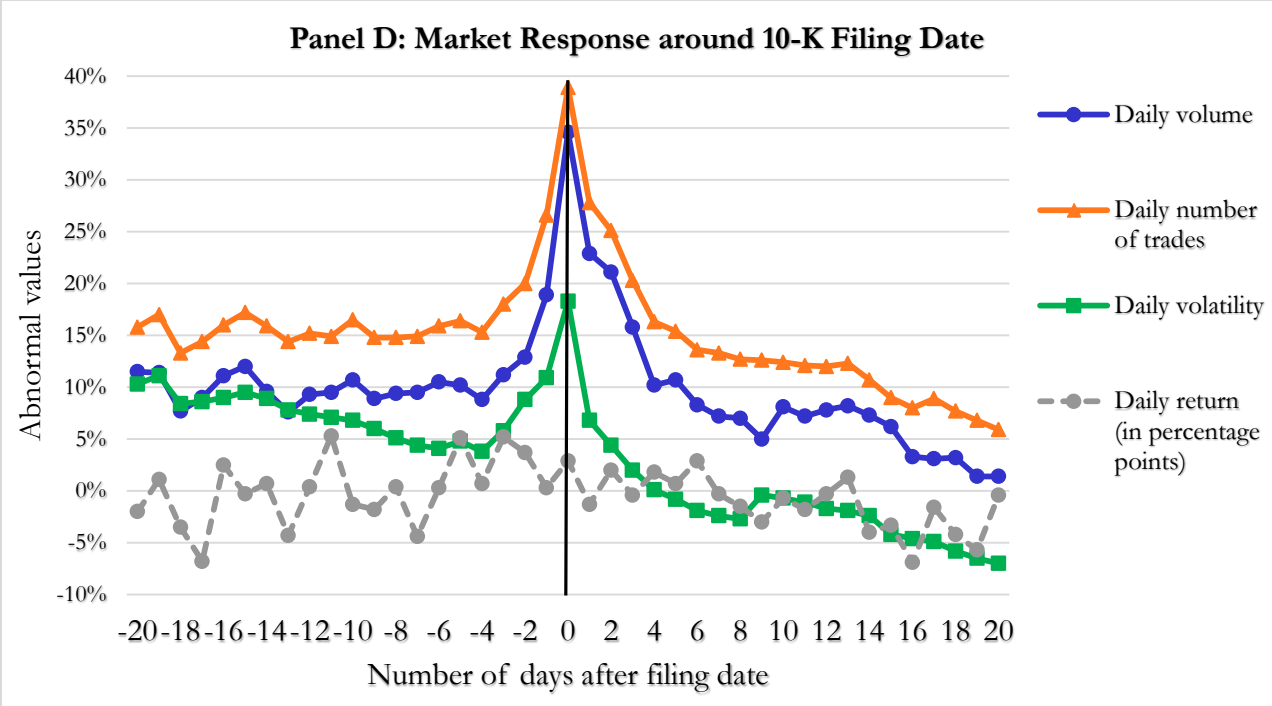
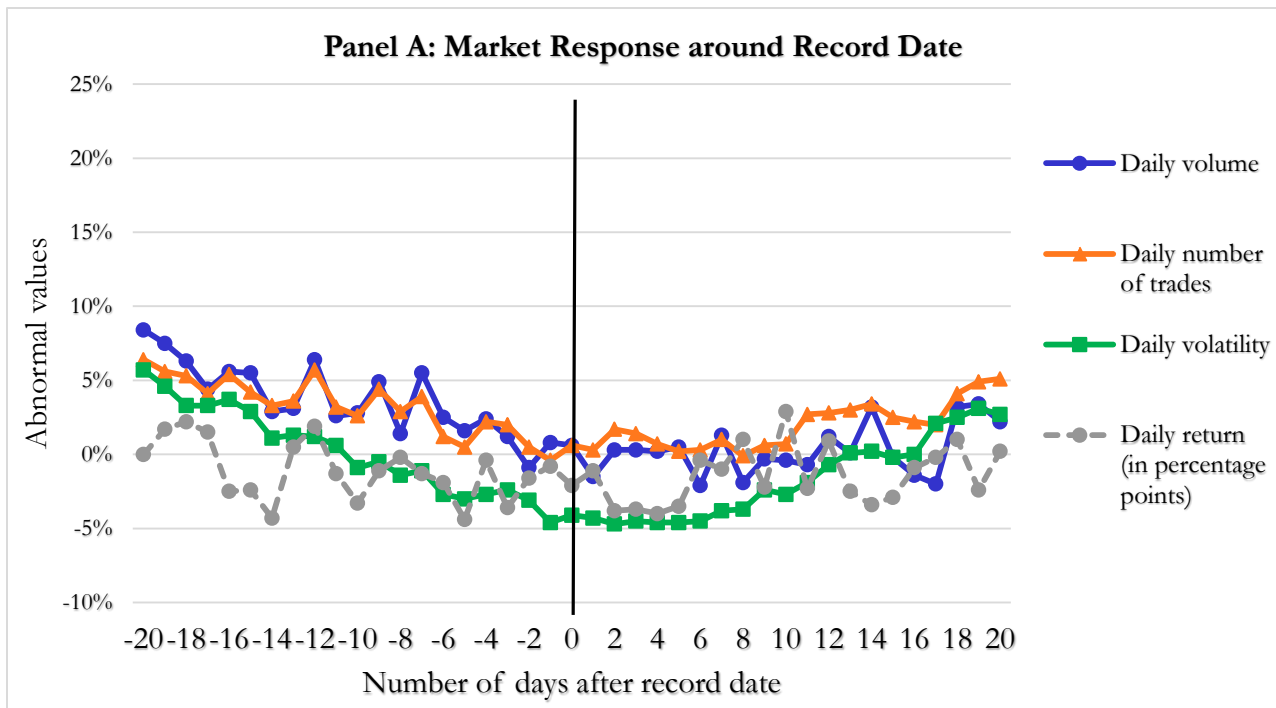
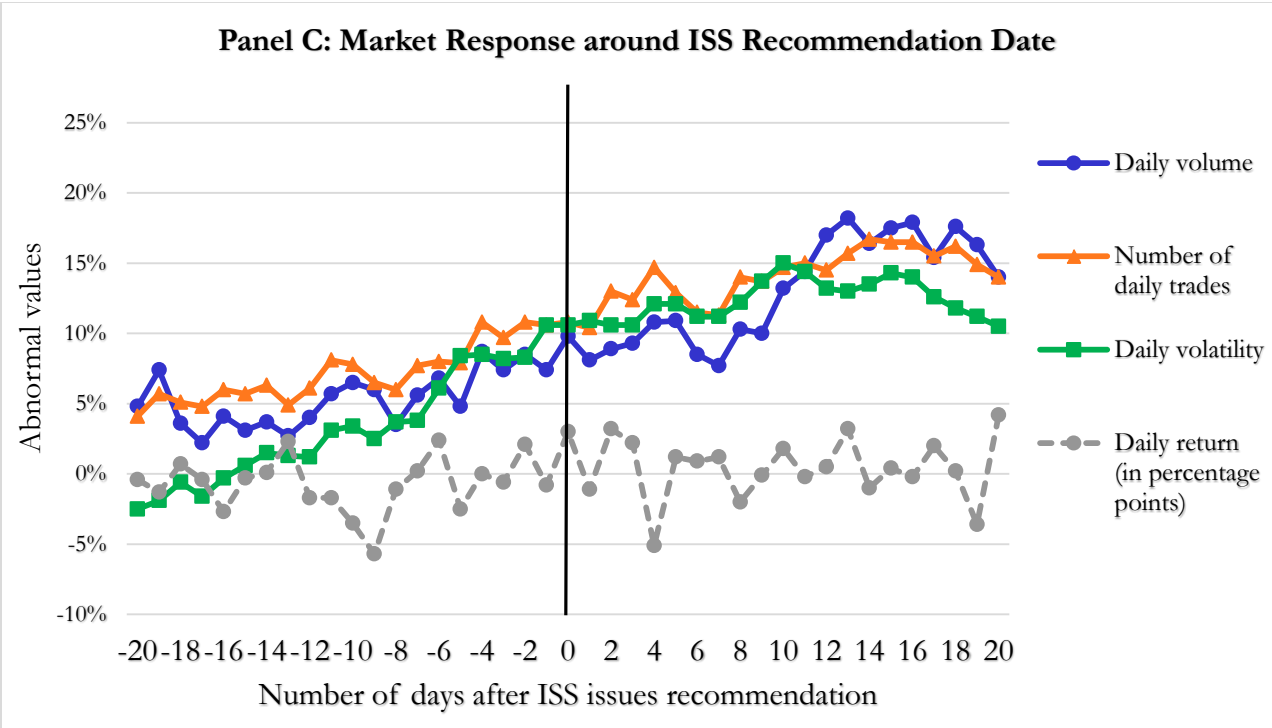
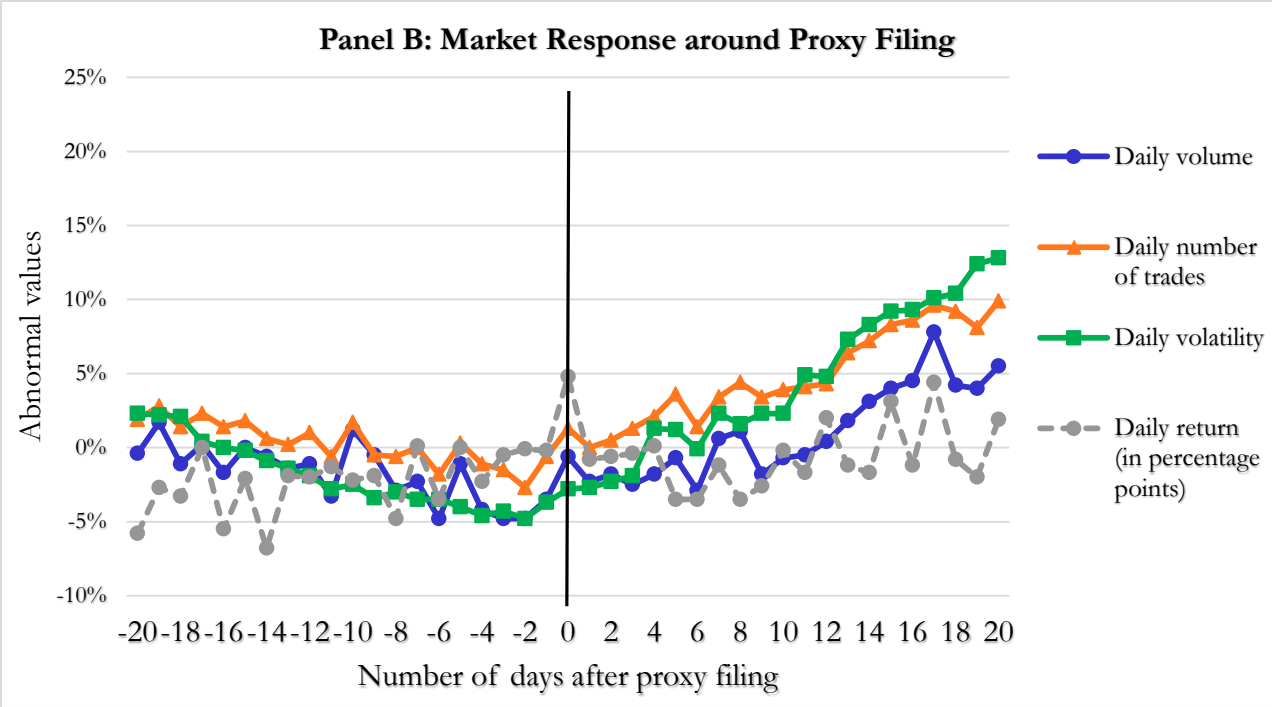


