How are shareholder votes and trades related?

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Abstract

We study the relation between shareholder votes and trading. We demonstrate that around the shareholder meeting date, the abnormal daily volume is substantially larger compared to the pre-voting period. This increase exists even for routine votes, and it is particularly large for important votes and when shareholders are unsupportive of management. We next analyze the vote-trade relationship at the investor level, using data on daily trades and the corresponding votes of the same funds. We find that before the meetings, funds' trades and votes are positively correlated. However, funds update their trading patterns when a vote outcome contradicts the vote they cast. We also show that votes catalyze trading particularly when the price reaction is large, higher degrees of information asymmetries exist, and investors are not distracted.

JEL Classification: G11, G12, G14, G30, G40

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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 the survey of McCahery, Sautner and Starks (2015), 53% of the institutional investors surveyed view voting against management as an important form of voice. A large theoretical literature emphasizes that shareholders' decisions about exercising voice are closely connected to their decisions about trading the company's stock.[1] Yet, empirically, it is not clear whether shareholder votes are sufficiently important to generate significant trading activity. More specifically, are shareholders' votes and trades correlated? And do shareholders update their trading patterns based on the information conveyed by other investors' votes? The goal of this paper is to examine the relation between votes and trades both at the stock level and at the investor level by using daily stock-level trading data around shareholder meetings, and data on daily trades of individual funds and the corresponding votes of these funds.

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, we may expect that, typically, votes will not generate abnormal trading activity because shareholders rarely oppose management on votes,[2] and even when they do, the votes are almost always non-binding (Levit and Malenko, 2011). Moreover, prior studies have not documented an overall clear pattern of abnormal returns around shareholder meeting days: Some studies find no or only negligible price effects around shareholder meetings,[3] while other studies find significant abnormal returns around shareholder meeting dates, but examine only a small subset of the votes.[4] On the other hand,

[1] See, e.g., Kahn and Winton (1998, 1999), Maug (1998, 1999), Back et al. (2017), Dasgupta and Piacentino (2012), Brav and Mathews (2011). Edmans (2014) provides a comprehensive survey of this literature.

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

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

[4] E.g., Cuñat, Gine, and Guadalupe (2012) find a positive abnormal return around governance-related shareholder proposals that pass or.fail by a small margin. However as we discuss in this paper, most meetings do not include such

we may expect that shareholder votes will generate abnormal trading activity, because, as Maug (1999) argues, shareholders learn about the quality of the firm, and about the opinion of other shareholders, from the vote outcomes. This implies that votes could have a significant effect on investors' trading decisions.

Prior studies that have examined whether the market responds to votes have typically focused on abnormal returns around shareholder meetings and other vote-related dates.[5] However, Kandel and Pearson (1995) and Hong and Stein (2007) emphasize that if different investors have heterogeneous priors and interpret information differently, there can be significant trading activity that would be captured by volume, but would not be accompanied by price changes. Following these studies, to capture the extent investors update their beliefs we focus on abnormal daily trading volume. We complement our analysis by also analyzing abnormal daily: number of trades, volatility, and returns.[6]

We document that on the shareholder meeting date abnormal volume is equal to 29%, and the average daily abnormal volume during the [-4,+4] window around the meeting date is equal to 23.2%. For comparison, note that the corresponding figures around 10-K filings are 40% and 20.5%, respectively, and hence the abnormal volume we document around the shareholder meeting date is large. In addition, we show that large abnormal volume around meeting dates exists even for routine votes, which we define as votes that include only basic routine proposals that all result in vote outcomes consistent with management's recommendation. This finding demonstrates that shareholder votes are associated with significant trading activity across the board. At the same time, we find that trading activity is particularly large on the dates of particularly important meetings, e.g.,

proposals. Brochet, Ferri, and Miller (2017) document positive abnormal returns over the period between the proxy filing and the annual meeting prior to contentious meetings.

[5] E.g., Alexander et al. (2010), Brochet, Ferri, and Miller (2017), Cuñat, Gine, and Guadalupe (2012), Ertimur, Ferri, and Oesch (2013), Gillan and Starks (2000), and Karpoff, Malatesta, and Walkling (1996).

[6] We follow DellaVigna and Pollet (2009), Hong and Stein (2007), Kandel and Pearson (1995), Bamber, Barron, and Stevens (2011), and Pan, Wang and Weisbach (2015), who all use one or more of these variables.

special meetings, meetings that involve a vote on a merger, or meetings at which at least one proposal resulted in an outcome contradicting management's recommendation.

We also examine whether abnormal volume exists around four additional vote-related dates: the record date (i.e., the date that determines if a shareholder is eligible to vote), the date the proxy statement is filed, the date ISS issues its recommendation (ISS is the leading proxy advisory firm), and the date the vote outcome is formally filed. We do not find a spike in abnormal volume around the record, proxy, or ISS-recommendation dates. However, we also find evidence demonstrating that abnormal volume also peaks on the date the vote outcome is filed, when some of the companies disclose for the first time the vote outcome. This further suggests that observing the vote outcome drives abnormal trading.

To further understand how votes and trades relate to each other, we next explore this relation at the investor level. To our knowledge, we are the first to directly examine how investors' trades, both before and after the vote, relate to their own votes, and whether and how investors update their trading patterns once they observe the vote outcome. Note that votes are a particularly compelling setting for examining how investors trade before and after an event because, all else being equal, the vote cast by an investor offers a proxy for the investor's beliefs. For the investor-level analysis, we study votes cast and trades made by mutual funds, because they cast 37% all voted shares (Schwartz-Ziv and Wermers, 2017), and both voting data and daily trading data are available for a subset of mutual funds.

One might expect that, between the proxy filing and the meeting date, votes and trades will be positively correlated, because shareholders vote sincerely (a possibility analyzed by Maug and Rydqvist, 2009) and their trades reflect their true opinion on the stock. However, it is also possible that shareholders vote strategically (Maug and Rydqvist, 2009; Matvos and Ostrovsky, 2010; Brav and Mathews, 2011; Malenko and Levit, 2011), meaning that shareholders do not simply vote in favor of proposals for which they have positive information and vice versa. Strategic voting could occur, for example, because shareholders 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. We first investigate the relation between a fund's say-on-pay votes and its trades because the say-on-pay vote is frequently viewed as a general vote of confidence in management (e.g., Cuñat, Gine, and Guadalupe (2016), Fisch, Palia, and Solomon (2017)). We find that funds that voted against management on a say-on-pay vote were more likely to decrease their holdings in the company, relative to companies for which they voted in support of say-on-pay. Consistent with these findings, we find evidence demonstrating that funds that vote against management on at least one proposal are more likely to decrease their holdings in the company relative to companies for which they vote in support of management on all proposals. Put differently, these findings suggest that before the vote outcome is observed, votes and trades are positively correlated, and hence, they complement each other.

We next address the question whether funds update their trading patterns in the direction of the vote outcome when the vote outcome contradicts the vote they cast. We first show that a fund that votes against management on a say-on-pay vote, but then observes that management receives large support rates on the say-on-pay vote from other shareholders, 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 rates for say-on-pay, is less likely to buy the stock after the meeting, relative to the fund's trades before the meeting. Our evidence suggests that, as Maug (1999) argues, funds garner information (in our case: about the quality of management) about the firm from the vote outcome, and adjust their trading patterns in the direction of the vote outcome once they observe it.

However, we also find evidence demonstrating that votes can bring a shareholder to the realization that his opinions on which actions the company should take are different from the opinions of most other shareholders (as Maug, 1999, implies may occur), and that may move him to exit. We find that if at least one vote outcome contradicts a vote cast by a fund, the fund is less likely to buy a stock, and more likely to sell a stock after the meeting. For example if a fund voted in support of declassifying the board, but it then observes that most other shareholders voted against declassifying the board, making it likely that the board will remain classified, the fund is more likely to exit after it observes such a vote outcome. Hence, when a fund observes that its opinion differs from that of most other shareholders, that catalyzes the exit of the fund. Taken together, the fund-level analysis suggests that funds learn from the vote outcome both about the quality of management (from the say-on-pay vote), and also about whether the fund's opinions on the actions the company is considering to take are consistent with those of other shareholders (from the other votes). Both of these pieces of information catalyze a fund to update its trading patterns after the meeting.

Finally, we examine whether, at the stock level, abnormal trading around the meeting date is particularly high for certain types of votes. First, consistent with the predictions of Kim and Verrechia (1991) and Harris and Raviv (1993), we find that abnormal volume around the meeting date is particularly large when the price reaction to the vote outcome is large. Second, consistent with Kim and Verrechia (1991), we find that when information asymmetry is large (which we proxy for using the number of analysts following the stock and company size) abnormal volume is particularly large. Third, following Hirshleifer and Teoh (2003), we show that when investors are distracted (which we proxy for using the total number of *other* shareholder meetings that take place on the same day) abnormal volume is particularly large.

Our paper contributes to the literature on shareholder voting in several ways. First, we show that votes affect trades across the board. While prior studies have shown that certain votes, which consist of a small fraction of proposals, affect returns, we show that even the most routine votes, those that do not include any special proposals, lead to a large and significant abnormal volume. We show that shareholder votes generate a significant spike in market trading activity, comparable to that generated by annual earnings announcements, and that this spike occurs, relative to the median volume, even when votes do not affect the level of prices.

Second, we contribute to the voting literature by examining, at the investor level, how a shareholder's trades are related to his own votes. The data on daily trades of mutual funds allow us to provide a detailed analysis of the relation between votes and trades because we can observe funds' daily trading behavior just around the meeting dates. By pinning, on the daily level, the multiple vote-related events, we are able to demonstrate that before mutual funds observe the vote outcome, their votes and trades are positively correlated, suggesting that votes and trades are complementary forms of governance.

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.[7] Our paper demonstrates that once a fund observes a vote outcome that reveals to the shareholder either that management quality is low (and this view contradicts the view of the fund as expressed in its vote), or that the opinion of most other shareholders about an action the company is considering differs from the fund's, the fund is more likely to exit.

2. Hypotheses

In this section we present our hypotheses.

<u>Hypothesis 1:</u> **Shareholders votes are not associated with significant trading activity.** We

[7] 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 (e.g., Admati and Pfleiderer (2009), Edmans (2009), Dasgupta and Piacentino (2012), and Levit (2017)). See McCahery, Sautner and Starks (2015) for institutional investors' views on their voice and exit decisions.

estimate that for 93.7% of the proposals, the vote outcomes is consistent with management recommendation, indicating that shareholders quite rarely attempt to govern management through shareholder votes. Moreover, According to Malenko and Levit (2011, footnote 1) 98% of shareholder proposals are non binding. As Malenko and Levit (2011) explain, this means that "the company's board can make its own determination as to whether adoption of all or any part of a shareholder proposal is in the company's best interest, even if the proposal received substantial majority support from shareholders." Given that it is unusual for shareholders to vote against management, and that even when they do so, management has extreme discretion as to whether to respond to shareholders votes, it is not obvious that shareholder votes will affect trades.

In addition, prior studies have not shown a clear market response (in terms of abnormal 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; Karpoff, 2001, Table 3). Cuñat, Gine, and Guadalupe (2012) find positive abnormal return for governance related proposals that pass by a small margin. However, we estimate that at most 18.1% of the meetings include a governance related proposal (and no more than 2% of the meetings include a governance related proposal that passed by a small margin),[8] which brings us back to our basic question—do shareholder votes, including the votes that do not include any special proposals, affect trades. Perhaps a softer version of this hypothesis would posit that excluding unusual special votes such as merger or proxy fights, overall, shareholder votes should not affect trades.

[8] 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". Hence assuming their sample includes approximately 2,000 companies per year (which we believe is a reasonable assumption, since we have examined the data used by Cuñat, Gine, and Guadalupe (2012), for most of the years included in their sample), and that each company had no more than one governance proposal submitted (an assumption which inflates our estimation), and that only one meeting was held per year (an additional assumption which inflates our estimation), only 18.1% (3984/(2000*11) of the firms had a governance related proposal submitted in a given meeting. Moreover, the primary analysis of Cuñat, Gine, and Guadalupe (2012) includes only the votes that passed or failed by a 5% margin, which according to our estimations includes only 450 proposals, or at most, 2% (450/(2000*11) of the meetings.

Hypothesis 2: **Shareholder votes are associated with significant trading activity.** Multiple models assume that there exists a relation between votes and trades (Maug, 1998 and 1999; Kahn and Winton, 1998; Brav and Mathews 2011; Dasgupta and Piacentino 2012; Back et al. 2017). The nature of this relation could be further broken down, as described in the hypothesis below. Note that Hypotheses 2a-2b pertain to the period before the vote outcome is observed, while Hypotheses 2c-2d apply to the period after the vote outcome is observed.

Hypothesis 2a: **Before the vote outcome is observed, shareholder votes and trades are positively correlated,** meaning that a shareholder who votes in support of management is likely to increase his holdings in the company. For example, if an investor votes sincerely (which Maug and Rydqvist, 2009 define as "vote in favor whenever your own signal is good"), her trades and votes should be positively correlated, because investors trades likely also reflect the investors true opinion on the stock.

Hypothesis 2b: **Before the vote outcome is observed, shareholder votes and trades are negatively correlated,** suggesting for example, that a shareholder who votes in support of management is likely to decrease his holdings in the company. This may occur because shareholders may be voting 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, amongst other, because: they may gain profits from such voting, as in Brav and Mathews (2011); opposing management is costly, so shareholders are likely to do so only if other shareholders are also likely to oppose management (Matvos and Ostrovsky, 2010), or if opposing management is likely to change the manager's decision to accept a shareholder proposal (Malenko and Levit, 2011).[9]

Hypothesis 2c: **After the vote outcome is observed, shareholders update their trading patterns**

[9] In addition, the mere existence 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, 2015), and this governance would not be observable in the vote cast.

in the direction of the vote outcome. Maug (1999) stresses that shareholders learn information from the votes cast by other shareholders. Accordingly, shareholders may learn about the quality of a firm based on the votes cast by the other shareholders. This suggests, for example, that assuming that a shareholder votes sincerely, and the vote outcome is in the opposite direction of the vote cast by the shareholder, the shareholder will alter his trading patterns, and align them in the direction of the vote outcome. Put differently, a shareholder learns about the quality of the firm from the votes cast by all other shareholders, and accordingly, adjusts his trading patterns.

Hypothesis 2d: **After the vote outcome is observed, shareholders are likely to exit if their vote contradicts other shareholders' votes**. Maug (1999) argues that shareholders may have a different opinion on what is best for the company. Once an investor observes a vote outcome, he may realize that his opinion on an action the company is considering to take, differs from the opinion of most other shareholders. This may catalyze the shareholder to exit.

3. Data

In this section, we describe the datasets used in the paper.

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 individual mutual funds. These votes are 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 the ISS and management recommendation 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 data to the ISS Voting Analytics dataset.

Mutual fund daily trading data. ANcerno Ltd. provides institutional trading data for the period from January 1999 to 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 in stock holdings, stock trades, and return characteristics. The ANcerno database captures the complete history of all transactions of the institutions, 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 preocedures of Busse, Chordia, Jiang, and Tang (2016) to match the mutual funds in ANcerno to the quarterly holdings data of mutual funds in S12 data over the January 1999 to September 2011 period. We further match these S12 funds to the CRSP mutual fund data through the MFLINK data provided by WRDS and identify 1169 unique WFICNs during our sample period.

Daily aggregate trades. The TAQ database provides the trades for all individual securities listed on the NYSE, NASDAQ, and AMEX stock exchanges, resulting in a total of 19,896 unique securities over the January 4, 1993 to December 31, 2013 sample period when matched according to the Center for Research in Securities Prices (CRSP) unique PERMNO numbers. We use TAQ to estimate daily volatility and number of trades and use CRSP to obtain the 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.

Dates when vote-related information is revealed. We obtain the meeting dates from the ISS Voting Analytics dataset. We obtain the vote outcome dates, the proxy filing dates,[10] and the 8-K, 10-Q, and

[10] In cases in which the firm filed a preliminary proxy statement before 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 included in the proxy statement.

10-K filing dates by manually going over filings and collecting the 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 was between 4:00 PM and 5:30 PM, we attribute this filing to the following day because investors can only trade on this information on the next day.[11] We thank Daniel Metzger who generously provided us with the data on record dates.

Date ISS issues recommendation. Data obtained from ISS (this data is not included in the ISS voting analytics dataset).

To examine the relation between votes and trades and the stock and investor level, we combine the voting data, the mutual fund trading data, and the stock data at the daily level. Our final sample includes a total of 399 mutual funds (with unique wficns) that have at least one vote observation over the period between August 2005 and September 2011. For the aggregate vote results, we have information on 4,029 unique firms and 21,290 shareholder meetings (see Table 1).

