Capital Gains Lock-In and Governance Choices☆

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ABSTRACT

Differences in accrued gains and investors' tax-sensitivity induce variation in a capital gains lock-in effect across mutual funds even for the *same* stock at the *same* time. Exploiting this variation, we show this effect influences funds' governance decisions: higher capital gains decrease the likelihood a fund exits prior to contentious votes and increase the likelihood a fund votes against management. Consistent with tax motivation, these findings are concentrated among funds with tax-sensitive investors. Further, high *aggregate* capital gains across funds holding a stock predict a higher likelihood management loses a vote and a lower likelihood a contentious vote is proposed.

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1. Introduction

Mutual funds face a dilemma when voting on contentious proposals in which the fund believes that opposing management will increase shareholder value. In this situation, a mutual fund must weigh the potential value created by opposing the firm's management against the potential costs. Prior studies suggest that, upon anticipating an imminent conflict with a company's management, a fund generally prefers to exist a position rather than fight (i.e., directly oppose management).[1] Economic incentives for this preference are clear: voting against management can reduce both the likelihood the mutual fund will be included in corporate defined contribution plans (Davis and Kim, 2007; Ashraf, Jayaraman, and Ryan, 2012) and access to information from management (Butler and Gurun, 2012).[2] Also, Roe (1990) argues that political and legal constraints encourage mutual funds to exit rather than directly oppose management.

For mutual funds with tax-sensitive investors and a capital gain on a stock, exiting a position, rather than "staying and fighting" the firm's management, imposes tax costs on the funds' investors. Therefore, to some extent, a mutual fund with a largely taxable clientele is locked into a stock position with an unrealized capital gain. Prior research shows that the capital gains lock-in effect influences mutual funds' trading decisions (Huddart and Narayanan, 2002; Cici, 2012; Sialm and Starks, 2012). Bergstresser and Poterba (2002) show that ignoring tax incentives is costly for fund managers because tax efficiency affects investment flows. Accordingly, because of this capital gains lock-in effect, the cost of exiting a position will differ across mutual funds even for the *same* stock at any given time, depending on the tax status of the funds' investors and the accrued capital gains (or losses) in that stock. Thus, for a position with an unrealized capital gain, mutual funds with taxable clientele must trade off these countervailing forces.

In this paper, we study the relation between funds' willingness to oppose management on contentious proposals and the capital gains lock-in effect. A mutual fund locked-in to a position for tax reasons may be more likely to oppose management because of the tax incentive to hold that position even if the fund disagrees with the firm's management on a particular vote. There are two related reasons for this. First, because realizing a capital gain is more costly for funds with tax-sensitive investors, the fund has a longer investment horizon and can benefit from the long-term

[1] See Parrino, Sias, and Starks (2003) and McCahery, Sautner, and Starks (2015).
[2] For example, a mutual fund company's statement to the SEC regarding vote disclosure rules states that ''… retaliation [from the firm] could be in the form of denial of access to company management in the course of our investment research on behalf of our shareholders.'' See http://www.sec.gov/rules/proposed/s73602/rmason1.txt.

value created by their voting. Second, funds that are not locked-in and that continue to hold the position are more likely aligned with management. In contrast, funds with a larger accrued gain in a stock and with tax-sensitive clientele may be more likely to oppose management on contentious votes because the capital gains lock-in effect, rather than an affinity for management, causes them to continue holding the stock. For funds locked into a holding for tax reasons, a pragmatic alternative to sale is actively monitoring the firm. Indeed, Bhide (1993, p. 42) explicitly mentions that the capital gains lock-in effect encourages active governance by reducing an investor's willingness to sell shares.

We test whether a higher accrued gain, by making exit less attractive because of the tax consequences, increases the likelihood that a mutual fund will oppose management. We first confirm, consistent with prior studies, a negative relation between the probability a fund sells a stock and the accrued capital gain[3] on that stock. We also confirm that this relation is stronger for funds with tax-sensitive clientele. We then test how the accrued gain affects the decision whether to oppose management, conditional on staying. For these tests, we focus on contentious votes, for which opposing management is potentially value-increasing. McCahery, Sautner, and Starks (2015) survey institutional investors, including mutual funds, and report that "most investors use proxy advisors and believe that their information improves their own voting decisions." Accordingly, in our main results we limit the sample to "contentious" votes for which Institutional Shareholder Services (ISS) recommends voting against management.[4] In robustness tests, we show that our results also hold in the full sample of all votes.

In our *Oppose Management* regressions, we obtain identification by including two sets of fixed effects: one set for each vote and one set for each mutual fund-quarter combination. First, for a given vote, the accrued capital gain since purchase varies across the different funds holding the company's stock, as does the tax status of those funds' investors. This variation allows us to include vote fixed effects in our specifications. These fixed effects eliminate many potential sources of confounding variation, such as the issue voted upon, as well as the company's finances,

[3] For expositional simplicity, we use the term "capital gain" to refer to the percent change in a stock holding's price since the time of purchase. Therefore, "capital gain" can refer to either a gain or a loss in a stock position.

[4] Numerous prior studies use ISS recommendations as a proxy for value-increasing voting recommendations (Bethel and Gillian, 2002; Morgan, Poulsen, and Wolf, 2006; Cotter, Palmiter, and Thomas, 2010; Morgan, Poulsen, Wolf, and Yang, 2011). Alexander, Chen, Seppi, and Spatt (2010) examine stock-price reactions to ISS announcements of voting recommendations that oppose management and show that ISS voting recommendations are generally value-enhancing, thus justifying this proxy. Although Iliev and Lowry (2015) argue that ISS recommendations are not always value-enhancing, at a minimum, proposals for which ISS and management disagree are contentious, with support for management not clearly in shareholders' best interests.

governance, and past performance. For example, past performance of the stock could certainly affect whether a fund opposes management (i.e., opposition to management may be lower following good performance). Our vote fixed effects control for any relation between opposition to management on a particular vote and past stock returns over any horizon because the stock return over a given past horizon is the same for all investors. We identify the effect of the capital gains lock-in effect on governance by exploiting the differences across funds in their accrued capital gain in *the same stock at a given time*, as well as differences across funds in the tax status of their investors. In particular, different funds will have different accrued capital gains if they established their positions in a stock at different times at different prices. For funds with taxable investors, it is this accrued capital gain that is relevant for tax-motivated decisions.

Second, for a fixed fund-quarter combination, the accrued capital gains vary across the different stocks held by the fund at that point in time. This variation allows us to include fund-quarter fixed effects in our specifications. These fixed effects eliminate many other potential sources of confounding variation. In particular, they eliminate the fund's overall propensity to oppose management during that quarter, propensity to follow ISS recommendations, factors related to the fund's family, as well as the fund's flow and past performance. For example, the fund-quarter fixed effects eliminate funds that always follow ISS recommendations or always follow management recommendations. Instead, our identification comes from exploiting the different accrued capital gains a given fund has in different stocks at the same point in time.

The results show that mutual funds with higher accrued capital gains in a stock are more likely to oppose management.[5] For example, a one standard-deviation increase in the accrued capital gains in a stock is associated with a 1.2 percentage-point increase in the likelihood a fund opposes management on a contentious vote (the sample average is 53%).[6] Our results further demonstrate that, consistent with a tax motivation, the relation between voting against management and the accrued capital gain in a stock is much stronger for funds with tax-sensitive clientele. A one standard-deviation increase in the accrued capital gain in a stock is associated with a 5.1 percentage-point increase in the likelihood a fund opposes management on a contentious vote if that fund has a tax-sensitive clientele.

[5] Consistent with prior studies such as Del Guercio, Seery, and Woidtke (2008) and Fischer, Gramlich, Miller, and White (2009), we define opposing management as the fund either voting against management's recommendation or withholding its vote from a management-sponsored proposal.

[6] This and other marginal effects reported from logit models (and multinomial logit models) are evaluated at the sample mean.

Also consistent with a tax motivation, the relation between voting against management and accrued capital gain is stronger for funds with high levels of gains elsewhere in their portfolios (as opposed to having losses, which could be used to offset realized capital gains). Again, this effect is only present for the mutual funds with a primarily tax-sensitive clientele. We also find that the effect is present for both long-term and short-term capital gains, with the magnitude of the effect greater for short-term capital gains (taxed at a higher rate). Further, funds from families with significant defined contribution (DC) plan business may be reluctant to oppose management even if the fund itself has little DC-plan business. Consistent with this hypothesis, we find a stronger capital gains lock-in effect for funds from families with lower levels of DC-plan business.

As a robustness test, we use a multinomial logit framework to model the multiple choices available to mutual funds facing a contentious vote—to exit, support, or oppose management. We find further evidence that the capital gains lock-in effect influences governance. For mutual funds with tax-sensitive clientele, an increase in the accrued capital gain increases the probability of continuing to hold the stock and opposing management and decreases the probability of either selling the stock or continuing to hold the stock and supporting management.

We also investigate broader consequences of the capital gains lock-in effect in terms of actual vote outcomes, the presence of a contentious proposal on the meeting agenda, the stock-market reaction to contentious proposals, and fund flows. We find evidence that the capital gains lock-in effect has an economically substantive effect on all four outcomes. That is, the capital gains lock-in effect has tangible consequences for the firms held by mutual funds.

When the aggregate accrued capital gains held by mutual funds are high (relative to the firm's total market value), management is significantly more likely to lose a contentious vote. This result holds after controlling for prior stock returns, mutual fund characteristics, and firm characteristics. In our sample, management loses about one-quarter of the contentious votes. A one standard-deviation increase in the fraction of a firm's market capitalization comprised of accrued gains held by mutual funds is associated with a 2.7 percentage-point increase in the likelihood management loses the vote (evaluated at the sample mean). The effect is larger if the accrued gains are held by funds with largely taxable investors. We also find that the capital gains lock-in effect is associated with fewer contentious proposals occurring in the first place. In 39% of the shareholder meetings in our sample, the agenda includes a contentious vote. These contentious votes are significantly less likely to occur if the aggregate accrued gains held by mutual

funds are high (but only if those gains are held by funds with tax-sensitive clientele). Thus, the capital gains lock-in effect influences not only individual fund voting decisions, but also both *actual vote outcomes* and the *presence of contentious proposals on the meeting agenda*. The latter result is consistent with locked-in mutual funds helping prevent agency issues at the firm from even arising.

Alexander, Chen, Seppi, and Spatt (2010) find positive abnormal returns during the week leading up to and including an ISS announcement recommending a vote against management. Their interpretation is that the stock market views ISS opposition to management as good news for two reasons: (1) the ISS recommendation validates (i.e., certifies) the quality of the alternative to management and the status quo already capitalized in the pre-contest stock price; and (2) the ISS recommendation increases the probability of the better alternative winning the vote. If the market generally views ISS recommendations as value-enhancing, the earlier results (showing that management is more likely to lose when the aggregate accrued capital gains of mutual funds are high) suggest that there should be a positive relation between the aggregate accrued capital gains of mutual funds and stock returns in the period around the ISS announcement opposing management. This is what we find. An increase in the fraction of a firm's market capitalization comprised of accrued capital gains held by mutual funds is associated with a significantly higher stock return in the 15-trading-day "ISS announcement window" before the vote, and this effect is larger if the gains are held by funds with tax sensitive investors or if the vote was close *ex post*.

We also find that opposition to management has a tangible effect for the funds themselves in terms of future fund flows. Controlling for the usual determinants of fund flows, we find a positive relation between future net fund flows and the proportion of contentious votes for which the fund opposed management over the past four quarters.

Our study is related to a voluminous literature that examines how liquidity affects blockholders' governance activities, in that the capital gains lock-in effect can loosely be viewed as a measure of illiquidity. As Kahn and Winton (1998), Levit (2012), and Fos and Kahn (2015) highlight, the relation between liquidity and governance by blockholders is complicated, with various theories predicting different relations. For example, Coffee (1991), Bhide (1993), and Back, Li, and Ljungqvist (2015) argue that liquidity discourages blockholders from engaging in governance: when exit is easy, blockholders do not engage in information acquisition or costly governance activities. In contrast, Kyle and Vila (1991), Faure-Grimaud and Gromb (2004),

Edmans (2009), Edmans and Manso (2011), and Edmans (2014) argue that liquidity encourages blockholders to engage in governance, either because liquidity allows the investor to acquire a block or because liquidity allows the investor to profit from intervention. Edmans (2009) further argues that, conditional on already owning a block, liquidity improves governance because it increases the credibility of the threat of exit, which constrains management. Empirically, Edmans, Fang, and Zur (2013) find that liquidity increases the likelihood of block formation, but, conditional on block formation, decreases the probability of "voice" (active intervention).

Theoretical models also make different predictions, depending on the nature of "voice." Papers such as Coffee (1991), Bhide (1993), and Kahn and Winton (1998) define voice as active intervention such as takeovers, proxy fights, or voting. In these studies, liquidity and voice are substitutes, with greater liquidity reducing intervention. More recent papers, such as Levit (2012) and Dasgupta and Piacentino (2015), define voice as soft shareholder activism, consisting of private communication with management ("jawboning"). In these studies, liquidity and voice are complements because the shareholder needs a credible threat of exit to convince management to follow the shareholder's privately communicated suggestions. In our paper, the measure of voice is based on voting, which is publicly observable. Thus, our empirical design fits most naturally with the theoretical papers that model voice and exit as substitutes.

Although related to this literature, our study differs in several important ways. First, we consider a very different form of liquidity than the studies referenced above, which consider "traditional" measures of trading liquidity like bid-ask spreads or Amihud's (2002) measure. Trading liquidity varies across firms, but not across investors within a firm. This raises concerns that omitted firm-specific factors could drive any relation between governance activities and liquidity, thus making identification based on cross-sectional comparisons difficult. Some studies instead focus on identification from time-series changes in liquidity that affect all firms or a particular group of firms at the same time. That approach assumes that only liquidity changes and that there are no other confounding changes that also affect governance. By using the capital gains lock-in effect as a measure of illiquidity, our identification is obtained by liquidity that varies *across investors in a given stock at a given time*.

Second, our empirical design focuses on how the accrued gains of stocks *already held by the mutual fund* influence governance decisions. Accordingly, we do not test the theories that focus on whether liquidity attracts investors to accumulate blocks of shares. For example, standard

measures of liquidity can be measured *a priori*. Therefore, funds can endogenously select the liquidity of their investment to enable the formation of a block or an ability to easily cash out from a successful intervention. Our measure of the liquidity of a fund's holding is exogenously given to the investor *ex post* (through a combination of the stock's return since purchase and the tax-sensitivity of the fund's investors). Because this capital gains lock-in-induced liquidity is not identifiable *a priori*, it cannot be selected by the fund when making investment decisions. Our finding that, conditional on already owning the stock, capital gains lock-in-induced illiquidity leads mutual funds to provide governance is consistent with the Edmans, Fang, and Zur (2013) result that, conditional on an institution already being a blockholder, illiquidity increases the probability of active intervention.