Figure 3: Market Response around Record, Proxy Filing, ISS Recommendation, and Vote Outcome Filing Dates

This figure reports the company's average abnormal daily volume, daily number of trades, daily volatility, and daily return on days around the record date (Panel A), proxy filing (Panel B), the date ISS issues its recommendation (Panel C), and the filing of the vote outcome (Panel D). Values for abnormal volume and abnormal daily number of trades are estimated as the daily value / average daily value during pre-voting period - 1. The pre-voting period is defined as the [-252, -21] window before the record date. Abnormal volatility is computed similarly, but divided by an exponential moving average of daily volatility over the same period with a half-life of five days. Abnormal returns are measured in percentage points and are calculated using the Fama-French-Carhart four-factor model. All panels report results for meetings held between February 28, 2010 and June 30, 2013.





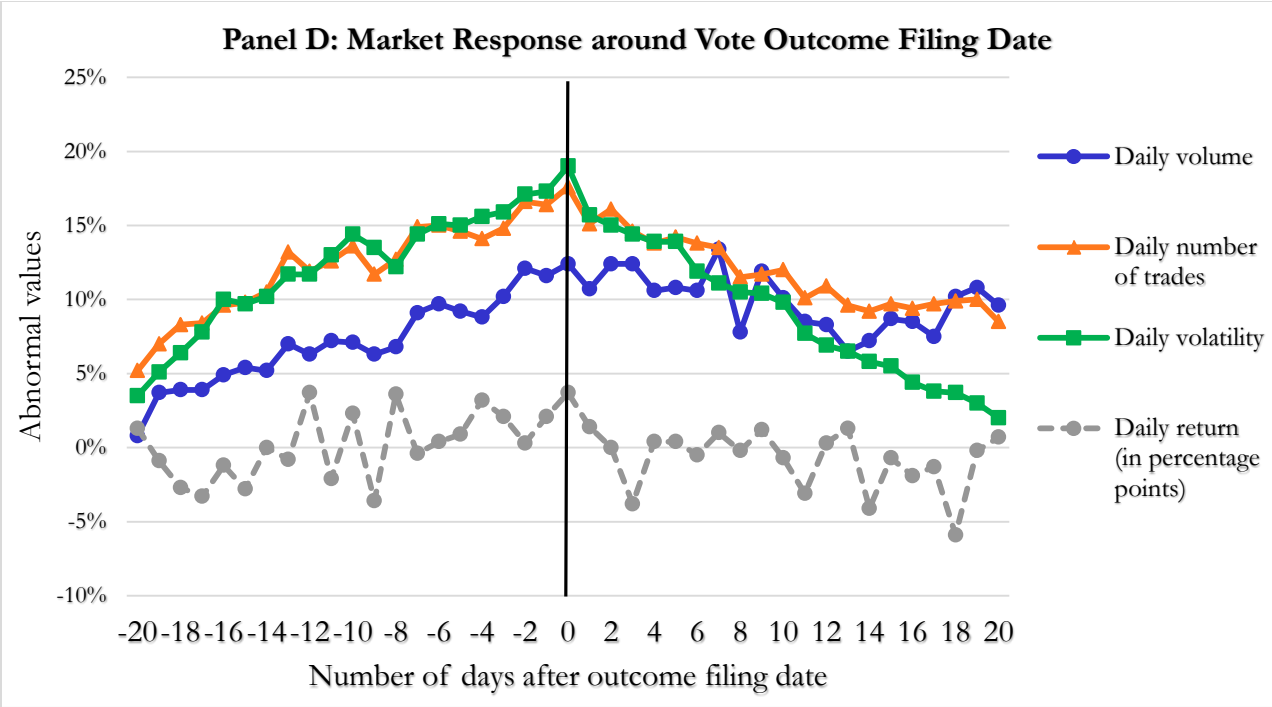


Figure 4: Funds Updating Trading Patterns when Vote Outcomes Contradict Their Own Votes

This figure examines actively managed fund's trades for the period between the proxy filing date and 30 trading days after the meeting date, for meetings held during February 28, 2010-September 30, 2011. *Net fraction of company bought* (in bps) is equal to the net number of the firm's shares bought by the fund on a given day * 10,000/number of firm shares outstanding. *Net fraction of portfolio bought* (in bps) is equal to the net dollar value of the firm's shares bought by the fund on a given day * 10,000/total dollar value of the fund's overall portfolio at the end of the most recent quarter. Categories A-C represent meetings in which a fund's vote and the vote outcome differ for at least one proposal, as further specified below. The number of observations reported pertains to unique fund-meeting combinations in each category.