4. The 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, starting from 2011, vote on say-on-pay. Shareholders also vote on additional non-routine proposals submitted both by management and by shareholders, if such proposals are submitted.

Figure 1 reports the typical timeline around shareholder meetings, which includes the following events: the proxy filing date, the record date (the date used to determine which shareholders are eligible to vote), the date ISS issues its recommendation, the shareholder meeting date, and the outcome date (i.e., the day the company files the result of the vote). For the period between the

[11] For filings filed after 5:30PM, the SEC automatically assigns the date as the following day, so we do not need to adjust the filing date.

meeting date and the date the vote outcome is held, we reports separate figures for the January 1, 2006-February 27, 2010 period ("pre March 2010"), versus the February 28, 2010-June 30, 2013 meetings ("post February 2010"). We report separate figures for each of these periods because for meetings held until February 27, 2010, companies reported the vote outcome in a 10-Q or a 10-K filing for the quarter in which the shareholder meeting was held, which typically resulted in a long lag in reporting the vote outcome. For meetings held after February 28, 2010, companies were required to report the outcome in an 8-K form within 4 days of the meeting.

We emphasize, however, that between the meeting date and the filing of the 8-K, companies are permitted to issue a press release announcing the voting results at the meeting.[12] It is very common for companies to issue such press releases (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 a press release on the meeting date. Walmart specified the support rate for each vote outcome. 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.[13]

As Figure 1 documents, the average number of trading days from the record date to the date the proxy is filed is 9 trading days (i.e., approximately 11 calendar days). From the proxy filing to the annual shareholder meeting there are on average 29 trading days. Figure 1 also reports that on average,

[12] 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.

[13] For example, see the press release of Walmart in the 2017 proxy season 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, and GMs initial press release 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.

there are 13 trading days between the day ISS issues its recommendation on how to vote, and the meeting date. The average number of days between the shareholder meeting and the day the vote outcome is formally filed is equal to 51 trading days during the pre March 2010 period, while it is only 2 trading days during the post February 2010 period.

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, we note that it is possible that information pertaining to the votes already cast may leak before the meeting date, or that shareholders will infer the expected vote outcome, if management reaches out to shareholders before the meeting in an attempt to persuade them to vote in a certain direction. Such situations may catalyze trading already before the meeting date.

5. The Relation between Voting and Trading at the Stock Level

5.1. Measuring Market Response

In section 5 we examine the relation between votes and trades at the stock level. In the present sub-section we describe the measures we use to capture trades at the stock level. 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 accordingly she will purchase the stock; in contrast, the new information may lead a second investor to decrease his estimate of the company's value relative to his prior, and therefore he 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 observed in prices, but to a change in trading volume. Accordingly, to capture the market's response we focus on abnormal daily trading volume. We complement our analysis by also 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 model and momentum factors (following Savor, 2012). We use the TAQ dataset to estimate daily number of trades and volatility. To estimate realized volatility, we gather minute-by-minute price data by applying the cleaning rules of Barndorff-Nielsen et al. (2009) and Bollerslev et al. (2016). We compute the daily volatility as the sum of squared 5-minute returns. 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.

The literature has used two different ways to measure abnormal volume: 1) the ratio of volume on a given day over "expected volume," measured as the average volume during a certain period preceding that day (e.g., Barber and Odean, 2008; Ben-Rephaell, Da, and Israelsen, 2017) and 2) the analog of this measure for log-transformed volume (to account for the skewed distribution of volume), i.e., the difference between log volume on a given day and "expected log volume", measured as the average log volume over a certain period preceding this day (e.g., DellaVigna and Pollet, 2009; Hirshleifer, Lim, and Teoh, 2009; and Chae, 2005). We report results for both of these measures to show robustness and provide a sense of economic magnitudes (using the second measure). Specifically, the figures correspond to non-log-transformed measures, while the tables correspond to log-transformed measures.

For a given shareholder meeting, the period we use to estimate expected volume and expected log volume includes all trading days within the period of [-365, -31] days prior to the corresponding record date.[14] 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. We use the same window for the abnormal (log) daily number of trades. Finally, we use a similar definition for abnormal (log) volatility, except that we estimate "expected (log) volatility" as the exponential moving average of daily (log) volatility over all trading days within [-365, -31] days prior to the record date, which allows to put more weight on more recent observations.[15]

5.2. Response around Shareholder Meeting

In this section we focus on the market response around the meeting date during the January 2006 – June 2013 period. In Figure 2 Panel A we report the average values of the non-log-transformed measures of daily abnormal volume, number of trades, and volatility. The corresponding average values for non-log-transformed abnormal volume are reported in Table B.1 of the Appendix.[16]

Figure 2 shows that abnormal volume on the meeting date peaks, and is equal 29%, relative to the average day over the [-365,-31] window prior to the record date. The average abnormal daily volume for the [-4,+4] window around the meeting date is 23.2%.[17] Table 2, Panel A demonstrates that the abnormal volume observed on the meeting date is statistically significant, and that the largest abnormal value is observed on the meeting date (as indicated by the coefficient 0.173 which is significant at the 1% level). Figure 2 (Panel A) and Table 2 (Panel 1) also demonstrate that the number of daily trades and volatility peak on, or one day following, the meeting date, respectively. These findings all provide clear support for Hypothesis 2: Shareholders votes are associated with significant

[14] Using trading days within the [-365,-31] calendar period is equivalent to using the [-252,-21] *trading* days period, which is the period traditionally used in the literature.
[15] This is motivated by the fact that volatility has a long memory. The half life of the exponential moving average is set to be five days, following Bollerslev et al. (2017).
[16] Specifically, for a given type of event (e.g., shareholder meeting), the sample includes [-20,+20] trading days around this event for all events in the sample (e.g., for all shareholder meetings in our sample), and we regress abnormal measures of trading on 41 dummy variables for each of these trading days (without a constant), with standard errors clustered at the company level and at the trading day level.
[17] This number is obtained by summing up abnormal non-log-transformed volume over days [-4,+4] from Table B.1 in Appendix B for meeting dates, and dividing it by 9.

trading activity.

We note that Figure 2 and Table 2 do not demonstrate a clear pattern for abnormal returns around the meeting date (which is reported in percentage points). This emphasizes the importance of examining other variables that capture the market response to the vote beyond abnormal returns.

It is possible that votes affect 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 auditors, and/or voting on say-on-pay. To further capture the most mundane votes, we further require that for all proposals voted upon at the meeting, the vote outcome was consistent with management recommendation. All other meetings are defined as non-routine meetings. In Panel B of Figure 2 we report the abnormal volume around meeting dates of routine meetings versus non-routine meetings. As this figure demonstrates, the abnormal volume on the meeting date for routine meetings is large, and is equal to 28.7% (and it is significant at the 1% level).[18] Hence, this figure clearly demonstrates that shareholder votes are associated with significant trading activity even for the most routine votes. Put differently, observing that a shareholder meeting passes smoothly also catalyzes trades.

The latter finding leads us to ask whether abnormal trading around the shareholder meeting date is particularly large when a particularly important vote takes place. To address this question, in Panel C of Figure 2 we focus on three types of potentially important meetings: 1) meetings pertaining to a shareholder vote on a merger, 2) special meetings,[19] and 3)meetings in which shareholders voted

[18] When we repeat this analysis, but define a routine vote as a vote that includes only votes on director elections and/ or approving the auditors, and we require that all these proposals resulted with a vote outcome consistent with management recommendation, the results remain almost identical. In addition, if we use either the latter definition to define a routine meeting, and also if we use the definition used in the paper, but in both cases we 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, and we continue to observe large abnormal returns around the meeting date for routine votes.

[19] The common issues on the agenda of special meetings are to approve a merger agreement or an acquisition and to authorize the issuance of shares (regular or in connection with an acquisition).

against management recommendation on at least one proposal. Panel C of Figure 2 also includes a fourth category of meetings, which serves as a control group: meetings that do not fall in any of those three categories. Panel C demonstrates 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 110%, 104%, and 48% for special meetings, meetings with a merger vote, and a meetings with an outcomes against management, respectively. In contrast, for meetings that do not fall in one of these three categories, the abnormal volume is only 24%. Table 3 demonstrates that the difference between the abnormal volume for each category of "important" meetings versus the that of regular meetings is significant.[20] Hence, all meetings generate abnormal volume, but important meetings generate larger abnormal volume than others.

Finally, to provide a sense of whether the magnitudes we document throughout this section are large and how they compare to prior events that have been studied in the literature (e.g., Atiase and Bamber, 1994), we repeat our analysis for earnings announcements. Specifically, instead of examining the market response around the meeting date, we examine the market response around 10-K filings (i.e., annual earnings announcements). Figure 2, Panel D reports the company's abnormal trading activity for non-log-transformed measures around annual earnings, using the same definitions and time period as before, where the expected volume, number of trades, and volatility are computed over trading days in [-365,-31] period before the 10-K filing. The corresponding average values for non-log-transformed measures are reported in Table B.1 in Appendix B, while the log-transformed measures are reported in Table B.2. While the abnormal volume on the 10-K filing date is larger than

[20] Specifically, it analyzes trading days in the [0,+4] window after the meeting date and shows that abnormal volume during this window is particularly large for meetings where an important vote takes place. In the first three regressions, the sample includes all meetings, and the explanatory variable is an indicator for each of the three types of important votes. For example, Regression 1 shows that the average abnormal log volume following a merger vote is 172% (0.4234/0.2462) higher than the average abnormal log volume following a meeting without a merger vote. In the last regression, the sample only includes meetings that are not classified as a merger vote, special meeting, or a meeting with outcome against management, so the constant measures the average abnormal log volume around non-important meetings.

that of the average meeting date (40% vs. 29% for the non-log-transformed measure, respectively), the average daily abnormal volume in the [-4,+4] window around the 10-K filing is 20.5%,[21] which is smaller than the comparable figure around shareholder meetings which is equal to 23.2%. Therefore, even relative to other important events experienced by companies, shareholder votes are an important event that generates significant trading activity.

In sum, in this section we demonstrate that abnormal volume is large, across the board, on the shareholder meeting date. This finding supports Hypothesis 2— shareholders votes are associated with significant trading activity.

5.3. Response around Other Vote-related Events

In this section we examine whether the other four vote-related dates (record, proxy filing, ISS recommendation, and outcome filing date) also generate abnormal volume. We investigate these dates because important information may be released on these dates which may affect investors trading patterns (proxy filing, ISS recommendation, and outcome filing date), or because investors may wish to change their voting power as a vote approaches (record). All analyses include the January 2006 – June 2013 period unless noted otherwise.

We find no spike in trading activity around the record date (Panels A of Figure 3 and Panel B of Table 2),[22] which is consistent with the findings of Christoffersen et al. (2007).[23] This finding

[21] This number is obtained by summing up abnormal non-log-transformed volume over days [-4,+4] from Table B.1 in Appendix B for 10-K filings, and dividing it by 9.

[22] It usually takes three days to settle a securities transaction, hence a shareholder interested in being an owner on the record date would have to purchase stock at least three days prior to the record date. However, no spike is documented in Panels E of Figure 2, 3 days prior to the record date.

[23] Christoffersen et al. (2007) find no change in trading volume in the spot market around the record date, however they document a large spike in loan volume but no increase in the price of the vote around the record date in the equity lending market. They explain this pattern by uninformed voters effectively abstaining from voting and passing their votes to other investors, hoping that they 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 record dates. They find 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.

demonstrates that in the spot market, for a typical shareholder meeting, there does not seem to be an abnormal demand for shareholder voting rights. Similarly, Panels B of Figure 3 and Panel C of Table 2 show no significant spike in trading activity on the proxy filing date.[24] This suggests that information revealed by management in the proxy filing has limited effect on trading, especially compared to the effect the vote outcome has on trading. Hence, in contrast to a 10-K filing which generates 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, which generates the abnormal volume.

In Panel C of Figure 3 we examine abnormal trading around the date ISS issues a recommendation. Alexander et al. (2010) and Ertimur et al. (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, suggesting that ISS recommendations may potentially lead to abnormal volume. Motivated by these studies, we examine the abnormal volume 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. This finding suggests that, overall, trading is not clearly catalyzed by ISS recommendation.

However, to further investigate whether ISS recommendation has any impact on abnormal trading, in Panel D of Table 3 we examine whether certain types of ISS recommendations, catalyze trades around the date ISS issues recommendations. Consistent with Alexander et al. (2010) and Ertimur et al. (2013), Panel B suggests that volume increases more substantially when ISS recommends to vote in support of all the proposals, relative to when ISS recommends to vote against at least one of the proposals. In unreported specifications we find that this difference is significant. Hence, we do find an indication that ISS recommendations, and specifically positive ISS recommendations, also

[24] Abnormal volume is larger than zero around the proxy filing date and the record date because these dates frequently fall around the 10-K filings.

affect trades. Nevertheless, this effect seems to apply mainly to certain types of recommendations, and at a smaller magnitude relative to that observed around the meeting date.

We next examine abnormal volume around the date the vote outcome is filed. For this analysis, we use only observations from the period after February 28, 2010, because as described in Section 4, before February 2010 companies filed the vote outcome in 10-K and 10-Q filings (the annual and quarterly financial reports, respectively); since those filings clearly include other substantial information, they do not allow capturing the direct market response specifically to the filing of the vote outcome. In contrast, since March 2010 vote outcomes are filed in 8-K filings (reports for material events), and typically report only the vote outcome. Hence, only data from the latter period allow us to clearly identify the market responses to the filing of vote outcomes. The results reported in Panel F of Figure 3 and Panel D of Table 2 show that abnormal volume peaks at the day the vote outcome is reported. Hence, on the day the vote outcome is filed, which is the first day some of the companies disclose the vote outcome, trading activity peaks and is unusually large.

In sum, this section shows that overall, on the record date, the proxy filing date, and the ISS recommendation date, abnormal volume does not peak. We do observe a peak in abnormal volume on the vote outcome date, which further suggest that the vote outcome offers shareholders meaningful information which they use to determine their subsequent trading.

6. The Relation between Voting and Trading at the Mutual Fund Level

In this section, we examine how votes and trades are related to each other at the investor level. The investors we examine are mutual funds. Mutual funds cast 37% of all votes cast (Schwartz-Ziv and Wermers, 2016) and hence 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 making the decision on how their funds should vote:[25] RR Donnelley et al. (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 of specific proxy items.

Because we are interested in examining how funds' trading patterns change once they observe other shareholders' votes, we want to contrast a fund's votes before versus after it observes the vote outcome. This requires us to identify the date at which funds learn about the vote outcome. As discussed in Section 4, since March 2010 firms have been required to report the outcome of the vote within 4 days of the meeting, and hence during this period, we can be certain that funds learned the vote outcome at the meeting date or very shortly thereafter. In contrast, up to February 2010, the average period between the meeting and the day the vote outcome is published is 51 trading days, which does not allow us to identify the date when the funds learn about the outcome. For this reason, we focus in this section on the period beginning with March 2010. Because ANcerno Ltd. only provided its institutional trading data up to September 2011, the analysis in this section is confined to the period between March 2010 and September 2011. This gives us almost two full years of data, because 80% of shareholder meetings are held between March and September (see Figure 7 on the distribution of shareholder meetings).

We use two measures that capture the magnitudes of a funds' trades at the daily level. The first is Net Fraction of Company Bought (in basis points), which is equal to (net number of the firm's shares bought by the fund during the day)*10,000 / (number of shares outstanding for this firm). The second is Net Fraction of Portfolio Bought (in basis points), which is equal to (net dollar value of the firm's shares bought by the fund during the day)*10,000/ (total dollar value of the fund's overall portfolio at the end of the most recent quarter). We measure these variables in basis points because

[25] Bew and Fields (2012) stress that investment advisors, which include mutual funds, have a fiduciary duty to vote on issues brought up at a shareholder meeting.

on most days, funds do not execute any trades, and hence the average value of these variables is very small.

6.1. Trades During the Period between the Proxy Filing and the Meeting Dates

We first examine the relation between a fund's votes and trades after the fund observes the vote-related information provided by the company in its proxy statement, but before the fund observes the vote outcome. Following Hypothesis 1 and Hypotheses 2a and 2b, the goal of this section (6.1) is to examine whether a fund's votes and trades during the period between the proxy statement and the vote outcome date are correlated, and if they are, what is the direction of the correlation.