Finally, the aforementioned literature is concerned with the governance activities of large, concentrated blockholders. In contrast, we consider mutual funds. As open-end mutual funds acquire an increasingly large fraction of total U.S. equity (open-end mutual funds surpassed direct holdings by individuals as the largest category of U.S. equity owners in 2004; French, 2008, Table 1), it is all the more important to understand mutual fund voting decisions. Overall, mutual funds appear to be relatively activist shareholders. They are more likely to oppose management than other stockholders, and mutual fund voting is a key determinant of whether a resolution passes (Morgan, Poulsen, Wolf, and Yang, 2011). Thus, the increasingly prominent role of open-end mutual funds in U.S. stock ownership has important implications for corporate governance, and our paper contributes toward understanding the governance decisions made by this increasingly influential class of investors.

Our study contributes to a recent literature examining mutual funds' voting decisions. Davis and Kim (2007), Matvos and Ostrovsky (2008), Ashraf, Jayaraman, and Ryan (2012), Butler and Gurun (2012), and Cvijanović, Dasgupta, and Zachariadis (2016) show that various conflicts of interest affect funds' voting decisions. Matvos and Ostrovsky (2010) consider peer effects in mutual fund voting and Iliev and Lowry (2015) test how proxy advisory firms, such as ISS, affect mutual fund voting. Morgan, Poulsen, Wolf, and Yang (2011) consider many fund-level characteristics that affect mutual funds' voting decisions, such as fund size, turnover ratios, and social responsibility objectives. In contrast, we focus on how the capital gains lock-in effect influences mutual funds' voting decisions. As discussed above, many other factors influence how

mutual funds vote. Our specification includes both vote-level and fund-level fixed effects, which subsume many of these other factors.

The remainder of the paper is organized as follows. Section 2 reviews the data and variables. Section 3 shows that mutual funds are more likely to vote against management when they are locked in to a position by taxable accrued capital gains. In Section 4, we show how capital gains affect the joint voting/trading decision. In Section 5, we consider whether this effect has broader, tangible manifestations in terms of actual vote outcomes, the presence of a contentious proposal on the meeting agenda, stock-market reactions to contentious proposals, and fund flows. Section 6 concludes.

2. Data and summary statistics

The data for this study come from multiple sources, including the CRSP Open-End Survival Bias Free Mutual Fund Database, Thompson-Reuters Mutual Fund Holdings Database, *Pensions & Investments'* Survey of Defined Contribution Plans, mutual funds' NSAR filings, CRSP Stock File, ISS Voting Analytics Database, and RiskMetrics Governance Database.

2.1. Data

2.1.1. Mutual fund data

Mutual fund data come from the CRSP Open-End Survival Bias Free Mutual Fund Database. We focus on actively-managed U.S. domestic equity mutual funds and eliminate balanced, bond, international, money market, and sector funds. Moreover, we also remove funds that hold fewer than 10 stocks or have less than two million dollars in total net assets at the end of the previous quarter. These screening criteria correspond closely to those of Kacperczyk, Sialm, and Zheng (2008). Quarterly mutual-fund stock holdings come from the Thompson-Reuters Mutual Fund Holdings Database. We match the CRSP Mutual Fund data to the holdings data using the MFLINKS file. Further, for a subset of our analyses we use information on the tax status of the mutual funds' investors, obtained from *Pensions & Investments*' annual Survey of Defined Contribution Plans. As described in Sialm and Starks (2012) and Sialm, Starks, and Zhang (2015), each year the trade publication *Pensions & Investments* asks mutual fund families to list the proportion of assets held by defined contribution pension plans for the family's 12 largest funds. We match the *Pensions & Investments* data, available for only a subset of our sample, with the CRSP Mutual Fund data using the funds' ticker symbols and names. In our sample, fund families

that report to *Pensions & Investments* control 70% of the total value of equity funds in CRSP. Finally, we collect mutual funds' actual fund flows from their NSAR filings with the SEC.

2.1.2. Stock data

We obtain information on stock prices, trading volume, stock splits, market capitalization, and share type from the CRSP (monthly and daily) stock database. We match mutual fund holdings to the CRSP stock database by CUSIP.

2.1.3. Mutual fund voting data

As of July 2003, the SEC requires all mutual funds to disclose their voting records by filing Form N-PX. Institutional Shareholder Services (ISS) compiles the information from these filings to create the ISS Voting Analytics database. Our dataset includes fund voting records from 2003 through the end of 2008. For each fund-stock combination, we have one observation per proposal (i.e., per fund-company-vote). For each observation, we observe how the fund voted, the issue voted upon (e.g., director election, compensation proposal), management recommendation, ISS recommendation, and the vote outcome. We hand-match the ISS Voting Analytics database to the CRSP Mutual Funds database, using fund and fund family names. The sample of funds included in Voting Analytics increases over the sample period; in the earlier years, Voting Analytics focused on the largest fund families.

2.2. Select variables

2.2.1. Capital gains

We impute the accrued capital gain embedded in each individual stock in each mutual fund's portfolio. Prior papers, such as Huddart and Narayanan (2002), Frazzini (2006), Jin (2006), and Cici (2012), impute stock-level capital gains using a variety of methods. These methods vary across two dimensions: (1) imputed transaction price, and (2) assumed sales rule.

We observe holdings at the end of each quarter and use that information to infer transactions during the quarter. Prior studies impute transaction prices in four different ways: beginning-of-quarter prices, end-of-quarter prices, daily average prices, and daily transaction-weighted prices. In this paper, we report results based on daily transaction-weighted prices, likely the most accurate estimate of actual transaction prices.

Funds may accumulate and divest positions over several quarters. Therefore, a fund may have multiple tranches of shares, each with a different cost basis. To impute the overall capital gain for a position, we assign partial sales to a specific tranche. Prior studies use four different imputation rules: the share-weighted average price, last-in-first-out, first-in-first-out, and highest-in-first-out. In this paper, we report results based on the highest-in-first-out method because Dickson, Shoven, and Sialm (2000) show this is the most tax-efficient rule.[7]

For each stock *i* held by fund *f* at time *t*, we compute the value-weighted cost basis (*VWCB*):

$$VWCB_{f,i}^{t} = \frac{\sum_{n=0}^{t} S_{f,i}^{t,t-n} \cdot P_{i}^{t,t-n}}{\sum_{n=0}^{t} S_{f,i}^{t,t-n}}, \tag{1}$$

where $S_{f,i}^{t,t-n}$ is the number of shares of stock *i* purchased by fund *f* at date *t-n* that are still held at time *t, and* $P_{i}^{t,t-n}$ is the imputed price paid for these shares.

The accrued capital gain for fund-stock combination *f*, *i* at time *t* is:

$$CapitalGain_{f,i}^{t} = \frac{P_{i}^{t} - VWCB_{f,i}^{t}}{VWCB_{f,i}^{t}} \tag{2}$$

2.2.2. Voting

As discussed in the introduction, we focus on the votes that likely represent a meaningful conflict between management and shareholders. Numerous prior studies use ISS recommendations as a proxy for value-increasing voting recommendations (Bethel and Gillian, 2002; Morgan, Poulsen, and Wolf, 2006; Cotter, Palmiter, and Thomas, 2010; Morgan, Poulsen, Wolf, and Yang, 2011). For example, typical ISS recommendations include voting to declassify the board, separate the positions of Chairman and CEO, provide for cumulative voting, and other recommendations generally viewed as reflecting good corporate governance. Therefore, for our main analyses we limit the sample to the votes for which ISS and management recommendations differ. This results in a final sample of 10,950 unique votes[8] over the period from 2003 to 2008. Our results are robust to using the full sample of all votes (although, as expected, the magnitudes are smaller because the full sample of votes includes many non-controversial proposals).

[7] As a robustness check, we compute all 16 possible imputed capital gains variables from the intersection of the four transaction price rules and four sales rules. Consistent with prior studies, we find that all 16 methods give similar results.

[8] Of these votes, 68% are director elections, 13% are compensation proposals, 8% are non-director board issues (e.g., change the size of the board or eliminate cumulative voting), 7% are governance issues (e.g., amend the articles or bylaws of the company), and the remaining 4% represent other issues (e.g., social issues). These 10,950 unique votes occur in 5,800 unique meetings, as some meetings have multiple contentious proposals on the agenda.

The main dependent variable is an indicator variable *OpposeManagement*. It is set to one if the fund does not follow management's recommendation, either by voting against management or by withholding its vote on management-sponsored proposals. It is set to zero if the fund votes to support management. Specifically, *OpposeManagement* equals one when management recommends voting "For" ("Against"), yet the fund either votes against (for) the proposal. *OpposeManagement* also equals one if the fund withholds its vote on a management-sponsored proposal.[9] Withholding a vote is an active decision, just like voting for or against a proposal, not a default category. This definition is very natural and is consistent with recent literature (e.g., Del Guercio, Seery, and Woidtke, 2008; Fischer, Gramlich, Miller, and White, 2009). As discussed by Fischer, Gramlich, Miller, and White (2009, p. 175), "Withhold" and "Against" are often functionally equivalent because the vote passage often depends on the ratio of "For" votes to total votes (including withheld votes).[10]

2.3. Summary statistics

Table 1 presents key summary statistics for the merged mutual fund holding - Voting Analytics dataset. We limit the data set to the fund-vote combinations for which ISS and management issue conflicting recommendations (these data form the basis for our regressions in Tables 2, 3, and 4). Particularly relevant for our analyses of voting patterns is the indicator variable *OpposeManagement*. Its value is one for 53% of the fund-vote observations in our sample, implying that funds support management for 47% of the fund-vote observations.

Although our primary focus is on whether the capital gains lock-in effect influences a given fund's vote, in Section 5 we also consider whether the aggregate accrued gains of all mutual funds holding a given firm's stock predicts whether management actually loses a contentious vote, and whether these aggregate accrued gains deter contentious proposals from appearing on the meeting agenda in the first place. *ManagementLosesVote* is an indicator variable set to one if management loses a contentious vote, and set to zero otherwise (thus, this variable is measured at the vote-level). Management loses 24% of the contentious votes in our sample. *ContentiousVoteHeldAtMeeting* is an indicator variable set to one if there are any contentious proposals for a particular meeting and is set to zero otherwise. Therefore, this variable is measured at the firm-meeting level and is

[9] The very rare cases in which a fund withholds its vote from a shareholder-sponsored proposal that management opposes are classified as voting with management (less than 0.1% of the sample).

[10] Under the Investment Advisers Act (1940), advisers have a duty to monitor corporate events and to vote the proxies (i.e., for, against, or withhold). Consistent with this regulation, in our sample only 0.5% of funds do not vote and only 2.6% abstain.

constructed using data from the full Voting Analytics database. There is at least one contentious proposal at 39% of the meetings.

The table also displays summary statistics of the capital gains (and losses) since purchase for mutual funds' stock holdings. Our key independent variable is *CapitalGain*, defined as the percentage accrued capital gain or loss in natural units (e.g., 0.34 = 34% and –0.61 = –61%).[11] The average accrued capital gain of a mutual fund's stock holding is 0.34 (34%). One-tenth of holdings have a capital gain of at least 1.09 (109%) and one-tenth have a capital gain of –0.17 (–17%) or less. The standard deviation of *CapitalGain* is 0.68 (68%), the magnitude we will use often to assess the economic effect of accrued capital gains on voting outcomes. We also calculate the standard deviation of *CapitalGain* for each vote. If all mutual funds bought a stock at the same time, the within-vote standard deviation of *CapitalGain* would be zero because all mutual funds would have the same return since purchase. Rather, the average within company-vote standard deviation in accrued capital gains is quite large, 0.49 (49%). Similarly, we calculate the standard deviation in *CapitalGain* for each fund-quarter combination. Once again, the average standard deviation in accrued capital gains across the stocks held in the portfolio of a given fund at a point in time is also large, 0.51 (51%). Thus, there is substantial variation in both the accrued capital gains across funds for a given stock at a given time, as well as in the accrued capital gains across the stocks held by a given fund at a given time. These variations allow us to employ specifications with both vote fixed effects and fund-quarter fixed effects.

In addition to exploiting variation in the mutual funds' accrued capital gains in a given stock, we also exploit variation across funds in the tax sensitivity of their investors. *DCPlan%* is the percentage of the fund owned by defined-contribution retirement plans. For ease of interpretation, we create an indicator variable *HighDC*, indicating whether the proportion of fund assets held by retirement plans is above the median (27.1% of assets across all fund-quarter observations in our sample).

TABLE 1 ABOUT HERE

[11] Although our vote sample begins in 2003, we begin tracking capital gains in 1984, when the mutual fund-holding data begin, assuming that all positions in the fund's first filing were purchased in the prior quarter. We then carry these imputed capital gains forward to the beginning of our voting sample in 2003. In our sample, only 0.2% of the positions were purchased prior to 1984.

3. The capital gains lock-in effect and the propensity to oppose management

In this section, we examine the relation between a mutual fund's voting decisions for a stock and the fund's accrued capital gains on that stockholding. We then present several robustness checks, including cross-sectional tests of the capital gains lock-in effect on mutual fund governance choices, an examination of strategic incentives of the fund towards a particular firm based on the holdings of its peers, and the use of an alternative sample of all votes.

As mentioned in the introduction, Huddart and Narayanan (2002), Cici (2012), and Sialm and Starks (2012) show a negative relation between the likelihood a mutual fund sells a stock and the accrued capital gain on that stock holding, and attribute it to tax motivations. Because the capital gains lock-in effect must affect the sale decision of mutual funds for the lock-in to affect governance decisions, we first confirm this finding. In Appendix Table 1, we test whether accrued capital gain and the tax status of a fund's clientele affect the fund's propensity to sell a stock holding by interacting *CapitalGain* with an indicator variable for the presence of a high proportion of tax-deferred investment (*HighDC*). Because a fund's likelihood of selling a stock next quarter falls with how long the stock has already been held, we follow Ivković, Poterba, and Weisbenner (2005) in using a Cox proportional hazards model. Appendix Table 1 shows a strong negative relation between the likelihood a fund sells a stock during the current quarter and the fund's accrued capital gain in that stock. The coefficient in column (1) implies that a one standard-deviation increase in the fund's capital gain (0.68) is associated with a 27.9% reduction in the likelihood the fund sells that stock.[12] Further, this negative relation is significantly weaker for funds whose clientele is less tax-sensitive, as captured by the positive coefficient on *HighDC*.

Having confirmed the presence of the capital gains lock-in effect, we proceed to consider whether this lock-in influences mutual funds' voting decisions. Specifically, we consider whether a mutual fund is more likely to oppose management if it is already "stuck" holding the stock for tax-related reasons.

3.1. Voting behavior of mutual funds and relation with accrued gains in a stock

We test whether the capital gains lock-in effect influences mutual funds' voting decisions by estimating models conditional on funds holding the stock at the time of the shareholder meeting. The decision for these funds at that time is whether to vote for or against management.

[12] The change in the likelihood that a fund sells a stock given a one standard-deviation increase in the fund's capital gain is calculated as: $\exp(-0.482 \cdot 0.64) - 1 = -0.279$.

