

Capital Gains Lock-In and Governance Choices^{*}

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ABSTRACT

Because of differences in accrued gains and investors' tax-sensitivity, capital gains "lock-in" varies across mutual funds even for the *same* stock at the same time. Using this variation, we show that tax lock-in affects funds' governance decisions. Higher tax lock-in decreases the likelihood a fund sells a stock prior to contentious votes, and increases the likelihood the fund votes against management. Consistent with tax motivations, these findings are concentrated among funds with tax-sensitive investors. High *aggregate* capital gains across funds holding a stock predicts a higher likelihood management loses a vote and a lower likelihood a contentious vote is proposed.

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Prior research shows that capital gains taxation affects mutual funds' trading decisions (Huddart and Narayanan (2002); Cici (2012); Sialm and Starks (2012)). These studies document a "lock-in" effect: to some extent, a mutual fund with a largely taxable clientele is locked into a position with an unrealized capital gain; realized gains are costly for taxable investors because they trigger a tax liability. Bergstresser and Poterba (2002) show that ignoring tax incentives is costly for fund managers because tax-efficiency affects investment flows. Therefore, because of this 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 size of the accrued gain (or loss) in that stock.

Capital gains lock-in may also affect mutual funds' governance activities. Prior studies suggest that, upon anticipating an imminent conflict with a company's management, a fund generally prefers to exit a position, rather than fight (i.e., directly oppose management).¹ Economic incentives for this preference are clear: voting against management may 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 Roe (1990) argues that political and legal constraints encourage mutual funds to exit rather than directly oppose management.

A mutual fund faces a dilemma when considering how to vote on a contentious proposal (a proposal for which the fund believes that opposing management is likely value-enhancing for shareholders). The mutual fund must weigh the potential value created by opposing the firm's management against the potential costs outlined above. Another consideration, relevant for mutual funds with tax-sensitive investors and a capital gain on a stock, is that exiting a position, rather than "staying and fighting" the firm's management, would impose tax costs on the funds'

¹ For related studies conducted on a broader set of institutional investors see, for example, Parrino, Sias, and Starks (2003) and McCahery, Sautner, and Starks (2011).

² Matvos and Ostrovsky (2010), illustrating that voting against management can be costly, quote a mutual fund company's statement to the SEC regarding vote disclosure rules 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> for further details.

investors. 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 capital gains lock-in and the funds' willingness to oppose management on contentious proposals at annual shareholder meetings. A mutual fund locked-in to a position for tax reasons may be more likely to oppose management because the capital gains tax provides an incentive to hold a position with an accrued gain even if the fund is not fully enamored with the firm's management. There are two related reasons for this. First, because exit from a holding with a gain is more costly for funds with tax-sensitive investors, the fund's investment horizon increases and the fund can benefit from the long-term value created by the corrective action they take through their voting. Second, funds that are not locked-in and that continue to hold the position are more likely aligned with management than funds holding the stock because exit would trigger a tax liability for investors. Thus, funds with larger accrued gains in a stock and with a tax-sensitive clientele may be more likely to oppose management on contentious votes because the lock-in effect, rather than an affinity for management, causes them to continue holding the stock in the first place. Thus, for funds that are locked into a holding for tax reasons, a pragmatic alternative to sale is actively monitoring the firm while continuing to hold the stock.³

Specifically, we test whether higher accrued gains, by making exit less attractive because of the tax consequences from realizing accrued gains, increase the likelihood that a mutual fund will oppose management. Our empirical setup is well-suited for these tests. We first confirm, consistent with the studies referenced above, that there is indeed a negative relation between the probability of a mutual fund selling a stock and the accrued capital gain⁴ of the stock holding (and that this relation is stronger for funds with tax-sensitive investors). We then test how the accrued gain affects the decision regarding whether to provide governance (i.e., "fight" by voting against management) conditional on staying. For these tests, we focus on a subset of contentious

³ Bhidé (1993, p.42) explicitly mentions that capital gains tax lock-in encourages active governance by reducing an investor's willingness to sell shares.

⁴ For expositional simplicity, we use the term "capital gains" to refer to the percent change in a stock holding's price since the time of purchase). Therefore, "capital gains" refer to both gains and losses in a stock position.

votes, for which opposing management is potentially value-increasing. Accordingly, based on the results of Alexander, Chen, Seppi, and Spatt (2010), in our main results we limit the sample to votes for which Institutional Shareholder Services (ISS) recommends that a vote against management is in the interests of shareholders. Throughout the paper we refer to such proposals/votes as being “contentious,” with opposition to management potentially value-increasing for shareholders.⁵ In robustness tests, we show that our results also hold in the full sample of all votes (although, as expected, the results are weaker in magnitude, because the full sample of votes includes many non-controversial proposals).

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, including the issue voted on, as well as the company’s finances, governance, and past performance. For example, the past performance of the stock (over the past quarter, past year, past five years, and so on) could certainly affect whether a mutual 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 capital gains lock-in 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. For funds with taxable investors, it is this accrued capital gain that is relevant for tax-motivated decisions. This identification strategy is possible because capital gains tax lock-in varies across

⁵ Alexander, Chen, Seppi, and Spatt (2010) examine stock-price reactions to ISS announcements of voting recommendations that oppose management, and show that ISS’s voting recommendations are generally value enhancing. Although Iliev and Lowry (2014) argue that ISS recommendations are not always value enhancing, at a minimum proposals for which ISS and management recommendations disagree are contentious in nature, with support for management not clearly in shareholders’ best interests.

different funds *holding the same stock at the same point in time*, allowing us to eliminate the most obvious sources of omitted variables bias.

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, such as the fund's overall propensity to vote against management during that quarter, propensity to follow ISS's recommendations, factors related to the fund's family, as well as the fund's flows and past fund performance.

The results show that mutual funds with higher accrued capital gains in a stock are more likely to oppose management.⁶ Our results further demonstrate that, consistent with a tax motivation, the relation between voting against management and accrued capital gains is stronger for funds with a tax-sensitive clientele. In contrast, for mutual funds with a high proportion of tax-deferred retirement assets, there is no relation between voting against management and accrued capital gains. Also consistent with tax motivation, we find that the relation between voting against management and accrued capital gains in a stock holding is stronger for funds that have a high level of gains elsewhere in their portfolio (as opposed to having losses, which could be used to offset realized capital gains for tax purposes). Again, this effect is only present for the mutual funds with a primarily tax-sensitive clientele. We also find that the effects are present for both long-term and short-term capital gains, with the magnitude of the effect greater for short-term capital gains (that are taxed at a higher rate).

We use a multinomial logit framework to model the multiple choices available for mutual funds facing a contentious vote: to exit, support, or oppose, and find further evidence that tax-induced lock-in affects governance. For mutual funds with a tax-sensitive clientele, estimates suggest that, as the accrued capital gain in the stock holding increases from -50% to 100%, the probability of continuing to hold the stock and opposing management increases from 46% to

⁶ 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, or withholding its vote from, management's recommendation.