6.1.1. Say-on-pay Vote

In this section we focus on the relation between funds' say-on-pay votes and their trades before the meeting. We focus on say-on-pay for two reasons. First, we wish to test Hypothesis 2a, which posits that shareholders learn information about the firm from the vote outcome. We believe say-on-pay is an ideal vote to test this hypothesis: Since January 21, 2011, when say-on-pay became mandatory, say-on-pay votes are held practically every year in most public firms. These votes not only allow shareholders to express their opinions on executive compensation, but are also often viewed as a general vote of confidence and a way for shareholders to express dissatisfaction with management performance (e.g., Cuñat, Gine, and Guadalupe, 2016; Fisch, Palia, and Solomon, 2017).[26] Hence, say-on-pay votes provide, for virtually all companies, a measure of the extent shareholders are supportive of management. The second reason we focus on say-on-pay votes is that if we wish to examine the relation between one particular type of proposal and its relation to the trades made by a fund, say-on-pay is almost the only vote for which our fund-level data provide a sufficient number of observations

[26] According to Francis Bird from Laurel Hill Advisory Group, "The vote is a way for shareholders to say 'We're not happy,' not just on pay, but also on performance" ("'Say on Pay' Changes Ways", *Wall Street Journal*, Feb 21, 2012). See also "Money Managers Increasing Activism on Governance — But Quietly" (*Pension and Investments*, March 19, 2012).

to conduct such an analysis.[27]

Figure 4 presents the average daily "net daily fraction of company bought" and "net fraction of portfolio bought" (both in BP) by the fund between the proxy and the meeting, depending on the say-on-pay vote cast by the fund. As Figure 4 demonstrates, funds in ANcerno are net sellers during our sample period. However, funds that were supportive of management in their say-on-pay votes sold a daily net average of only 0.005 (0.19) basis points of the fraction of company (fraction of portfolio). In contrast, funds that voted against say-on-pay sold more – a daily average of 0.037 (0.5069) basis points. This figure provides preliminary evidence on the positive relation between a fund's votes and trades prior to the meeting.

In Table 4, we investigate more formally the relation between votes and trades. We present the analysis at the fund-company-day level and confine it to the days between the proxy filing and the meeting date. Our primary dependent variable of interest is whether the fund voted in support of say-on-pay. All specifications include a "fund X proxy year" fixed effects[28], which allow us to observe whether in a given proxy year, a given fund trades differently for companies for which it is supportive of management, versus companies for which it is not supportive of management. We also include controls for the fund's stake in the company (fraction of total outstanding shares held by the fund, in basis points), the company's weight in the fund's overall portfolio (in basis points), and the fund's turnover and expense ratios.

In Regressions 1-2, we include only actively managed funds because these are the funds that have discretion over their trades, and in Regressions 3-4 we only include index funds as a falsification

[27] If we restrict our analysis to a particular type of vote to examine the relation between votes and trades, we only have a sufficient number of observations to perform this fund level analysis with respect to the say-on-pay vote and director elections. We do not find a consistent and clear pattern with respect to director elections.
[28] A proxy year starts at the end of July of the prior calendar year, and ends at June of the calendar year.

test.[29] As Regression 1 demonstrates, during the period between the proxy filing and the shareholder meeting, a fund is likely to have a "net fraction of company bought" that is 0.035 basis points larger for companies in which the fund voted in support of management, compared to companies in which it voted against management. Since the average "net fraction of company bought" for actively managed funds during the period included in the regression is -0.0061 basis points (as indicated in the bottom row of Table 4), an increase of 0.035 basis points is substantial. Similarly, Regression 2 documents that when a fund votes in support of say-on-pay, it is likely to increase its portfolio weight in the company by 0.363 basis points more compared to a company in which it votes against say-on-pay, which is significant given that the average unconditional mean of this variable for actively managed funds during the sample period included in Table 4 is -0.2266 basis points.

In contrast, Regressions 3 and 4 do not show any relation between a fund's votes and trades for index funds. This strengthens our conclusion: the positive relation between trades and votes that we document exists only for funds that have discretion over their investment decisions.

6.1.2. Funds Opposing Management

In this section, we continue to examine the relation between shareholder votes and trades, but we use a different measure to capture shareholders' opposition to management, a measure that is based on a fund's votes for *all* proposals for a given meeting: We construct the variable "fund opposed management on at least one proposal". This variable equals one if, at a given meeting, the fund opposed management on at least one proposal, or zero if the fund voted in supported of management for all proposals. Hence, this measure captures whether a fund demonstrated some kind of opposition

[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 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-tradedfund, ftse, holdrs, idx, ind, index, indx, ishares, jones, kbw, market, mkt, morningstar, msci, nasdaq, nyse, powershares, russ,russell, s&p, sandp, sp, spdr, streettracks, stoxx, wilshire, 100, 1000, 1500, 2000, 3000, 400, 4000, 500, 5000, 600, and 900. We exclude from our analysis a small number of funds for which we are unable to match a fund name.

towards management in its voting at a given meeting. We note that on average, shareholders vote on 7 proposals for each meeting, and on average, a given fund opposed management in 32% of the meetings on at least one proposal.

Table 5 demonstrates that during the period between the proxy filing and the meeting date, funds are particularly likely to decrease the magnitudes of their holdings when they vote against management on at least one proposal. Regressions 1 and 3 of Table 5, include a meeting fixed effect to examine whether for a given shareholder meeting, funds that oppose management on at least one proposal are more likely to sell their stocks relative to funds that support management on all proposals.

Regression 1 of Table 5 indicates that funds that oppose management on at least one proposal are likely to decrease the net fraction of the company bought by 0.026 basis points relative to funds that vote in support of management on all proposals. Similarly, Regression 3 documents that such funds are likely to decrease the fraction of the portfolio bought by 0.474 basis points. Regression 4, which includes a "fund X meeting" fixed effect estimates that the "net fraction of portfolio bought" is expected to be 0.141 basis points smaller for investments for which a fund opposed management on at least one proposal, relative to companies for which the fund voted in support of management on all proposals. These magnitudes are large, relative to the corresponding unconditional means which equal -0.0108 and -0.2215, respectively (reported in the last row of Table 5).

Hence, similar to the findings in the prior section (6.1.1), we observe once again that funds that vote against management are likely to decrease their holdings in it between the proxy filing and the meeting date. These findings suggest that, consistent with Hypothesis 2a, fund's votes and trades are positively correlated and complement each other.[30]

[30] We note that it is possible that other types of shareholders, for example, hedge funds, may trade strategically, consistent with Hypothesis 2b.

6.2. Funds Updating their Trades when Vote Results are Made Public

We next examine whether funds update their trading patterns once they observe a vote outcome. We focus on cases in which a fund voted in one direction yet the vote outcome was in the opposite direction, since in these situations the fund observes new information that contradicts its prior beliefs (as proxied by its own vote). We limit the analysis to non-index funds, since we wish to investigate the relation between votes and trades for funds that have discretion in their trading decisions.

6.2.1. Funds Updating Trading Patterns and the Say-on-Pay Vote

In this section we examine whether funds update their trading patterns once they observe the say-on-pay vote outcome. As noted, the say-on-pay vote offers investors on overall feedback on management performance, as assessed by all shareholders. Figure 5 reports the average daily net fraction of company bought by a fund (in basis points) during the period between the proxy filing date and the meeting date (the blue columns) versus the 30 trading days that follow the shareholder meeting (the orange columns). The left two columns report the trades of funds who voted against say-on-pay, and thereby also voted against management recommendation (because management recommended to vote in support of say-on-pay for all proposals), while most other shareholders were supportive of management. Specifically, we define such cases as those in which the fund voted against say-on-pay, while the overall shareholder support for say-on-pay exceeded 80%.[31] Conversely, the right two columns report the trades of funds who votes in favor of say-on-pay, while aggregate shareholder support was less than 80%.

Figure 5 documents that funds update their trading patterns after the meeting in the direction of the vote outcome. In particular, while a fund that votes against management is likely to sell 0.038 basis points of the stock prior to the meeting date, it is likely to buy the stock (although a negligible amount) after the meeting date if it learns that other shareholders were supportive of management

[31] The 80% cutoff corresponds to the 16th percentile of say-on-pay support across all companies in our sample period.

(the left two columns of Figure 5). Conversely, a fund voting in favor of say-on-pay is likely to buy the stock prior to the meeting date, but is likely to sell it after the meeting, once it learns that other shareholders were unsupportive of management (the right two columns of Figure 5).

In Table 6, we examine more formally whether funds update their trading patterns when the vote outcome contradicts their trades. As in Figure 5, we confine the analysis to the period between the proxy filing date and the 30 trading days after the meeting date. Our primary variable of interest is the indicator variable "after meeting" which equals one if the observations corresponds to the days on or after the meeting, and zero if it corresponds to the days before the meeting. We include a "fund X meeting" fixed effect to allow contrasting the votes of a given fund for a given meeting before versus after the meeting.

In Regressions 1 and 2 of Table 6, we focus on observations in which the fund was unsupportive of management, yet the vote outcome was supportive of management, as defined above for Figure 5. In such cases, the net fraction of company (net fraction of portfolio) bought by a fund is expected to be 0.0218 basis points (0.2015 basis points) larger in the 30 days after the meeting, compared to the period between the proxy and the meeting. Since the average fraction of company bought (fraction of portfolio bought) is -0.0162 basis points (-0.1009 basis points) in our sample, the magnitudes noted above are economically large. These results are consistent with those in Figure 5.

In Regressions 3 and 4, we focus on observations in which the fund was supportive of management, yet shareholders were unsupportive (as defined above). Consistent with Figure 5, we observe that funds are more likely to sell the stock after the meeting date compared to before the meeting: the average net fraction of company bought in the 30 days after the meeting is 0.0277 basis points lower compared to the period before the meeting.

Taken together, our results in this section show that, with respect to the say-on-pay vote, funds update their trading patterns in the direction of the vote outcome. This finding is consistent with Hypothesis 2c, which posits that funds will learn about the quality of the firm from the vote outcome, and accordingly, the vote will catalyze funds to adjust their prior trading patterns in the direction of the vote outcome.

6.2.2. Funds Updating Trading Patterns when Vote Outcome Contradicts Their Vote

Hypothesis 2d above posits that shareholders may disagree with each other about what is the best action a company should take, and when a shareholder observes a vote outcome that contradicts the vote he cast it may bring him to realize that his opinion is different from that of most other shareholders. Ultimately, the vote outcome may bring the shareholder to the realization that the other shareholders are pushing the company to take an action which he prefers the company not take (or vice versa), which may catalyze the shareholder to exit. Following Hypothesis 2d, in this section we examine whether funds are likely to decrease their holdings in a firm when they observe a vote outcome that contradicts the vote they cast.

An indication of our findings is reported in Figure 6. In this figure, we define three categories which each capture a vote for which the fund voted in one direction, yet the vote outcome was in the opposite direction: *A*. The vote outcome contradicts the fund's vote concerning at least one proposal discussed at a meeting; *B*. The fund voted with management but the outcome was against management for at least one proposal discussed at a meeting and *C*. The fund voted against management, but the outcome was with management for at least one proposal discussed at a meeting. As a control group, we include category *D*, which includes votes at meetings at which all the fund's votes were consistent with the vote outcome. Figure 6 includes observations from the period between the proxy filing date and 30 days after the meeting date for each of the abovementioned four categories. Panel A reports the average frequency with which funds buy a stock, while Panel B reports the average frequency with which funds sell a stock, before versus after a meeting.

Figure 6 demonstrates that when funds vote in one direction, yet the vote outcome is in the opposite direction (as captured by each of Categories A-C), after the meeting funds are less likely to buy the stock (Panel A) and are more likely to sell the stock (Panel B), relative to fund's trades before the meeting. These findings support Hypothesis 2d, which posits that when funds observe a vote outcome that contradicts the vote they cast, they are more likely to exit.

We note that for Category D (which includes meetings for which all vote outcomes are consistent with the votes cast), the buy and sell frequency is almost identical before versus after the vote, which further emphasizes that it is only after votes for which funds observe outcomes that contradict their own vote that they update their trading patterns. We also point out that the frequency of both the buy (Panel A) and sell (Panel B) trades for each of Categories A-C is substantially larger relative to that observed for Category D, consistent with the findings in Section 5.2 (Figure 2 Panel C). This demonstrates that abnormal trading is particularly prevalent around contentious votes, which are frequently the votes included in categories A-C.[32]

Table 7 reports a story consistent with the one reported in Figure 6. Table 7 includes a "meeting X fund" fixed effect, to allow contrasting how a given fund's trades differ before versus after the vote outcome of a given meeting is observed. Regressions 1-2 examine whether funds trade differently before versus after a meeting for which at least one of the vote outcomes contradicted the vote cast by the fund (i.e., the votes included in Category A in Figure 6). Regression 1 reports that funds are 0.1% less likely to buy a stock after such a vote outcome, while regression 2 reports that funds are 0.5% more likely to sell a stock in the latter case. The latter magnitude is equivalent to an increase of 22.7% (=0.005/0.022) relative to the unconditional mean of the frequency with which these funds sell a stock (reported at the bottom of Table 7), and hence it is economically meaningful.

Similarly, funds are less likely to buy a stock, and more likely sell a stock, after a meeting that

[32] For example, for 32% of the observations included in Category A, at least one vote outcome contradicted management recommendation, while for category D this figure is equal to only 8%.

included at least one proposal for which the fund voted with management yet that same proposal failed (Regressions 3-4, which correspond to Category B in Figure 6), or a vote for which the fund voted against management on at least one proposal yet the vote passed (Regressions 5-6, which correspond to Category C in Figure 6). Put differently, these findings indicate that, consistent with Hypothesis 2d, when a fund observes that at least one vote outcome (of the proposals voted upon for a given meeting) contradicts the vote cast by the fund, after the meeting the fund is less likely to buy the stock, and more likely to sell the stock, i.e., the fund is more likely to exit.[33]

We point out that the findings of Table 7 are not identical with those reported in Table 6 (which focused on say-on-pay votes). In Table 6, we found that when a fund voted against management on a say-on-pay vote, yet the vote outcome was supportive of management, the fund was likely to increase its holdings in the company. That finding supported Hypothesis 2c which posits that shareholders will update their trading patterns in the direction of the vote outcome. Table 7 demonstrates an opposite pattern: when a fund opposes management on at least one proposal, yet that same vote passes, the fund *decreases* its holdings. This finding is consistent with Hypothesis 2d which posits that when a fund observes a vote outcome that contradicts the vote it casts it is likely to exit.

We believe each of these findings provides support for a different hypothesis. As noted, a say-on-pay vote is one that provides overall feedback on management performance. Hence, consistent with Hypothesis 2c, this vote allows shareholders to get an indication of how other shareholders view the overall quality of management. In contrast, Table 7 examines all votes (and the results for this table are almost identical if we drop the say-on-pay vote from this analysis). Hence, for example, Table 7 could include a vote in which a shareholder voted to declassify the board, yet this vote failed, indicating

[33] Using quarterly holdings data, Iliev and Lowry (2015) show that funds disagreeing with ISS recommendations decrease their quarterly holdings following the meeting. In unspecified specifications we do not find a clear pattern with respect to whether and how funds update their trading patterns if the vote outcome contradicts ISS recommendation. However, we note that our measures of funds disagreeing with management is correlated with the measures of funds disagreeing with ISS, and perhaps this limits our ability to obtain significant results in our sample with respect to funds deviating from ISS recommendation.

that the board will likely remain classified. That is, this vote is about an action the company is considering to take (in this case to declassify the board), an action which some shareholders may view as a desirable action (consistent with Bebchuk and Cohen, 2005) while others may not (consistent with Cremers, Litov, and Sepe, 2017). Consistent with Hypothesis 2d, Table 7 demonstrates that once the shareholder observes a vote outcome that contradicts the vote he cast, he realizes his view is different from that of most other shareholders, and that catalyzes his decision to exit.

In sum, in Section 6.2 we find evidence indicating that funds update their trading patterns once they observe the vote outcome. Our findings suggest that they do so both because they learn from the vote outcome about the quality of the firm (consistent with Hypothesis 2c), and because they realize they do not agree with the majority of the shareholders on the actions the company should take (consistent with Hypothesis 2d).

7. When Do Shareholder Votes Have a Particularly Large Impact?

In this section, we return to the stock-level analysis and examine in which situations abnormal trading around shareholder votes is likely to be particularly high.

7.1. Volume and Price Reactions

The models of Kim and Verrechia (1991), Harris and Raviv (1993), and Banerjee and Kremer (2010) predict that when a public announcement is made, there is a positive correlation between abnormal volume and the magnitude of absolute price changes.[34] We test this hypothesis in Table 8. In Panel A (B) of the table, abnormal volume is estimated as log volume on a given day minus the average (median) log volume during the pre-voting period ([-365,-31] window before the corresponding record date. In Regressions 1-5 of the table, we split the sample conditional on the magnitude of the abnormal return. As in Table 6, we confine the analysis to the period between the meeting day until four days

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

after the meeting.