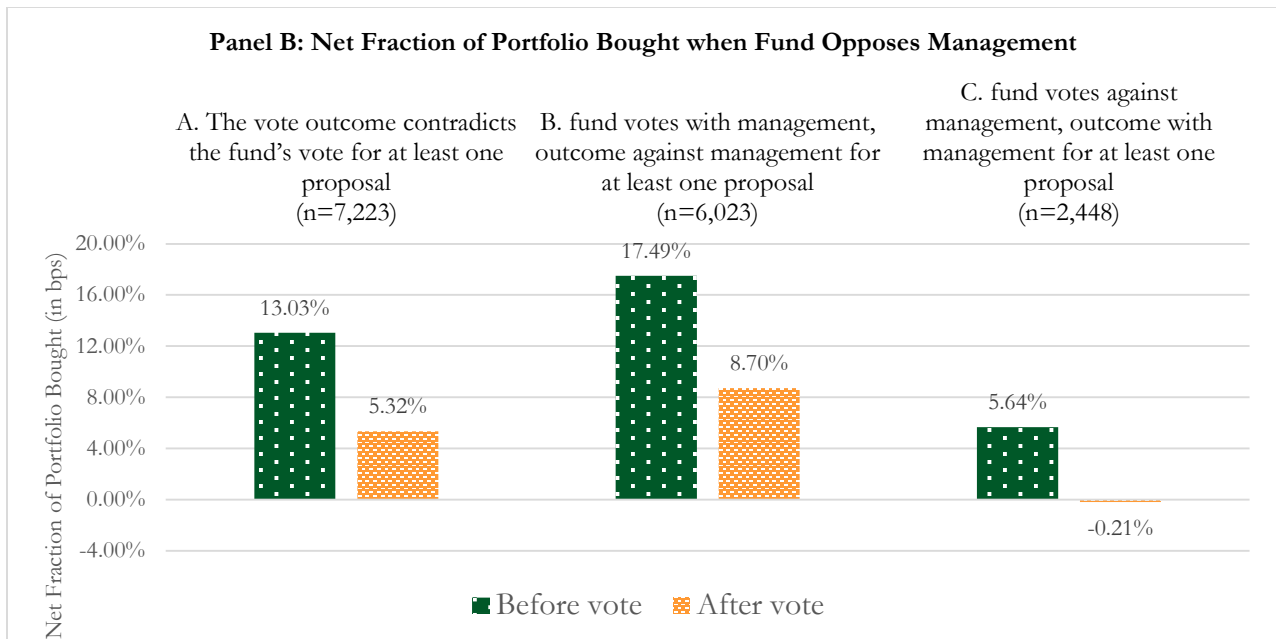
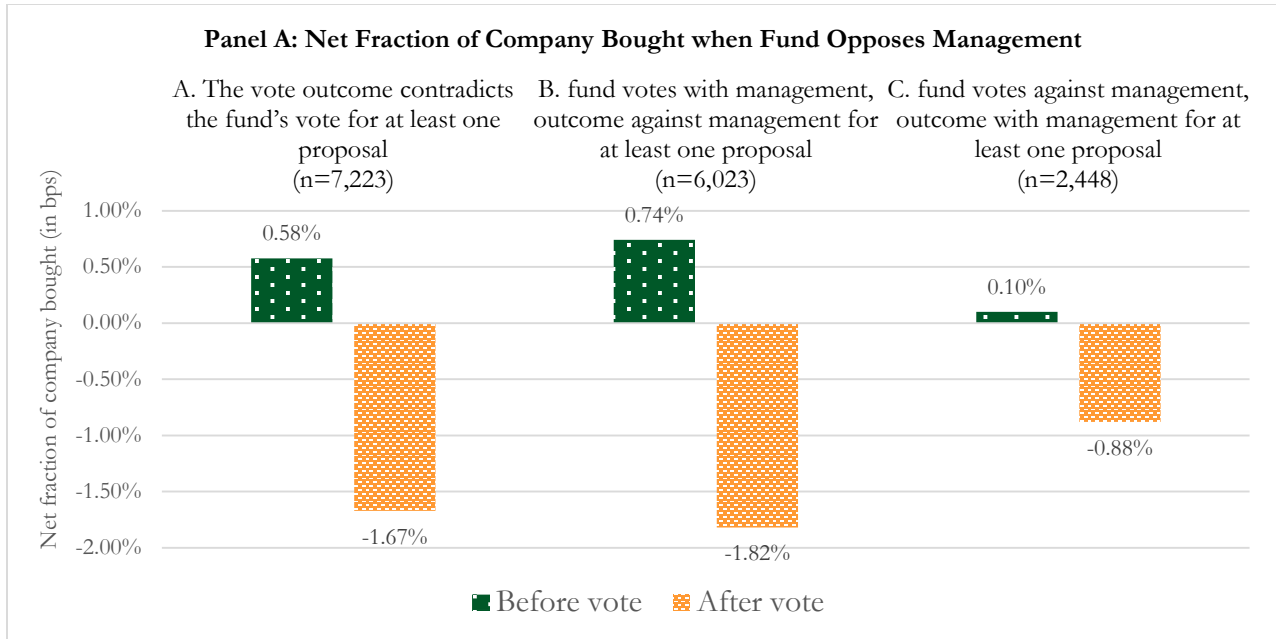


Table 1: Summary Statistics

Panel A reports summary statistics on the sample size. Panel B reports descriptive statistics of our main variables (variables are defined in the Glossary of Variables).

Panel A: Sample Size

<u>Item</u>	<u>Total</u>
<i>Company-level data (February 28, 2010-June 30, 2013):</i>	
Number of unique companies	3,421
Number of unique shareholder meetings	10,701
<i>Fund-level data (February 28, 2010-September 30, 2011):</i>	
Number of unique actively managed funds	201
Number of unique institutions advising funds	57
Number of unique fund-meeting combinations for actively managed funds	18,381

Panel B: Descriptive Statistics

Variable	Mean	25th percentile	50th percentile	75th percentile	S.D.
Abnormal number of trades	0.0703	-0.3195	-0.0975	0.2398	0.7476
Abnormal return (in percentage points)	-0.0139	-0.7963	-0.0444	0.7241	1.7312
Abnormal volatility	0.1095	-0.2118	-0.0198	0.2564	0.5735
Abnormal volume	0.0371	-0.3699	-0.1512	0.1815	1.0411
Book-to-market ratio	0.6786	0.3349	0.5628	0.8853	0.6023
Buy	0.0228	0.0000	0.0000	0.0000	0.1492
Fraction of company held by the fund (in bps)	27.332	1.262	5.631	27.522	60.101
Fund assets under management (in millions)	2721.1	207.3	735.5	2525.6	5364.3
Fund expense ratio	0.0092	0.0043	0.0106	0.0127	0.0048
Fund turnover ratio	0.7625	0.4500	0.6500	0.9500	0.5243
Market capitalization	21181.5	1337.4	4176.0	17589.1	44907.4
Net fraction of company bought (in bps)	-0.0088	0.0000	0.0000	0.0000	1.2539
Net fraction of portfolio bought (in bps)	-0.1351	0.0000	0.0000	0.0000	14.7919
Portfolio weight (in bps)	65.283	13.000	41.000	93.000	74.647
Sell	0.0270	0.0000	0.0000	0.0000	0.1621