59%. At the same time, the probability of selling the stock falls from 8% to 3% and the probability of continuing to hold the stock and supporting management falls from 46% to 38%.

Finally, we also show that the governance lock-in effect has 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. Furthermore, high aggregate accrued capital gains are associated with a lower likelihood that a contentious vote appears on the agenda of the shareholder meeting in the first place, and thus deter an agency conflict from arising. This holds after controlling for firm returns at various horizons, mutual fund characteristics such as their average holding period in the stock, and firm characteristics, including size, institutional ownership, and various entrenchment measures. In our sample, management ultimately loses about one quarter of the contentious votes. A one-standard deviation increase in the fraction of a firm's ownership comprised of accrued gains held by mutual funds is associated with a 1.0 percentage point increase in the likelihood management loses the vote. However, this marginal effect increases to 4.4 percentage points if the accrued gains are all held by funds with largely taxable investors, and falls to 0.1 percentage points if the accrued gains are all held by funds with largely tax-deferred retirement-account investors. We also find that the lock-in effect for mutual funds is associated with fewer contentious proposals coming up for vote at the shareholders' meeting in the first place. In 39% of the shareholder meetings in our sample, the agenda includes a contentious vote (i.e., one for which ISS and management offer different recommendations). These contentious votes are significantly less likely to occur if the aggregate accrued gains across all mutual funds holding the stock is larger (but only if those gains are held by mutual funds with a tax-sensitive clientele). Thus, tax lock-in affects not only individual mutual fund voting decisions, but also both vote outcomes and the presence of contentious proposals on the meeting agenda.

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; Figure 1, based on French (2008, Table I)), it is all the more important to improve our understanding of mutual funds' decisions regarding whether to exit, stay and

support, or stay and fight. Overall, mutual funds appear to be relatively activist shareholders; they are more likely to oppose management than are other categories of stockholders, and mutual fund voting is a key determinant of whether a resolution passes (Morgan, Poulsen, Wolf, and Yang (2011)). Thus, this trend in U.S. stock ownership has important implications for corporate governance, and our paper contributes to understanding the governance decisions of this increasingly influential class of investors.

FIGURE 1 ABOUT HERE

Indeed, our study contributes to a recent literature examining various motivations for 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 (2013) show that various conflicts of interest affect mutual funds' voting decisions, while Matvos and Ostrovsky (2010) consider peer effects in 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 with these papers, we focus on how capital gains lock-in affects mutual funds' voting decisions. As discussed above, many other factors influence how mutual funds vote at annual shareholder meetings. Our specification includes both vote-level and fund-level fixed effects, which subsume many of these other factors, and thus allows us to identify the effect of lock-in on governance.

Another contribution of this paper is to document another avenue through which capital gains taxation influences the behavior of institutional investors. Huddart and Narayanan (2002), Cici (2012), Sialm and Starks (2012), and Sialm and Zhang (2013) show that capital gains taxation affects mutual funds' trading decisions. We further find that capital gains lock-in increases the likelihood that a locked-in fund will oppose a firm's management during contentious votes. This is an important finding because just over one-half of equity mutual fund assets are held by taxable investors (Sialm, Starks, and Zhang (2014)).

Our study is also related, although indirectly, to a voluminous literature that examines how liquidity affects the governance activities of blockholders,⁷ in that capital gains tax lock-in can loosely be viewed as a measure of illiquidity. In several respects, however, our study differs from the papers in that literature. First, they are concerned with the governance activities of large, concentrated blockholders. In contrast, we consider mutual fund holdings. Although, collectively, mutual funds are the single largest category of equity owners in the U.S. (French (2008)), their ownership is more diffuse than that of traditional blockholders. Our study thus sheds light on the relation between governance and liquidity for a large, but less-studied class of investors. Second, we consider a very different form of “liquidity” than the studies referenced above, which consider traditional measures of liquidity such as bid-ask spreads or Amihud’s (2002) measure. These commonly-used measures of liquidity vary across firms, but not across investors within a firm, while our measure of capital gains tax lock-in varies *across investors in a given stock at a given time*. This provides a compelling identification strategy to identify the lock-in effect on governance. Third, because our empirical design focuses on how governance decisions are influenced by the accrued gains of stocks *already held by the mutual fund*, we do not test the theories that focus on whether liquidity attracts investors to accumulate blocks of shares in the first place. Instead, we test whether, conditional that the stock is already held, tax lock-in affects governance activities by mutual funds.

The remainder of the paper is organized as follows. Section I reviews the data and variables. Section II first confirms that, consistent with several prior studies, there is a negative relation between mutual funds’ sale decisions and accrued capital gains in the stock holding. We then show that accrued capital gains also predict mutual funds’ voting decisions. Section III then shows how capital gains affect the joint voting/trading decision. Section IV documents that the aggregate accrued capital gains of all mutual funds that hold a stock affect both the outcome of a

⁷ As Kahn and Winton (1998) highlight, the relation between governance by blockholders and liquidity is complicated, with various theories predicting different relations between the two. For example, Coffee (1991), Bhide (1993), and Back, Li, and Ljungqvist (2013) argue that liquidity discourages blockholders from actively engaging in governance: when exit is easy, blockholders do not engage in information acquisition or costly governance activities. Kyle and Vila (1991), Maug (1998), Faure-Grimaud and Gromb (2004), Edmans (2009), Edmans and Manso (2011), and Edmans (2014) argue that liquidity instead 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.

contentious vote as well as whether such a contentious vote appears on the agenda of the shareholder meeting. Section V concludes.

I. 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, CRSP Stock File, ISS Voting Analytics Database, and RiskMetrics Governance Database.

A. Data

A.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 ten 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). Mutual fund stock holdings come from the Thompson-Reuters Mutual Fund Holdings Database. Funds are required to disclose their holdings semiannually, but during our sample period many funds disclose their holdings quarterly. We match the CRSP Mutual Fund data to the holdings data using the MFLINKS file. Finally, 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. 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 mutual funds.⁸ 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.

⁸ Sialm and Starks (2011) and Sialm, Starks, and Zhang (2014) provide a detailed description of this dataset.

A.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.

A.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).⁹ For each observation, we observe how the fund voted, the issue voted upon (e.g., director election, compensation proposal), management recommendation, ISS recommendation (which is disseminated a few weeks before the vote occurs), and the overall vote outcome. We match the ISS Voting Analytics database to the CRSP Mutual Funds database by hand, using fund and fund family names. The sample of mutual funds included in Voting Analytics increases over the sample period; in the earlier years Voting Analytics focused on the largest mutual fund families. Consequently, we do not have voting data for all mutual funds.