As Regression 1 of Panel A indicates, companies that experienced an abnormal return within the top 15th percentile (i.e., a particularly large and positive abnormal return), experienced an abnormal trading volume equal to 40%. Regression 2 demonstrates that meetings within the 16th -30th percentile of abnormal returns (i.e., positive returns, but smaller than those included in Regression 1) experienced an abnormal volume equal to 10%, i.e., positive but substantially smaller relative to meetings that were followed by a large price change. A similar pattern is observed in Regressions 4 and 5: companies with an absolute return in the bottom 15th percentile experienced a 33.5% abnormal trading volume, and this number is positive but smaller (5.3%) for companies with an absolute return in the bottom 16th -30th percentile.

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., those within the bottom decile of the *absolute* return. As both panels indicate, abnormal volume in this case is significantly smaller compared to meetings in which the price reaction is large. For these no-price-change observations, Panel A reports an insignificant abnormal volume of 0.2% (relative to the average), while Panel B reports a significant abnormal volume of 2.6% (relative to the median). Hence, when virtually no price reaction occurs, abnormal volume does exist if measured relative to the median trading volume (in line with the findings of Kandel and Pearson, 1995). This indicates that relative to a median day, on which no event typically occurs, on shareholder meeting days investors update their priors particularly frequently, even when these updates are not sufficient to move prices.

Finally, in Regressions 6-8 we regress abnormal volume on the absolute value of abnormal return both for the whole sample and for the subsamples with a positive and negative abnormal return. All three regressions confirm that abnormal volume is significantly higher when absolute return is higher. Together, these findings are consistent with the predictions of Kim and Verrechia (1991), Harris and Raviv (1993), and Banerjee and Kremer (2010).

7.2. Information Asymmetry

We next examine how the level of information asymmetry affects market trading around shareholder votes. Kim and Verrechia (1991) predict that the volume reaction to an announcement should increase in the degree of information asymmetry among investors prior to the announcement. We follow Atiase and Bamber (1994) and Chae (2005) and use the proxies in these papers (in the context of earnings announcements) to capture companies with high information asymmetry: companies with a small 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 9. As before, it is confined to the days between the meeting day until four days after the meeting day (including these days). The dependent variable in Regression 1 is an indicator 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 equal to zero otherwise. The dependent variable in Regression 2 is "small company," which is equal to one if the company's market capitalization is below sample median, and equal to zero otherwise. The table shows that abnormal volume for companies covered by few analysts is 133% higher (0.096/0.072) than for companies covered by many analysts, and that abnormal volume for small companies is 29% higher (0.063/0.221) than for large companies. These findings are consistent with the hypothesis that abnormal trading around vote outcomes is particularly high for companies in which information asymmetry is high.

7.3. Distracted Investors

Hirshleifer and Teoh (2003) and DellaVigna and Pollet (2009) argue that investors have limited attention. Following these studies, we hypothesize that the market will pay more attention to shareholder votes when fewer events distract investors' attention. To capture the latter, we use the number of shareholder meetings that take place on the same day that a company's shareholder meeting takes place. Shareholder meetings tend to be clustered on Tuesdays, Wednesdays and Thursdays during April. We demonstrate this in Figure 7 by reporting the distribution of shareholder meetings during the 2011 proxy year; the distribution is very similar for other years.

We test the hypothesis on distracted investors in Table 10. In Regression 1, we only include shareholder meetings held on days on which investors were not distracted, which we define as days with less than 0.5% of shareholder meetings of that proxy year (July to June of the following calendar year). The majority of trading days and approximately one quarter of the meetings fall under this definition. In Regression 2, we restrict attention to meetings that were held on days when investors could be distracted, which we define as days with at least 3% of all meetings within the proxy year. Approximately 20% of the meetings in each proxy year fall under this definition. As Regression 2 documents, the abnormal volume is 43% smaller (-1+0.0941/0.1644) for the second type of meetings compared to the first. [35]

Regressions 3 and 4 consider the entire sample. Regression 3 shows that the larger the percentage of meetings held on the same meeting date, the smaller the abnormal volume around the meeting date. Similarly, Regression 4 shows that abnormal volume is about 13% (0.0222/0.1650) smaller on days on which there were at least 2% of all meetings within that proxy year, compared to days with less than 2% of meetings. Together, these results demonstrate that abnormal volume is lower on days when fewer other shareholder meetings take place, which is consistent with the limited attention hypothesis.

It is important to note that the timing of shareholder meetings is endogenously determined by companies. For example, companies may want to avoid receiving the market's attention to a

[35] Clearly, the date of the shareholder meeting is endogenously determined by the company. For example, companies that expect low shareholder support rates could try to reduce the market's attention to the vote by strategically scheduling their meetings on the same day as other shareholder meetings are expected to occur. If meetings in which shareholders are unsupportive of management generate more attention from the market than regular meetings, then our estimates could potentially be even larger if strategic scheduling of meetings were not possible.

shareholder vote, possibly because they try to conceal a vote that they expect to receive low support rates. Such companies may strategically schedule their shareholder meetings on a day on which many other shareholder meetings are expected to occur. However, if meetings in which shareholders are unsupportive of management generate relatively more attention from the market (which is consistent with our findings in Panel C of Figure 2 and Table 3), then the magnitude of our results could potentially be even larger if strategic scheduling of meetings were not possible.

8. Conclusions

The goal of this paper is to examine the relation between shareholders' voting and trading decisions, both at the stock and at the investor level. At the stock level, we document that abnormal trading volume, daily number of trades, and volatility are all substantially larger around the shareholder meeting date compared to the pre-voting period. The increase in abnormal volume exists even for routine votes, and is economically large. At the investor level, we study how a shareholder's trading and voting decisions are related before the aggregate vote outcome is made public, as well as whether shareholders update their trading patterns after observing the votes of other shareholders. We show that before vote results are disclosed, mutual funds' trades and votes are positively correlated: funds are more likely to sell the stock if they vote against management on the say-on-pay proposal, or against management on at least one proposals. However, after the vote outcome is made public, funds change the direction of their trades if the aggregate vote outcome contradicts their own vote. Taken together, our study shows that there is a strong link between investors' trading and voting decisions.

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Figure 1: Timeline around Shareholder Meetings

The figures on the timeline represent the average (median) number of trading days between events. All figures correspond to the January 1, 2006-June 30, 2013 period, unless noted otherwise. Until February 27, 2010, companies were permitted to report the vote outcomes in a 10-Q or a 10-K; Starting from February 28, 2010 companies were required to report the outcome of the vote within 4 days in an 8-K. Accordingly, the period between the shareholder meeting and the date the vote outcome is made public differs before versus after February 28, 2010, as indicated below.

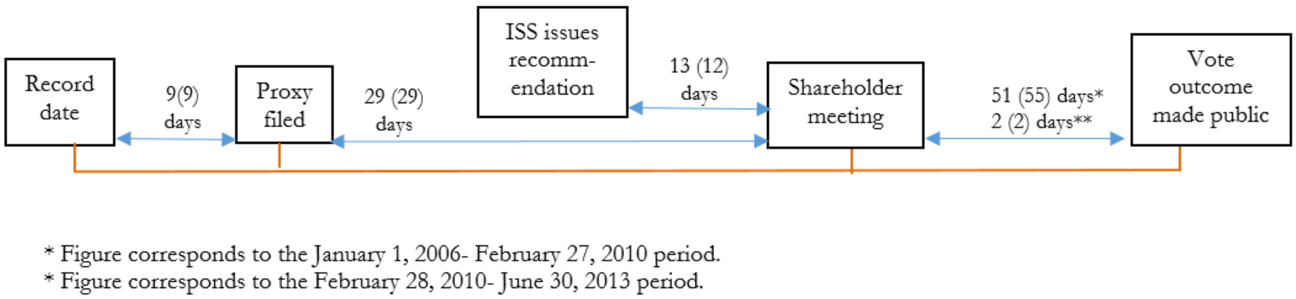
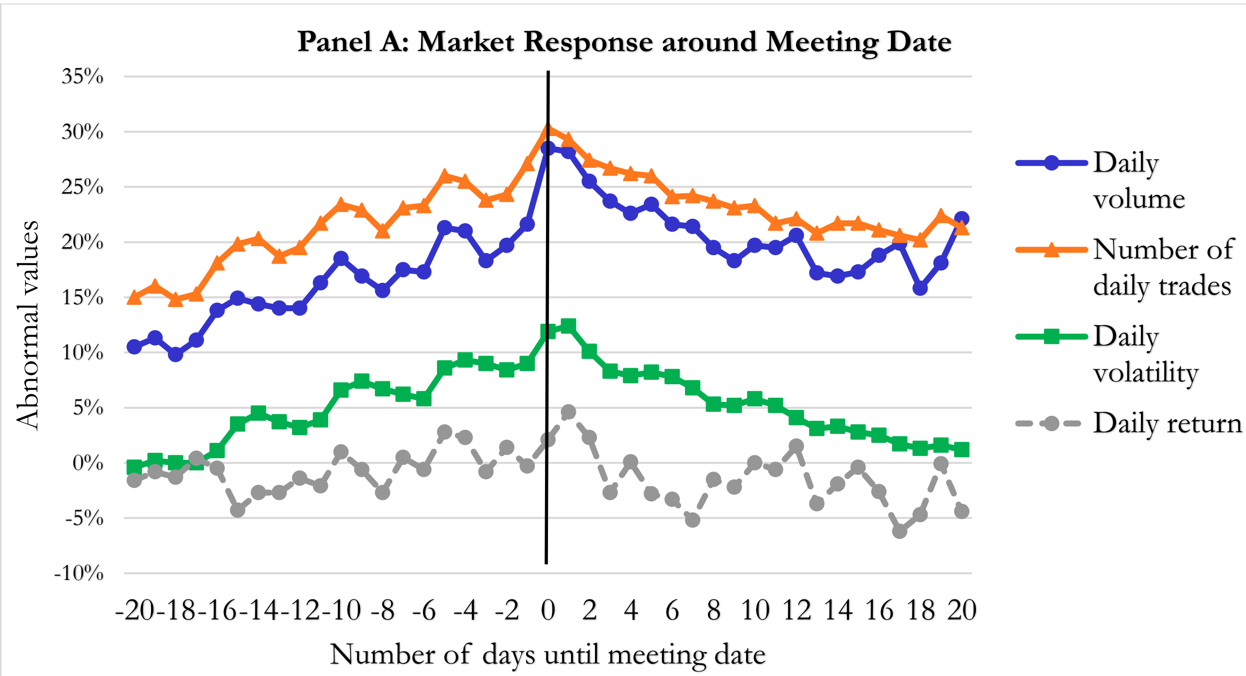
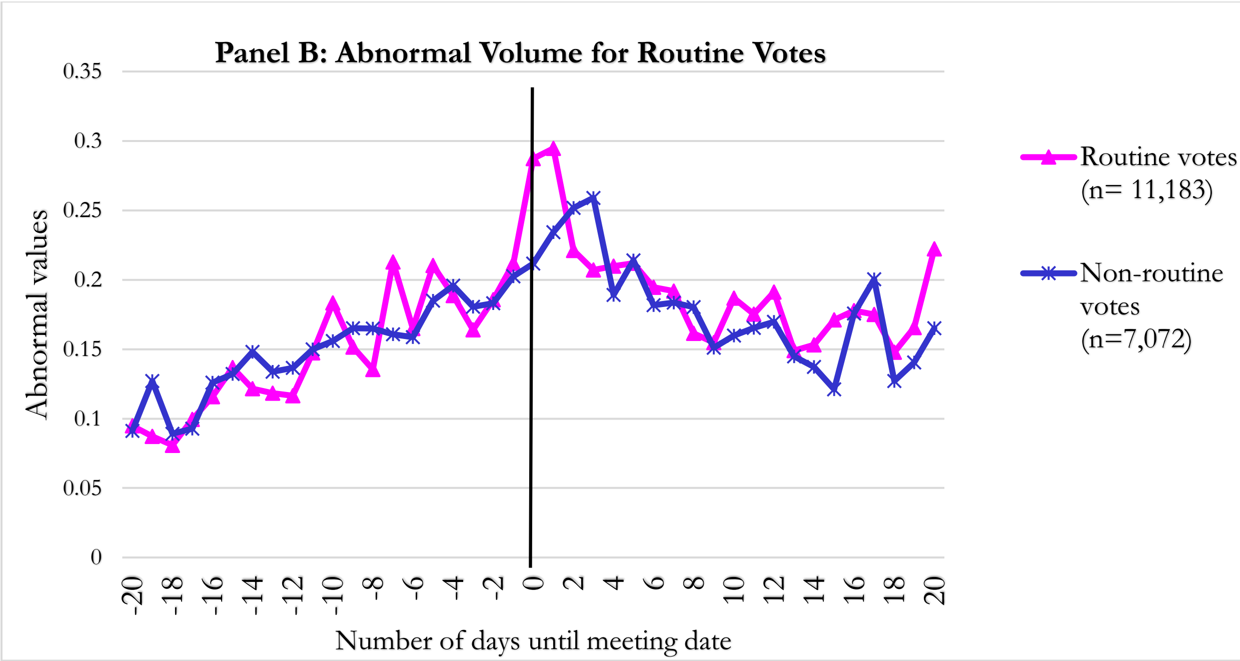


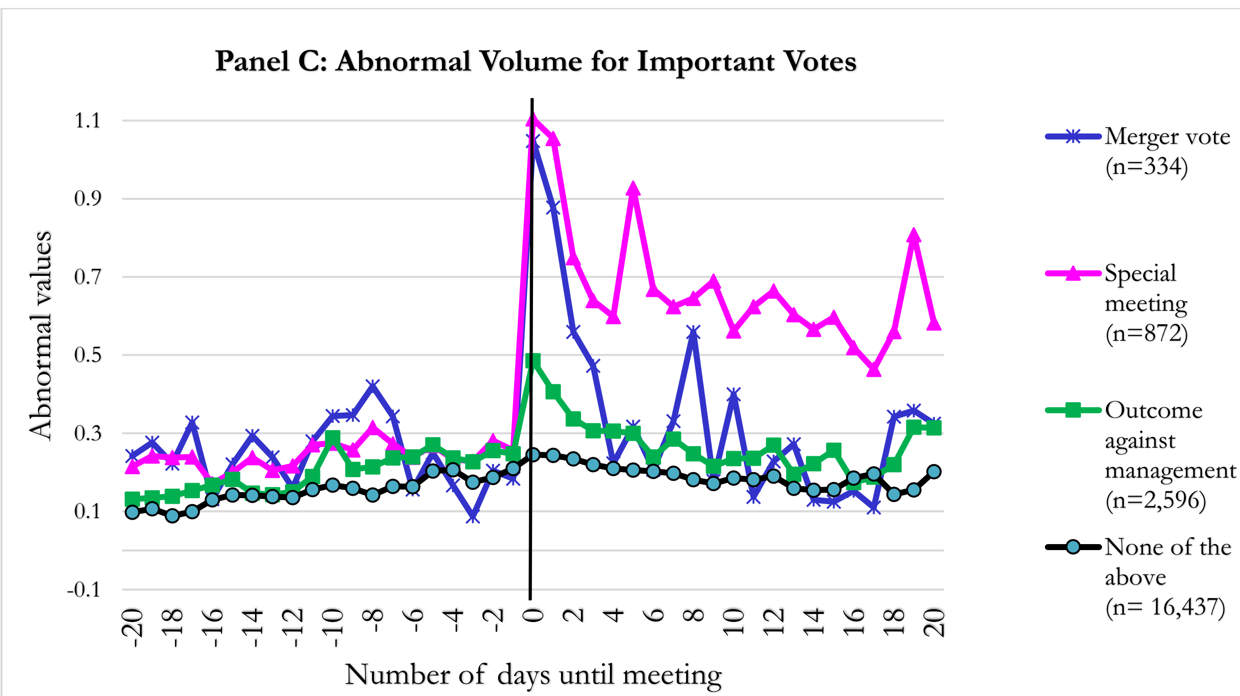
Figure 2: Market Response around Meeting Date

Panel A reports the company's 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 meeting are defined as meetings that include only the basic proposals companies are required to include on their agenda, i.e., proposals on appointing directors, approving the auditors, and/or voting on say-on-pay, and for which the vote outcome was consistent with management recommendation for all proposals voted upon at the meeting; all other meetings are defined as non-routine meetings. *Panel C* reports the daily average abnormal volume for four types of shareholder meetings – those involving a vote on a merger, special meetings, meetings with at least one vote outcome that contradicted management recommendation, and meetings that cannot be classified as any of the three types above ("none of the above"). *Panel D* reports the company's average abnormal daily volume, daily number of trades, daily volatility and daily return around 10-K filings. *All* panels report data for the January 2006-June 2013 period. In Panels A-C, abnormal values for volume and daily number of trades are estimated as [the daily value divided by the average daily value during the pre-voting period (all trading days within the [-365,-31] window before the record date)] minus one, and 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 and momentum factors. For Panel D the abnormal values are estimated using the same method note above, however, instead of using the [-365,-31] window before the record date, the [-365,-31] window before the 10-K is used.