Table 2: Market Response around Shareholder Meeting Date

This table mirrors Panel A of Figure 2. It reports, on the stock level, the average daily abnormal volume, number of trades, volatility, and return on days around shareholder meetings. The sample includes [-20, +20] trading days around each event, and we regress each abnormal measure on 41 dummy variables corresponding to each of these trading days (without a constant), with standard errors clustered at the company and the trading day levels. Values for abnormal volume and abnormal number of trades are estimated as the daily value / average daily value during pre-voting period – 1. The pre-voting period is defined as the [-252, -21] window before the record date. Abnormal volatility is computed similarly, but divided by an exponential moving average of daily volatility over the same period with a half-life of five days. Abnormal returns are measured in percentage points and are calculated using the Fama-French-Carhart four-factor model. The analysis includes meetings held between February 28, 2010 and June 30, 2013. T-statistics are reported in parentheses. *, **, and *** indicate $p < .10$, $p < .05$, and $p < .01$, respectively.

Day	Abnormal volume		Abnormal number of trades		Abnormal volatility		Abnormal return	
	coefficient	t-stat.	coefficient	t-stat.	coefficient	t-stat.	coefficient	t-stat.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
-20	0.035*	(1.688)	0.063***	(3.744)	0.025	(1.629)	-0.005	(-0.239)
-16	0.057***	(2.916)	0.093***	(5.218)	0.057***	(3.534)	-0.003	(-0.156)
-12	0.068***	(3.855)	0.096***	(6.041)	0.086***	(4.964)	-0.013	(-0.566)
-8	0.082***	(3.978)	0.112***	(5.788)	0.125***	(3.970)	-0.019	(-0.812)
-7	0.104***	(5.454)	0.144***	(8.151)	0.117***	(5.800)	0.018	(0.778)
-6	0.084***	(5.351)	0.128***	(8.564)	0.106***	(6.260)	-0.030	(-1.362)
-5	0.129***	(5.757)	0.157***	(8.445)	0.140***	(5.492)	0.017	(0.663)
-4	0.138***	(6.704)	0.151***	(8.264)	0.150***	(5.297)	-0.004	(-0.158)
-3	0.104***	(4.627)	0.133***	(6.980)	0.148***	(4.893)	-0.024	(-1.092)
-2	0.114***	(6.229)	0.137***	(8.384)	0.135***	(5.840)	0.034	(1.512)
-1	0.126***	(7.491)	0.159***	(10.927)	0.146***	(6.578)	-0.001	(-0.036)
0	0.194***	(8.914)	0.188***	(9.967)	0.180***	(5.853)	0.032	(1.282)
1	0.197***	(7.378)	0.179***	(8.311)	0.186***	(5.276)	0.040*	(1.720)
2	0.193***	(6.451)	0.177***	(9.363)	0.163***	(5.608)	0.045*	(1.848)
3	0.170***	(7.016)	0.173***	(10.253)	0.146***	(6.603)	0.001	(0.067)
4	0.154***	(5.978)	0.161***	(10.578)	0.134***	(7.473)	-0.010	(-0.422)
5	0.182***	(5.821)	0.166***	(9.866)	0.142***	(6.919)	-0.035	(-1.630)
6	0.166***	(5.506)	0.152***	(8.584)	0.145***	(5.666)	-0.030	(-1.415)
7	0.174***	(5.329)	0.149***	(8.350)	0.130***	(4.787)	-0.009	(-0.485)
8	0.137***	(5.222)	0.138***	(7.909)	0.101***	(4.967)	-0.016	(-0.723)
12	0.158***	(4.594)	0.131***	(7.926)	0.090***	(4.797)	0.032	(1.397)
16	0.125***	(4.263)	0.106***	(6.853)	0.054***	(3.474)	-0.011	(-0.468)
20	0.143***	(3.843)	0.100***	(6.073)	0.030**	(2.084)	-0.037	(-1.610)
N	391,945		411,188		412,333		388,288	

Table 3: Abnormal Volume around Major Events

This table reports the average daily abnormal volume around the record date, proxy filing, ISS recommendation date, filing of the vote outcome, and the filing of a 10-K. The sample includes [-20, +20] trading days around each event, and we regress each abnormal measure on 41 dummy variables corresponding to each of these trading days (without a constant), with standard errors clustered at the company and the trading day levels. Values for abnormal volume are estimated as the daily value / average daily value during pre-voting period – 1. The pre-voting period is defined as the [-252, -21] window before the record date. The analysis in Columns 1-8 includes meetings held between February 28, 2010 and June 30, 2013, while that in Columns 9-10 includes 10-K filings filed during this period. T-statistics are reported in parentheses. *, **, and *** indicate $p < .10$, $p < .05$, and $p < .01$, respectively.

Days to event	Record date		Proxy filing date		ISS recommendation date		Vote outcome date		10-K filing date	
	coefficient	t-stat.	coefficient	t-stat.	coefficient	t-stat.	coefficient	t-stat.	coefficient	t-stat.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
-20	0.084***	(4.638)	-0.004	(-0.267)	0.048**	(2.103)	0.008	(0.434)	0.115***	(4.119)
-16	0.056***	(3.037)	-0.017	(-0.852)	0.041*	(1.808)	0.049***	(2.659)	0.111***	(6.090)
-12	0.064***	(2.814)	-0.011	(-0.571)	0.040**	(2.332)	0.063***	(4.041)	0.093***	(5.273)
-8	0.014	(0.882)	-0.029*	(-1.703)	0.035**	(2.227)	0.068***	(3.846)	0.094***	(5.905)
-7	0.055**	(2.264)	-0.023	(-1.010)	0.056***	(2.638)	0.091***	(5.129)	0.095***	(6.150)
-6	0.025	(1.141)	-0.048***	(-2.923)	0.068***	(2.887)	0.097***	(4.967)	0.105***	(6.618)
-5	0.016	(0.659)	-0.011	(-0.430)	0.048***	(2.733)	0.092***	(5.086)	0.102***	(6.323)
-4	0.024	(1.152)	-0.042***	(-2.659)	0.087***	(3.777)	0.088***	(4.662)	0.088***	(6.379)
-3	0.012	(0.767)	-0.048***	(-2.865)	0.074***	(4.280)	0.102***	(4.593)	0.112***	(6.304)
-2	-0.009	(-0.490)	-0.048***	(-2.617)	0.085***	(4.167)	0.121***	(7.339)	0.129***	(6.751)
-1	0.008	(0.348)	-0.035*	(-1.825)	0.074***	(4.202)	0.116***	(7.152)	0.189***	(9.395)
0	0.006	(0.307)	-0.006	(-0.304)	0.098***	(3.877)	0.124***	(6.562)	0.346***	(15.190)
1	-0.015	(-1.006)	-0.023	(-1.356)	0.081***	(4.596)	0.107***	(6.123)	0.229***	(9.767)
2	0.003	(0.211)	-0.018	(-1.070)	0.089***	(4.858)	0.124***	(6.116)	0.211***	(8.612)
3	0.003	(0.122)	-0.025	(-1.591)	0.093***	(5.038)	0.124***	(6.309)	0.158***	(8.050)
4	0.002	(0.122)	-0.018	(-0.942)	0.108***	(4.999)	0.106***	(5.914)	0.102***	(5.556)
5	0.005	(0.221)	-0.007	(-0.370)	0.109***	(5.414)	0.108***	(4.799)	0.107***	(5.543)
6	-0.021	(-1.233)	-0.029*	(-1.826)	0.085***	(4.261)	0.106***	(4.838)	0.083***	(4.721)
7	0.013	(0.698)	0.006	(0.267)	0.077***	(3.822)	0.134***	(4.763)	0.072***	(3.408)
8	-0.019	(-1.320)	0.011	(0.420)	0.103***	(6.472)	0.078***	(4.157)	0.070***	(3.079)
12	0.012	(0.589)	0.004	(0.214)	0.170***	(6.849)	0.083***	(3.371)	0.078***	(3.806)
16	-0.014	(-0.919)	0.045**	(1.989)	0.179***	(5.824)	0.085***	(3.553)	0.033*	(1.835)
20	0.022	(1.267)	0.055***	(2.648)	0.140***	(5.824)	0.096***	(3.227)	0.014	(0.834)
N	349,705		261,008		357,212		345,832		469,119	