B. Select Variables

B.1 Capital Gains

To conduct this study, we impute the accrued capital gain embedded in each individual stock in each mutual fund's portfolio. Numerous prior papers impute stock-level capital gains

⁹ If a fund lends shares to short-sellers and fails to recall the shares before the record date of the vote, the fund cannot vote its shares. In our data, we drop observations in which a fund holds the stock at the end of the quarter prior to the quarter of a vote, is not recorded voting or withholding its vote, but holds the stock at the end of the quarter (as these observations may reflect instances in which the fund did not sell the stock before the vote, but instead just lent out shares). As a practical matter, we find that at most 0.2% of fund-vote combinations are missing due to securities lending (i.e., are dropped due to our sample restriction), suggesting this issue is very unlikely to affect our results. This apparent negligible security-lending by mutual funds during votes in which ISS and management's recommendations disagree is very much consistent with a pair of SEC No-Action Letters to State Street Bank & Trust Company in 1972 that established that funds have a fiduciary duty to recall shares prior to "material" votes. Additionally, Aggarwal, Saffi, and Sturgess (2012) find that institutional investors frequently recall loaned shares prior to a vote.

using a variety of methods.¹⁰ These methods vary across two dimensions: (1) imputed transaction price; (2) assumed sales rule.

We observe holdings at the end of each quarter, and from this we 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 must assign partial sales to a specific tranche. Prior studies use four different 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.¹¹

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

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

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

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

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

¹⁰ See, for example, Huddart and Narayanan (2002), Frazzini (2006), Jin (2006), and Cici (2012).

¹¹ 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. All 16 methods give similar results. Prior studies, including Jin (2006) and Cici (2012), also find that different methods give similar results.

B.2 Voting

As discussed in the introduction, we focus on votes that likely represent a meaningful conflict between management and shareholders. Therefore, for our main analyses, we limit our sample to votes for which ISS recommendation differs from management recommendation. This results in a final sample of 10,950 unique votes¹² over the period from 2003 to 2008. We note, however, that our results are robust to using the full sample of all votes, although, as expected, the results are weaker in magnitude because the full sample of votes includes many non-controversial proposals.

The dependent variable in our analyses of mutual fund voting is an indicator variable *OpposeManagement*. It is set to one if the mutual fund does not follow management’s recommendation, either by voting against management or by withholding its vote, and is set to zero if the fund votes to support management. Specifically, a mutual fund does not follow management recommendation when management recommends voting “For” (“Against”), yet the fund either votes against (for) the proposal or withholds its vote. 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 Woitke (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). 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).¹³

C. Summary Statistics

Table I presents summary statistics for the key variables over the 2003-2008 sample period for the merged mutual fund holding – Voting Analytics dataset, which we limit to the

¹² Of these votes, 68% involve director elections, 13% involve compensation proposals, 8% involve non-director board issues (e.g., change the size of the board or eliminate cumulative voting), 7% involve governance issues (e.g., amend the articles or bylaws of the company), and the remaining 4% represent other issues (e.g., social issues).

¹³ Consistent with this regulation, only 0.5% of funds do not vote in our sample of contentious proposals and only 2.6% abstain.

fund-vote combinations for which the ISS recommendation does not equal the management recommendation (these data form the basis for our regressions in Tables II and III). Particularly relevant for our analyses of voting patterns is the indicator variable *OpposeManagement*, which is one for 53% (0.53) of the fund-vote observations in our sample. Thus, funds support management for 47% of the fund-vote observations.

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%).¹⁴ The average accrued capital gain of a mutual fund's stock holding is 34%, with one-tenth of holdings having a capital gain of at least 109% and one-tenth having a capital gain of -17% or worse. 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. This is definitely not the case; the average within company-vote standard deviation in accrued capital gains is quite large, 49% (0.49). 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, 51% (0.51). Thus, there is substantial variation in both the accrued capital gain across mutual funds for a given stock at a given time, as well as in the accrued capital gain across the stocks held by a given mutual fund at a given time, allowing us to employ specifications with both vote fixed effects and fund-quarter fixed effects.

In addition to exploiting variation in the accrued capital gain mutual funds have in a given stock, we also exploit variation across funds in the tax sensitivity of their investors. *% Defined Contribution Investors* is the percentage of the fund owned by defined-contribution retirement plans. For ease of interpretation, in some analyses we create an indicator

¹⁴ Although our vote sample begins in 2003, we begin tracking capital gains for mutual funds 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 positions were purchased prior to 1984.

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). As an additional measure of a fund's tax sensitivity, we also calculate *FundOverhang*, the value-weighted capital gain across all of the stocks held by the fund. Funds can reduce the tax liability they pass on to their investors from realized capital gains by realizing capital losses elsewhere in their portfolio. Thus, funds with a lower *FundOverhang* are likely less tax sensitive. At the sample median, accrued capital gains are 17% of the fund's total value. For ease of interpretation, in some analyses we create an indicator variable, *LowFundOverhang*, set to one for funds with a below median level of total accrued capital gains across all of their holdings and set to zero otherwise.

Finally, although the primary focus of this paper is whether capital gains lock-in affects a given fund's vote at a firm meeting, in Section IV we also consider whether the aggregate accrued gains of all mutual funds holding a given firm's stock predicts whether the management of that firm actually lose a contentious vote, and whether these aggregate accrued gains deter a contentious proposal 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 if management wins (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 to be voted on in a particular meeting and is set to zero if none of the proposals are contentious (thus, this variable is measured at the firm-meeting level, which is typically once a year). There is at least one contentious proposal at 39% of the meetings. This variable is calculated using the full sample of votes from Voting Analytics, determining for a given firm meeting whether the voting recommendations of management and ISS differ for any of the proposals.

TABLE I ABOUT HERE

II. Capital Gains Lock-in and the Propensity to Oppose Management

In this section, we examine the relation between the mutual fund's voting decisions for a stock and the fund's accrued capital gains on that stockholding. As mentioned in the introduction, Huddart and Narayanan (2002), Cici (2012), and Sialm and Starks (2012) all document a negative relation between the likelihood a fund sells a stock and the accrued capital gains on that stock holding, which they attribute, at least in part, to tax motivations.¹⁵ Because capital gains lock-in must affect the sale decision of mutual funds for lock-in to affect governance decisions, we confirm this finding in Appendix Table I. In that table, we test whether accrued capital gains and the tax status of a mutual fund's clientele affect funds' sales-propensity. In these tests, we interact *CapitalGain* (the accrued capital gain of a mutual fund in a given stock holding) with an indicator variable for the presence of a large proportion of tax-deferred investors (*HighDC*). Because a mutual fund's likelihood of selling a stock next quarter falls with how long the stock has already been held,¹⁶ we follow Ivković, Poterba, and Weisbenner (2005) in using a Cox proportional hazards model. As shown in Appendix Table I, we find a strong negative relation between the likelihood a fund sells a given stock during the current quarter and the fund's accrued capital gain in the stock. Further, this negative relation is significantly weaker for funds with a more tax-sensitive clientele, as captured by the coefficient on *HighDC*. Having established that capital gains lock-in exists, we next consider whether this lock-in affects mutual funds' voting decisions. Specifically, we consider whether the fund is more likely to oppose management, given that the fund is already stuck holding the stock (not

¹⁵ In contrast to the studies referenced above, Frazzini (2006) finds that mutual fund managers seem to be subject to the disposition effect (a tendency to realize gains and hold on to losses that could result from prospect theory and loss aversion). In particular, Frazzini finds that, over the period 1980-2002, the aggregate proportion of gains realized (PGR) by mutual funds exceeds the aggregate proportion of losses realized (PLR). However, using similar data as we do, Cici (2012) finds that, consistent with tax lock-in, PLR *exceeds* PGR for mutual funds over the period 1980-2009, as well as for each of the subperiods 1980-89, 1990-99, and 2000-09. While Frazzini uses a different methodology and a different sample than we do, in unreported results we replicate Cici's findings.