Panel B: Abnormal Volume for Routine Votes
Abnormal values
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
-20 -18 -16 -14 -12 -10 -8 -6 -4 -2 0 2 4 6 8 10 12 14 16 18 20
Number of days until meeting date
Routine votes (n= 11,183)
Non-routine votes (n=7,072)



Panel C: Abnormal Volume for Important Votes
Abnormal values
1.1
0.9
0.7
0.5
0.3
0.1
-0.1
-20 -18 -16 -14 -12 -10 -8 -6 -4 -2 0 2 4 6 8 10 12 14 16 18 20
Number of days until meeting
Merger vote (n=334)
Special meeting (n=872)
Outcome against management (n=2,596)
None of the above (n= 16,437)

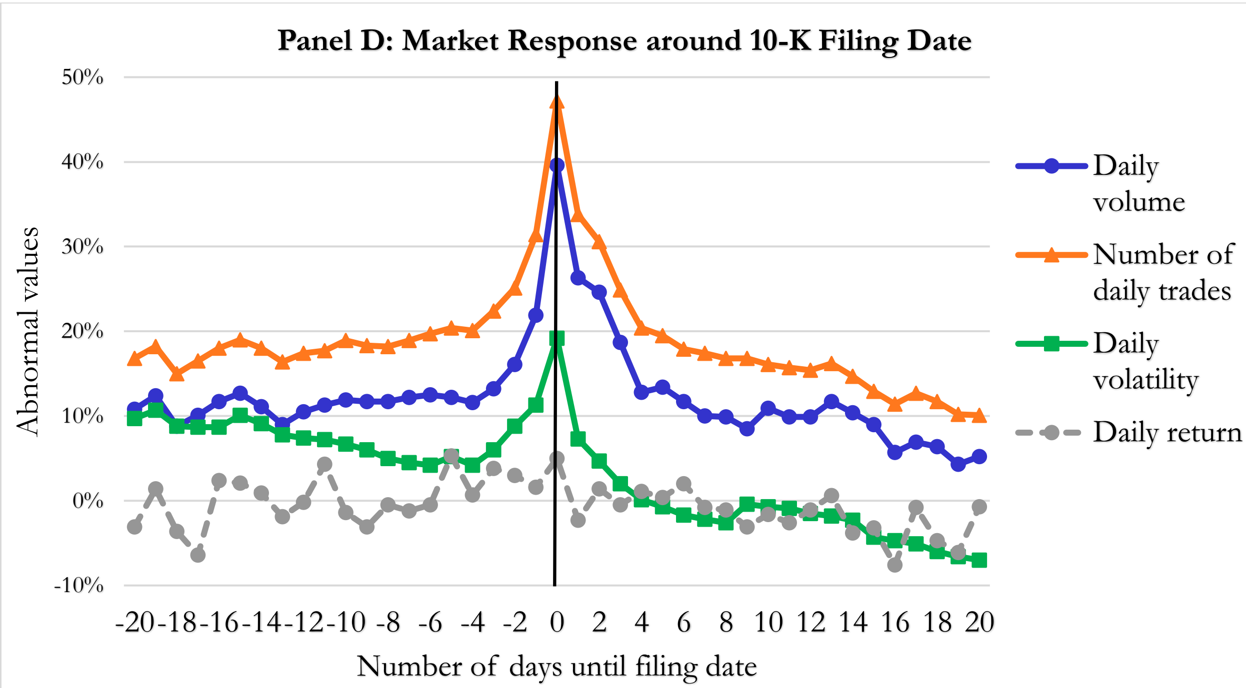
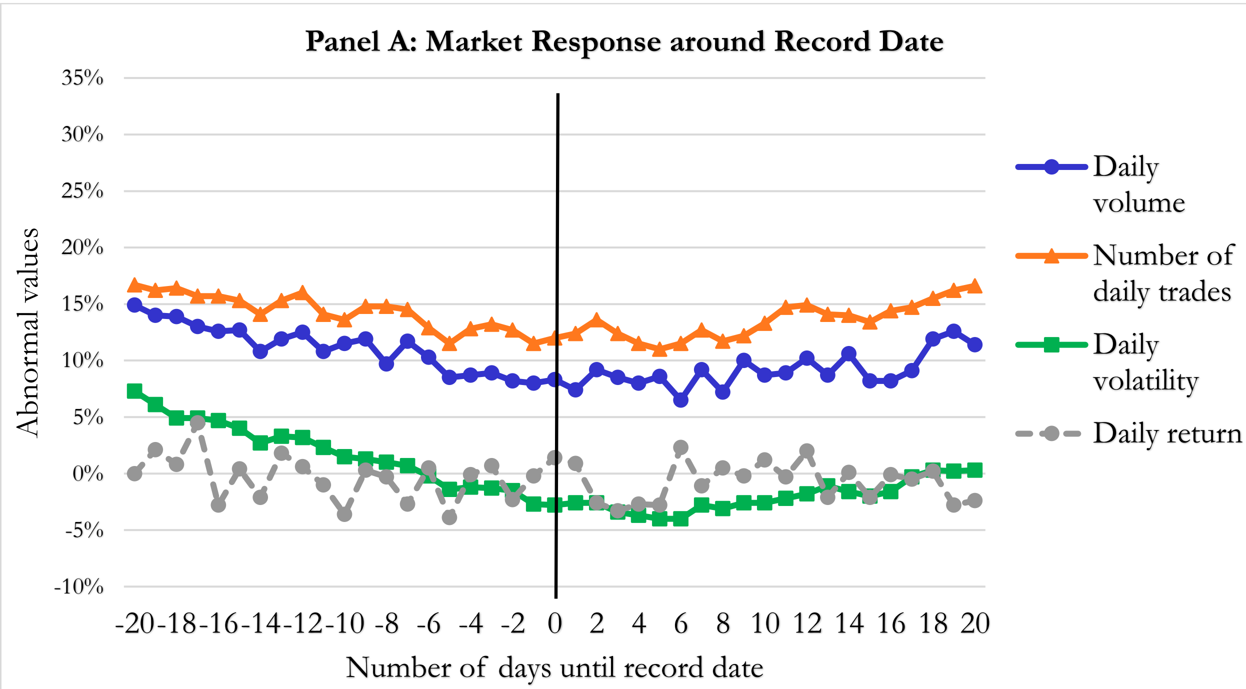
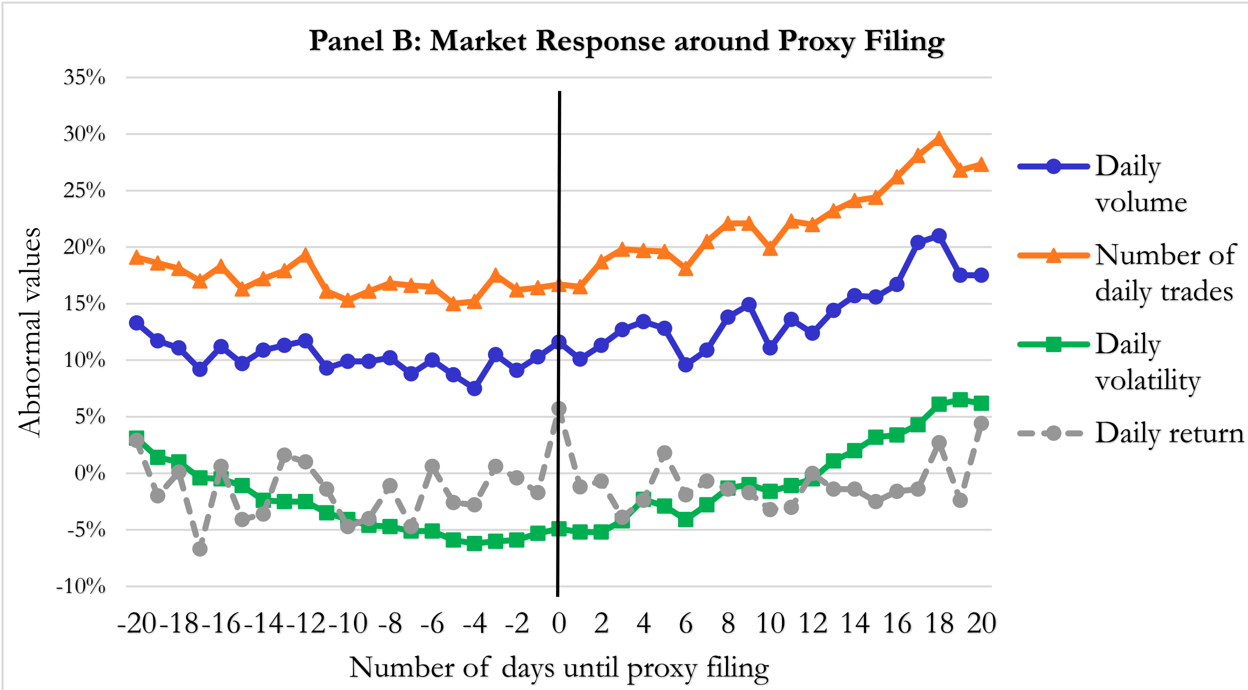
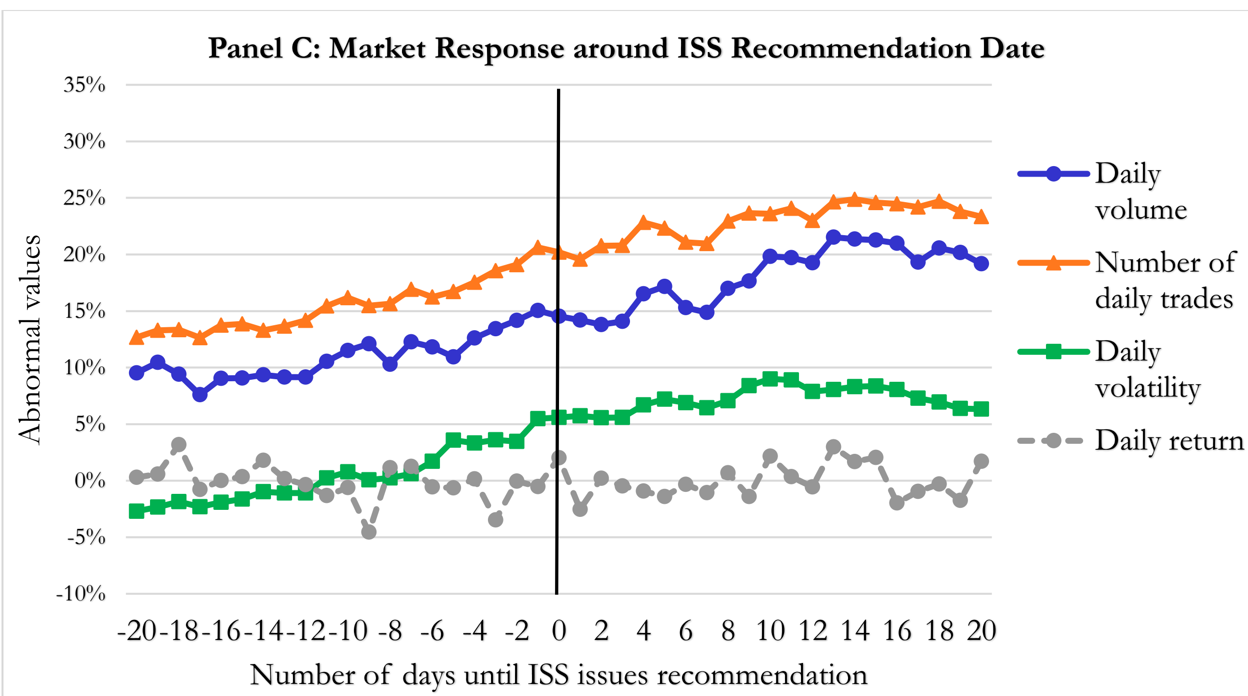
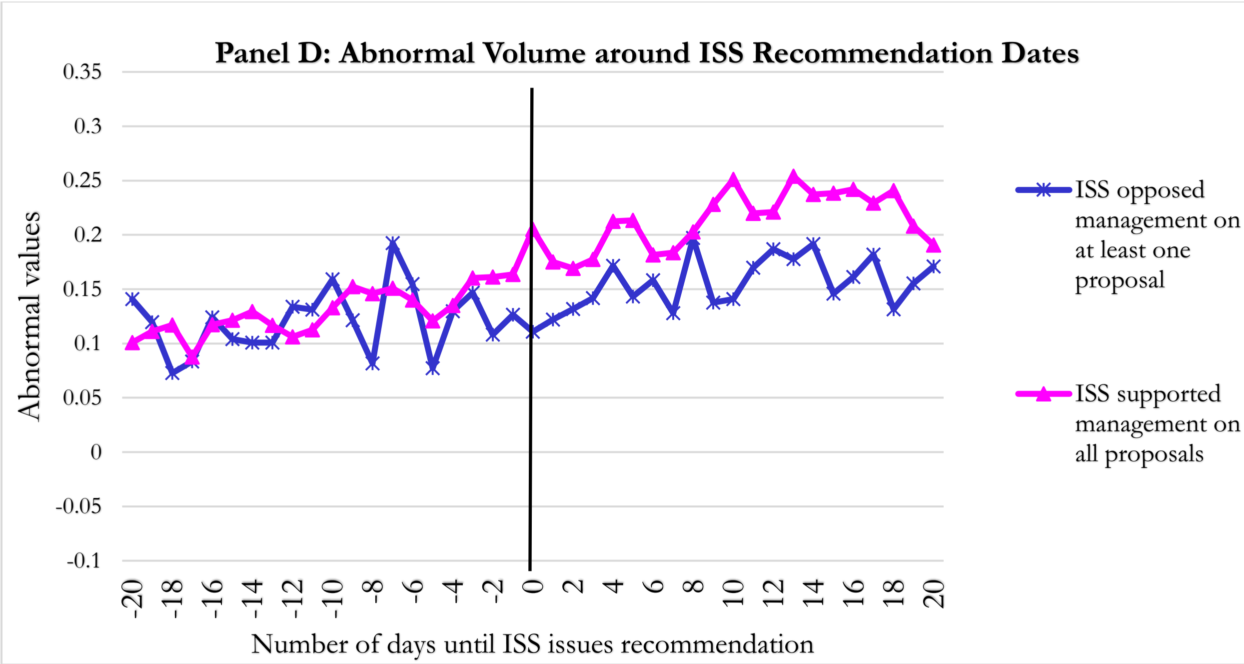

Panel D: Market Response around 10-K Filing Date
50%
40%
30%
20%
10%
0%
-10%
Abnormal values
-20 -18 -16 -14 -12 -10 -8 -6 -4 -2 0 2 4 6 8 10 12 14 16 18 20
Number of days until filing date
Daily volume
Number of daily trades
Daily volatility
Daily return

Figure 3: Market Response around Record, Proxy, ISS Recommendation, and Meeting Date
This figure reports the company's average abnormal daily volume, daily number of trades, daily volatility and /or daily return on days around the record date (Panel A), proxy filing (Panel B), date ISS issues its recommendations (Panels C and D) and the filing of the vote outcome, (Panel E). Abnormal values for volume and daily number of trades are estimated as [the daily value divided by the average daily value during the pre-voting period (all trading days within the [-365,-31] window before the record date)] minus one, and 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 and momentum factors. Panels A-D report data for meetings that were held between January 2006-June 2013, and panel E corresponds to the March 2010-June 2013 period.