Table 4: Volume and Different Types of Meetings

This table compares abnormal daily volume around meetings at which different types of proposals are discussed. The dependent variable is the average abnormal daily volume during the [0, +4] window following the meeting. Values for abnormal volume are estimated as the daily value / average daily value during pre-voting period – 1. The pre-voting period is defined as the [-252, -21] window before the record date. *Routine meetings* are defined as meetings (i) that involve only the standard proposals companies are required to put forward annually, i.e., proposals on appointing directors, approving the company’s auditors, and/or voting on say-on-pay, and (ii) for which the vote outcome is consistent with management recommendation for all proposals; all other meetings are defined as *Non-routine meetings*. *Merger vote* is equal to one if the meeting features a vote on a merger, *Outcome against mgmt.* is equal to one if the outcome of at least one proposal contradicts management recommendation, and zero otherwise. *Special meeting* is equal to one if the meeting is a special meeting according to ISS Voting Analytics. Standard errors are clustered on the company level. T-statistics are reported in parentheses. *, **, and *** indicate $p < .10$, $p < .05$, and $p < .01$, respectively.

	Abnormal volume			
	(1)	(2)	(3)	(4)
Constant	0.1339*** (7.734)	0.1611*** (12.184)	0.1469*** (13.202)	0.1392*** (13.885)
Non-routine meeting	0.0597** (2.418)			
Merger vote		0.6615*** (5.700)		
Outcome against mgmt.			0.2308*** (3.080)	
Special meeting				1.0478*** (4.131)
N	47,398	47,398	47,398	47,398

Table 5: Funds Opposing Management and Their Pre-Meeting Trades

This table reports OLS regressions, on the fund-company-day level, funds' trades between the proxy filing and the meeting date (excluding the meeting date) during February 28, 2010-September 30, 2011. The analysis includes only actively managed funds. *Net fraction of company bought* (in bps) is equal to the net number of the firm's shares bought by the fund on a given day * 10,000/number of firm shares outstanding. *Net fraction of portfolio bought* (in bps) is equal to the net dollar value of the firm's shares bought by the fund on a given day * 10,000/total dollar value of the fund's overall portfolio at the end of the most recent quarter. *Buy* equals one if the fund buys the stock on the observation day, and zero otherwise. *Sell* equals one if the fund sells the stock on the observation day, and zero otherwise. T-statistics are reported in parentheses. *, **, and *** indicate $p < .10$, $p < .05$, and $p < .01$, respectively.

	Net fraction of company bought (in bps) (1)	Net fraction of portfolio bought (in bps) (2)	Buy (binary) (3)	Sell (binary) (4)
Fund opposes mgmt. on at least one proposal	-0.022** (-2.124)	-0.873*** (-6.560)	-0.003*** (-2.679)	0.000 (0.181)
Fund asset under management	0.000 (1.394)	0.000 (0.483)	0.000** (2.257)	0.000* (1.731)
Fraction of company held by the fund	-0.000*** (-4.780)	0.000 (0.405)	0.000** (2.246)	0.000*** (5.362)
Portfolio weight	0.000 (-1.422)	-0.003*** (-3.982)	0.000 (0.631)	0.000** (2.054)
Fund expense ratio	-35.238*** (-2.716)	-725.565*** (-4.259)	0.291 (0.183)	2.324 (1.328)
Fund turnover ratio	-0.095*** (-2.662)	2.515*** (5.355)	-0.017*** (-3.767)	0.000 (-0.079)
Market capitalization	0.000 (0.346)	0.000*** (6.660)	0.000 (1.212)	0.000 (-0.495)
Book-to-market ratio	0.409** (2.308)	1.218 (0.524)	-0.004 (-0.187)	-0.006 (-0.240)
Fund FE	Yes	Yes	Yes	Yes
Meeting FE	Yes	Yes	Yes	Yes
Days included		Proxy filing date to meeting date		
R-squared	0.046	0.013	0.063	0.099
N	262,226	262,226	262,226	257,662
Unconditional mean of the dependent variable in the table sample	-0.0119	-0.2348	0.0249	0.0313

Table 6: Funds Opposing Management and Their Post-Meeting Trades

This table reports OLS regressions of funds' trades during the February 28, 2010-September 30, 2011 period at the fund-company-day level. These analyses examine whether a fund is likely to sell its stocks after a meeting at which, for at least one proposal, the vote outcome contradicts the vote cast by that fund. The analyses include the period from the proxy filing date to 30 trading days after the meeting date for only actively managed funds. The dependent variable in the odd-numbered regressions is *Net fraction of company bought* (in bps); the dependent variable in the even-numbered regressions is *Net fraction of portfolio bought* (in bps). *Net fraction of company bought* (in bps) is equal to the net number of the firm's shares bought by the fund on a given day * 10,000/number of firm shares outstanding. *Net fraction of portfolio bought* (in bps) is equal to the net dollar value of the firm's shares bought by the fund on a given day * 10,000/total dollar value of the fund's overall portfolio at the end of the most recent quarter. *After meeting* is an indicator variable that equals one if the observation corresponds to the day of or the days after the meeting, and zero if it corresponds to a day before the meeting. All controls reported in Table 5 are included, but are not reported for brevity. T-statistics are reported in parentheses. *, **, and *** indicate p<.10, p<.05, and p<.01, respectively.