¹⁶ On average, 11% of stock positions are sold in any given quarter (without controlling for the length of the holding period up to that quarter). In untabulated results, we find that the unconditional probability of a mutual fund selling a stock during the next quarter is 19% if the stock has been held for only one quarter, but declines to 12% after six quarters, and to 8% after 12 quarters.

necessarily because of an affinity for management but rather for tax reasons) and will thus continue to hold the stock instead of exiting.

As previously discussed, voting against management may be costly to the mutual fund (e.g., Davis and Kim (2007); Ashraf, Jayaraman, and Ryan (2012); Butler and Gurun (2012)). If a mutual fund disagrees with management, but does not want to directly vote against them, one solution is for the fund to vote with its feet by selling the stock. The benefits of doing so, however, might be outweighed by the tax liability triggered by realizing an accrued capital gain; Bergstresser and Poterba (2002) highlight that realizing an accrued capital gain can be costly to the fund, because such tax inefficiency reduces future investment flows from tax-savvy investors (not to mention the tax liability passed on to the current investors!).

Thus, if a mutual fund is locked-in to a position for tax reasons (by virtue of having a tax-sensitive clientele), instead of exiting, the fund may choose a pragmatic alternative to sale – to continue holding stocks with accrued capital gains and to devote more resources to monitoring. For many votes, however, management recommendations are likely uncontroversial in nature, so there is less reason to expect a strong relation between opposition to management and accrued capital gains in the full sample of all proposals (as compared to the subsample of contentious votes for which the ISS and management recommendations differ). Therefore, we use the subsample of contentious proposals for most of our analyses.

A. Voting Behavior of Mutual Funds and Relation with Accrued Gains in a Stock

We begin our analysis of whether capital gains lock-in affects 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. This analysis provides straightforward and easy-to-interpret results. We expand upon these results in the next section, by estimating multinomial logit models of a fund's three-way choice of selling a stock just before the shareholder meeting, continuing to hold the stock and supporting management, or continuing to hold the stock and opposing management.

In this section, we estimate a linear probability model that relates the indicator variable *OpposeManagement* (set to one if the mutual fund votes against or withholds its vote from the management recommendation, and set to zero otherwise) with *Capital Gain* (the accrued capital gain or loss in the stock holding) in the following panel regression:

$$\begin{aligned} \text{OpposeManagement}_{f,i,v,t} = & \beta \cdot \text{CapitalGain}_{f,i,t-1} + \delta_{i,v} \\ & + \theta_{f,t} + \sum_{q=1}^{20} (\gamma_q \cdot I_q) + \varepsilon_{i,f,v,t} \end{aligned} \quad (3)$$

where $\delta_{i,v}$ are vote fixed effects, $\theta_{f,t}$ are fund-quarter fixed effects, and I_q , $q = 1, \dots, 20$ are indicator variables set to one if fund f has held stock i for q quarters, and to zero otherwise. We report t-statistics based on standard errors clustered by fund-quarter. The vote effects remove all variation in the issue voted on, as well as any company-level effects such as past stock performance, size, and governance. The fund-quarter fixed effects remove all variation at the fund-period level, such as past fund returns, overall voting tendencies that quarter, or flows into the fund. Thus, our identification comes from variation in accrued capital gains across different stocks held by the same fund in the same quarter, after conditioning out fund-level 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, independent of accrued capital gains.

To test whether the relation between voting patterns and capital gains differs for funds that have a tax-insensitive clientele, we also estimate a similar regression in which we interact *CapitalGain* with *HighDC* (an indicator variable set to one if the proportion of fund assets held by retirement plans is above the sample median and set to zero otherwise). Because $\text{HighDC}_{f,t}$ 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:

$$\begin{aligned}
OpposeManagement_{f,i,v,t} = & \beta_1 \cdot CapitalGain_{f,i,t-1} \\
& + \beta_2 \cdot (CapitalGain_{f,i,t-1} \times HighDC_{f,t}) \\
& + \delta_{i,v} + \theta_{f,t} + \sum_{q=1}^{20} (\gamma_q \cdot I_q) + \varepsilon_{i,f,v,t}
\end{aligned} \tag{4}$$

In some specifications, we also include interactions with *LowFundOverhang*, an indicator variable set to one for funds whose total accrued capital gains across all of their holdings is below the median, and set to zero otherwise.

Column (1) of Table II presents the first specification (Equation (3)), which includes only accrued capital gains. As expected, we find a positive relation between *OpposeManagement* and *CapitalGain* in Table II (with the regression coefficient of 0.003, statistically significant at the 5-percent level). This result is consistent with our prediction – funds that are locked-in to a stock holding because of capital gains taxes are more likely to oppose management.

As discussed earlier, prior research demonstrates that tax lock-in affects mutual funds’ sales decisions; the holding period of a stock increases with its accrued gain, which we confirm in Appendix Table I. In this section, we find that, conditional on holding the stock at the time of the vote, funds with larger accrued gains are also more likely to oppose management. This reflects a simple tradeoff. Opposing management may be costly for all funds for the reasons cited in the introduction and at the beginning of this section. As discussed earlier, however, funds with accrued gains in a stock can benefit more from opposing management in an attempt to boost the stock’s price in the future, because they have a longer expected holding period relative to funds with accrued losses in the stock. Another, similarly-motivated, explanation for this result is that the tax lock-in effect may cause affected funds to continue to hold a stock even if they are not enamored with the management – making them more likely to vote against management on contentious proposals relative to funds not “forced” by taxes to be holding the stock at the time of the vote.