Panel B: Market Response around Proxy Filing
35%
30%
25%
20%
15%
10%
5%
0%
-5%
-10%
Abnormal values
-20 -18 -16 -14 -12 -10 -8 -6 -4 -2 0 2 4 6 8 10 12 14 16 18 20
Number of days until proxy filing
Daily volume
Number of daily trades
Daily volatility
Daily return


Panel C: Market Response around ISS Recommendation Date
35%
30%
25%
20%
15%
10%
5%
0%
-5%
-10%
Abnormal values
-20 -18 -16 -14 -12 -10 -8 -6 -4 -2 0 2 4 6 8 10 12 14 16 18 20
Number of days until ISS issues recommendation
Daily volume
Number of daily trades
Daily volatility
Daily return


Panel D: Abnormal Volume around ISS Recommendation Dates
Abnormal values
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.05
-0.1
-20 -18 -16 -14 -12 -10 -8 -6 -4 -2 0 2 4 6 8 10 12 14 16 18 20
Number of days until ISS issues recommendation
ISS opposed management on at least one proposal
ISS supported management on all proposals

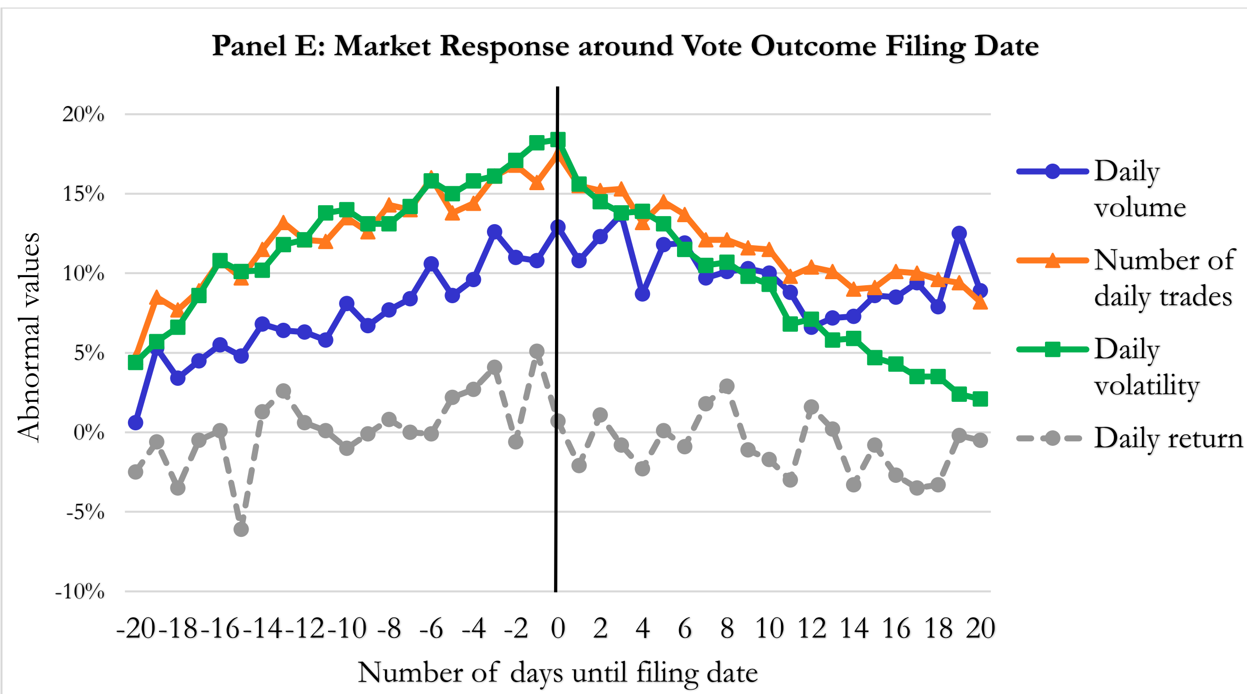

Panel E: Market Response around Vote Outcome Filing Date
Abnormal values
20%
15%
10%
5%
0%
-5%
-10%
-20 -18 -16 -14 -12 -10 -8 -6 -4 -2 0 2 4 6 8 10 12 14 16 18 20
Number of days until filing date
Daily volume
Number of daily trades
Daily volatility
Daily return

Figure 4: Fund Trades between the Proxy Filing and the Meeting Date and Say-on-Pay votes

The figure includes observations for the March 2010-September 2011 period and reports the average daily Net Fraction of Company Bought and the average daily Net Fraction of Portfolio Bought (both in basis points) during the period between the proxy date and the shareholder meeting date (not including these days). The figure is confined to active funds. The left two columns correspond to trades by funds that ultimately voted in support of say-on-pay, and the right two columns correspond to trades by funds that voted against say-on-pay.

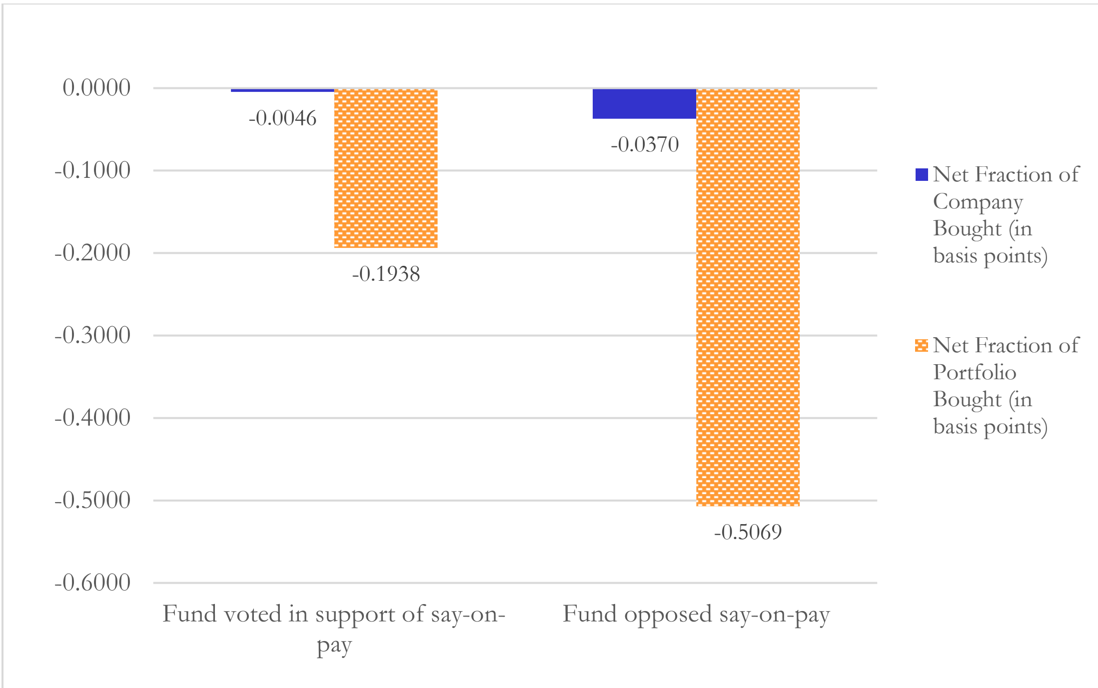


Figure 5: Fund Trades Before and After the Meeting and Say-on-Pay Votes
The figure includes observations for the March 2010-September 2011 period and reports the average daily Net Fraction of Company Bought (in basis points) during the period between the proxy filing date and the meeting date (the blue columns) versus the 30 trading days that follow the meeting date (the orange columns). The left two columns correspond to trades by funds in companies where they voted against say-on-pay and then observed that shareholder support for say-on-pay was above 80%. The right two columns correspond to trades by funds in companies where they voted in favor of say-on-pay and then observed that shareholder support for say-on-pay was below 80%.

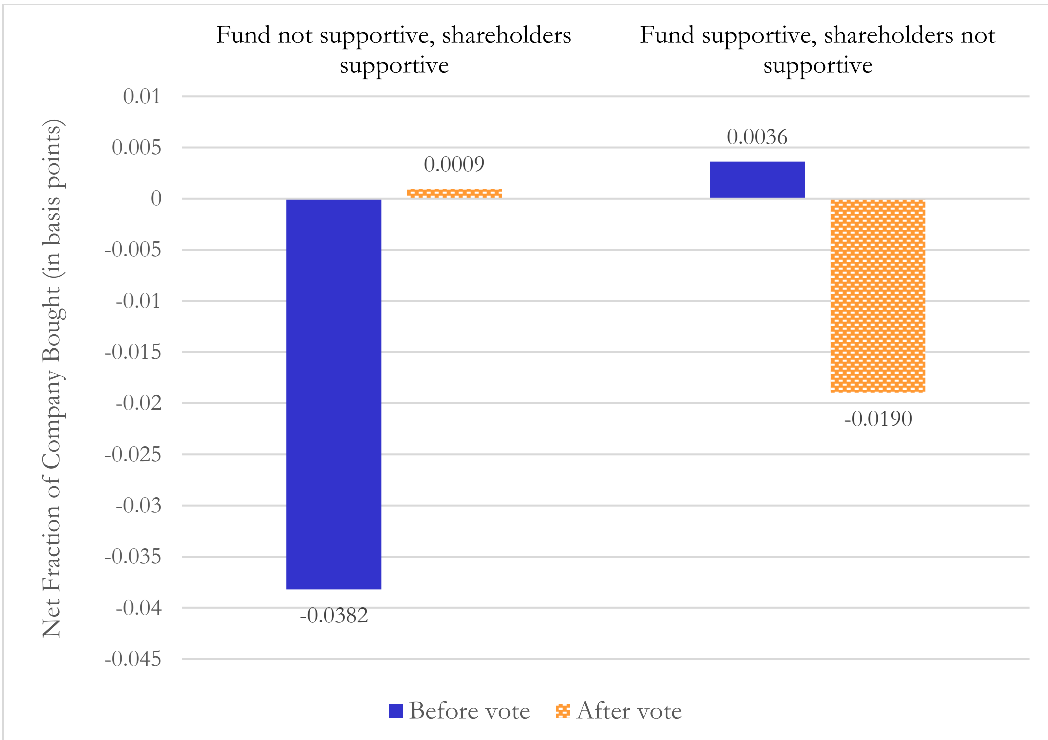
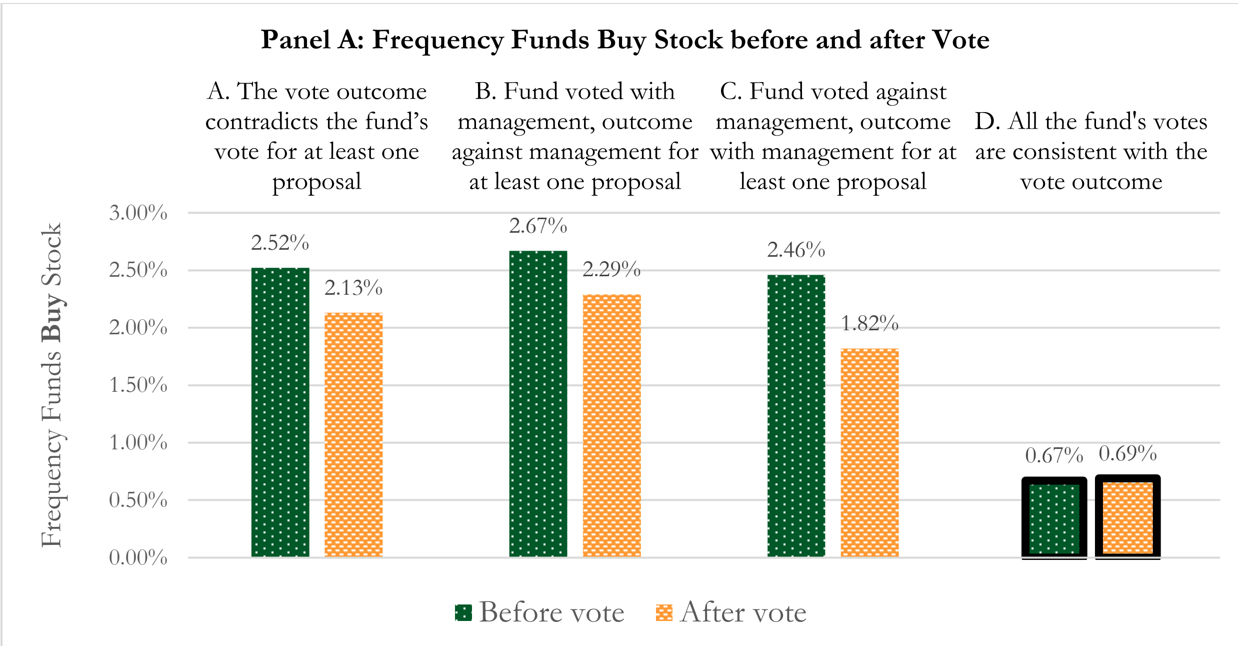


Figure 6: Funds Updating Trading Patterns when Vote Outcome Contradicts the Fund's Vote

The figure includes observations from the March 2010-September 2011 period; Only days between the proxy filing date and 30 days after the meeting date are included. Panel A reports the frequency funds bought a stock, while Panel B reports the frequency they sold a stock. Categories A-C (as indicated below in the both panels) represent meetings for which a fund voted in one direction, yet the vote outcome was in the opposite direction, for at least one proposal. Category D, which serves as a control group, includes the meetings for which all the votes cast by the fund were consistent with the vote outcome.



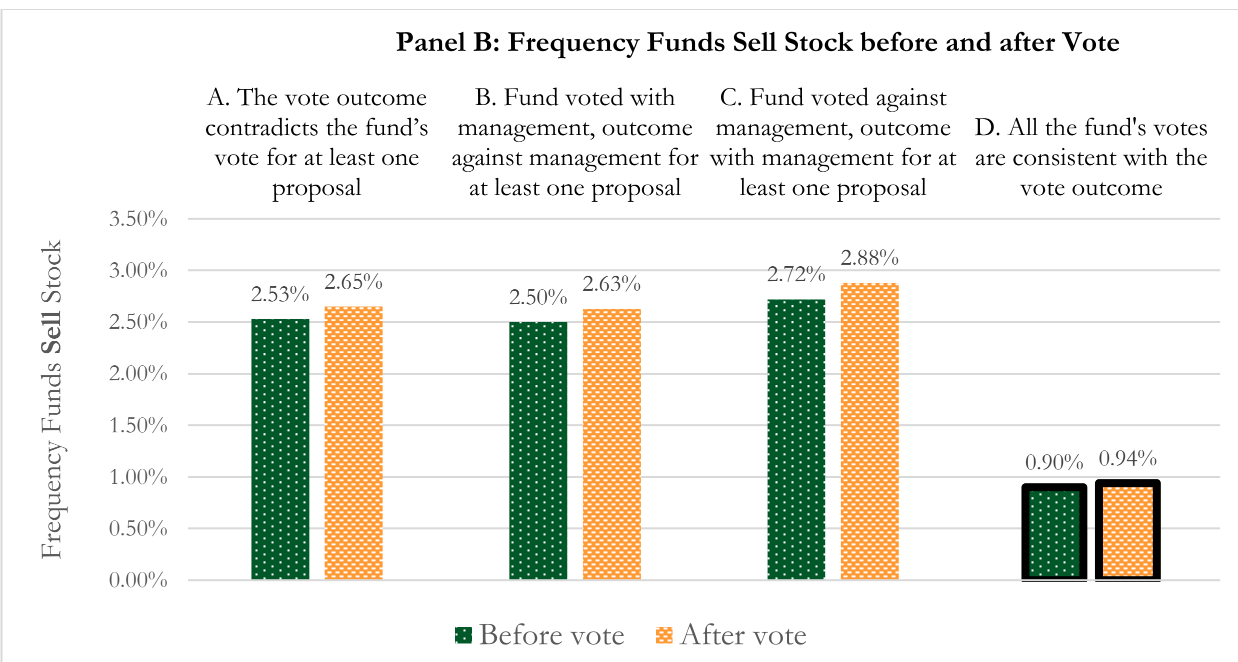


Figure 7: Number of Shareholder Meetings Held on Each Day during the 2011 Proxy Year
The figure reports the number of shareholder meetings held on each day during the 2011 proxy year (July 1st 2010-June 30th 2011) for the 2853 companies included in the ISS Voting Analytics dataset.

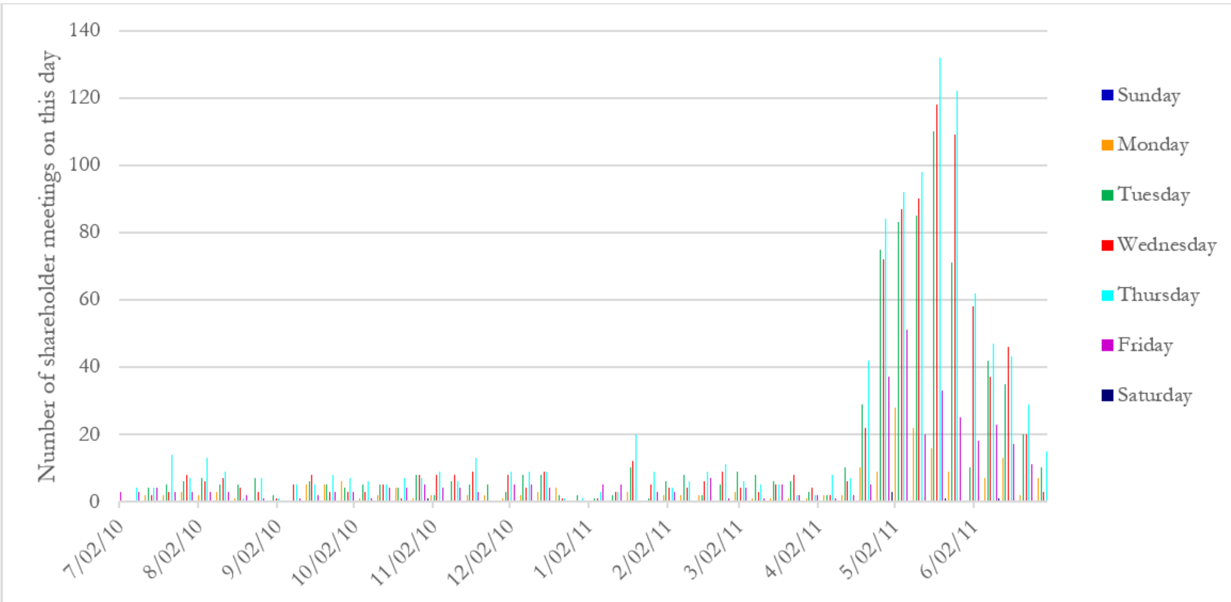


Table 1: Summary Statistics
This table provides summary statistics on the data used in the paper.