	Net fraction of company bought (in bps) (1)	Net fraction of portfolio bought (in bps) (2)	Net fraction of company bought (in bps) (3)	Net fraction of portfolio bought (in bps) (4)	Net fraction of company bought (in bps) (5)	Net fraction of portfolio bought (in bps) (6)
After meeting	-0.013*** (-2.719)	-0.067* (-1.868)	-0.012*** (-2.755)	-0.060* (-1.763)	-0.022*** (-6.201)	-0.117*** (-4.349)
Vote outcome contradicts fund vote for at least one proposal	-0.058 (-0.823)	-0.198 (-0.344)				
Vote outcome contradicts fund vote for at least one proposal X after meeting	-0.015** (-2.362)	-0.086* (-1.742)				
Fund with mgmt., outcome against mgmt. for at least one proposal			-0.139 (-1.490)	-0.116 (-0.123)		
Fund with mgmt., outcome against mgmt. for at least one proposal X after meeting			-0.019*** (-2.919)	-0.115** (-2.335)		
Fund against mgmt., outcome with mgmt. for at least one proposal					-0.009 (-0.136)	-0.203 (-0.377)
Fund against mgmt., outcome with mgmt. for at least one proposal X after meeting					0.005 (0.582)	0.022 (0.330)
Controls included	Yes	Yes	Yes	Yes	Yes	Yes
Meeting X Fund FE	Yes	Yes	Yes	Yes	Yes	Yes
Days included		Proxy filing to 30 trading days after meeting date				
R-squared	0.065	0.047	0.065	0.047	0.065	0.047
N	503,276	501,118	503,276	501,118	503,276	501,118
Unconditional mean of the dependent variable in the table sample	-0.0183	-0.2348	-0.0183	-0.2348	-0.0183	-0.2348

Table 7: Probability that Funds Buy or Sell when They Oppose Management

This table reports OLS regressions of funds' trades during the February 28, 2010-September 30, 2011 period at the fund-company-day level. These analyses examine whether a fund is likely to buy or sell its stocks after a meeting at which the vote outcome contradicts the vote cast by that fund for at least one proposal. The analyses include the period from the proxy filing date to 30 trading days after the meeting date for only actively managed funds. The dependent variable in the odd-numbered regressions is the binary variable *Buy* which equals one if the fund buys the stock on the observation day, and zero otherwise; that in the even-numbered regressions is the binary variable *Sell* which equals one if the fund sells the stock on the observation day, and zero otherwise. *After meeting* is an indicator variable that equals one if the observation corresponds to the day of or the days after the meeting, and zero if it corresponds to a day before the meeting. All controls reported in Table 5 are included, but are not reported for brevity. T-statistics are reported in parentheses. *, **, and *** indicate $p < .10$, $p < .05$, and $p < .01$, respectively.

	Buy (binary) (1)	Sell (binary) (2)	Buy (binary) (3)	Sell (binary) (4)	Buy (binary) (5)	Sell (binary) (6)
After meeting	-0.003*** (-4.052)	-0.006*** (-9.371)	-0.003*** (-4.694)	-0.005*** (-8.166)	-0.003*** (-6.329)	-0.003*** (-6.062)
Vote outcome contradicts fund vote for at least one proposal	0.007 (0.717)	0.023** (2.085)				
Vote outcome contradicts fund vote for at least one proposal X after meeting	-0.001* (-1.749)	0.008*** (8.430)				
Fund with mgmt., outcome against mgmt. for at least one proposal			0.058*** (4.702)	0.049*** (2.727)		
Fund with mgmt., outcome against mgmt. for at least one proposal X after meeting			-0.001 (-1.505)	0.006*** (6.913)		
Fund against mgmt., outcome with mgmt. for at least one proposal					-0.016* (-1.771)	0.011 (1.118)
Fund against mgmt., outcome with mgmt. for at least one proposal X after meeting					-0.002** (-2.158)	0.006*** (4.405)
Controls included	Yes	Yes	Yes	Yes	Yes	Yes
Meeting X Fund FE	Yes	Yes	Yes	Yes	Yes	Yes
Days included		Proxy filing date to 30 trading days after meeting date				
R-squared	0.094	0.109	0.094	0.109	0.094	0.109
N	515,211	501,118	515,211	501,118	515,211	501,118
Unconditional mean of the dependent variable in the table sample	0.0222	0.0281	0.0222	0.0281	0.0222	0.0281

Appendix A: Identifying the Vote Outcome Filing Dates

To identify the dates on which vote outcomes are made public, we use Seekedgar, which allows us to search through SEC filings. We search within 8-K, 10-K and 10-Q filings for the phrases “vote for”, “votes for”, or “voted for”, or for tables that include the words “against” and “abstain”, “against” and “withheld”, or “against” and “broker.” For the January 1, 2006-February 27, 2010 period we exclude from our sample a small number of observations that match these criteria but are filed more than 5 months after the meeting date, because companies are required to file 10-Ks and 10-Qs within 45 days after the end of a quarter.³³ Hence, even if a meeting is held at the beginning of a quarter, the vote outcome should be filed within 5 months.

For the February 28, 2010 and June 30, 2013 period (and also thereafter) companies are required to report in an 8-K filing their vote results within 4 trading days, although some companies may file the vote outcome after 4 trading days; accordingly, we exclude from our sample vote outcome filings filed more than 14 trading days after the meeting date since we assume these filings have been mismatched.

³³ This requirement is indicated here <https://www.sec.gov/answers/form10q.htm>.

Appendix B: Abnormal Log Volume around Major Events

In this appendix we report the abnormal log transformed volume around the record date, proxy filing date, meeting date, ISS recommendation date, the filing of the vote outcome, and the filing of a 10-K. Abnormal log volume is estimated as the daily log volume minus the average daily log volume during the pre-voting period (i.e., the [-252, -21] window before the record date). For each event, the sample includes [-20, +20] trading days around the event, and we regress daily abnormal log volume on 41 dummy variables corresponding to each of these trading days (without a constant), with standard errors clustered at the company and the trading day levels.

Of the five vote-related events examined in Columns 1-10, the largest peak is observed on the meeting date, as indicated by the coefficient of 0.100 reported in column 5. In addition, the result in Column 11 shows a large jump in abnormal log volume on the day a 10-K is filed.

Table B.1: Abnormal Log Volume around Major Events

This table reports, on the stock level, the average abnormal daily log volume on days around the record date, proxy filing date, meeting date, ISS recommendation date, the filing of the vote outcome, and the filing of a 10-K. For each event, the sample includes [-20, +20] trading days around the event, and we regress daily abnormal log volume on 41 dummy variables corresponding to each of these trading days (without a constant), with standard errors clustered at the company and the trading day levels. Abnormal log volume is estimated as the daily log volume – average daily log volume during the pre-voting period defined as the [-252, -21] window before the record date. The table reports observations for meetings held between February 28, 2010 and June 30, 2013, and 10-K filings filed during this period. T-statistics are reported in parentheses. *, **, and *** indicate $p < .10$, $p < .05$, and $p < .01$, respectively.