The result in column (1) does not differentiate by the tax status of the funds’ investors – the 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 identify more precisely why accrued capital gains explain mutual funds' decisions to vote against management. If this relation stems from tax motivations, the positive relation between opposing management and capital gains in the stock should be weaker for funds with more tax-deferred retirement assets under management. To test this, column (2) presents the second specification (Equation (4)), which includes both accrued capital gains and its interaction with *HighDC*. Consistent with the tax lock-in hypothesis, the coefficient on the interaction $CapitalGain \times HighDC$ is -0.009. It is negative and significant at the 1-percent level, almost exactly offsetting 0.011, the positive and statistically significant coefficient for *CapitalGain* (which, in this specification, represents the relation between opposing management and accrued capital gains for funds with tax-sensitive investors). Thus, the propensity to oppose management varies 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.¹⁷

In column (3), we also include interaction terms with *LowFundOverhang*, an indicator variable set to one for funds whose total accrued capital gains across all of their holdings is below the median, and set to zero otherwise. Because funds can use realized capital losses to offset realized capital gains, the effect of tax lock-in should be weaker for funds with lower fund-level capital gains (i.e., $LowFundOverhang = 1$). This predicts a negative coefficient on $CapitalGain \times LowFundOverhang$. Moreover, *LowFundOverhang* should mitigate the lock-in effect more for funds with a tax-insensitive clientele (i.e., $HighDC = 0$) than for funds with a tax-sensitive clientele ($HighDC = 1$). Thus, we expect a positive coefficient on the triple interaction $CapitalGain \times HighDC \times LowFundOverhang$. This is precisely what we find. The positive effect of *CapitalGain* on *OpposeManagement* (the regression coefficient, statistically significant at the 1-percent level, is 0.013) is almost fully offset for those funds with a low fund-level capital gains

¹⁷ By definition, *HighDC* funds have both a higher fraction of investment that is tax-insensitive as well as more retirement plan business. Therefore, the lack of a relation between *CapitalGain* and *OpposeManagement* for *HighDC* funds could simply reflect that funds with more retirement-plan business are less willing to vote against management. The key point of our identification strategy is that, while funds with a tax-sensitive clientele (i.e., $HighDC = 0$) may also care about alienating management by opposing them on a vote, they are more likely to do so if the stock holding has a gain than a loss because of the tax-induced lock-in effect.

overhang (the regression coefficient associated with $CapitalGain \times HighDC$, significant at the 1-percent level, is -0.012). The positive and significant coefficient of 0.017 on the triple interaction, $CapitalGain \times HighDC \times LowFundOverhang$ shows that, for funds with a 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.

TABLE II ABOUT HERE

B. Robustness Tests

We conclude this section by reporting various robustness tests of our $OpposeManagement$ regression. In particular, in untabulated analyses, we consider the effect of holding period (short-term vs. long-term), expanding the sample to analyze all vote outcomes (not just votes on proposals for which the ISS recommendation differed from that of management), and dividing the sample into management proposals (the votes of which are binding) and other votes that may be more symbolic in nature (such as shareholder proposals with nonbinding results and director elections in which candidates are often unopposed).

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), a concern is that our $OpposeManagement$ results may only apply to short-term capital gains and thus be more transitory in nature. In a regression otherwise analogous to Equation (3), yet with capital gains separated by short-term and long-term status, the coefficient associated with short-term gains is 0.014 (significant at the 5-percent level), and the coefficient associated with long-term gains is 0.003 (significant at the 1-percent level). Among funds that have a more tax-sensitive clientele (i.e., $HighDC = 0$), the coefficient associated with short-term gains is 0.046, and the coefficient associated with long-term gains is 0.011 (both significant at the

1-percent level). Thus, as predicted, the lock-in effect on voting is stronger for short-term gains, but is present for both short-term and long-term mutual fund holdings.¹⁸

The analyses in this section have focused on mutual fund voting decisions on proposals in which the recommendations of ISS and management differ. This is done to identify a set of proposals for which, *a priori*, opposing management may be value-increasing – or, at a minimum, to identify a set of contentious proposals in which support for management is not clearly in shareholders’ best interests. Nonetheless, as a robustness test, we also estimate the *OpposeManagement* regression on the sample of votes in the Voting Analytics dataset in which the recommendations of ISS and management are the *same*. 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 action¹⁹ and, thus, funds may oppose management even in some instances in which ISS supports management’s view on a proposal. In these latter cases, we would also expect opposition to management to be positively associated with accrued capital gains in a stock holding, but with a smaller magnitude than is found for the sample of votes in which the ISS and management recommendations differ (because the full sample contains a large number of non-controversial votes). This is exactly what we find. In the specification in which we interact *CapitalGain* with *HighDC*, analogous to column (2) of Table II, the coefficient on *CapitalGain* is 0.004 (significant at the 1-percent level) and the coefficient on *CapitalGain* \times *HighDC* is -0.001 (significant at the 5-percent level). Thus, capital gains lock-in does affect mutual funds’ voting decisions in the full sample of all votes, but, as expected, the effect is much larger in the subsample of contentious votes.

Finally, our sample contains votes on management proposals, shareholder proposals, and director elections. Votes on management proposals are binding. In contrast, votes on shareholder proposals are generally not binding and candidates in director elections are often unopposed,

¹⁸ In untabulated results, and consistent with Sialm and Starks (2012), we also find that the lock-in effect in mutual fund sales is indeed stronger for fund holdings with a holding period less than 12 months. Importantly, we find that a lock-in effect is also present for long-term capital gains, with this effect stronger for funds with more tax-sensitive investors.

¹⁹ Iliev and Lowry (2014) note that some mutual funds place relatively little weight on ISS recommendations in their voting decisions.

making these votes perhaps more symbolic in nature. In interpreting the results, we assess whether these symbolic votes drive the results²⁰ by separating our sample into votes on management proposals and other votes (i.e., shareholder proposals and director elections). We find that, if anything, the results are stronger for the binding management proposals. Focusing on the *OpposeManagement* specification that includes interactions with *HighDC*, for the binding management proposals, the coefficient on *CapitalGain* is 0.024 (significant at the 1-percent level) and the coefficient on *CapitalGain* \times *HighDC* is -0.021 (significant at the 5-percent level). For the non-binding shareholder proposals and director elections, the coefficient on *CapitalGain* is 0.007 (significant at the 5-percent level) and the coefficient on *CapitalGain* \times *HighDC* is -0.005 (t-statistic of 1.60). Thus, our key results regarding the lock-in effect on mutual fund voting are significant for both binding and non-binding proposals.

III. Support, Oppose, or Exit: A Multinomial Logit Approach

The dependent variable in the previous section was an indicator variable contrasting two choices – *conditional upon holding the stock at the time of the vote*, the fund can either support or oppose management. An alternative specification, presented in this section, is to model the dependent variable as a choice between three alternatives: sell, 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 sell (i.e., 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 in the shareholder meeting). For those funds that continue to hold the stock until the vote, we measure whether the fund supports or opposes management (as in Section II).

We use a multinomial logit model to test the relation between these three choices and accrued capital gains. This approach thus unites the results presented in Appendix Table I (relating sale propensity and accrued capital gains) and in Section II (relating opposing

²⁰ Cai, Garner, and Walkling (2009) and Fischer, Gramlich, Miller, and White (2009) show that significant levels of dissenting votes, even if they fall short of winning, are often followed by changes in the board, management, or corporate actions within the next year.

management and accrued capital gains), and thus simultaneously explores the full range of choices available to the funds. The covariates are the same as in Table II, 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.²¹

Table III presents the multinomial logit results. In Panel A, the key independent variable is *CapitalGain*. In Panel B, we add the interaction term *CapitalGain* \times *HighDC*. In Panel C, we add further interactions with *LowFundOverhang*. For all three 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 t-statistics are based on standard errors clustered by fund-quarter. Note that the number of observations increases relative to Table II, 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 the fund-quarter observations are: 6% probability of a complete stock sale before the vote, 44% probability of continuing to hold the stock and support management, and 50% probability of continuing to hold the stock and oppose management (by either a vote against management or a withheld vote).²²

The results displayed in Table III are consistent with our earlier results. Column (1) of Panel A shows that higher accrued capital gains in a stock holding 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). A common way to assess the economic magnitude of the results of the multinomial logit model is to convert the coefficients to relative risk ratios. For the coefficients in Panel A, the relative risk

²¹ Charbonneau (2013) provides details on implementing Chamberlain (1980) in a model with multiple fixed effects.