Item	Total
Company level data:	
Number of unique companies	4,029
Unique number of shareholder meetings	21,290
Fund level data:	
Number of unique funds included in sample:	
Funds identified as actively managed funds	201
Funds identified as index funds	41
Number of unique fund-meeting combinations:	
Actively managed funds	22,433
Index funds	19,163

Table 2: Fund Volume, Daily Number of Trades, Volatility and Returns around Vote Events

This table reports, on the stock level, the average abnormal daily log volume, abnormal daily log number of trades, abnormal daily log volatility, and abnormal daily return on days around shareholder meetings (Panel A), record date (Panel B), proxy filing (panel C) and the filing of the vote outcome, (Panel D). Specifically, for a given type of event (e.g., shareholder meeting), the sample includes [-20,+20] trading days around this event for all events in the sample (e.g., for all shareholder meetings in our sample), and we regress abnormal measures of trading on 41 dummy variables for each of these trading days (without a constant), with standard errors clustered at the company level and at the trading day level. Abnormal values for log volume and log number of trades are estimated as the daily log value minus the average daily log value during the pre-voting period (all trading days within the [-365,-31] window before the record date), and abnormal log volatility is estimated as the daily log value minus the exponential moving average of daily log 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 and momentum factors. Panels A-C report data for meetings that were held between January 2006-June 2013, and panel D corresponds to the March 2010-June 2013 period. T-statistics are reported in parentheses. * indicates p<.10, ** p<.05, and *** p<.01.

	Panel A. Event examined: Meeting date								Panel B. Event examined: Record date							
Day	Volume		Num. of daily trades		Volatility		Return		Volume		Num. of daily trades		Volatility		Return	
	coefficient	T-stat.	coefficient	T-stat.	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)	(13)	(14)	(15)	(16)
-20	0.054***	(5.310)	0.094***	(10.216)	-0.042***	(-4.736)	-0.016	(-0.837)	0.106***	(11.152)	0.122***	(12.574)	0.025***	(2.964)	-0.021	(-1.010)
-16	0.079***	(7.520)	0.112***	(11.203)	-0.028***	(-2.971)	-0.004	(-0.203)	0.087***	(9.745)	0.113***	(12.452)	0.005	(.592)	-0.028	(-1.432)
-12	0.077***	(7.845)	0.117***	(12.369)	-0.011	(-1.190)	-0.015	(-0.714)	0.082***	(8.536)	0.114***	(11.696)	-0.006	(-0.726)	0.006	(.342)
-8	0.098***	(9.363)	0.134***	(13.046)	0.018	(1.557)	-0.028	(-1.424)	0.072***	(7.358)	0.105***	(10.356)	-0.027***	(-3.192)	-0.003	(-0.181)
-4	0.133***	(13.382)	0.164***	(16.418)	0.043***	(4.010)	0.022	(1.305)	0.054***	(5.501)	0.085***	(8.568)	-0.045***	(-5.421)	-0.002	(-0.106)
-3	0.120***	(11.965)	0.156***	(15.259)	0.039***	(3.540)	-0.008	(-0.471)	0.060***	(6.008)	0.091***	(9.203)	-0.042***	(-5.131)	0.007	(.385)
-2	0.134***	(13.983)	0.163***	(16.456)	0.037***	(3.575)	0.014	(.756)	0.052***	(4.956)	0.084***	(8.385)	-0.043***	(-5.274)	-0.023	(-1.189)
-1	0.148***	(16.209)	0.185***	(19.762)	0.043***	(4.398)	-0.004	(-0.217)	0.050***	(4.536)	0.071***	(7.226)	-0.054***	(-6.789)	-0.002	(-0.115)
0	**0.173*** **	**(16.670)**	**0.199*** **	**(19.358)**	**0.067*** **	**(6.144)**	**0.021**	**(1.112)**	**0.057*** **	**(5.394)**	**0.077*** **	**(7.763)**	**-0.054*** **	**(-6.715)**	**0.014**	**(.816)**
1	0.172***	(14.619)	0.189***	(16.659)	0.064***	(5.549)	0.046**	(2.496)	0.055***	(5.213)	0.086***	(8.297)	-0.053***	(-6.633)	0.009	(.498)
2	0.151***	(13.053)	0.176***	(15.901)	0.050***	(4.511)	0.023	(1.088)	0.054***	(5.175)	0.089***	(8.474)	-0.054***	(-6.586)	-0.027	(-1.443)
3	0.149***	(14.120)	0.176***	(17.296)	0.041***	(4.037)	-0.027	(-1.541)	0.048***	(4.508)	0.078***	(8.135)	-0.061***	(-7.401)	-0.033*	(-1.925)
4	0.139***	(14.287)	0.176***	(18.348)	0.041***	(4.423)	0.001	(.034)	0.048***	(4.624)	0.070***	(7.690)	-0.063***	(-8.282)	-0.028	(-1.516)
8	0.124***	(11.744)	0.153***	(14.767)	0.020**	(2.107)	-0.015	(-0.802)	0.036***	(3.529)	0.073***	(7.635)	-0.058***	(-7.482)	0.005	(.267)
12	0.103***	(8.651)	0.137***	(12.523)	0.013	(1.395)	0.015	(.831)	0.055***	(5.384)	0.089***	(9.045)	-0.048***	(-5.702)	0.02	(1.035)
16	0.101***	(8.436)	0.125***	(11.827)	0.001	(.130)	-0.026	(-1.563)	0.046***	(4.594)	0.089***	(9.055)	-0.047***	(-5.628)	-0.002	(-0.103)
20	0.113***	(8.026)	0.124***	(10.998)	-0.01	(-1.159)	-0.045***	(-2.587)	0.061***	(5.862)	0.098***	(9.320)	-0.032***	(-3.576)	-0.024	(-1.337)
N	787,941		826,163		828,660		784,148		714,923		743,851		744,225		709,765	

	Panel C. Event examined: Proxy filing date								Panel D. Event examined: Vote outcome is filed							
Day	Volume		Num. of daily trades		Volatility		Return		Volume		Num. of daily trades		Volatility		Return	
	coefficient	T-stat.	coefficient	T-stat.	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)	(13)	(14)	(15)	(16)
-20	0.105***	(8.403)	0.148***	(11.604)	0.003	(.302)	0.03	(1.326)	-0.032**	(-2.464)	0.004	(.352)	0.008	(.630)	-0.025	(-1.079)
-16	0.082***	(6.275)	0.136***	(10.652)	-0.031**	(-2.548)	0.006	(.238)	0.018	(1.280)	0.050***	(3.784)	0.055***	(3.590)	0.001	(.048)
-12	0.083***	(6.540)	0.138***	(10.495)	-0.047***	(-4.002)	0.011	(.397)	0.029**	(2.189)	0.065***	(5.131)	0.070***	(4.428)	0.006	(.240)
-8	0.071***	(5.577)	0.126***	(9.726)	-0.069***	(-6.438)	-0.012	(-0.505)	0.033**	(2.465)	0.074***	(6.176)	0.086***	(6.208)	0.008	(.358)
-4	0.058***	(4.400)	0.114***	(8.592)	-0.082***	(-8.208)	-0.027	(-1.085)	0.053***	(4.400)	0.093***	(8.110)	0.104***	(6.688)	0.026	(1.029)
-3	0.059***	(4.483)	0.118***	(8.719)	-0.081***	(-7.705)	0.006	(.204)	0.070***	(5.657)	0.103***	(9.199)	0.108***	(7.006)	0.040*	(1.850)
-2	0.054***	(4.343)	0.111***	(8.687)	-0.080***	(-7.542)	-0.003	(-0.126)	0.066***	(5.543)	0.103***	(9.261)	0.116***	(7.582)	-0.006	(-0.221)
-1	0.062***	(4.686)	0.116***	(9.111)	-0.076***	(-6.983)	-0.017	(-0.551)	0.066***	(4.763)	0.100***	(8.059)	0.122***	(7.134)	0.052**	(2.255)
0	**0.074*** **	**(5.421)**	**0.118*** **	**(8.951)**	**-0.074*** **	**(-6.997)**	**0.057** **	**(1.977)**	**0.080*** **	**(5.114)**	**0.106*** **	**(7.734)**	**0.119*** **	**(7.102)**	**0.005**	**(.232)**
1	0.059***	(4.476)	0.119***	(8.948)	-0.077***	(-7.275)	-0.011	(-0.467)	0.067***	(5.050)	0.099***	(8.648)	0.108***	(7.778)	-0.021	(-0.915)
2	0.064***	(4.574)	0.126***	(8.854)	-0.081***	(-7.525)	-0.007	(-0.250)	0.070***	(5.323)	0.096***	(8.263)	0.099***	(7.472)	0.011	(.485)
3	0.073***	(5.204)	0.134***	(9.743)	-0.070***	(-6.000)	-0.038	(-1.498)	0.066***	(4.932)	0.094***	(8.595)	0.097***	(7.199)	-0.008	(-0.368)
4	0.074***	(5.049)	0.132***	(9.201)	-0.064***	(-4.194)	-0.021	(-0.763)	0.054***	(4.105)	0.077***	(6.381)	0.094***	(6.464)	-0.023	(-1.120)
8	0.090***	(7.020)	0.152***	(11.149)	-0.047***	(-3.869)	-0.013	(-0.516)	0.044***	(3.243)	0.071***	(6.582)	0.073***	(5.660)	0.031	(1.338)
12	0.092***	(7.667)	0.159***	(12.272)	-0.038***	(-3.017)	0	(.001)	0.019	(1.380)	0.048***	(4.258)	0.050***	(4.332)	0.016	(.709)
16	0.112***	(8.434)	0.181***	(12.862)	-0.01	(-0.743)	-0.017	(-0.619)	0.019	(1.378)	0.040***	(3.778)	0.026**	(2.367)	-0.027	(-1.358)
20	0.128***	(9.033)	0.195***	(13.436)	0.015	(.980)	0.045*	(1.710)	0.01	(.588)	0.025**	(2.220)	0.005	(.468)	-0.006	(-0.270)
N	396,261		406,421		406,437		394,734		345,807		359,930		360,791		343,170	

Table 3: Important Votes

This table compares abnormal volume around meetings with important votes to abnormal volume around routine meetings. The outcome variable is the average abnormal daily log volume during the [0,+4] window following the meeting. Abnormal values for log volume are estimated as the daily log volume minus the average daily log volume during the pre-voting period (all trading days within the [-365,-31] window before the record date). The analysis includes meetings that were held between January 2006-June 2013. In the first three regressions, the sample includes all meetings and the explanatory variable is an indicator for each of the three types of important votes: "special meeting" is an indicator equal to one if the meeting was a special meeting as classified by ISS Voting Analytics, "merger vote" is an indicator equal to one if the meeting featured a vote on a merger, and "outcome against management" is an indicator equal to one if at least one of the votes held was in the opposite direction than that recommended by management. In the last regression, the sample only includes meetings that are not classified as any of the three important votes above, so the constant measures the average abnormal volume around non-important meetings. Standard errors are clustered on company level. T-statistics are reported in parentheses. * indicates p<.10, ** p<.05, and *** p<.01.

	Abnormal volume			
	(1)	(2)	(3)	(4)
Constant	0.2462*** (19.746)	0.2326*** (17.989)	0.2258*** (19.140)	0.2222*** (17.236)
Merger vote	0.4234*** (5.112)			
Outcome against management		0.1516*** (3.752)		
Special meeting			0.6670*** (5.767)	
Meetings included	All	All	All	No merger, no outcome against management, not a special meeting
R-squared	0	0	0.003	0
N	94,122	94,107	94,107	80,013

Table 4: Trades between Proxy Filing and Meeting Date and Say-on-Pay votes
This table reports, on the fund-company-day level, fund's trades between the proxy filing and the meeting date (not including these dates), during the March 2010–September 2011 period. Regressions 1-4 include only actively managed funds, whereas Regressions 5-8 include only index funds. Net Fraction of Company Bought (in basis points) is equal to (net number of the firm's shares bought by the fund during the day)*10,000 / (number of shares outstanding for this firm). Net Fraction of Portfolio Bought (in basis points) is equal to (net dollar value of the firm's shares bought by the fund during the day)*10,000/ (total dollar value of the fund's overall portfolio at the end of the most recent quarter). T-statistics are reported in parenthesis. * indicates p<.10, ** p<.05, and *** p<.01.

	Net Fraction of Company Bought (in BP)	Net Fraction of Portfolio Bought (in BP)	Net Fraction of Company Bought (in BP)	Net Fraction of Portfolio Bought (in BP)
	(1)	(2)	(3)	(4)
Fund voted for say-on-pay	**0.035** (2.394)**	**0.363* (1.753)**	0.006 (.521)	0 (-0.017)
Book-to-market ratio	0.014** (2.042)	0.074 (.792)	-0.004 (-1.267)	0.006** (2.214)
Fraction of company held by the fund	-0.001*** (-7.439)	0.001 (.455)	0 (-1.390)	-0.000*** (-4.852)
Portfolio weight (in fraction)	0 (-0.352)	-0.005*** (-6.073)	0 (-0.464)	0.001*** (77.714)
Fund's expense ratio	5.932 (.186)	156.156 (.346)	3.931 (.327)	6.53 (.616)
Turnover ratio of the fund	0.049 (.326)	4.341** (2.028)	-0.800** (-2.285)	0.383 (1.240)
Type of funds included	Active funds	Active funds	Index funds	Index funds
Fund X proxy year FE	Yes	Yes	Yes	Yes
R-squared	0.005	0.003	0.002	0.046
N	184,041	184,041	190,362	190,362
Unconditional mean of dependent variable in table sample	-0.0061	-0.2266	0.0102	0.0198

Table 5: Funds Opposing Management and their Trades before the Meeting

This table reports, on the fund-company-day level, fund's trades between the proxy filing and the meeting date (not including these dates), during the March 2010–September 2011 period. All regressions include only active managed funds. Net Fraction of Company Bought (in basis points) is equal to (net number of the firm's shares bought by the fund during the day)*10,000 / (number of shares outstanding for this firm). Net Fraction of Portfolio Bought (in basis points) is equal to (net dollar value of the firm's shares bought by the fund during the day)*10,000/ (total dollar value of the fund's overall portfolio at the end of the most recent quarter). T-statistics are reported in parenthesis. * indicates p<.10, ** p<.05, and *** p<.01.

	Net Fraction of Company Bought (in BP) (1)	Net Fraction of Company Bought (in BP) (2)	Net Fraction of Portfolio Bought (in BP) (3)	Net Fraction of Portfolio Bought (in BP) (4)
Fund oppose management at least once	-0.026*** (-3.176)	0.003 (.550)	-0.474*** (-4.376)	-0.141** (-2.076)
Book-to-market ratio	0.346** (2.018)	-0.002 (-0.503)	-0.03 (-0.013)	0 (.001)
Fraction of company held by the fund	-0.000*** (-3.553)	-0.000*** (-6.596)	0.002*** (3.003)	0 (.461)
Portfolio weight (in fraction)	0 (-0.886)	0 (-1.592)	-0.003*** (-5.936)	-0.003*** (-5.382)
Fund's expense ratio	1.215* (1.840)	-3.172 (-0.190)	-12.049 (-1.390)	-31.555 (-0.146)
Turnover ratio of the fund	-0.003 (-0.552)	-0.012 (-0.217)	-0.048 (-0.625)	1.465** (1.992)
Type of funds included	Active funds	Active funds	Active funds	Active funds
Fixed effect	Meeting	Fund * proxy year	Meeting	Fund * proxy year
Days included	Proxy to meeting date			
R-squared	0.033	0.005	-0.001	0.003
N	276,389	276,389	276,389	276,389
Unconditional mean of dependent variable in table sample	-0.0108	-0.2215	-0.0108	-0.2215

Table 6: Funds Updating Trading Patterns when Vote Outcome Contradicts Fund's Vote

This table reports on the fund-company-day level fund's trades during the March 2010–September 2011 period. The days included in the analysis are the days between the proxy filing date and up to 30 trading days after the meeting date. All regressions include only active managed funds. Net Fraction of Company Bought (in basis points) is equal to (net number of the firm's shares bought by the fund during the day)*10,000 / (number of shares outstanding for this firm). Net Fraction of Portfolio Bought (in basis points) is equal to (net dollar value of the firm's shares bought by the fund during the 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 days on or after the meeting, and zero if it corresponds to the days before the meeting. T-statistics are reported in parenthesis. * indicates p<.10, ** p<.05, and *** p<.01.