For this test, we begin by estimating a logit model that relates the indicator variable *OpposeManagement* (set to one if the mutual fund votes against the management recommendation or withholds its vote from a management-sponsored proposal, and set to zero otherwise) with *CapitalGain* in the following panel regression:

$$P(OpposeManagment_{f,i,v,t} = 1 | X_{f,i,v,t} = x) \\ = F(\alpha + \beta \cdot CapitalGain_{f,i,t-1} + \delta_{i,v} + \theta_{f,t} + \sum_{q=1}^{20} (\gamma_q \cdot I_q) + \varepsilon_{i,f,v,t}) \quad (3)$$

where $\delta_{i,v}$ are vote fixed effects, $\theta_{f,t}$ are fund-quarter fixed effects, and I_q, q = 1,...,20 are indicator variables set to one if fund f has held stock i for q quarters, and to zero otherwise. We report z-scores based on standard errors clustered by fund-quarter.

The vote fixed effects remove all variation in the issue voted upon and any company-level effects such as past stock performance, size, and governance. In particular, one might naturally expect that a fund may be more likely to support management if its stock has recently performed well (indeed, we find this is the case in Section 5.1., as do Morgan, Poulsen, Wolf, and Yang, 2011). Because the stock return over a given past horizon is the same for all investors, our vote fixed effects control for any relation between opposition to management on a particular vote and past stock returns over any and all horizons. We identify the capital gains lock-in effect on governance by exploiting the differences across funds in their *accrued capital gain* in the same stock at a given time because of the differences in the timing of when different funds acquired their shares. The fund-quarter fixed effects remove all variation at the fund-period level such as past fund returns, overall voting tendencies that quarter (such as always supporting or opposing management recommendations), and fund flows. Thus, identification comes from variation in accrued capital gains across different stocks held by the same fund in the same quarter, after conditioning out fund- and vote-level differences. Finally, the length-of-holding indicator variables control for the possibility that a funds' propensity to oppose management changes with the length of the holding period for reasons unrelated to accrued capital gains.

In this paper, we focus on identifying the capital gains lock-in effect on fund voting decisions. The holding period return of a fund in a stock identifies the capital gains lock-in. This holding-period return may also have a behavioral effect on voting if funds are subject to attribution bias (Tversky and Kahneman, 1974). That is, experiencing a positive return since purchase may

make a fund manager feel more positively towards firm management (even after controlling for a firm's performance through vote fixed effects). Whereas this behavioral effect may be present, it should be mitigated (or outweighed) by the capital gains lock-in effect for funds with tax-sensitive clientele. Thus, the key to our analysis is the comparison of the relation between a fund's voting behavior and its holding-period return by the tax status of its investors.

To test whether the relation between voting patterns and capital gains differs across funds with clienteles of different levels of tax sensitivity, we also estimate a similar regression in which we interact *CapitalGain* with *HighDC*. Because $HighDC_{f,t}$ does not vary across fund *f*'s holdings in calendar quarter *t*, it is absorbed by the fund-quarter fixed effects, resulting in the following specification:

$$P(OpposeManagment_{f,i,v,t} = 1|X_{f,i,v,t} = x) = F(\alpha + \beta_1 \cdot CapitalGain_{f,i,t-1} + \beta_2 \cdot \left(CapitalGain_{f,i,t-1} \times HighDC_{f,t}\right) + \delta_{i,v} + \theta_{f,t} + \sum_{q=1}^{20}\left(\gamma_q \cdot I_q\right) + \varepsilon_{i,f,v,t}) \quad (4)$$

Column (1) of Table 2 presents the specification from Equation (3). Consistent with the prediction that funds locked in to a stock holding because of capital gain taxes are more likely to oppose management, there is a positive relation between *OpposeManagement* and *CapitalGain* (the coefficient of 0.070 is significant at the 1% level).

The result in column (1) does not differentiate by the tax status of the funds' investors. The capital gains lock-in effect on governance should be weaker for funds with more assets held by tax-deferred retirement accounts. We use the *Pensions & Investments* data to test this hypothesis in column (2), which presents the second specification (Equation (4)).[13] Consistent with the capital gains lock-in effect, the coefficient on *CapitalGain*, representing the relation between opposing management and accrued capital gains for funds with tax-sensitive investors, is substantially larger than it is in the first column (0.302, significant at the 1% level). Moreover, the coefficient on the interaction *CapitalGain* × *HighDC* is –0.440; it is negative, significant at the 1% level, and similar in magnitude to the coefficient on *CapitalGain*.[14] Thus, the propensity to oppose management is

[13] The number of observations in column (2) is substantially smaller than in column (1) because *Pensions & Investments* data are only available for the 12 largest funds in each family. The sample from column (2) is fairly comprehensive, however, as it encompasses about 70% of total net assets under management from the sample in column (1).

[14] We also estimate a specification in which we interact *CapitalGain* with the fraction of a fund's assets held by DC plans (i.e., we use a continuous measure of a fund's DC-plan business, as opposed to the *HighDC* indicator variable). The coefficient on the interaction term is –0.820 with a z-score of 5.70.

related positively with the amount of accrued capital gains for funds with low levels of retirement account assets, but not for funds with high levels of retirement account assets. Indeed, the net effect of *CapitalGain* for *HighDC* funds (i.e., the sum of the coefficients on *CapitalGain* and *CapitalGain* × *HighDC*) is a statistically significant –0.138. This negative relation for funds with more tax-deferred investors is consistent with fund managers having an attribution bias. That is, in the absence of the capital gains lock-in effect, a fund is more likely to support management if the stock has performed well since the fund purchased it.

Thus, we find that, conditional on holding the stock at the time of the vote, funds with larger accrued gains and tax-sensitive clientele are more likely to oppose management. This reflects a simple tradeoff. Opposing management may be costly for all funds for the reasons discussed in Davis and Kim (2007), Ashraf, Jayaraman, and Ryan (2012), Butler and Gurun (2012), and Cvijanović, Dasgupta, and Zachariadis (2016). However, funds with a longer expected holding period, driven by the capital gains lock-in effect, may receive more of the value created by opposing management because, according to Cuñat, Gine, and Guadalupe (2012) and Iliev and Lowry (2015), the benefits of improved governance are only slowly incorporated into prices. In addition, the capital gains lock-in effect may cause some funds to continue holding the stock even if they are not enamored with the management, making them more likely to oppose management on contentious proposals relative to funds not "forced" by taxes to hold the stock.

TABLE 2 ABOUT HERE

3.2. Robustness tests

3.2.1. Interaction effects

We next consider how various factors strengthen or weaken the capital gains lock-in effect by interacting these factors with *CapitalGain* and *CapitalGain* × *HighDC*. Specifically, we interact these two variables with the ability to offset capital gains with losses (measured by the fund's capital gains overhang), short versus long-term capital gains holding period in the stock (affecting the capital-gains tax rate), fund turnover, and fund family defined contribution business. For each of these interactions, we first lay out our prediction as to whether the variable should strengthen or weaken the capital gains lock-in effect and then describe our results. Across the various specifications, we predict that the sign of the coefficient on the interaction of the factor with *CapitalGain* × *HighDC* should be opposite from the sign of the coefficient on the factor's

interaction with *CapitalGain*. The intuition for this prediction is that, because the capital gains lock-in effect should be much weaker for *HighDC* funds than *LowDC* funds, any variable that strengthens or weakens the capital gains lock-in effect for *LowDC* funds should have a more muted effect for *HighDC* funds.[15] The inclusion of these two interaction terms with a given variable (i.e., the inclusion of both *CapitalGain* × *Variable* and *CapitalGain* × *HighDC* × *Variable*) allows the variable to have differential effects for the *LowDC* and *HighDC* funds. This would occur if the coefficients on the two interaction terms had opposite signs in the regression. The sum of the coefficients *CapitalGain* × *Variable* and *CapitalGain* × *HighDC* × *Variable* should be small in magnitude, though not necessarily zero, given that the *HighDC* funds have more tax-insensitive investors than the *LowDC* funds (and any variable that weakens or strengthens the capital gains lock-in effect for *LowDC* funds should matter less for them). The inclusion of *CapitalGain* × *HighDC* × *Variable* in the regression is essential to allow the effect of *Variable* on the capital gains lock-in effect to vary across *LowDC* and *HighDC* funds (as we predict it should).

Because funds can use realized capital losses to offset realized capital gains, the capital gains lock-in effect should be weaker for funds with lower fund-level capital gains. *LowOverhang* is an indicator variable set to one for funds with a level of total accrued capital gains across all of their holdings below the median (at the sample median, accrued capital gains are 17% of a fund's total value). It is set to zero otherwise. We extend Equation (4) to include interactions of *LowOverhang* with *CapitalGain* and *CapitalGain* × *HighDC*. The direct effects of *LowOverhang* and the interaction *LowOverhang* × *HighDC* are absorbed by the fund-quarter fixed effects. Because a low fund-level capital gains overhang weakens the capital gains lock-in effect, there should be a negative coefficient on *CapitalGain* × *LowOverhang*. Moreover, *LowOverhang* should primarily mitigate the capital gains lock-in effect for funds with tax-sensitive clientele (*HighDC* = 0). *LowOverhang* should have little effect on the capital gains lock-in effect of funds with tax-insensitive clientele (*HighDC* = 1) because their capital gains lock-in effect had been much weaker at the outset. Thus, we expect a positive coefficient on the triple interaction

[15] Our sharpest predictions about the interaction terms with *CapitalGain* and *CapitalGain* × *HighDC* concern their signs, rather than their magnitudes. Indeed, because *HighDC* funds may have some tax-sensitive investors, we do not predict an absence of a capital gains lock-in effect for *HighDC* funds. Rather, we hypothesize that the capital gains lock-in effect for *HighDC* funds should be weaker than the capital gains lock-in effect for *LowDC* funds. Accordingly, our prediction is not that the interactions of a particular factor with *CapitalGain* and *CapitalGain* × *HighDC* should necessarily produce perfectly offsetting coefficients, but, rather, that the absolute magnitude of the interaction of the factor with *CapitalGain* should be greater than or equal to the interaction with *CapitalGain* × *HighDC*. This is because any factor that strengthens or weakens the capital gains lock-in effect for *LowDC* funds may also have a strengthening or weakening effect on *HighDC* funds, but the magnitude of this interaction effect should be smaller for the *HighDC* funds.

CapitalGain × *HighDC* × *LowOverhang* because the coefficient on this triple interaction term offsets the negative estimated effect of *CapitalGain* × *LowOverhang*, resulting in little effect of *CapitalGain* × *LowOverhang* for the *HighDC* funds. This is precisely what we find in column (1) of Table 3. The positive effect of *CapitalGain* on *OpposeManagement* (the coefficient of 0.406 is significant at the 1% level) is partially offset for the funds with a low fund-level capital gains overhang because there is a negative coefficient on *CapitalGain* × *LowOverhang* (–0.236, significant at the 1% level). The positive and significant coefficient of 0.272 on the triple interaction, *CapitalGain* × *HighDC* × *LowOverhang* shows that, for funds with tax-insensitive clientele, the fund-level capital gains overhang does not influence the relation between *CapitalGain* and *OpposeManagement* because the tax sensitivity of these funds is already low.

Short-term capital gains are taxed at a higher rate than long-term gains, suggesting that our regression results should be stronger for short-term gains. Also, because most mutual fund holdings in our sample are long-term (68% of mutual fund holdings have been held at least 12 months), the *OpposeManagement* results may only apply to short-term capital gains and thus be more transitory in nature. *ShortTerm* is an indicator variable set to one if the capital gains are short-term (less than one year), and set to zero otherwise. Specifically, we define a stock holding as short-term if less than one year has elapsed since the fund first initiated the position.[16] We again extend Equation (4); this time, we include interactions of *ShortTerm.* Because a higher tax rate on capital gains creates a greater capital gains lock-in effect, there should be a positive coefficient on *CapitalGain* × *ShortTerm*. Moreover, *ShortTerm* should intensify the capital gains lock-in effect more for funds with tax-sensitive clientele (*HighDC* = 0) than for funds with tax-insensitive clientele (*HighDC* = 1). Thus, we expect a negative coefficient on the triple interaction *CapitalGain* × *HighDC* × *ShortTerm*. In column (2) of Table 3, the coefficient associated with long-term gains (*CapitalGain*) is 0.390 (significant at the 1% level). The coefficient associated with the additional capital gains lock-in effect of the gain because of its short-term status (*CapitalGain* × *ShortTerm*) is 0.775 (significant at the 1% level). As hypothesized, a fund with a tax-insensitive clientele (reflected in the interactions with *HighDC*) mitigates both effects. Thus, as predicted, the capital gains lock-in effect on voting is stronger for short-term gains, but is present for both short-term and long-term holdings.

[16] For example, if a mutual fund initiated a position in a particular stock 18 months ago and bought additional shares in the stock three months ago, the position would be coded as a long-term holding. In unreported analyses, we have verified that the results are robust to other measures of short-term and long-term gains. These results are available from the authors upon request.

Funds with high turnover are less likely to realize the (longer-term) benefits of changes in governance because they generally have much shorter holding periods than funds with low turnover. *HighTurnover* is an indicator variable set to one if the fund's turnover rate is above the median (the median turnover rate in our sample is 25% per quarter), and set to zero otherwise. Similarly to the *LowOverhang* variable, we hypothesize that the coefficient on the interaction *HighTurnover* × *Capital Gain* should be negative and the coefficient on the triple interaction *CapitalGain* × *HighDC* × *HighTurnover* should be positive. As predicted, in column (3) of Table 3 we find that tax-sensitive funds with low turnover have a greater capital gains lock-in effect. The triple interaction term is indeed positive, but lacks statistical significance.

Finally, even a fund that does not currently manage DC-plan assets may be reluctant to oppose management if it belongs to a family with a lot of DC-plan business. *HighFamilyDC* is an indicator variable set to one if the fund's family has an above-median level of DC-plan business in terms of the percent of its total assets under management held by DC plans (the sample median of family assets held by DC plans is 19%), and set to zero otherwise.[17] While there is a positive correlation between the fund having a lot of DC-plan business and its family having a lot of DC-plan business, in our sample the probability a *LowDC* fund has *HighFamilyDC* is 36% (the probability a *HighDC* fund has *LowFamilyDC* is also 36%). In column (4) of Table 3, we find that funds that both have a low-level of DC-plan business themselves *and* also come from a family with a low level of DC-plan business have a large capital gains lock-in effect (the coefficient on *CapitalGain* is 0.545; significant at the 1% level). However, this capital gains lock-in effect is greatly diminished if either the fund itself or the fund's family have a lot of DC-plan business—the coefficients on *CapitalGain* × *HighDC* and *CapitalGain* × *HighFamilyDC* are both negative and highly significant. As predicted, the mitigating effect of belonging to a fund family with a high level of DC-plan business is smaller for *HighDC* funds than for *LowDC* funds (i.e., the triple interaction term on *CapitalGain* × *HighDC* × *HighFamilyDC* is positive and significant).