²² At first glance, the 6% probability of exiting a stock position before the vote seems low/inconsistent relative to the 11% probability of liquidating a stock holding over the subsequent quarter that was reported in an earlier footnote in Section II. However, across all the observations in the multinomial logit model, 32% of the votes are in the first month of a quarter, 52% of the votes are in the middle month of the quarter, and 16% of the votes are in the last month of the quarter. Thus, the timeframe over which a stock can be sold before a vote is often only one or two months (as opposed to a full quarter), thus explaining the difference between the 6% and 11% figures.

ratio of selling the stock relative to holding it and supporting management is 0.77, implying that if *CapitalGain* increases by 100 percentage points the relative probability of selling the stock decreases by 23%. The relative risk ratio of holding the stock and opposing management relative to supporting management is 1.06, implying that if *CapitalGain* increases by 100 percentage points the relative probability of opposing management increases by 6%.

Panel B of Table III includes an interaction term between accrued capital gains and an indicator variable for funds with a high proportion of defined contribution retirement plan assets (indicating less sensitivity to tax lock-in effects). The results show that, as the accrued capital gain increases: (1) the probability of sale decreases, but the effect is weaker for the funds with higher defined contribution assets; and (2) the probability of opposing management increases, but not for the funds with a higher share of defined contribution assets.

For the group of funds with fewer tax-deferred investors, the implied economic magnitudes are large. In Panel B, the coefficients on *CapitalGain* represent the effects of accrued capital gains on the decision to exit/support/oppose management for funds with a low fraction of retirement account assets (i.e., *HighDC* = 0). For this group of tax-sensitive funds, a transformation of the coefficients in Panel B results in a relative risk ratio of selling the stock relative to holding the stock and supporting management of 0.57, while the relative risk ratio of holding the stock and opposing management relative to supporting management is 1.35. These relative risk ratios imply that as *CapitalGain* increases from 0% to 100%, the relative probability of selling the stock decreases by 43%, while the relative probability of opposing management increases by 35%.

In Panel C of Table III, we report results of a multinomial logit model that includes further interactions with the indicator variable *LowFundOverhang*. The positive relation between the likelihood of a mutual fund voting against management and accrued capital gains in a stock holding is significantly weaker for funds with a low level of capital gains across all their fund holdings (i.e., *LowFundOverhang*=1). We also find, as predicted, that *LowFundOverhang* mitigates the lock-in effect on voting more for funds with fewer retirement assets than for funds

with more retirement assets (i.e., the triple interaction term $CapitalGain \times HighDC \times LowFundOverhang$ has a negative and significant coefficient).

Based on the coefficient estimates from Table III, Figure 2 illustrates how the probabilities of exit, support of management, and opposition to management change when the accrued gain in the stock increases from -50% to 100%.²³ Panel A, capturing all funds, shows that, as the accrued capital gain in a stock holding increases, the probability of continuing to hold the stock and opposing management increases from 49.9% (for an accrued capital gain of -50%) to 53.3% (for an accrued capital gain of 100%). At the same time, the probability of both exit and of supporting management decline. Not surprisingly, given our tax lock-in hypothesis and our prior results, the effects are much stronger for the funds with more tax-sensitive investors. Panel B, capturing funds with more tax-sensitive investors (i.e., $HighDC = 0$), shows that, as the accrued capital gain in the stock holding increases from -50% to 100% for this group of funds, the probability of continuing to hold the stock and opposing management increases 13 percentage points (from 46.2% to 59.4%). At the same time the probability of selling the stock falls from 7.8% to 2.8%, and the probability of continuing to hold the stock and supporting management falls from 46.0% to 37.9%. Finally, Panel C, capturing funds with more tax-sensitive investors and a high fund capital gains overhang (i.e., $HighDC = 0$ and $LowFundOverhang = 0$), shows that, consistent with the tax lock-in hypothesis, the effects are further amplified when we examine the subset of funds with more tax-sensitive investors that also have large portfolio-wide capital gains (and thus a lack of losses available to offset realized gains for tax purposes). For this group of particularly tax-sensitive funds, as the accrued capital gain in the stock holding increases from -50% to 100%, the probability of continuing to hold the stock and opposing management increases almost 20 percentage points (from 51.9% to 70.3%).

In sum, the findings presented in this section are consistent with the results reported in the Appendix and Section II. Tax-induced lock-in not only affects the sale of stocks, but also

²³ For both all funds and for funds with a more tax-sensitive clientele (i.e., $HighDC = 0$), we record the unconditional probabilities of the exit/support/oppose decision, as well as, the unconditional average accrued capital gain in a stock holding. From that baseline, we then extrapolate the probabilities of the exit/support/oppose decision for higher and lower accrued capital gains using the coefficients from Panels A, B, and C of Table III for Panels A, B, and C of Figure 2.

affects the likelihood mutual funds with taxable investors will vote against management on contentious votes. Nonetheless, as documented in Table I, management loses these contentious votes only about a quarter of the time. Section IV investigates whether the effect of capital gains lock-in on mutual fund voting is large enough to actually influence vote outcomes and the agenda of proposals to be voted on at the shareholder meeting.

TABLE III ABOUT HERE

FIGURE 2 ABOUT HERE

IV. Does the Lock-In Effect Influence Vote Outcomes/Agenda?

In the prior sections, we have analyzed the decisions of individual mutual funds regarding whether to exit, support management, or oppose management on a given proposal. This framework enables us to control for vote specific fixed effects as well as fund-quarter fixed effects. Thus, we identify the effect of capital gains lock-in on fund voting by exploiting differences across funds in both the accrued capital gains since purchase in a given stock as well as the tax status of the funds' investors (while at the same time controlling for a fund's underlying tendency to oppose or support management).

From these analyses, however, we cannot determine whether the effect of tax lock-in on voting is sufficiently large to influence the actual vote outcome, or to influence whether a contentious proposal even appears on the meeting's agenda in the first place. To answer these questions, we must conduct analyses at the vote level (does management win or lose the vote) or at the firm-meeting level (does the meeting agenda contain at least one vote for which ISS and management have different recommendations). In this section, we conduct precisely these tests. Because the unit of observation is at the vote-level, or even broader at the meeting-level, we must relax some of the precision of our identification strategy because we can no longer control for individual vote fixed effects (which absorbed all firm characteristics that may influence whether a fund would oppose or support management). Nonetheless, these specifications provide

useful evidence on the importance of this governance channel for mutual funds with taxable investors.