Day	Record date		Proxy filing		Meeting date		ISS recommendation		Vote outcome		10-K filing	
	coefficient	t-stat.	coefficient	t-stat.	coefficient	t-stat.	coefficient	t-stat.	coefficient	t-stat.	coefficient	t-stat.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
-20	0.034***	2.683	-0.022*	(-1.714)	-0.019	(-1.448)	(-1.842)	0.006	-0.032**	(-2.495)	-0.021	(-0.855)
-16	0.011	0.953	-0.042***	(-3.128)	0.005	0.356	(-1.321)	0.014	0.009	0.613	-0.031	(-1.536)
-12	-0.004	(-0.357)	-0.041***	(-3.029)	0.014	0.972	(-1.100)	0.002	0.027**	1.984	-0.038*	(-1.954)
-8	-0.012	(-0.959)	-0.048***	(-4.169)	0.031**	2.053	(-0.118)	0.001	0.029**	2.257	-0.048*	(-1.754)
-7	-0.022*	(-1.680)	-0.058***	(-4.935)	0.046***	3.252	-0.051	0.008	0.042***	3.305	-0.044*	(-1.901)
-6	-0.023	(-1.611)	-0.070***	(-6.449)	0.043***	3.517	-0.584	0.018	0.049***	3.772	-0.018	(-0.788)
-5	-0.031**	(-2.320)	-0.040***	(-2.675)	0.066***	5.012	-1.203	0.015	0.055***	4.105	-0.020	(-0.889)
-4	-0.028**	(-2.421)	-0.065***	(-5.139)	0.066***	4.696	-1.044	0.023*	0.048***	3.895	-0.009	(-0.367)
-3	-0.030**	(-2.491)	-0.070***	(-5.472)	0.050***	3.587	-1.671	0.025*	0.055***	4.491	-0.010	(-0.398)
-2	-0.043***	(-3.691)	-0.074***	(-5.395)	0.066***	5.171	-1.896	0.030**	0.070***	5.980	0.016	0.708
-1	-0.033**	(-2.305)	-0.069***	(-5.357)	0.076***	6.593	-2.207	0.032**	0.070***	5.683	0.050**	2.135
0	-0.026*	(-1.863)	-0.040***	(-2.771)	0.100***	7.265	-2.171	0.031**	0.076***	5.337	0.128***	5.632
1	-0.035***	(-2.835)	-0.054***	(-3.984)	0.096***	5.936	-2.231	0.038***	0.067***	4.851	0.131***	5.814
2	-0.037***	(-3.007)	-0.044***	(-3.134)	0.090***	5.348	-3.091	0.037***	0.073***	5.419	0.084***	3.468
3	-0.040***	(-3.133)	-0.046***	(-3.453)	0.092***	6.515	-3.024	0.043***	0.062***	4.974	0.046*	1.738
4	-0.032**	(-2.435)	-0.049***	(-3.425)	0.076***	5.966	-3.302	0.043***	0.061***	4.811	0.008	0.321
5	-0.036**	(-2.518)	-0.037**	(-2.483)	0.077***	5.831	-3.006	0.038***	0.057***	4.009	0.004	0.153
6	-0.050***	(-4.263)	-0.059***	(-4.154)	0.075***	4.924	-2.961	0.040***	0.058***	4.244	-0.029	(-1.236)
7	-0.042***	(-3.505)	-0.043***	(-3.213)	0.075***	4.630	-3.251	0.055***	0.061***	4.479	-0.038*	(-1.802)
8	-0.052***	(-4.278)	-0.044***	(-3.495)	0.073***	4.878	-4.433	0.053***	0.035***	2.735	-0.057***	(-2.785)
12	-0.035***	(-2.803)	-0.033**	(-2.508)	0.044***	2.594	-6.015	0.085***	0.020	1.343	-0.027	(-0.791)
16	-0.044***	(-3.392)	-0.013	(-0.905)	0.039**	2.439	-5.959	0.079***	0.020	1.315	-0.075**	(-2.406)
20	-0.024*	(-1.764)	0.011	0.680	0.047**	2.415	-5.137	0.000	0.015	0.879	-0.117***	(-5.296)
N	358246		267375		391945		365976		354297		136190	

Appendix C: Shareholder Votes, Price Changes, and Information Asymmetry

The models of Kim and Verrechia (1991), Harris and Raviv (1993), and Banerjee and Kremer (2010) predict that, when a public announcement is made, abnormal volume and the magnitude of the absolute price change are positively correlated.³⁴ We test this prediction in Table C.1. In Panel A (B), abnormal volume is estimated as the volume on a given day divided by the average (median) volume during the pre-voting period (the [-252, -21] window before the corresponding record date) minus one. In Regressions 1-5, we split the sample conditional on the magnitude of the abnormal return. As in Table 4, we confine the analysis to the period between the meeting date and four days after the meeting.

As Regression 1 of Panel A indicates, companies that experience abnormal returns at or above the 85th percentile (i.e., particularly large positive abnormal returns) are associated with abnormal trading volume equal to 53.22%. Regression 2 demonstrates that companies experiencing abnormal returns in the 70th-84th percentiles (i.e., positive returns with smaller magnitudes than the returns included in Regression 1) are associated with substantially smaller abnormal volume – only 3.16%. A similar pattern is observed when shareholder meetings are followed by negative returns: companies with absolute returns at or below the 15th percentile (i.e., particularly large and negative abnormal returns) experience abnormal trading volume equal to 49.47% (Regression 5), compared to just 0.52% for companies with returns in the 16th-30th percentiles (Regression 4). Panel B reports a similar pattern when abnormal volume is measured relative to the median rather than the average volume.

In Regression 3 of both panels, following Bamber, Barron and Stober (1999) and Kandel and Pearson (1995), we confine the analysis to observations in which there is almost no price reaction (i.e., observations within the bottom decile of the *absolute* return). As both panels indicate,

³⁴ Atiase and Bamber (1994) provide evidence consistent with this prediction in the context of earnings announcements.

abnormal volume in this case is significantly lower than abnormal volume around meetings that experience larger price reactions. For these almost-no-price-change observations, Regression 3 in Panel A reports a negative abnormal volume equal to -7.79%. However, this figure is estimated relative to the average volume, which takes into account other days on which a stock experiences high abnormal volume (10-K filings). In order to capture the abnormal volume relative to a typical day, we repeat our analysis in Panel B using the abnormal volume estimated relative to the *median* volume. Regression 3 in Panel B reports that, for the meetings with the smallest price reaction (i.e., returns at or below the 10th percentile in terms of absolute value), abnormal volume is equal to 13.15% relative to the median. Hence, even when the price reaction is virtually nonexistent, abnormal volume is observed when measured relative to the median trading volume. These findings, which are in line with those of Kandel and Pearson (1995), demonstrate that relative to days on which no special event occurs, investors trade particularly intensively on shareholder meeting days, even when prices do not move substantially.

Finally, in Regressions 6-8, we regress abnormal volume on the absolute value of abnormal returns both for the full sample and for subsamples with positive or negative abnormal returns. All three regressions confirm that abnormal volume is significantly higher when absolute return is higher. Taken together, these findings are consistent with the predictions of Kim and Verrechia (1991), Harris and Raviv (1993), and Banerjee and Kremer (2010) that abnormal volume and the magnitude of absolute returns are positively related in the event of public announcement.

We next examine how information asymmetry is related to trading around shareholder votes. Kim and Verrechia (1991) predict that the trading volume in reaction to an announcement should increase with the degree of information asymmetry among investors prior to the announcement. We use the proxies introduced in Atiase and Bamber (1994) and Chae (2005) in the context of earnings announcements to identify companies with high information asymmetry.

Specifically, we look for companies with low market capitalization and companies followed by a small number of analysts. We obtain the number of analysts from the I/B/E/S summary files.

The analysis is presented in Table C.2. As before, it is confined to the period between the meeting date and four days after the meeting day (including these days). The independent variable in Regression 1 is the dummy variable *Few analysts*, which is equal to one if the number of analysts following the company is below the sample median (seven analysts or less), and zero otherwise. The independent variable in Regression 2 is *Small company*, which is equal to one if the company's market capitalization is below the sample median, and zero otherwise. The table shows that the abnormal volume is 131% higher (0.0934/0.0712) for companies covered by few analysts than for companies covered by many analysts. Further, abnormal volume for small companies is 60.9% higher (0.0737/0.1209) than for large companies. These findings support the argument that abnormal trading around vote outcome is particularly high for companies with high information asymmetry.

Table C.1: Abnormal Volume and Returns

This table reports, on the stock level, the abnormal daily volume of companies around shareholder meeting days during the February 28, 2010-June 30, 2013 period. The analysis includes [0, +4] trading days, starting on the meeting day. In Panel A (B), abnormal daily volume is estimated as the daily volume / average (median) daily volume during pre-voting period – 1. The pre-voting period is defined as the [-252, -21] window before the record date. Abnormal returns are calculated using the Fama-French-Carhart four-factor model following Savor (2012). For both panels, Regressions 1-5 split the sample by the magnitude of daily abnormal return. Regression 1 includes observations with abnormal returns at or above the 85th percentile (i.e., particularly large and positive abnormal returns). Regression 2 includes observations in the 70th-84th percentiles of abnormal returns. Regression 3 includes observations that experience almost no price reaction, i.e., those in the bottom decile of absolute abnormal returns. Regression 4 includes observations in the 16th-30th percentiles of abnormal returns. Regression 5 includes observations in the bottom 15th percentiles of abnormal returns, i.e., those that experience the largest negative abnormal returns. Regressions 6 and 7 include only observations associated with positive or negative abnormal returns, respectively, while Regression 8 includes observations associated with both positive and negative abnormal returns. T-statistics are reported in parentheses. *, **, and *** indicate $p < .10$, $p < .05$, and $p < .01$, respectively.