In column (5), we include all four sets of these interactions. Although a natural concern is that the various interaction terms may be highly correlated, and thus each column really represents the same underlying effect, that is not the case. The base case fund-holding observation in column (5) is represented by a fund with tax-sensitive clientele, high fund overhang, long-term tax status

[17] The number of observations in this analysis, as well as in columns (5) and (7) of Table 3, is lower than in the previous columns (83,396 versus 107,736). This decline is driven by the availability of fund family-level information regarding DC-plan investments.

holding, low turnover, and from a family with low DC-plan business. As predicted, the capital gains lock-in effect is quite strong in this baseline case (coefficient of 0.716, significant at the 1% level). Particularly striking is that all of the interactions with *CapitalGain* and the triple interactions load in the expected direction and are statistically significant except the coefficient on *CapitalGain* × *LowOverhang* (–0.111, *z*-score of 1.40) and the coefficient on *CapitalGain* × *HighDC* × *ShortTerm*, (–0.356, *z*-score of 1.60), each of which has the predicted sign but lacks statistical significance. Thus, the four factors we identified *a priori*, which should strengthen or weaken the capital gains lock-in effect, all do so in a way consistent with our respective predictions. Further, these interactions generally act independently and, thus, represent separate effects.

TABLE 3 ABOUT HERE

Based on the results in Tables 2 and 3, Figure 1 illustrates economic magnitudes of the capital gains lock-in effect on funds' likelihood of opposing management. We calculate the marginal effect on the probability of opposing management associated with a one standard-deviation increase in *CapitalGain* (i.e., if the accrued capital gain of a fund holding increased by 0.68), evaluated at the sample mean. For perspective, across all the fund-holding observations in the sample, funds oppose management 53% of the time on contentious proposals. Figure 1 shows a progression of increasingly stronger effects of the accrued capital gain on the probability that the fund opposes the firm's management. For example, a one standard-deviation increase in the accrued capital gain in a stock is associated with a 1.2 percentage-point increase in the likelihood a fund opposes management on a contentious vote, which rises to 5.1 percentage points if that fund has tax-sensitive clientele, that is, the fund is a low DC fund (based on the coefficients from the first row of Table 2).[18] The marginal effect increases to about 7 percentage points for both low DC funds with a high capital gains overhang and low DC funds with low turnover, 9.2 percentage points for low DC funds with low DC fund family, and 12.1 percentage points for low DC funds with a high capital gains overhang, low turnover, and a low DC fund family (based on the coefficients from the first row of Table 3). For this latter group, the capital gains lock-in effect on

[18] The implied change in the likelihood of opposing management associated with a one standard-deviation increase in *CapitalGain* is calculated as:
$\sigma_{CG} \cdot Pr_{OpposeManagement} \cdot (1 - Pr_{OpposeManagement}) \cdot \beta_{CapitalGain} = 0.68 \cdot 0.53 \cdot (1 - 0.53) \cdot 0.070 = 0.012$ (or 1.2%).
The implied change in the likelihood of opposing management associated with a one standard-deviation increase in *CapitalGain* is calculated (assuming the fund caters to a tax-sensitive clientele) as:
$\sigma_{CG} \cdot Pr_{OpposeManagement} \cdot (1 - Pr_{OpposeManagement}) \cdot \beta_{CapitalGain} = 0.68 \cdot 0.53 \cdot (1 - 0.53) \cdot 0.302 = 0.051$ (or 5.1%).

voting is quite large; however, it represents just under one-tenth of the sample of funds for which we have DC plan data.

FIGURE 1 ABOUT HERE

3.2.2. Strategic considerations of the fund

Presumably, funds believe their opposition to management is value-enhancing (or else they would support management). That noted, the well-known relation between fund flows and relative fund performance, shown by Sirri and Tufano (1998), suggests that mutual funds with a below-average portfolio weight in a company have less incentive to expend resources on activism than do funds with above average portfolio weights (e.g., see Kahan and Rock, 2007). That is, a fund has a stronger incentive to provide governance if the benefits of governance accrue disproportionally to the fund itself and not to its competitors. Funds generally either have zero ownership in a stock, or ownership greater than the unconditional average. Nonetheless, in our sample, 15% of fund-vote observations have portfolio weights smaller than the unconditional average portfolio weight in that same stock by other funds in the same investment-style category.[19]

We create an indicator variable *BelowStyleWeight* (set to one if the fund's portfolio weight in a stock is below the unconditional average across other funds of the same investment-style at the time, and set to zero otherwise) and use it in an interaction term to extend our baseline logit model from Table 2. Specifically, column (6) of Table 3 includes interactions of *BelowStyleWeight* with *CapitalGain* and *CapitalGain* × *HighDC*. This logit regression coefficients are 0.349 on *CapitalGain* and –0.449 on *CapitalGain* × *HighDC* (indicating a strong capital gains lock-in effect for funds with above-average portfolio weights in a stock), and the coefficients on the interaction terms are –0.207 on *CapitalGain* × *BelowStyleWeight* and 0.221 on *CapitalGain* × *HighDC* × *BelowStyleWeight*. In column (7) of Table 3, we add the *BelowStyleWeight* interactions to the set of four interactions included in column (5). The coefficients on the *BelowStyleWeight* interactions in this comprehensive specification maintain their significance and are of similar magnitude to those obtained in the more parsimonious specification in column (6).

These results confirm our conjecture that, when the fund has a low allocation relative to its competitors, there is a substantially reduced relation between fund voting and accrued capital gains

[19] Mutual funds are assigned to one of nine style-categories based on the rankings of the average market capitalization and average book-to-market ratio of their holdings.

(i.e., the coefficient on *CapitalGain* × *BelowStyleWeight* is significantly negative). However, because the capital gains lock-in effect on governance should be driven by funds with tax-sensitive investors (*HighDC* = 0), the mitigation of that effect should also be stronger (i.e., more negative) for funds with tax-sensitive investors. Therefore, we predict and, indeed, find a positive coefficient on the triple interaction *CapitalGain* × *HighDC* × *BelowStyleWeight*. Thus, funds' opposition to management is influenced by whether the fund will benefit more than its competitors if the stock rises in value. This strategic voting provides further evidence that the capital gains lock-in effect influences mutual fund activism and is consistent with funds viewing these governance actions as value-enhancing.

3.2.3. Sample of all votes

The analyses in this section have focused on mutual fund voting decisions on proposals in which the recommendations of ISS and management differ. Therefore, we focused on proposals for which, *a priori*, opposing management may be value-increasing or, at a minimum, contentious proposals in which support for management is not clearly in shareholders' best interests. As a robustness test, we also estimate the *OpposeManagement* regression on the sample of all votes in the Voting Analytics dataset, regardless of whether the recommendations of ISS and management differ, leading to a substantially larger sample size of 716,343 observations. We conduct this analysis for two reasons. First, to ensure the results are generalizable for the overall sample. Second, because funds and ISS may occasionally disagree about the value-maximizing course of action and, thus, funds may oppose management even for some proposals in which ISS supports management. In the full sample of all proposals, we would also expect opposition to management to be positively associated with accrued capital gains, but with a smaller magnitude than in the sample of contentious votes (because the full sample contains many non-controversial votes).

In this untabulated specification, which is analogous to column (2) of Table 2, the coefficient on *CapitalGain* is 0.066 (significant at the 1% level) and the coefficient on *CapitalGain* × *HighDC* is –0.151 (significant at the 1% level).[20] In the sample of votes on all proposals, funds oppose management on average 10% of the time (as opposed to 53% for contentious proposals). Evaluated at this sample mean, a one standard-deviation change in the accrued capital gain of a stock held by a fund with tax-sensitive clientele is associated with a 0.4 percentage point

[20] In a logit model estimated using votes on all proposals that only includes *CapitalGain* with no interaction with *HighDC* (i.e., the analog of column (1) of Table 2), the coefficient on *CapitalGain* is 0.014, significant at the 1% level.

(0.68×0.10×0.90×0.066 = 0.004) increase in the likelihood a fund opposes management on a vote (compared to 5.1 percentage points for contentious votes). Thus, the capital gains lock-in effect influences mutual funds' voting decisions in the sample of all votes, but, as expected, the effect is smaller than in the subsample of contentious votes.

4. Support, oppose, or exit: A multinomial logit approach

The dependent variable in the previous section is an indicator variable that contrasts two choices – conditional upon holding the stock at the time of the vote, the fund can either support or oppose management. Relating this governance choice to the fund's accrued capital gain in a stock holding is the key specification of the paper. However, a fund can also decide simply to exit a position before the contentious vote occurs. Thus, an alternative specification, presented in this section, models the dependent variable as a choice among three alternatives: exit, stay and support management, or stay and oppose management. In this framework, the sample includes all fund holdings at the end of the quarter before a vote. We define exit as the complete liquidation of the stock before the vote (i.e., in the time period from the start of the quarter until the date of record for voting). For those funds that continue to hold the stock until the vote, we measure whether the fund supports or opposes management (as in Section 3).

We use a multinomial logit model to test the relation between the choice among these three alternatives and accrued capital gains. This approach unites the results presented in Appendix Table 1 (relating sale propensity and accrued capital gains) and in Section 3 (relating opposing management and accrued capital gains). The covariates are the same as in Table 2, and the specification includes both vote and fund-quarter fixed effects, as well as indicator variables for the number of quarters the fund has held the stock. We use the method of Chamberlain (1980) to control for the vote and fund-quarter fixed effects, as detailed in Charbonneau (2013).

Table 4 presents the multinomial logit results. In Panel A, the key independent variable is *CapitalGain.* In Panel B, we add the interaction term *CapitalGain* × *HighDC*. For both panels, the first column shows results for the *Sell* decision and the second column shows results for the *OpposeManagement* decision. Continuing to hold the stock and supporting management is the excluded category. The *z*-scores are based on standard errors clustered by fund-quarter. The number of observations increases relative to Table 2 because the sample now includes fund-vote combinations for which the fund sells the stock before the vote. The unconditional probabilities of

the three outcomes across all fund-quarter observations are: 6% probability of exit before the vote, 44% probability of holding the stock and supporting management, and 50% probability of holding the stock and opposing management.

The results displayed in Table 4 are consistent with our earlier results.[21] Column (1) of Panel A shows that higher accrued capital gains are associated with a lower probability that the fund sells the stock (relative to the probability of supporting management). Column (2) shows that higher accrued capital gains are associated with a higher probability that the fund opposes management (again, relative to the probability of supporting management). Panel B of Table 4 includes an interaction term between accrued capital gains and an indicator variable for funds with a high proportion of DC-plan assets (tax-insensitive funds). The results show that as the accrued capital gain increases: (1) the probability of sale decreases, with weaker effect for tax-insensitive funds; and (2) the probability of opposing management increases, but not for tax-insensitive funds. Thus, these results suggest that the funds with the weakest threat of exit (funds with high accrued capital gain in a stock holding and tax-sensitive investors) are the most likely to engage in one particular form of voice (voting against management).

To assess the economic magnitude of the multinomial logit regressions, we estimate the changes in likelihood of a fund's decision associated with a one standard-deviation increase in accrued capital gains in stock holding (σ_{CG} = 0.68 or 68%; Table 1). Figure 2 summarizes these marginal effects, evaluated at the sample average. Based on the coefficient estimates from Panel A of Table 4, the change in likelihood of selling the stock associated with a one standard-deviation increase in accrued capital gains is –1.1 percentage points,[22] the change in likelihood of continuing to hold the stock and supporting management is –0.5 percentage points,[23] and the change in likelihood of continuing to hold the stock and opposing management is 1.6 percentage points.[24] Consistent with the capital gains lock-in effect and the results from the previous section, the effects

[21] The coefficients in columns (2) and (4) of the multinomial specification are very similar to the coefficients of the logit specification in Table 2, suggesting that the assumption of independence of irrelevant alternatives is appropriate. Nonetheless, we formally test this assumption using the Small and Hsiao (1985) test of the multinomial logit models in Table 4. The χ^2 value for excluding *Sell Stock* is 22.0 (*p*-value of 0.47) in Panel A and 28.5 (*p*-value of 0.16) for Panel B. The χ^2 value for excluding *Hold and Oppose Management* is 20.2 (*p*-value of 0.57) in Panel A and 11.8 (*p*-value of 0.96) for Panel B. Thus, we find support for the appropriateness of our modeling choice because we cannot reject the assumption of independence of irrelevant alternatives.

[22] The change in the likelihood of selling the stock is calculated as follows:
$\sigma_{CG} \cdot (Pr_{Sell} \cdot (\beta_{CG,\,Sell} - (\beta_{CG,\,Sell} \cdot Pr_{Sell} + \beta_{CG,\,Oppose} \cdot Pr_{Oppose}))) = 0.68 \cdot (0.06 \cdot (-0.265 - (-0.265 \cdot 0.06 + 0.062 \cdot 0.5))) = -0.011$ (or –1.1%).

[23] The change in the likelihood of continuing to hold the stock and supporting management is calculated as follows:
$\sigma_{CG} \cdot (Pr_{Support} \cdot (\beta_{CG,\,Support} - (\beta_{CG,\,Sell} \cdot Pr_{Sell} + \beta_{CG,\,Oppose} \cdot Pr_{Oppose}))) = 0.68 \cdot (0.44 \cdot (0 - (-0.265 \cdot 0.06 + 0.062 \cdot 0.5))) = -0.005$ (or –0.5%).

[24] The change in the likelihood of continuing to hold the stock and opposing management is calculated as follows:
$\sigma_{CG} \cdot (Pr_{Oppose} \cdot (\beta_{CG,\,Oppose} - (\beta_{CG,\,Sell} \cdot Pr_{Sell} + \beta_{CG,\,Oppose} \cdot Pr_{Oppose}))) = 0.68 \cdot (0.5 \cdot (0.062 - (-0.265 \cdot 0.06 + 0.062 \cdot 0.5))) = 0.016$ (or 1.6%).

are much stronger for the funds with more tax-sensitive investors (Panel B). In that subsample, as also shown in Figure 2, the change in likelihood of selling the stock is –2.8 percentage points (a 46% reduction relative to the unconditional probability of 6%), the change in likelihood of continuing to hold the stock and supporting management is –3.4 percentage points (an 8% reduction relative to the unconditional probability of 44%), and the change in likelihood of continuing to hold the stock and opposing management is 6.2 percentage points (a 12% increase relative to the unconditional probability of 50%).

TABLE 4 ABOUT HERE

FIGURE 2 ABOUT HERE

5. Tangible effects of tax-motivated mutual fund voting behavior

In this section, we test for broader, tangible effects of mutual funds' tax-motivated voting behavior in terms of vote outcomes, the presence of a contentious proposal on the meeting agenda, stock-market reaction to contentious proposals, and fund flows. Because the unit of observation in these analyses is at the vote-level, meeting-level, or fund-level, we necessarily relax some of the precision of our identification strategy because we can no longer control for some types of fixed effects. For example, vote-level regressions no longer can include vote-level fixed effects. We find evidence that the capital gains lock-in effect has economically substantive effects for both the firms held by mutual funds and for the funds themselves.