A. Aggregate Capital Gains Lock-In and Vote Outcomes

In Table IV, 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 will lose a contentious vote. Our dependent variable in this analysis, *ManagementLosesVote*, is an indicator variable set to one if management actually loses a contentious vote (i.e., a vote in which the recommendations of ISS and management diff), and set to zero if management wins. Thus, this analysis is conducted at the vote level. Our key explanatory variable, *MF Capital Gain % of Market Cap*, is the aggregate dollar value of capital gains held by mutual funds in the firm's stock normalized by the firm's total market capitalization.²⁴ It quantifies how important the aggregate lock-in effect for mutual funds is for a particular firm and, thus, how influential it should be in determining the vote outcome.

Besides *MF Capital Gain % of Market Cap*, we also include the value-weighted average holding period of mutual funds (*VW Average MF Holding Period*), the share of the firm's stock owned by mutual funds (*MF % of Firm Owned*), and the value-weighted average capital gain in a stock by mutual funds (*VW MF Average Capital Gain*) – the product of these last two variables equals *MF Capital Gain % of Market Cap*. The inclusion of these additional aggregate mutual fund shareholder variables in the regression helps us test whether it is really the presence of large accrued capital gains that drives management losing votes, as opposed to other characteristics of mutual fund shareholders in the firm (such as how long they have held shares, how many shares they own, and the return earned since purchase). Finally, the regressions in Table IV also include various firm-level and proposal-level characteristics (all of which were subsumed by the fixed effects in our earlier analyses). Specifically, we include as controls lagged 3-month and lagged 12-month stock returns, log(market capitalization), book-to-market ratio, leverage ratio, cash

²⁴ This variable 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.

flow-to-assets, capital expenditure-to-assets, S&P 500 membership, 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.²⁵

The coefficient on *MF Capital Gain % of Market Cap* of 0.290, presented in column (1) of Table III, is positive and is both statistically and economic significant. For example, a one-standard deviation increase in *MF Capital Gain % of Market Cap*, (0.033), is associated with a 1.0 percentage point increase in the likelihood management loses the vote (0.290×0.033). To put this effect in perspective, recall that management loses a vote on average 24% of the time in the sample. Moreover, the coefficient on *MF Capital Gain % of Market Cap* is obtained *while also 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 – the product of these last two variables equals *MF Capital Gain % of Market Cap*. The regressions include these additional aggregate mutual fund shareholder variables to ensure it is really the presence of large accrued capital gains that drives management losing votes, as opposed to other characteristics of mutual fund stockholdings in the firm.²⁶

For brevity, the coefficients associated with the other controls are suppressed from Table IV. The complete table is provided as Appendix Table II. Other controls generally have the expected signs; management is less likely to lose a vote if stock returns were high over the prior 3 months, cash flow are high, the firm is large, or if management's ownership is high. On the other hand, the management of firms with higher capital expenditures (perhaps representing over investment) and higher institutional ownership are more likely to lose a vote. Not surprisingly, management is less likely to lose management-sponsored proposals and director elections (which often feature only one candidate). The coefficient on the prior 3-month return is particularly

²⁵ These control variables follow from Matvos and Ostrovsky (2010), Morgan, Poulsen, Wolf, and Yang (2011), and Iliev and Lowry (2014), among others.

²⁶ We also estimated a version of the specification in column (1) of Table IV in which we do not include these other mutual fund shareholder variables. In that specification, the coefficient on *MF Capital Gain % of Market Cap* is 0.262, which is very similar to the coefficient of 0.290 from column (1), and it is still highly significant. The similarity of these coefficients is not surprising, given the trivial magnitudes of the coefficients on these other mutual fund shareholder variables in Table IV. Thus, it really is the amount of accrued capital gains aggregated across mutual funds as a whole that affects vote outcomes.

noteworthy; although high accrued gains by mutual fund investors predicts 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 IV, 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, *MF Capital Gain % of MktCap by HighDC* is the accrued gains aggregated across all funds with a primarily tax-insensitive clientele (normalized by firm market value), whereas *MF Capital Gain % of MktCap by LowDC* is the analogous variable constructed for those funds with a tax-sensitive clientele. The *p*-value, reported below the coefficients on these two variables, gives the significance of the difference in the effect of accrued capital gains held by these two types of funds.

If tax lock-in really influences vote outcomes, the coefficient on *MF Capital Gain % of MktCap by LowDC* should be larger than the coefficient on *MF Capital Gain % of MktCap by HighDC*. This is exactly what we find. In column (2) of Table IV, the coefficient on *MF Capital Gain % of MktCap by LowDC* is a positive and highly significant 2.040, while that on *MF Capital Gain % of MktCap by HighDC* is an insignificant 0.050 (with the difference between the two significant). The results imply that, if all of the mutual funds holding the stock have a tax-sensitive clientele, a one-standard deviation increase in accrued capital gains held by mutual funds is associated with a 4.4 percentage point increase in the likelihood management loses the vote (2.040×0.0215).²⁷ This 4.4 percentage point effect is quite large relative to the baseline probability that management loses a contentious vote of 24%. If, instead, all of the mutual funds holding the stock have a tax-insensitive clientele, a one-standard deviation increase in accrued capital gains held by mutual funds implies only a 0.1 percentage point increase in the likelihood management loses the vote (0.050×0.0215), a result statistically indistinguishable from zero.

²⁷ In our sample, mutual funds with data on the tax status of their investors through *Pensions and Investments'* annual survey hold roughly 65.4% of the total aggregate capital gains held by all mutual funds. Thus, the standard deviation used in this calculation, 0.0215, differs from 0.033 computed from the full sample because information concerning investors' tax status is not available for some funds (and thus the accrued gains of the funds missing this information are not included in either *MF Capital Gain % of MktCap by HighDC* or *MF Capital Gain % of MktCap by LowDC*).

Thus, not only do accrued capital gains influence an individual mutual fund's decision whether to oppose management on a contentious vote, but aggregate mutual fund capital gains can also predict vote outcomes (with this effect driven by aggregate gains held by funds with taxable investors).

TABLE IV ABOUT HERE

B. Aggregate Capital Gains Lock-In and Contentious Votes on Meeting Agenda

In this section, we test whether the aggregate accrued capital gain of the mutual fund investors in a firm's stock affects whether a contentious proposal appears on the meeting agenda in the first place.²⁸ Table V shows the results of this analysis. *ContentiousVoteHeldAtMeeting* is an indicator variable set to one if there are any contentious proposals to be voted on in a particular meeting, and is set to zero if none of the proposals are contentious (thus, this variable is measured at the firm-meeting level, which is typically once a year). We construct this variable using data from the full Voting Analytics database. Using these data, we calculate that 39% of shareholder meetings have at least one contentious proposal, with a contentious proposal defined as one in which the ISS and management voting recommendations differ. We include the same aggregate mutual fund investor variables, as well as the same firm-level controls as in Table IV (since the unit of observation is now at the firm-meeting level, the regressions do not include any proposal-specific variables); once again, the coefficients associated with the other controls are suppressed from the table, but are reported in their entirety in Appendix Table III.