Panel A: Abnormal volume relative to average								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	0.5322*** (25.239)	0.0316*** (2.743)	-0.0779*** (-6.904)	0.0052 (.456)	0.4947*** (19.428)	-0.2585*** (-28.571)	-0.3031*** (-30.957)	-0.2780*** (-42.093)
Absolute abnormal return						0.3236*** (93.408)	0.3417*** (77.531)	0.3306*** (121.335)
Panel B: Abnormal volume relative to median								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	0.9212*** (34.134)	0.2786*** (18.991)	0.1315*** (9.062)	0.2389*** (15.883)	0.8667*** (27.072)	-0.3201*** (-19.554)	-0.2272*** (-13.567)	-0.2863*** (-24.614)
Absolute abnormal return						0.5416*** (86.422)	0.4630*** (61.483)	0.5115*** (106.670)
Subset	85 th -100 th percentile of daily returns	70 th -84 th percentile of daily returns	Bottom 10 th percentile of <i>absolute</i> value of daily returns	16 th -30 th percentile of daily returns	Bottom 15 th percentile of daily returns	Positive abnormal returns	Negative abnormal returns	All
N	5,593	6,261	4,180	5,850	4,869	38,449	38,555	77,004

Table C.2: Abnormal Volume and Information Asymmetry

This table reports, on the stock level, companies' abnormal daily volume around shareholder meeting days during the February 28, 2010-June 30, 2013 period. The analysis includes trading days [0, +4], starting from the meeting day. Values for abnormal volume are estimated as the daily volume / average daily volume during pre-voting period - 1. The pre-voting period is defined as the [-252, -21] window before the record date. *Few analysts* is equal to one if the number of analysts following the company is below the sample median (seven analysts or less), and zero otherwise. *Small company* is equal to one if the company's market capitalization is below the sample median, and zero otherwise. T-statistics are reported in parentheses. *, **, and *** indicate $p < .10$, $p < .05$, and $p < .01$, respectively.

	Abnormal volume	
	(1)	(2)
Constant	0.0712*** (5.695)	0.1209*** (8.588)
Few analysts	0.0934*** (3.982)	
Small company		0.0737*** (3.136)
Subset	All	All
R-squared	0.001	0.001
N	30,293	42,284

Appendix D: Funds Buying and Selling Stocks – Logistic Regressions

In this appendix, using logistic regression, we repeat the specifications with binary dependent variable *Buy* or *Sell*. Specifically, Table D.1 repeats the analysis in Regressions 3 and 4 of Table 5. Similar to the results reported in Table 5, Regression 1 of Table D.1 demonstrates that during the period between the proxy filing and the meeting date, funds that vote against management on at least one proposal are less likely to buy the stock (result is significant at the 1% level), whereas Regression 2 of Table D.1 does not exhibit a significant relation between funds' voting against management and their tendency to sell a stock.

Table D.2 repeats the analysis of Table 7. Similar to the results in Table 7, Regressions 1-2 of Table D.2 reports that, relative to a fund's trades before the meeting, the average fund is less likely to buy a stock after observing a vote outcome that contradicts its own vote for at least one proposal (*Vote outcome contradicts fund vote for at least one proposal X After meeting*), and more likely to sell a stock after such a vote outcome. Results are similar when a fund votes consistently with management recommendation but the outcome is against management recommendation for at least one proposal (Regressions 3-4), or when a fund votes against management recommendation but the outcome is consistent with management recommendation for at least one proposal (Regressions 5-6).

Table D.1: Funds Opposing Management and Their Pre-Meeting Trades —Logistic Regressions

This table reports logistic regressions, on the fund-company-day level, funds' trades between the proxy filing and the meeting date (excluding the meeting date) during February 28, 2010-September 30, 2011. The analysis includes only actively managed funds. *Buy* equals one if the fund buys the stock on the observation day, and zero otherwise. *Sell* equals one if the fund sells the stock on the observation day, and zero otherwise. Z-statistics are reported in parentheses. *, **, and *** indicate $p < .10$, $p < .05$, and $p < .01$, respectively.

	Buy (binary) (1)	Sell (binary) (2)
Fund oppose management at least once	-0.173*** (-2.945)	-0.002 (-0.041)
Fund assets under management	0.000 (1.513)	0.000* (1.670)
Fraction of company held by the fund	0.002*** (3.053)	0.002*** (4.749)
Portfolio weight (in fraction)	0.001 (1.382)	0.001*** (3.623)
Fund's expense ratio	121.403** (1.967)	95.372 (1.450)
Turnover ratio of the fund	-0.416 (-1.562)	-0.295 (-1.046)
Market capitalization	0.000 (1.411)	0.000 (-0.425)
Book-to-market ratio	-0.670 (-0.520)	-0.344 (-0.333)
Fund FE	Yes	Yes
Meeting FE	Yes	Yes
Days included	Proxy filing date to meeting date	
N	210,761	213,004

Table D.2: Funds Updating Trading Patterns and Funds Opposing Management—Logistic Regressions

This table reports logistic regressions of funds' trades during the February 28, 2010-September 30, 2011 period at the fund-company-day level. These analyses examine whether a fund is likely to buy or sell its stocks after a meeting at which the vote outcome contradicts the vote cast by that fund for at least one proposal. The analyses include the period from the proxy filing date to 30 trading days after the meeting date for only actively managed funds. The dependent variable in the odd-numbered regressions is the binary variable *Buy* which equals one if the fund buys the stock on the observation day, and zero otherwise; that in the even-numbered regressions is the binary variable *Sell* which equals one if the fund sells the stock on the observation day, and zero otherwise. *After meeting* is an indicator variable that equals one if the observation corresponds to the day of or the days after the meeting, and zero if it corresponds to a day before the meeting. All controls reported in Table 5 are included, but are not reported for brevity. Z-statistics are reported in parentheses. *, **, and *** indicate $p < .10$, $p < .05$, and $p < .01$, respectively.

	Buy (binary) (1)	Sell (binary) (2)	Buy (binary) (3)	Sell (binary) (4)	Buy (binary) (5)	Sell (binary) (6)
After meeting	-0.003*** (-4.052)	-0.006*** (-9.371)	-0.003*** (-4.694)	-0.005*** (-8.166)	-0.003*** (-6.329)	-0.003*** (-6.062)
Vote outcome contradicts fund vote for at least one proposal	0.007 (.717)	0.023** (2.085)				
Vote outcome contradicts fund vote for at least one proposal X after meeting	-0.001* (-1.749)	0.008*** (8.430)				
Fund with mgmt., outcome against mgmt. for at least one proposal			0.058*** (4.702)	0.049*** (2.727)		
Fund with mgmt., outcome against mgmt. for at least one proposal X after meeting			-0.001 (-1.505)	0.006*** (6.913)		
Fund against mgmt., outcome with mgmt. for at least one proposal					-0.016* (-1.771)	0.011 (1.118)
Fund against mgmt., outcome with mgmt. for at least one proposal X after meeting					-0.002** (-2.158)	0.006*** (4.405)
Controls included	Yes	Yes	Yes	Yes	Yes	Yes
Meeting X Fund FE	Yes	Yes	Yes	Yes	Yes	Yes
Days included	Proxy filing date to 30 trading days after meeting date					
N	515,211	501,118	515,211	501,118	515,211	501,118