5.1. Aggregate capital gains lock-in effect and vote outcomes

The mutual fund-vote level analyses in Sections 3 and 4 are not suited to determine whether the capital gains lock-in effect on voting is sufficiently large to influence *actual vote outcomes.* Answering that question requires analyses at the vote level. In Table 5, we examine whether the total amount of accrued capital gains held by all mutual fund investors in a firm's stock predicts whether the firm's management loses a contentious vote (which occurs 24% of the time). The dependent variable in this analysis, *ManagementLosesVote*, is an indicator variable set to one if management loses a contentious vote (i.e., a vote in which the recommendations of ISS and management differ), and set to zero if management wins. The key explanatory variable, *MFCapitalGain%ofMktCap*, is the aggregate dollar value of capital gains (positive or negative) held by mutual funds in the firm's stock normalized by the firm's current total market

capitalization to allow cross-sectional comparisons.[25] This variable provides one measure of how important the aggregate capital gains lock-in effect for mutual funds is for a particular firm and, thus, how influential it should be in determining the vote outcome. An advantage of this variable is that it considers the magnitude of funds' capital gains, and thus the aggregate strength of funds' capital gains lock-in effect. A disadvantage of this variable, however, is that it ignores the cross-sectional distribution of capital gains across the funds holding a particular stock. As discussed below, in untabulated results, we find similar results using an alternative measure of the aggregate importance of locked-in mutual funds' holding of a firm's stock – the proportion of the firm's shares held by mutual funds that have a positive capital gain on their holding.[26]

Besides *MFCapitalGain%ofMktCap*, we also include the value-weighted average holding period of mutual funds (*VWAvgMFHoldingPeriod*), the share of the firm's stock owned by mutual funds (*MFOwnership%ofMktCap*), and the value-weighted average capital gain in a stock by mutual funds (*VWAvgMFCapitalGain*).[27] Including these additional aggregate mutual fund shareholder variables helps to ensure it is really the aggregate accrued capital gains that drives vote outcomes, as opposed to other characteristics of mutual fund shareholders. We note specifically that *MFCapitalGain%ofMktCap* measures the total economic scale of capital gains held by mutual funds relative to a stock's capitalization, while *VWAvgMFCapitalGain* just measures the cross-fund average percent return. The regressions in Table 5 also include various controls for firm-level and proposal-level characteristics (all of which were absorbed by the fixed effects in our earlier analyses). Specifically, we include lagged 3-month and lagged 12-month stock returns, log(market capitalization), book-to-market ratio, leverage ratio, cash flow-to-assets, capital expenditure-to-assets, and S&P 500 membership. We also include the G-Index of Gompers, Ishii, and Metrick (2003), institutional ownership percentage, percent of the company owned by the top five executives, indicator variables for management sponsored proposals and for director elections, and quarter fixed effects.

The coefficient on *MFCapitalGain%ofMktCap* of 4.531, presented in column (1) of Table 5, is positive and is both statistically and economically significant. For example, evaluated at the sample mean, a one standard-deviation increase in *MFCapitalGain%ofMktCap* (0.033) is

[25] The variable *MFCapitalGain%ofMktCap* has a mean of 0.006 (i.e., the aggregate capital gains held by mutual funds represent 0.6% of a firm's value), with a 75th percentile of 0.020 and a 90th percentile of 0.040, and a standard deviation of 0.033.
[26] We thank the referee for suggesting this alternative measure.
[27] The variables *VWAvgMFHoldingPeriod* and *VWAvgMFCapitalGain* are value-weighted by the value of a fund's holding in the stock.

associated with a 2.7 percentage-point increase in the likelihood that management loses the vote.[28] This constitutes an 11% increase relative to the unconditional probability of losing the vote (24%). Thus, the capital gains lock-in effect influences not only individual mutual fund voting decisions, but also the actual vote outcomes. Moreover, this result is obtained while controlling for the value-weighted holding period of mutual funds, the share of the firm's stock owned by mutual funds, and the value-weighted average capital gain in a stock by mutual funds. In contrast with the significant coefficient on *MFCapitalGain%ofMktCap*, the coefficients on *MFOwnership%ofMktCap* and *VWAvgMFCapitalGain* are insignificant. This suggests that vote outcomes are affected by the dollar value of mutual funds' capital gains normalized by the market capitalization of the company, and not simply by the level of mutual funds' ownership or the average capital gain across funds holding the stock.

For brevity, the coefficients for the other controls are suppressed from Table 5. The complete table is provided as Appendix Table 2. Other controls generally have the expected signs. The coefficient on the prior 3-month return is particularly noteworthy. Although high accrued gains by mutual fund investors predict management is more likely to lose the vote, a higher prior 3-month return predicts management is more likely to win.

In column (2) of Table 5, we split the four mutual fund shareholder variables into aggregates for the *HighDC* mutual funds and for the *LowDC* mutual funds (i.e., for each vote-level observation we create separate aggregated variables for all mutual funds whose proportion of assets held by retirement funds is above and below the sample median, respectively). For example, *MFCapGain%ofMktCapHighDC* is the accrued gains aggregated across all funds with a primarily tax-insensitive clientele (normalized by firm market value), whereas *MFCapGain%ofMktCapLowDC* is the analogous variable constructed for the funds with tax-sensitive clientele. The *p*-value, reported below the coefficients of these two variables, gives the significance of the difference between these two coefficients.

If the capital gains lock-in effect really influences vote outcomes, the coefficient on *MFCapGain%ofMktCapLowDC* should be larger than the coefficient on *MFCapGain%ofMktCapHighDC.* This is exactly what we find. In column (2) of Table 5, the coefficient on *MFCapGain%ofMktCapLowDC* is a highly significant 19.723, while the coefficient

[28] The implied change in the likelihood of management losing a vote associated with a one standard-deviation increase in *MFCapitalGain%ofMktCap* is calculated as:
$\sigma_{CG} \cdot Pr_{ManagementLoses} \cdot (1 - Pr_{ManagementLoses}) \cdot \beta_{MFCapitalGain\%ofMarketCap} = 0.033 \cdot 0.24 \cdot 0.76 \cdot 4.531 = 0.027$ (or 2.7%).

on *MFCapGain%ofMktCapHighDC* is a much smaller and statistically insignificant 2.479. Moreover, the difference between the two is significant at the 10% level (*p*-value = 0.071).[29] Finally, the coefficients for the holding period, percentage of firm owned, and average capital gains are all statistically insignificant in column (2). Thus, as in column (1), vote outcomes are affected by the dollar value of mutual funds' capital gains normalized by the market capitalization of the company, and not simply by the level of mutual funds' ownership or the average capital gain across funds holding the stock. The results in column (2) further illustrate that this effect is driven by the *MFCapitalGain%ofMktCap* of *LowDC* funds.

TABLE 5 ABOUT HERE

5.2. Presence of a contentious proposal on meeting agenda

McCahery, Sautner, and Starks (2015) survey institutional investors, including mutual funds, and report the prevalence of various exit and voice actions taken by these investors. The single most common action is discussions with a firm's top management to improve corporate governance (reported by 63% of the surveyed asset managers). The second most common action is actually voting against management (reported by 53% of the surveyed asset managers). As McCahery, Sautner, and Starks conclude (2015, p. 8), "Our findings of the widespread use of private discussions support the view that investors first try to engage firms behind the scenes through direct negotiations, and take public measures (e.g., shareholder proposals, public criticism) only after private interventions have failed." The conclusion that private engagement of institutional investors with management has an important effect on firms' governance is consistent with the findings of Carleton, Nelson, and Weisbach (1998), Becht, Franks, Mayer, and Rossi (2009), and Dimson, Karakas, and Li (2015).

Thus, the expectation of an action can sometimes constrain a firm's management to the point that the action becomes unnecessary. As discussed in Section 5.1., the aggregate accrued capital gains of the mutual funds holding a firm's stock predicts management losing a contentious vote. Although we cannot observe private communications between locked-in mutual funds and a firm's management, we can observe the ultimate composition of the proposals voted upon at a

[29] If we use an alternative independent variable, the proportion of the firm's total shares outstanding owned by mutual funds with a positive capital gain on their holding, the coefficient for *LowDC* funds is 11.228 (*p*-value = 0.091), and the coefficient for *HighDC* funds is -2.532 (*p*-value = 0.327), with the difference between the two effects significant at the 10% level (*p*-value = 0.076).

shareholder meeting. Therefore, we can test whether the presence of locked-in mutual fund investors deter some agency conflicts from arising by affecting whether a contentious proposal is included on the meeting agenda in the first place. Such reasoning would suggest a negative relation between aggregate mutual fund capital gains and the presence of a contentious proposal on the meeting agenda ("deterrence hypothesis"). On the other hand, this lock-in-induced willingness to oppose management might embolden shareholders to make value-enhancing, yet contentious proposals, thus suggesting a positive relation between aggregate mutual fund capital gains and the presence of a contentious proposal on the meeting agenda ("emboldening hypothesis").

Table 6 shows the results of this analysis. *ContentiousVoteHeldAtMeeting* is an indicator variable set to one if there are any contentious proposals on the agenda of a particular meeting, and set to zero otherwise (this variable is measured at the firm-meeting level). We construct this variable using data from the full Voting Analytics database and find that 39% of shareholder meetings have at least one contentious proposal (a proposal for which ISS and management voting recommendations differ). We include the same aggregate mutual fund investor variables and the same firm-level controls as in Table 5 (because the unit of observation is now at the firm-meeting level, the regressions do not include proposal-specific variables). The coefficients on the other controls are suppressed from the table, but are reported in Appendix Table 3.

The negative and statistically significant coefficient of –3.182 on *MFCapitalGain%ofMktCap*, presented in column (1) of Table 6, suggests that the aggregate accrued capital gains of mutual fund investors indeed deter contentious proposals from appearing on the firm's meeting agenda. This result is consistent with the "deterrence hypothesis" outlined above. This effect is economically substantive as well, with a one standard-deviation increase in *MFCapitalGain%ofMktCap* associated with a 2.5 percentage point decrease in the likelihood a contentious proposal appears on the meeting agenda.[30] The coefficients on the other aggregate mutual fund investor control variables are not significant; the only variable that matters is the aggregate amount of the accrued capital gains held by mutual funds.

In column (2), we test whether the effect of locked-in gains by mutual fund shareholders differs for funds with tax-sensitive versus tax-insensitive clienteles. The coefficient on *MFCapGain%ofMktCapLowDC* is –12.492 (highly statistically significant), compared to the

[30] The implied change in the likelihood of a contentious proposal appearing on the agenda associated with a one standard-deviation increase in *MFCapitalGain%ofMktCap* is calculated as:
$\sigma_{CG} \cdot Pr_{ContentiousVote} \cdot (1 - Pr_{ContentiousVote}) \cdot \beta_{MFCapitalGain\%ofMarketCap} = 0.033 \cdot 0.39 \cdot 0.61 \cdot (-3.182) = -0.025$ (or –2.5%).

coefficient on *MFCapGain%ofMktCapHighDC* of only –2.203 (statistically insignificant).[31] However, the difference between the two effects is not statistically significant at conventional levels (*p*-value = 0.12).

Because we examine the outcomes of contentious votes and the presence of contentious votes on the meeting agenda, we cannot include vote-level fixed effects in these specifications. This was a key to our identification strategy of the capital gains lock-in effect earlier in the paper as we examined the voting behavior of individual mutual funds. Thus, we need to be more cautious in making causal interpretations of the coefficients from Tables 5 and 6. Nonetheless, any alternative explanation of the vote outcome and meeting agenda regressions must also be consistent with the finding in column (2) of each table. Vote outcomes and the presence of a contentious proposal on the meeting agenda are significantly related to the aggregate accrued capital gains held by funds with tax-sensitive investors, but not to the gains held by funds with tax-insensitive investors. The significant positive relation between management losing a contentious vote and the aggregate accrued capital gains of mutual funds, particularly for the accrued gains held by funds with tax-sensitive clients, is certainly suggestive and complements our earlier results. Further, the analysis in Table 6 suggests that the capital gains lock-in effect not only influences vote outcomes, but also deters agency conflicts from arising, perhaps through private discussions with management (McCahery, Sautner, and Starks, 2015).

TABLE 6 ABOUT HERE

5.3. Stock market reaction before a contentious vote

It is unlikely that management or investors directly attempt to ascertain other investors' capital gains lock-in and consider how it will affect voting. Instead, locked-in investors can participate in pre-vote communication, which, in turn, may affect other investors' expectations about the likelihood that management will lose an upcoming vote. Indeed, Alexander, Chen, Seppi, and Spatt (2010, p. 4424) point out that "ISS and Glass Lewis often host public conference calls at which opposing sides in proxy contests can present their arguments." This suggests a mechanism through which the market can infer how the capital gains lock-in effect influences the likelihood

[31] If we use an alternative independent variable, the proportion of the firm's total shares outstanding owned by mutual funds with a positive capital gain on their holding, the coefficient for *LowDC* funds is -6.484 (*p*-value = 0.054) and the coefficient for *HighDC* funds is -0.499 (*p*-value = 0.697), though the difference between the two effects is not statistically significant at conventional levels (*p*-value = 0.12).

that management will lose a contentious vote, thus allowing the market to price the effect before the vote.

Alexander, Chen, Seppi, and Spatt (2010) find that an ISS recommendation to vote against management is accompanied by a positive return for the week leading up to and including the ISS announcement. Their interpretation is that the stock market views ISS opposition to management as good news for two reasons: (1) the ISS recommendation validates (i.e., certifies) the quality of the alternative to management and the status quo already capitalized in the pre-contest stock price; and (2) the ISS recommendation increases the probability of the better alternative winning the vote. If the market generally views these ISS recommendations as value-enhancing, given the results in Table 5, there should be a positive relation between stock returns and *MFCapitalGain%ofMktCap* around the ISS announcement opposing management.

In Table 7, we study stock returns before contentious votes. Specifically, based on the work of Alexander, Chen, Seppi, and Spatt (2010), we examine stock returns over the three-week period before a contentious vote (–15 to –1 trading days) to evaluate the announcement effect of the ISS recommendation.[32] This window should fully measure the stock market's reaction to the ISS announcement. We express these stock returns as cumulative abnormal returns (CARs), calculated as the differences between daily stock returns and the corresponding Carhart four-factor model expected returns, summed over –15 to –1 trading days before the contentious vote. We relate these CARs to the aggregate mutual fund capital gains in the stock, scaled by the stock's market capitalization (*MFCapitalGain%ofMktCap*). Higher *MFCapitalGain%ofMktCap* implies a higher probability of opposing management. If the market believes that, on average, opposing management under these circumstances is value-enhancing, there should be a positive relation between pre-vote CARs and *MFCapitalGain%ofMktCap*. Further refining this hypothesis, this positive relation should be even stronger among funds with primarily taxable clientele (i.e., *MFCapGain%ofMktCapLowDC*).

[32] Alexander, Chen, Seppi, and Spatt (2010, p. 4424) hand-collect 170 ISS recommendations and observe that "A vote recommendation is issued … privately to institutional clients one to two weeks before a scheduled vote. In contested elections, one or both of the contestants typically issue public press releases (within a few days of the original report) either responding to or touting a vote recommendation." These authors examine the period one week before to one day after the ISS announcement. The large sample of ISS recommendations and votes we consider precludes hand collection of exact dates, so we simply examine stock returns over the three-week period [–15, –1] before a vote occurs, which should contain the market reaction to the ISS announcement (based on the windows shown by Alexander, Chen, Seppi, and Spatt , 2010). This 15-day window does not include the announcement of the meeting agenda itself, as the definitive proxy statement (typically the first document detailing proposals for the meeting) must be posted to a website, sent to the SEC, and distributed to banks/brokers/nominees of record at least 40 days prior to the annual meeting (https://www.law.cornell.edu/cfr/text/17/240.14a-16).