	Net Fraction of Company Bought (in BP)	Net Fraction of Portfolio Bought (in BP)	Net Fraction of Company Bought (in BP)	Net Fraction of Portfolio Bought (in BP)
	(1)	(2)	(3)	(4)
After meeting	**0.0218*** **(1.742)**	**0.2015**** **(2.219)**	**-0.0277***** **(-3.916)**	**-0.0232** **(-0.154)**
Book-to-market ratio	-1.1799* (-1.895)	0.1676 (.037)	0.3077*** (2.848)	1.5607 (.676)
Fraction of company held by the fund	-0.0034 (-0.945)	-0.0531** (-2.042)	-0.0001 (-1.089)	0.0026 (.998)
Portfolio weight (in fraction)	-0.0003 (-0.983)	-0.0079*** (-3.958)	0 (-0.461)	-0.0095*** (-5.547)
Fund's expense ratio	-3.6207 (-0.105)	-180.7621 (-0.723)	44.6694* (1.715)	169.0639 (.304)
Turnover ratio of the fund	0.0059 (.025)	0.569 (.329)	0.1047 (1.144)	6.6691*** (3.411)
Fund X meeting fixed effects	Yes	Yes	Yes	Yes
Fund vote on say-on-pay	Unsupportive		Supportive	
Aggregate vote outcome on say-on-pay	Supportive		Unsupportive	
R-squared	0.018	0.016	0.02	0.002
N	8,277	8,277	77,388	77,388
Unconditional mean of dependent variable in table sample	-0.0162	-0.1009	-0.0102	-0.3122

Table 7: Funds Updating Trading Patterns and Funds Opposing Management

This table reports on the fund-company-day level fund's trades during the March 2010–September 2011 period. The days included in the analysis are the days between the proxy filing date and up to 30 trading days after the meeting date. The dependent variable in the odd-numbered regressions is a binary variable that equals one if the fund bought the stock on the observation day, and zero if the fund did not buy stock. The dependent variable in the even-numbered regressions is a binary variable that equals one if the fund sold the stock on the observation day, and zero if the fund did not sell stock. All regressions include only active managed funds. The table examines whether funds vote differently before versus after a fund observes that for at least one vote cast by the fund for a given shareholder meeting, the vote outcome contradicted the vote cast by the fund. T-statistics are reported in parenthesis. * indicates p<.10, ** p<.05, and *** p<.01.

	Buy (binary) (1)	Sell (binary) (2)	Buy (binary) (3)	Sell (binary) (4)	Buy (binary) (5)	Sell (binary) (6)
After meeting	-0.003*** (-5.309)	-0.005*** (-8.882)	-0.003*** (-6.877)	-0.004*** (-7.956)	-0.003*** (-7.530)	-0.003*** (-6.432)
The vote outcome contradicts the fund's vote for at least one proposal	0.024** (1.970)	0.048*** (3.653)				
The vote outcome contradicts the fund's vote for at least one proposal X after meeting	**-0.001*** **(-1.941)**	**0.005***** **(7.283)**				
Fund voted with management, outcome against management for at least one proposal			-0.019 (-1.333)	0.026* (1.705)		
Fund voted with management, outcome against management for at least one proposal X after meeting			**0** **(-0.619)**	**0.005***** **(6.072)**		
Fund voted against management, outcome with management for at least one proposal					0.040*** (3.070)	0.046*** (3.142)
Fund voted against management, outcome with management for at least one proposal X after meeting					**-0.003***** **(-3.675)**	**0.004***** **(4.115)**
Type of funds included	Active funds					
Meeting X fund FE	Yes	Yes	Yes	Yes	Yes	Yes
Days included	Proxy to 30 trading days after meeting date					
Additional controls	Book-to-market ratio, fraction of company held by the fund, portfolio weight, fund's expense ratio, turnover ratio of the fund					
R-squared	0.062	0.072	0.062	0.072	0.062	0.072
N	838,503	838,503	838,503	838,503	838,503	838,503
Unconditional mean od dependent variable	0.0222	0.0281				

Table 8: Abnormal Volume and Returns

This table reports, on the stock level, the abnormal daily log volume of companies around shareholder meeting days during the January 2006-June 2013 period. The analysis includes trading days [0,+4] starting from the meeting day. In Panel A (B), abnormal log volume is estimated as the daily log volume minus the average (median) daily log volume during the pre-voting period (all trading days within the [-365,-31] window before the record date). Abnormal returns are calculated using the Fama-French and momentum factors. In both panels, in Regressions 1-5 we split the sample depending on the magnitude of the abnormal return on that day. Regression 1 includes observations with an abnormal return within the top 15th percentile (i.e., a particularly large and positive abnormal return), while Regression 2 includes observations within the 16th-30th percentile of abnormal returns. Regression 3 includes observations that experience almost no price reaction, i.e., those within the bottom decile of the absolute abnormal return. Regression 4 includes observations within the bottom 16th-30th percentile of abnormal returns. Regression 5 includes observations that experience the largest negative abnormal returns. Regression 6 and 7 include observations that experience positive and negative abnormal returns, respectively, and Regression 8 includes the entire sample. T-statistics are reported in parenthesis. * indicates p<.10, ** p<.05, and *** p<.01.

-	Panel A: Abnormal volume relative to **average**							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	0.400*** (66.215)	0.101*** (18.838)	0.002 (.280)	0.053*** (9.584)	0.335*** (49.157)	0.005 (1.381)	-0.043*** (-10.747)	-0.016*** (-5.816)
Absolute abnormal return						0.099*** (68.713)	0.120*** (65.833)	0.107*** (94.767)
	Panel B: Abnormal volume relative to **median**							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	0.425*** (70.201)	0.124*** (23.191)	0.026*** (4.033)	0.078*** (13.895)	0.359*** (52.764)	0.029*** (7.621)	-0.019*** (-4.667)	0.008*** (2.940)
Absolute abnormal return						0.099*** (68.794)	0.119*** (65.734)	0.107*** (94.777)
Subset	Top 15h percentile of daily return	Top 16th-30th percentile of daily return	Bottom 10th percentile of *absolute* value of daily returns	Bottom 16th-30th percentile of daily return	Bottom 15h percentile of daily return	Positive abnormal returns	Negative abnormal returns	All
N	12,640	11,786	7,555	11,651	11,532	38,448	38,544	76,992

Table 9: Information Asymmetry

This table reports, on the stock level, the abnormal daily log volume of companies around shareholder meeting days during the January 2006-June 2013 period. The analysis includes trading days [0,+4] starting from the meeting day. Abnormal log volume is estimated as the daily log volume minus the average daily log volume during the pre-voting period (all trading days within the [-365,-31] 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 equal to zero otherwise. "Small company" is equal to one if the company's market capitalization is below sample median, and equal to zero otherwise. T-statistics are reported in parenthesis. * indicates p<.10, ** p<.05, and *** p<.01.

	Abnormal volume	
	(1)	(2)
Constant	0.072*** (5.717)	0.221*** (22.731)
Few analysts	0.096*** (4.087)	
Small company		0.063** (2.138)
Subset	All	All
R-squared	0.001	0
N	30,363	88,471

Table 10: Distracted Investors

This table reports, on the stock level, the abnormal daily log volume of companies around shareholder meeting days during the January 2006-June 2013 period. The analysis includes trading days [0,+4] starting from the meeting day. Abnormal log volume is estimated as the daily log volume minus the average daily log volume during the pre-voting period (all trading days within the [-365,-31] window before the record date). Regression 1 is confined to meeting days on which shareholders are not expected to be distracted since few meetings take place on these days (i.e., less than 0.5% of the meetings of that proxy year), while regression 2 is confined to meetings for which investors are expected to be distracted since many shareholder meetings take place on the same day (more than 3% of the meetings of that proxy year). Regressions 3 and 4 consider the entire sample. T-statistics are reported in parenthesis. * indicates p<.10, ** p<.05, and *** p<.01.

	Abnormal volume			
	(1)	(2)	(3)	(4)
Constant	0.1644*** (15.752)	0.0941*** (11.642)	0.1222*** (6.708)	0.1650*** (24.592)
Percentage meetings held on date			-0.0073* (-1.714)	
Percent of meetings on date larger than 2%				-0.0222*** (-2.606)
Subset	Less than 0.5% of the meetings of that year held on that day	More than 3% of the meetings of that year held on that day	All	All
Observations included	Meeting day - 4 days after meeting day			
R-squared	0	0	0	0
N	27,205	18,772	96,036	96,036

Appendix A - Identifying the Vote Outcome Filing Dates

To identify the dates the vote outcomes were made public, we use Seekedgar, which allows searching through SEC filings. We search within 8-K and 10-Q filings for the phrase "vote for", "votes for", or "voted for", or for tables that include the words "against" and "abstain", "against" and "withheld", or "against" and "broker". We exclude from our sample a small number of observations that match these criteria but were filed more than 5 months after the meeting date, because companies are required to file 10-Qs up to 45 days after the end of the quarter (https://www.sec.gov/answers/form10q.htm).

Hence, even if a meeting is held at the beginning of a quarter (or in the last few days of a quarter), the vote outcome should be filed within 5 months. We apply the latter criteria for filings filed until February 28, 2010, since after this date companies were required to disclose their vote results within 4 trading days. Although starting from March 1, 2010 companies were required to report their vote results within 4 trading days, not all companies do this – at times companies file several days after this deadline. Accordingly, we exclude from our sample the filings that were filed after March 1st 2010 and were filed more than 14 days after the meeting date.

Appendix B

Table B.1: Abnormal Non-log-transformed Volume around Shareholder Meetings, Proxy Filings, Vote Outcomes, and Record Dates

This table is the analog of Figure 2. It reports, on the stock level, the average (non-log-transformed) abnormal daily volume on days around shareholder meetings, proxy filings, vote outcomes (i.e., the date a filing which reveals the vote outcome is filed), and record dates. Abnormal volume is estimated as daily volume divided by the average daily volume during the pre-voting period (all trading days within the [-365,-31] window before the record date) minus one. Results for shareholder meetings, proxy filings, and record dates are for meetings that were held between January 2006-June 2013, and results for vote outcome dates correspond to the March 2010-June 2013 period.

Days to event	Meeting date		Proxy filing		Vote outcome		Record date		10-K filing	
	coefficient	T-stat.	coefficient	T-stat.	coefficient	T-stat.	coefficient	T-stat.	coefficient	T-stat.
-20	0.105***	(7.394)	0.133***	(7.823)	0.006	(.345)	0.149***	(11.741)	0.108***	(4.314)
-16	0.138***	(9.091)	0.112***	(6.603)	0.055***	(3.257)	0.126***	(9.872)	0.117***	(6.707)
-12	0.140***	(9.964)	0.117***	(6.691)	0.063***	(3.989)	0.125***	(9.087)	0.105***	(6.121)
-8	0.156***	(10.205)	0.102***	(5.912)	0.077***	(4.413)	0.097***	(7.980)	0.117***	(6.520)
-4	0.210***	(14.269)	0.075***	(4.952)	0.096***	(4.177)	0.087***	(6.511)	0.116***	(7.822)
-3	0.183***	(11.613)	0.105***	(5.384)	0.126***	(6.690)	0.089***	(7.245)	0.132***	(7.131)
-2	0.197***	(14.522)	0.091***	(5.443)	0.110***	(7.195)	0.082***	(6.201)	0.161***	(7.796)
-1	0.216***	(15.635)	0.103***	(5.778)	0.108***	(5.715)	0.080***	(5.381)	0.219***	(10.328)
0	0.285***	(15.741)	0.116***	(6.431)	0.129***	(6.690)	0.083***	(6.283)	0.396***	(16.572)
1	0.282***	(14.275)	0.101***	(5.841)	0.108***	(6.065)	0.074***	(5.952)	0.263***	(11.072)
2	0.255***	(13.019)	0.113***	(6.249)	0.123***	(6.399)	0.092***	(6.871)	0.246***	(8.782)
3	0.237***	(13.702)	0.127***	(6.732)	0.137***	(5.984)	0.085***	(5.644)	0.187***	(8.703)
4	0.226***	(12.562)	0.134***	(6.779)	0.087***	(5.016)	0.080***	(6.190)	0.128***	(6.188)
8	0.195***	(11.600)	0.138***	(7.810)	0.101***	(4.497)	0.072***	(5.511)	0.099***	(3.995)
12	0.206***	(9.572)	0.124***	(8.099)	0.066***	(3.327)	0.102***	(7.069)	0.099***	(4.510)
16	0.188***	(9.209)	0.167***	(8.688)	0.085***	(3.568)	0.082***	(6.636)	0.057***	(2.976)
20	0.221***	(8.236)	0.175***	(10.113)	0.089***	(2.892)	0.114***	(7.726)	0.052**	(2.514)
N	787,923		396,333		345,792		714,917		552,227	

Table B.2: Abnormal Trading around 10-K Filings

This table reports, on the stock level, the average abnormal daily log volume, abnormal daily log number of trades, abnormal daily log volatility, and abnormal daily return on days around 10-K filings during the January 2006-June 2013 period. Abnormal values for log volume and log number of trades are estimated as the daily log value minus the average daily log value during the pre-voting period (all trading days within the [-365,-31] window before the record date), and abnormal log volatility is estimated relative to an exponential moving average of daily log volatility over the same period. Abnormal returns are measured in percentage points and are calculated using the Fama-French and momentum factors. T-statistics, reported in parentheses, are calculated using the standard error of the mean, clustered at the company level and at the trading day level. * indicates p<.10, ** p<.05, and *** p<.01.

	Event examined: 10-K filing							
Day	Volume		Num. of daily trades		Volatility		Return	
	coefficient	T-stat.	coefficient	T-stat.	coefficient	T-stat.	coefficient	T-stat.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
-20	0.051***	(2.595)	0.093***	(4.325)	0.057***	(3.125)	-0.032	(-1.456)
-16	0.056***	(4.022)	0.099***	(5.973)	0.050***	(3.660)	0.024	(.938)
-12	0.056***	(3.633)	0.096***	(5.598)	0.038***	(2.803)	-0.002	(-0.090)
-8	0.067***	(4.593)	0.104***	(6.285)	0.016	(1.468)	-0.005	(-0.200)
-4	0.072***	(5.141)	0.121***	(6.783)	0.014	(1.249)	0.006	(.229)
-3	0.089***	(5.653)	0.139***	(7.697)	0.025	(1.549)	0.039	(1.324)
-2	0.114***	(6.468)	0.161***	(7.638)	0.049**	(2.485)	0.03	(1.111)
-1	0.153***	(8.937)	0.200***	(9.519)	0.066***	(3.382)	0.016	(.473)
0	**0.251*****	**(14.321)**	**0.279*****	**(13.343)**	**0.114*****	**(5.597)**	**0.047**	**(1.541)**
1	0.200***	(11.225)	0.230***	(11.635)	0.044***	(2.834)	-0.021	(-0.821)
2	0.173***	(8.870)	0.207***	(9.435)	0.024	(1.566)	0.013	(.594)
3	0.146***	(8.287)	0.177***	(8.881)	0.002	(.164)	-0.004	(-0.174)
4	0.102***	(6.262)	0.146***	(7.902)	-0.015	(-1.176)	0.013	(.533)
8	0.056***	(2.976)	0.103***	(4.739)	-0.043***	(-3.095)	-0.011	(-0.495)
12	0.072***	(3.756)	0.102***	(5.089)	-0.031**	(-2.055)	-0.011	(-0.434)
16	0.027	(1.549)	0.065***	(3.691)	-0.062***	(-6.671)	-0.075***	(-2.807)
20	0.003	(.214)	0.048***	(2.735)	-0.086***	(-10.518)	-0.008	(-0.343)
N	552,706		574,170		574,635		549,724	