These regressions, reported in Table 7, include controls for recent stock performance, namely lagged 3-month and lagged 12-month stock returns. The first two columns include the 10,192 contentious proposals examined in Table 5. Of course, some contentious votes will be closer than others. For the votes expected to be close, the presence of mutual funds with accrued capital gains in the firm's stock should be particularly important in determining whether management loses the vote. Therefore, we also consider how the aggregate accrued capital gains held by mutual funds affect pre-vote stock returns for votes that turn out to be close *ex post*. Specifically, we also report the results estimated over the subsample of 778 votes (326 votes) within +/–10 percentage points (+/–5 percentage points) of the passing threshold.

As shown in column (1) of Table 7, the coefficient on *MFCapitalGain%ofMktCap* is positive and significant. A one standard-deviation increase in *MFCapitalGain%ofMktCap* (0.033) is associated with a 33 basis-point increase in CARs (0.099 × 0.033 = 0.0033) in the pre-vote, ISS announcement window. As predicted, the effects are stronger for the more uncertain votes (at least *ex post* they were close votes). For example, the coefficient on *MFCapitalGain%ofMktCap* in column (5) implies that a one standard-deviation increase in aggregate accrued capital gains is associated with a 75 basis-point increase in CARs (0.226 × 0.033 = 0.0075) for the sample of votes that ultimately were within +/–5 percentage points of the passing threshold.

The even columns in Table 7 suggest that this effect is driven by the aggregate capital gains of funds with tax-sensitive clientele. For example, in the sample of all contentious votes displayed in column (2), the coefficient on aggregate capital gains held by mutual funds with more taxable clientele (*MFCapGain%ofMktCapLowDC*) is a highly significant 0.403. On the other hand, the coefficient on aggregate capital gains held by mutual funds with less taxable clientele (*MFCapGain%ofMktCapHighDC*) is a much smaller and insignificant 0.037. Moreover the difference between the two coefficients is significant at the 10% level (*p*-value = 0.089). In column (4), focusing on the contentious votes that were *ex post* within 10 percentage points of the passing threshold, the coefficient on *MFCapGain%ofMktCapLowDC* is a highly significant 0.879 (almost four times the baseline coefficient on *MFCapitalGain%ofMktCap* of 0.221). On the other hand, the coefficient on *MFCapGain%ofMktCapHighDC* is 0.110 (statistically insignificant), though the difference between the two coefficients is not statistically significant at conventional levels (*p*-value = 0.115). Finally, in column (6), focusing on contentious votes that were *ex post* within 5

percentage points of the passing threshold, the coefficients have the predicted relation but are not statistically significant.

Thus, in the 15 trading days before a contentious vote (which likely include the announcement of the ISS recommendation), the stock market reaction is more positive if mutual funds' aggregate capital gains comprise a relatively large percentage of the firm's market capitalization. This effect on stock returns also appears to be larger if the accrued capital gains are held by funds with tax sensitive investors and for votes that are close *ex post*. These results provide further evidence of a capital gains lock-in effect-induced channel of mutual fund activism.

TABLE 7 ABOUT HERE

5.4. Mutual fund governance choices and fund flows

Finally, we consider whether current and prospective investors view mutual fund activism (as measured by recent opposition to firm management on contentious votes) as a desirable trait, rewarded with higher net flows to the fund. Such a finding would provide evidence of a tangible benefit to the fund from the capital gains lock-in effect-induced opposition to management.

To disentangle the effect of opposition to management from other determinants of fund flows, we relate monthly fund flows over the period 2004 to 2008[33] to a broad range of covariates. Similar to Bergstresser and Poterba (2002), we regress monthly net fund flows[34] on variables related to fund tax efficiency (*CapitalGainRealized%* and *TaxBurden*), *FundVoteAgainstMgmt%* (defined as the percentage of contentious proposals in which the fund voted against management during the past four quarters), fund performance over the past 12 months in both absolute and relative terms (*PreTaxReturn*, *Top20%StyleReturn*, *Bottom20%StyleReturn*), and other controls: ln(total net assets), ln(fund age), fund overhang, expense ratio, indicator variables for front-end and back-end loads, fund turnover, and both fund-style and month fixed effects. The reported *t*-statistics are based on standard errors clustered by fund.

CapitalGainRealized% and *TaxBurden* capture capital gains realizations in the recent past. These measures rely on dollar values of a fund's capital gains realizations during the prior calendar year, both for holdings held more than 12 months ($\$LongTermCGRealized_{t-1}$) and for less than

[33] Our sample of monthly net flows spans 2004 to 2008, reflecting that our sample of contentious votes spans the period from 2003 to 2008 and that the fund's voting record over the past four quarters is included as an explanatory variable.

[34] Fund *i* net flows for month *t* are calculated using data from the fund's NSAR filing as: $Flow_{i,t}$ = $\$NetFlows_{i,t} / TNA_{i,t-1}$, where *TNA* is the total net assets of fund *i* at time *t–1*.

12 months ($\$ShortTermCGRealized_{t-1}$). These variables are scaled by the fund's total net assets TNA_{t-1} as of the beginning of the prior calendar year. *CapitalGainRealized%* is featured in the first two columns of Table 8. It is defined as:

$$\frac{\$LongTermCGRealized_{t-1}}{TNA_{t-1}} + \frac{\$ShortTermCGRealized_{t-1}}{TNA_{t-1}} \tag{5}$$

TaxBurden of capital gains, which takes into account different long- and short-term capital gains tax rates, is featured in the last two columns of Table 8. It is defined as:

$$0.15 \times \frac{\$LongTermCGRealized_{t-1}}{TNA_{t-1}} + 0.35 \times \frac{\$ShortTermCGRealized_{t-1}}{TNA_{t-1}} \tag{6}$$

Columns (1) and (3) of Table 8 present specifications akin to those from Bergstresser and Poterba (2002). Columns (2) and (4) add the variable *FundVoteAgainstMgmt%*, which measures the fund's propensity to oppose management in contentious votes. As is well-known in the literature (e.g., Sirri and Tufano, 1998), there is a positive, non-linear relation between net fund flows and relative fund performance. There is also a strong positive relation between net flows and past pre-tax returns on an absolute basis. We also find both of these effects in Table 8.

Consistent with Bergstresser and Poterba (2002), we find that tax-inefficient funds have lower net flows. Both the percent of capital gains realized by the fund (columns (1) and (2)) and the tax burden the fund imposes on investors (columns (3) and (4)) are negatively related to net flows. A one standard-deviation increase in *CapitalGainRealized%* (0.050) is associated with a decrease in net flows of 0.25% of assets per month. A one standard-deviation increase in the *TaxBurden* (0.009) is associated with a decrease in net flows of 0.20% of assets per month. To put these economic magnitudes into context, a fund in the top performance quintile enjoys net flows that are approximately 0.8% of net assets higher per month than the net flows to funds in the middle three quintiles. This nontrivial cost in terms of lower fund flows is consistent with our finding that mutual funds are more likely to realize losses than gains.

The positive and statistically significant coefficient on *FundVoteAgainstMgmt%* suggests that investors appreciate mutual funds that oppose management on contentious proposals. The economic magnitude of a one standard-deviation increase in the average propensity to oppose management (0.535) implies higher net flows of 0.18% of assets per month.

In untabulated results, we also consider how fund alphas relate to funds' recent voting behavior, while controlling for the fund characteristics included in the flow regressions. Perhaps consistent with Berk and Green (2004), while such opposition to management is associated with increased net future fund flows, it is unrelated to future fund alphas. The coefficient on *FundVoteAgainstMgmt%* in the fund alpha regression is very small in magnitude and statistically insignificant. For example, a one standard-deviation shift in the average propensity to oppose management suggests an effect on the fund alpha of only –0.01% per month.[35]

In sum, we find that opposition to management has tangible effects for the funds themselves. Controlling for the usual determinants of fund flows, the funds that have more frequently voted against management on contentious votes over the past four quarters have greater future net flows, and funds that chose to exit positions with large capital gains (thus creating tax burdens for their investors) have lower net flows.

TABLE 8 ABOUT HERE

6. Conclusion

Over the last thirty years, the share of U.S. equity held by mutual funds has grown drastically (French, 2008). This study investigates one channel that may influence the governance activities of this growing shareholder group – the capital gains lock-in effect. In particular, we investigate not only whether taxation of realized gains deters mutual funds from selling shares with accrued capital gains, but also whether these accrued gains make the funds more likely to oppose the firm's management on contentious votes. Capital gains lock-in varies across funds simply based on the fund's accrued gain and on the tax status of the fund's investors. Therefore, the magnitude of the capital gains lock-in effect varies across funds even for the *same* stock at the *same* time, and our identification comes from this variation.

Consistent with prior studies, we find a negative relation between a mutual fund's propensity to sell a stock and its capital gain on the stock, and that this relation is stronger for funds with more tax-sensitive investors. Given this tax-induced reluctance to sell, we next show that funds with higher accrued capital gains in a stock are indeed more likely to oppose management

[35] In this monthly fund alpha regression, alphas are calculated as follows: estimate the fund's Carhart model factor loadings using the preceding 36 months of returns; apply those factor loadings to the current month's factor returns to get the benchmark return (and add back the risk-free rate); and take the difference between the actual fund return and the benchmark return.

in our sample of contentious votes. Our results further demonstrate that, consistent with a tax motivation, the relation between accrued capital gains and funds' voting decisions is stronger for funds with a high fraction of tax-sensitive investors.

This paper complements recent findings in the corporate governance literature. For example, our research highlights that actively-managed mutual funds locked-in to a stock holding (e.g., through capital gains taxes) are willing to oppose management on contentious proposals. Consistent with our findings, Appel, Gormley, and Keim (2016) find that index funds influence firm's governance choices because these "locked-in" passive investors, locked-in by the virtue of needing to hold the index, are also willing to oppose management on contentious issues. McCahery, Sautner, and Starks (2015) show the importance of private discussions as a means for investors to engage firms behind the scenes before taking public actions like voting against management. Similarly, we find that the presence of locked-in gains by mutual funds predicts a lower likelihood that a contentious proposal will be on the meeting agenda. A natural area for future research is a systematic exploration of behind-the-scenes negotiations (perhaps through Factiva or LexisNexis searches), in an effort to determine what types of governance issues are resolved before a vote and what factors determine whether a pre-vote settlement occurs. Finally, this paper documents a new avenue through which capital gains taxation influences the behavior of institutional investors, as the capital gains lock-in effect increases the likelihood that a fund will oppose the firm's management. This is an important finding because taxable investors hold more than one-half of equity mutual fund assets (Sialm, Starks, and Zhang, 2015).

In sum, our results show one determinant of corporate governance by mutual funds, operating through the tax-induced capital gains lock-in channel. As open-end mutual funds continue to own an increasingly larger fraction of total U.S. equities, their voting decisions will be an increasingly important component of corporate governance.

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Table 1

Summary statistics

This table contains summary statistics for the merged mutual fund holding - Voting Analytics dataset covering the sample period from 2003 to 2008. The sample is limited to contentious votes in which the ISS recommendation does not equal the management recommendation. *OpposeManagement* is an indicator variable set to one if the mutual fund votes against the management recommendation (or withholds its vote from a management-sponsored proposal) and set to zero if the fund votes to support management. *ManagementLosesVote* is an indicator variable set to one if management loses a contentious vote and set to zero if management wins the vote (measured at the vote-level). *ContentiousVoteHeldAtMeeting* is an indicator variable set to one if management has any contentious proposal to be voted upon in a particular meeting and set to zero otherwise (measured at the firm-meeting level, typically once a year). This variable is calculated using the full sample of votes from Voting Analytics, including both contentions and non-contentious votes. *CapitalGain* is the capital gain or loss accrued since stock purchase, expressed in natural units (e.g., 0.34 = 34% and –0.61 = –61%). *CapitalGain – within Vote S.D.* is the standard deviation of *CapitalGain* across funds within each vote. *CapitalGain – within Fund-Quarter S.D.* is the standard deviation of *CapitalGain* across all stockholdings within each fund-quarter combination. *DCPlan%* is the percentage of the fund owned by defined-contribution retirement plans.

	Mean	S.D.	1st %	10th %	25th %	50th %	75th %	90th %	99th %
Key Dependent Variables:									
OpposeManagement	0.53	0.50	0	0	0	1	1	1	1
ManagementLosesVote	0.24	0.43	0	0	0	0	0	1	1
ContentiousVoteHeldAtMeeting	0.39	0.49	0	0	0	0	1	1	1
Key Explanatory Variables:									
CapitalGain	0.34	0.68	–0.61	–0.17	–0.02	0.14	0.46	1.09	3.15
CapitalGain – within Vote S.D.	0.49	0.29	0.04	0.13	0.23	0.46	0.71	0.91	1.16
CapitalGain – within Fund-Quarter S.D.	0.51	0.31	0.01	0.16	0.27	0.45	0.69	0.95	1.33
DCPlan%	29.1	20.7	0.9	5.6	10.3	27.1	40.6	61.4	80.8

Table 2

Propensity to oppose management, accrued capital gains, and tax motivation

This table presents results of the logit models from Equations (3) and (4) that relate a mutual fund's voting decision on a proposal to the fund's capital gain or loss accrued since stock purchase. The dependent variable is an indicator variable *OpposeManagement*, set to one if the mutual fund does not follow the management recommendation (either by voting against management or by withholding its vote from a management-sponsored proposal) and set to zero if the mutual fund votes to support the management recommendation. This regression is estimated for funds holding the stock at the time of the shareholder meeting. *CapitalGain* is the capital gain or loss accrued since stock purchase. The regression in column (2), described by Equation (4), tests for the effect of a high presence of defined-contribution retirement accounts in the fund. *HighDC* is an indicator variable set to one if the proportion of fund assets held by retirement plans is above the median and set to zero otherwise. Direct effects of *HighDC* on *OpposeManagement* are absorbed by fund-quarter fixed effects. The sample includes all contentious votes in the merged mutual fund holding - Voting Analytics dataset covering the period from 2003 to 2008. Contentious votes are the votes in which the ISS recommendation for a proposal does not equal the management recommendation. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively. *z*-scores are listed in square brackets below the point estimates (*z*-scores are based on standard errors clustered at the fund-quarter level).

	(1)	(2)
CapitalGain	0.070***	0.302***
	[4.58]	[7.15]
CapitalGain × *HighDC*		–0.440***
		[6.77]
Vote Fixed Effects?	Yes	Yes
Fund-Quarter Fixed Effects?	Yes	Yes
Length of Holding Period Fixed Effects?	Yes	Yes
Number of Observations	366,644	107,377

Table 3

Propensity to oppose management, accrued capital gains, and tax motivation: Interactions

This table presents results of logit models that relate a mutual fund's voting decision on a proposal to the fund's accrued capital gain or loss since purchase of the stock. The dependent variable is an indicator variable *OpposeManagement*, set to one if the mutual fund does not follow the management recommendation (either by voting against management or by withholding its vote from a management-sponsored proposal). It is set to zero if the mutual fund votes to support the management recommendation. *CapitalGain* is the capital gain or loss accrued since stock purchase. *HighDC* is an indicator variable set to one if the proportion of fund assets held by retirement plans is above the median and set to zero otherwise. *LowOverhang* is an indicator variable set to one for funds with a level of total accrued capital gains across all of their holdings that is below the median. *ShortTerm* is an indicator variable set to one if the capital gains are short-term (less than a year) and thus taxed at a higher rate. Specifically, a stock holding is defined as short-term if the time since the position was initiated by the fund is less than one year. *HighTurnover* is an indicator variable set to one if the fund's turnover rate is above the sample median. *HighFamilyDC* is an indicator variable set to one if the fund's family has an above the median level of defined contribution business in terms of the percent of its total assets under management held by DC plans. *BelowStyleWeight* is an indicator variable set to one if the fund's portfolio weight in a stock is below the unconditional average across other funds of the same investment style at the time. Mutual funds are assigned to one of nine style-categories based on the rankings of the average market capitalization and average book-to-market ratio of their holdings. Direct effects and interactions of *HighDC, LowOverhang, HighTurnover,* and *HighFamilyDC* on *OpposeManagement* are absorbed by fund-quarter fixed effects. The regressions are estimated for funds holding the stock at the time of the shareholder meeting. The sample includes all contentious votes in the merged mutual fund holding - Voting Analytics dataset covering the period from 2003 to 2008. Contentious votes are the votes in which the ISS recommendation for a proposal does not equal the management recommendation. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively. *z*-scores are listed in square brackets below the point estimates (*z*-scores are based on standard errors clustered at the fund-quarter level).

Table 3 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CapitalGain	0.406***	0.390***	0.415***	0.545***	0.716***	0.349***	0.694***
	[7.77]	[9.10]	[7.71]	[7.59]	[7.28]	[9.49]	[7.55]
CapitalGain × *HighDC*	–0.526***	–0.483***	–0.517***	–0.413***	–0.559***	–0.449***	–0.502***
	[6.95]	[7.36]	[6.56]	[3.64]	[4.09]	[7.54]	[3.79]
CapitalGain × *LowOverhang*	–0.236***				–0.111		–0.102
	[2.81]				[1.40]		[1.30]
CapitalGain × *HighDC* × *LowOverhang*	0.272***				0.242**		0.237**
	[2.57]				[2.38]		[2.34]
CapitalGain × *ShortTerm*		0.775***			0.702***		0.692***
		[5.17]			[4.14]		[4.10]
CapitalGain × *HighDC* × *ShortTerm*		–0.496***			–0.356		–0.360
		[2.39]			[1.60]		[1.62]
CapitalGain × *HighTurnover*			–0.193***		–0.381***		–0.375***
			[2.42]		[3.73]		[3.74]
CapitalGain × *HighDC* × *HighTurnover*			0.130		0.226*		0.213*
			[1.26]		[1.88]		[1.80]
CapitalGain × *HighFamilyDC*				–0.642***	–0.750***		–.764***
				[6.81]	[6.75]		[6.70]
CapitalGain × *HighDC* × *HighFamilyDC*				0.269***	0.358***		0.357**
				[2.09]	[2.55]		[2.51]
CapitalGain × *BelowStyleWeight*						–0.207***	–0.221***
						[3.11]	[2.95]
CapitalGain × *HighDC* × *BelowStyleWeight*						0.221***	0.137**
						[3.97]	[2.18]
Vote Fixed Effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fund-Quarter Fixed Effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Length of Holding Period Fixed Effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	107,377	107,377	107,377	83,936	83,936	107,377	83,936

Table 4
Multinomial logit analyses of exit/voting decisions

This table presents results of multinomial logit models in which the dependent variable has three alternatives – sell the stock, continue to hold the stock and support management (the excluded category), or continue to hold the stock and oppose management. The independent variables are the same as in Table 2. A fund is classified as holding and opposing management if the fund continues to hold the stock and either votes against the management recommendation or withholds its vote from a management-sponsored proposal. *CapitalGain* is the capital gain or loss accrued since stock purchase. *HighDC* is an indicator variable set to one if the proportion of fund assets held by defined-contribution retirement plans is above the median and set to zero otherwise. Panel A displays estimates from a multinomial logit model without any interaction terms; Panel B displays estimates from a model with an interaction between *CapitalGain* and *HighDC*. Each specification includes vote fixed effects, fund-quarter fixed effects, and length of holding period fixed effects for the number of quarters that the fund has held the stock. The sample includes all contentious votes in the merged mutual fund holding - Voting Analytics dataset covering the period from 2003 to 2008. Contentious votes are the votes in which the ISS recommendation for a proposal does not equal the management recommendation. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively. *z*-scores are listed in square brackets below the point estimates (*z*-scores are based on standard errors clustered at the fund-quarter level).

	Panel A: No interaction with *HighDC*		**Panel B: Interaction with *HighDC***	
	Sell stock	Hold, oppose management	Sell stock	Hold, oppose management
	(1)	(2)	(3)	(4)
CapitalGain	–0.265***	0.062***	–0.563***	0.296***
	[6.21]	[4.08]	[4.45]	[7.03]
CapitalGain × *HighDC*			0.154*	–0.437***
			[1.75]	[6.74]
Vote, Fund-Quarter, and Holding Period Effects?	Yes	Yes	Yes	Yes
Number of Observations	391,040		112,027	

Table 5
Management loses a contentious vote

This table presents results of logit models that relate the vote outcome to a range of aggregate mutual fund shareholder variables as well as various firm and vote characteristics. The dependent variable is an indicator variable, *ManagementLosesVote*, set to one if management loses a contentious vote and set to zero if management wins (thus, this variable is measured at the vote level). Our sample includes all contentious votes in the merged mutual fund holding - Voting Analytics dataset covering the period from 2003 to 2008. Contentious votes are the votes in which the ISS recommendation for a proposal does not equal the management recommendation. The key independent variable is *MFCapitalGain%ofMktCap*, the aggregate dollar value of capital gains held by mutual funds in the firm's stock normalized by the firm's total market capitalization. *VWAvgMFHoldingPeriod* is the value-weighted holding period of mutual funds. *MFOwnership%ofMktCap* is the share of the firm's stock owned by mutual funds, and *VWAvgMFCapitalGain* is the value-weighted average capital gain in a stock held by mutual funds. The specifications contain various firm-level and proposal-level characteristics (lagged 3-month and lagged 12-month stock returns, log(market capitalization), book-to-market ratio, leverage ratio, cash flow-to-assets, capital expenditure-to-assets, S&P 500 membership, the *G-Index* of Gompers, Ishii, and Metrick (2003), institutional ownership percentage, the percent of the company owned by the top five executives, indicator variables for management sponsored proposals and for director elections), as well as quarter fixed effects. The second column of the table includes versions of the four aggregate mutual fund shareholder variables calculated separately for all *HighDC* and *LowDC* mutual funds (i.e., mutual funds whose proportion of assets held by retirement funds is above and below the sample median, respectively). ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively. *z*-scores are listed in square brackets below the point estimates (*z*-scores are based on standard errors clustered at the quarter level). For brevity, the coefficients are suppressed for the other controls beyond the aggregate mutual fund shareholder variables. The complete table is provided as Appendix Table 2.

Table 5 (continued)

	(1)	(2)
MFCapitalGain%ofMktCap	4.531***	
	[2.70]	
MFCapGain%ofMktCapHighDC		2.479
		[0.81]
MFCapGain%ofMktCapLowDC		19.723**
		[2.43]
p-value of difference		*0.071**
VWAvgMFHoldingPeriod	0.010*	
	[1.83]	
VWAvgMFHoldPeriodHighDC		0.004
		[0.97]
VWAvgMFHoldPeriodLowDC		0.003
		[0.44]
MFOwnership%ofMktCap	–0.004	
	[0.47]	
MFOwnership%ofMktCapHighDC		–0.012
		[0.86]
MFOwnership%ofMktCapLowDC		–0.048
		[1.43]
VWAvgMFCapitalGain	–0.040	
	[0.28]	
VWAvgMFCapGainHighDC		0.105
		[0.94]
VWAvgMFCapGainLowDC		–0.143
		[0.77]
Other Controls?	Yes	Yes
Quarter Fixed Effects?	Yes	Yes
Pseudo R^2	0.624	0.625
Number of Observations	10,192	10,192

Table 6

Presence of a contentious proposal on meeting agenda

This table presents results of logit models that relate the presence of a contentious proposal on the meeting agenda to a range of aggregate mutual fund shareholder variables as well as various firm characteristics. The dependent variable is an indicator variable *ContentiousVoteHeldAtMeeting*, measured at the firm-meeting level. It set to one if there are any contentious proposals to be voted upon in a particular meeting. It is set to zero if none of the proposals are contentious. Our sample of meeting agendas includes all votes in the merged mutual fund holding - Voting Analytics dataset covering the period from 2003 to 2008. Contentious votes are the votes in which the ISS recommendation for a proposal does not equal the management recommendation. The specifications include the same aggregate mutual fund shareholder variables and firm-level controls as in Table 5. Because the unit of observation is now at the firm-meeting level, the regressions do not include any proposal-specific variables. The second column of the table includes versions of the four aggregate mutual fund shareholder variables calculated separately for all *HighDC* and *LowDC* mutual funds (i.e., mutual funds whose proportion of assets held by retirement funds is above and below the sample median, respectively). ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively. *z*-scores are listed in square brackets below the point estimates (*z*-scores are based on standard errors clustered at the quarter level). For brevity, the coefficients associated with other controls beyond the aggregate mutual fund shareholder variables are suppressed. The complete table is provided as Appendix Table 3.

Table 6 (continued)

	(1)	(2)
MFCapitalGain%ofMktCap	–3.182***	
	[3.21]	
MFCapGain%ofMktCapHighDC		–2.203
		[1.28]
MFCapGain%ofMktCapLowDC		–12.492**
		[2.11]
p-value of difference		*0.120*
VWAvgMFHoldingPeriod	0.003	
	[1.19]	
VWAvgMFHoldPeriodHighDC		–0.001
		[0.40]
VWAvgMFHoldPeriodLowDC		0.001
		[0.09]
MFOwnership%ofMktCap	–0.005	
	[1.09]	
MFOwnership%ofMktCapHighDC		0.004
		[0.66]
MFOwnership%ofMktCapLowDC		–0.008
		[0.43]
VWAvgMFCapitalGain	0.087	
	[1.22]	
VWAvgMFCapGainHighDC		0.093*
		[1.67]
VWAvgMFCapGainLowDC		0.021
		[0.33]
Other Controls?	Yes	Yes
Quarter Fixed Effects?	Yes	Yes
Pseudo R^2	0.037	0.037
Number of Observations	11,062	11,062

Table 7

Returns before a contentious vote (around ISS announcement window)

This table presents results of linear models that relate cumulative abnormal stock returns around the announcement by ISS of a recommendation to vote against management with aggregate mutual fund capital gains. The dependent variable is a stock's cumulative abnormal return (CAR) over the period –15 to –1 trading days prior to the vote. Abnormal returns are calculated by subtracting from raw returns the expected returns based on the Carhart four-factor model. In columns (1) and (2), the sample includes one observation for each contentious vote in the sample covering the period from 2003 to 2008. In columns (3) and (4), the sample includes one observation for each contentious vote whose outcome is within +/–10 percentage points of the passing threshold. In columns (5) and (6), the sample includes one observation for each contentious vote whose outcome is within +/–5 percentage points of the passing threshold. In columns (1), (3), and (5) the key independent variable is *MFCapitalGain%ofMktCap*, the aggregate dollar value of capital gains held by mutual funds in the firm's stock normalized by the firm's total market capitalization. In columns (2), (4), and (6), the aggregate mutual fund capital gains are calculated separately for all *HighDC* and *LowDC* mutual funds (i.e., mutual funds whose proportion of assets held by retirement funds is above and below the sample median, respectively). The regressions control for lagged 3-month and 12-month stock returns. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively. Robust *t*-statistics are listed in square brackets below the point estimates.

Abnormal stock return –15 to –1 days before a contentious vote (ISS announcement window)						
			Threshold for ex-post close votes			
	All contentious proposals		*Within 10% margin*		*Within 5% margin*	
	(1)	(2)	(3)	(4)	(5)	(6)
MFCapitalGain%ofMktCap	0.099***		0.221***		0.226*	
	[3.53]		[3.23]		[1.85]	
MFCapGain%ofMktCapLowDC		0.403**		0.879**		1.221
		[2.30]		[2.35]		[1.37]
MFCapGain%ofMktCapHighDC		0.037		0.110		–0.032
		[0.59]		[0.71]		[0.09]
p-value of difference		*0.089**		*0.115*		*0.290*
Lag 3-Month Stock Return	–0.014***	–0.014**	–0.022	–0.017	–0.011	–0.011
	[2.62]	[2.51]	[1.08]	[0.85]	[0.36]	[0.38]
Lag 12-Month Stock Return	0.001	0.002	0.015**	0.015**	0.008	0.008
	[0.77]	[0.95]	[2.22]	[2.17]	[0.78]	[0.88]
Number Observations	10,192	10,192	778	778	326	326

Table 8

Net mutual fund flows related to tax efficiency and opposition to management by fund

This table presents results of linear models that relate net fund flows over the period 2004 to 2008 to mutual funds' tax efficiency and voting records. The dependent variable is each fund's monthly net fund flow as a percentage of beginning of month net assets. Net fund flow data are obtained from NSAR filings. The sample contains monthly observations for all funds in the main data sample. *CapitalGainRealized%* is the dollar value of capital gains realized during the prior calendar year by the fund divided by the fund's total net assets as of the beginning of the prior calendar year. *TaxBurden* is calculated, following Bergstresser and Poterba (2002), as 0.15 multiplied by the long-term *CapitalGainRealized%* plus 0.35 multiplied by the short-term *CapitalGainRealized%. FundVoteAgainstMgmt%* is the percentage of contentious votes during the prior four quarters in which the fund voted against management. All regressions include pre-tax returns over the past year, indicator variables for funds in either the top or bottom 20% of funds in their style-category over the past year, as well as controls for fund age, total net assets, fund overhang, expense ratios, turnover, and indicator variables for funds with front or back end loads. All regressions also include fund-style fixed effects and month fixed effects. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively. Robust *t*-statistics are listed in square brackets below the point estimates (*t*-statistics are based on standard errors clustered at the fund level). For brevity, the coefficients associated with other controls beyond the tax efficiency, mutual fund voting pattern, and past return variables are suppressed.

	(1)	(2)	(3)	(4)
CapitalGainRealized%	–4.952***	–4.954***		
	[11.80]	[11.81]		
TaxBurden			–22.404***	–22.383***
			[9.67]	[9.66]
FundVoteAgainstMgmt%		0.343***		0.341***
		[4.77]		[4.73]
PreTaxReturn	11.763***	11.721***	11.850***	11.809***
	[26.82]	[26.73]	[27.01]	[26.92]
Top20%StyleReturn	0.779***	0.786***	0.778***	0.784***
	[10.11]	[10.20]	[10.08]	[10.17]
Bottom20%StyleReturn	–0.570***	–0.567***	–0.569***	–0.567***
	[8.11]	[8.08]	[8.09]	[8.06]
Other Controls?	Yes	Yes	Yes	Yes
Number of Observations	24,712	24,712	24,712	24,712

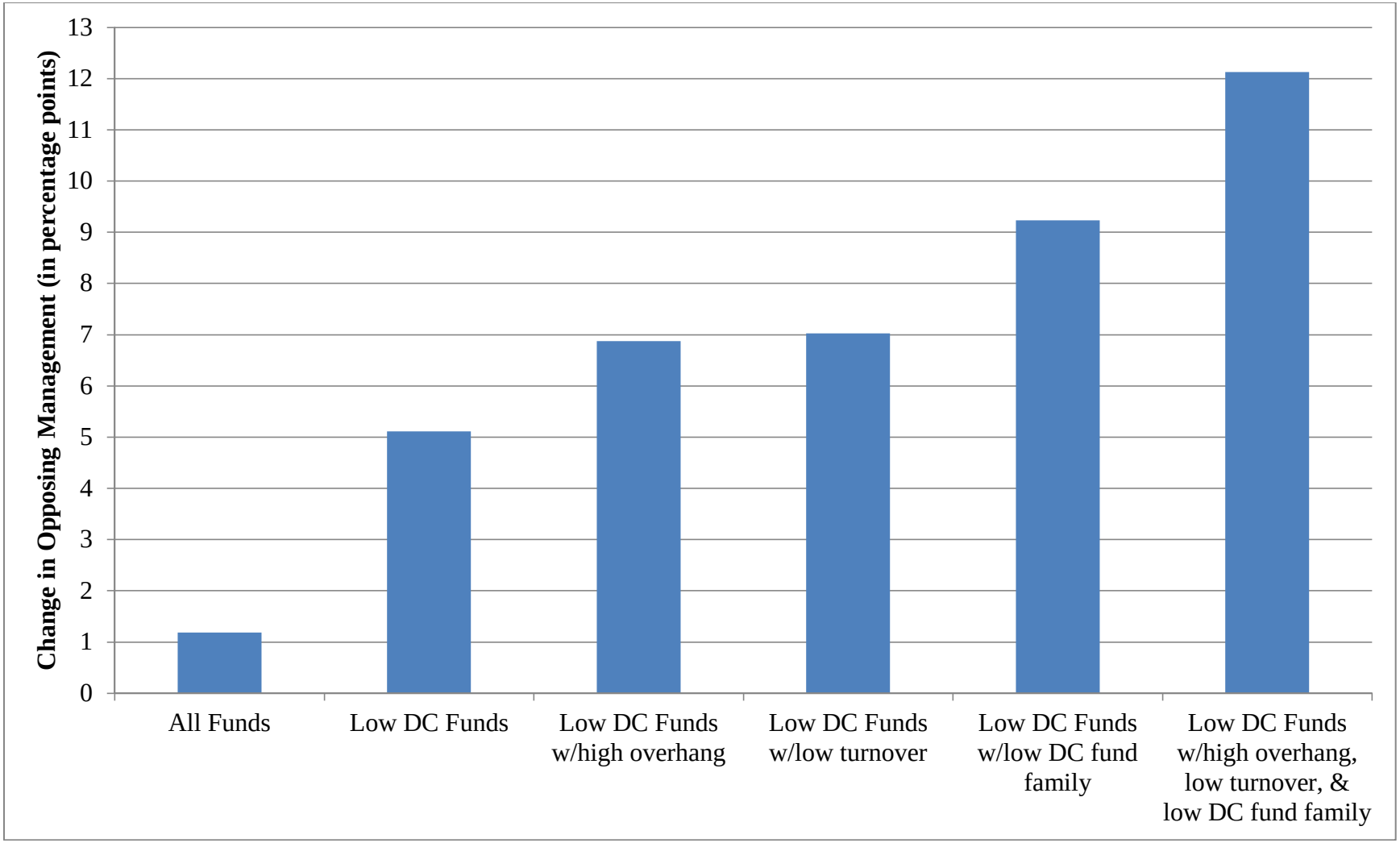

Fig. 1. This figure shows the implied change in the likelihood of a mutual fund opposing a firm's management from a one standard-deviation increase in accrued capital gains in a stock holding by type of mutual fund. These marginal effects are based on coefficients from the logit models presented in Table 2 and Table 3 and are evaluated at the sample mean.

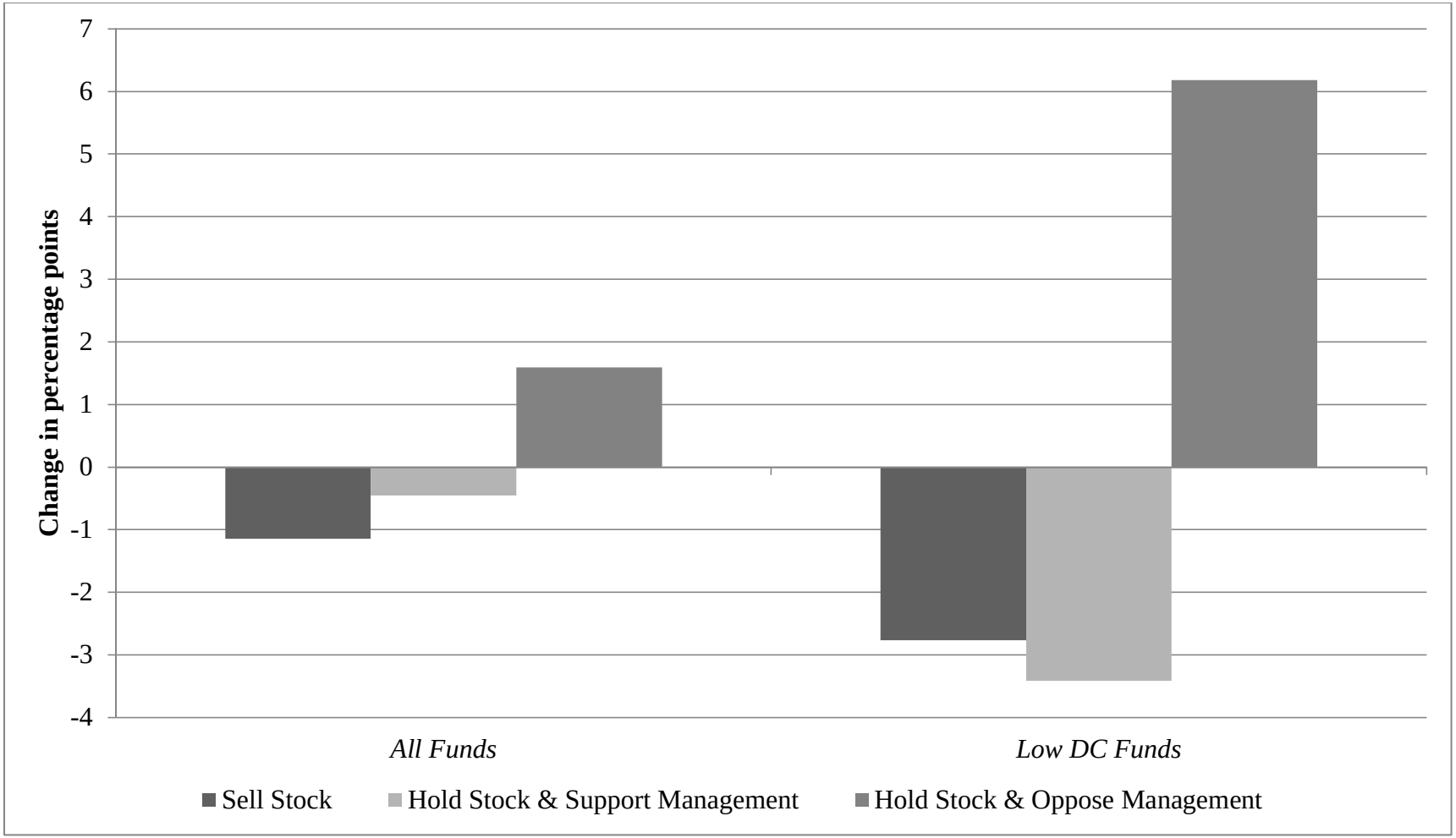

Fig. 2. This figure shows the implied change in the likelihood of a mutual fund's exit/voting decision from a one standard-deviation increase in accrued capital gains in a stock holding by type of mutual fund. These marginal effects are based on coefficients from the multinomial logit models presented in Table 4 (Panel A model for *All Funds* and Panel B model for *Low DC Funds*). They are evaluated at the sample mean.

APPENDIX Table 1

Cox proportional hazards model of stock sales

This table presents results of Cox proportional hazards models that relate a mutual fund's propensity to sell a stock to the fund's accrued capital gain on that stock and the tax status of the fund's investors. The baseline hazard rates are estimated non-parametrically, following Han and Hausman (1990), with a separate baseline for each fund-quarter combination (i.e., each fund can have different sale propensities from quarter to quarter, at different calendar times *t*):

$$Sell_{f,i,t}(q) = \gamma_{f,t}(q) \cdot e^{(\boldsymbol{X_{f,i,t}} \cdot \boldsymbol{\beta})}. \tag{A1}$$

$Sell_{f,i,t}(q)$ is the hazard rate of fund *f* selling stock *i* at time *t* (quarter *t* in calendar time) after holding the stock for the past *q*–1 quarters, $\gamma_{f,t}(q)$ is the non-parametric (fund-calendar-quarter specific) baseline rate of fund *f* selling a stock previously held for *q*–1 quarters at time *t*. $\boldsymbol{X}$ are covariates that shift the baseline rate: *CapitalGain*, the capital gain or loss accrued since stock purchase; *HighDC*, an indicator variable set to one if the proportion of fund assets held by defined-contribution retirement plans is above the sample median and set to zero otherwise; and the interactions of *HighDC* with *CapitalGain*. Panel A shows the results of estimation over the full sample of observations in the period from 2003 to 2008. Panel B shows results from the subsample of observations with coverage in the Voting Analytics data, also from 2003 to 2008. Panel B loses observations relative to Panel A because the Voting Analytics data do not include all mutual funds, especially for the first two years of the sample (in which Voting Analytics focused on large mutual funds). The coverage is better for the defined contribution subsample, as *Pensions & Investments* also focuses on the largest mutual funds, so fewer observations are lost in the merged subsample. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively. *z*-scores are listed in square brackets below the point estimates (*z*-scores are based on standard errors clustered at the fund level)**.**

	Panel A: All observations		**Panel B:** Observations with data in Voting Analytics	
	(1)	(2)	(3)	(4)
CapitalGain	–0.482***	–0.500***	–0.525***	–0.511***
	[26.13]	[14.80]	[24.79]	[14.08]
CapitalGain × *HighDC*		0.128***		0.107**
		[2.89]		[2.29]
Fund-Quarter Fixed Effects?	Yes	Yes	Yes	Yes
Number of Observations	8,063,230	1,247,917	5,998,671	1,128,516

APPENDIX Table 2

Management loses a contentious vote, all controls displayed

This table presents results of logit models that relate the vote outcome to a range of aggregate mutual fund shareholder variables and firm and vote characteristics. It replicates Table 5 and further provides all the regression coefficients associated with the controls suppressed from Table 5. Regressions based on 10,192 contentious votes. For brevity, the table only reports the coefficient estimates, with ***, **, * denoting significance at the 1%, 5%, and 10% levels.

	(1)	(2)
MFCapitalGain%ofMktCap	4.531***	
MFCapGain%ofMktCapHighDC		2.479
MFCapGain%ofMktCapLowDC		19.723**
p-value of difference		*0.071**
VWAvgMFHoldingPeriod	0.010*	
VWAvgMFHoldPeriodHighDC		0.004
VWAvgMFHoldPeriodLowDC		0.003
MFOwnership%ofMktCap	–0.004	
MFOwnership%ofMktCapHighDC		–0.012
MFOwnership%ofMktCapLowDC		–0.048
VWAvgMFCapitalGain	–0.040	
VWAvgMFCapGainHighDC		0.105
VWAvgMFCapGainLowDC		–0.143
Lag 3-Month Stock Return	–0.797***	–0.858***
Lag 12-Month Stock Return	0.068	0.024
log(Market Cap)	–0.267***	–0.272***
Book-to-Market Ratio	0.035	0.030
Leverage Ratio	0.072	0.080
CF-to-Assets	–0.639**	–0.750**
Capex-to-Assets	1.891**	1.925**
S&P 500 Member	0.001	0.052
G-Index	0.010	0.009
Institutional Ownership %	0.350	0.408**
Top 5 Executive Ownership %	–2.535***	–2.615***
Management Sponsored Proposal	–5.431***	–5.485***
Elect Director Vote	–3.010***	–3.008***
Quarter Fixed Effects?	Yes	Yes
Pseudo R^2	0.624	0.625

APPENDIX Table 3

Presence of a contentious proposal on meeting agenda, all controls displayed

This table presents results of logit models that relate the presence of a contentious proposal on the meeting agenda to a range of aggregate mutual fund shareholder variables as well as various firm characteristics. It replicates Table 6 and further provides all the regression coefficients associated with the controls suppressed from Table 6. For brevity, the table only reports the coefficient estimates, with ***, **, * denoting significance at the 1%, 5%, and 10% levels.

	(1)	(2)
MFCapitalGain%ofMktCap	–3.182***	
MFCapGain%ofMktCapHighDC		–2.203
MFCapGain%ofMktCapLowDC		–12.492**
p-value of difference		*0.120*
VWAvgMFHoldingPeriod	0.003	
VWAvgMFHoldPeriodHighDC		–0.001
VWAvgMFHoldPeriodLowDC		0.001
MFOwnership%ofMktCap	–0.005	
MFOwnership%ofMktCapHighDC		0.004
MFOwnership%ofMktCapLowDC		–0.008
VWAvgMFCapitalGain	0.087	
VWAvgMFCapGainHighDC		0.093*
VWAvgMFCapGainLowDC		0.021
Lag 3-Month Stock Return	0.150	0.127
Lag 12-Month Stock Return	–0.040	–0.065
log(Market Cap)	0.157***	0.154***
Book-to-Market Ratio	0.128*	0.146**
Leverage Ratio	0.094**	0.102**
CF-to-Assets	–0.101	–0.112
Capex-to-Assets	0.103	0.023
S&P 500 Member	0.278***	0.326***
G-Index	–1.906***	–1.875***
Institutional Ownership %	–1.105***	–1.200***
Top 5 Executive Ownership %	1.267***	1.273***
Quarter Fixed Effects?	Yes	Yes
Pseudo R^2	0.037	0.037
Number of Observations	11,062	11,062