The negative and statistically significant coefficient of -0.726 on *MF Capital Gain % of Market Cap*, presented in column (1) of Table V, suggests that the aggregate accrued capital gains of mutual fund investors indeed deter contentious proposals from appearing on the firm's meeting agenda. This effect is economically substantive as well, with a one-standard-deviation increase in *MF Capital Gain % of Market Cap* associated with a 2.4 percentage point decrease in the likelihood a contentious proposal appears on the meeting agenda. The value-weighted

²⁸ Unless there is an unusual event for the firm, such as a potential merger, shareholder meetings occur once a year.

holding period of mutual fund shareholders, the share of the firm's stock owned by mutual funds, and the value-weighted average capital gain of mutual fund shareholders have no effect on the presence of contentious proposals; all that matters is the aggregate amount of the accrued capital gains held by mutual funds.

In column (2), we test whether the deterrent effect of locked-in gains by mutual fund shareholders differs for funds with tax-sensitive versus tax-insensitive clienteles. This is indeed the case. The coefficient on *MF Capital Gain % of MktCap by LowDC* is -2.869 (highly statistically significant), compared to the coefficient on *MF Capital Gain % of MktCap by HighDC* of only -0.505 (statistically insignificant), with the difference between the two effects just missing conventional levels of statistical significance with a *p*-value of 0.11.

In closing, we reiterate that, 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, a key to our identification strategy earlier in the paper when we examined the voting behavior of individual mutual funds. Thus, we must be more cautious in making causal interpretations of the coefficients from Tables IV and V. Nonetheless, the significant positive relation between the amount of accrued gains aggregated across mutual fund shareholders and management losing a contentious vote, as well as the deterrent effect these accrued capital gains have on a contentious proposal appearing on the agenda in the first place, are certainly suggestive in nature and complement our earlier results.

TABLE V ABOUT HERE

V. Conclusion

Over the last thirty years, the share of U.S. equity held by mutual funds has grown drastically, accounting for roughly a third of total U.S. equity (French (2008)). Despite this growth, we know relatively little about the governance activities of mutual funds. 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 whether the taxation of

realized gains not only deters funds from selling shares with accrued capital gains, but also whether these accrued gains make funds more likely to oppose the firm's management on contentious votes.

Our empirical design is well suited to answer this question. 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—thus, the magnitude of the capital gains lock-in will vary across funds even for the *same* stock at the *same* time. Thus, *our identification comes from variation across investors in a given stock at a given time*. To implement our identification strategy, we construct a rich data set that combines mutual fund holdings, their clientele (taxable and tax-deferred), and detailed voting data for proposals at the company meeting.

Consistent with prior studies, we find that there is a negative relation between a mutual fund's propensity to sell a stock and accrued capital gains on the stock, and that this relation is stronger for funds with more tax-sensitive investors. Given this tax-induced reluctance to sell shares, we next examine whether funds with higher accrued capital gains in a stock are more likely to oppose the company's management (in a sample of contentious votes). Simply put, given these locked-in funds are likely to continue to hold the stock, they could potentially benefit from monitoring the company. Relatedly, the tax lock-in effect may prompt affected funds to continue to hold a stock even if they are not enamored with the management, making them more likely to vote against management on contentious proposals relative to funds not “forced” by taxes to be holding the stock at the time of a vote.

We find that funds with higher accrued capital gains in a stock are indeed more likely to oppose management 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.

Thus, this paper documents another avenue through which capital gains taxation influences the behavior of institutional investors. Huddart and Narayanan (2002), Cici (2012), and Sialm and Starks (2012) show that capital gains taxation affects mutual funds' trading decisions. We further find that capital gains lock-in not only reduces the likelihood that a fund

will sell a stock, but also increases the likelihood that a locked-in fund will oppose the firm's management.

Finally, the effect of capital gains lock-in on voting has important implications for the firm, that is, the effects on mutual fund voting behavior at shareholder meetings is large enough to materially affect the outcome of the vote as well the type of proposals that are put up for vote on the meeting agenda in the first place. Specifically, the presence of accrued capital gains among mutual funds with taxable investors leads to a higher likelihood of a vote outcome against management and a lower likelihood of a contentious proposal being voted on at the meeting *in the first place*. In sum, our results thus 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, mutual funds' decisions regarding whether to exit, stay and support, or stay and fight a firm's management will be an increasingly important component of corporate governance.

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Table I
Summary Statistics

This table contains summary statistics for the merged fund holding – Voting Analytics dataset over the sample period from 2003 to 2008, limited to the sample of votes in which the ISS recommendation does not equal the management recommendation (i.e., a sample of contentious votes). *OpposeManagement* is an indicator variable set to one if the mutual fund votes against the management recommendation (or withholds its vote) and set to zero if the fund votes to support management. *CapitalGain* is the percentage accrued capital gain or loss of a mutual fund in a given stock holding since 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. *% Defined-Contribution Plan Investors* is the percentage of the fund owned by defined-contribution retirement plans. *FundOverhang* is the accrued capital gain averaged across all of the fund’s holdings (value-weighted). *ManagementLosesVote* is an indicator variable set to one if management loses a contentious vote (i.e., a vote in which ISS and management offer differing recommendations) 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 on 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, determining for a given firm meeting whether the voting recommendations of ISS and management differ for any of the proposals.

	Mean	S.D.	1 st %	10 th %	25 th %	50 th %	75 th %	90 th %	99 th %
<u>Key Dependent Variable:</u>									
<i>OpposeManagement</i>	0.53	0.50	0	0	0	1	1	1	1
<u>Key Explanatory Variables:</u>									
<i>CapitalGain</i>	0.34	0.68	-0.61	-0.17	-0.02	0.14	0.46	1.09	3.15
<i>CapitalGain – within Vote S.D.</i>	0.49	0.29	0.04	0.13	0.23	0.46	0.71	0.91	1.16
<i>CapitalGain – within Fund-Quarter S.D.</i>	0.51	0.31	0.01	0.16	0.27	0.45	0.69	0.95	1.33
<i>% Defined-Contribution Plan Investors</i>	29.1	20.7	0.9	5.6	10.3	27.1	40.6	61.4	80.8
<i>FundOverhang</i>	0.21	0.21	-0.13	0.00	0.09	0.17	0.29	0.43	1.03
<u>Other Dependent Variables:</u>									
<i>ManagementLosesVote</i>	0.24	0.43	0	0	0	0	0	1	1
<i>ContentiousVoteHeldAtMeeting</i>	0.39	0.49	0	0	0	0	1	1	1

Table II
Propensity to Oppose Management, Accrued Capital Gains, and Tax Motivation

This table presents results of the linear probability model, described by Equation (3), in which we relate a mutual fund’s voting decision for a stock to the fund’s tax lock-in for that stock holding. 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) 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 accrued capital gain or loss since purchase of the stock. We also estimate a regression in column (2), described by Equation (4), to test for the effects 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. In column (3), we estimate a regression that adds interactions with *LowFundOverhang* to the specification in Equation (4). *LowFundOverhang* 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 and set to zero otherwise. The specification also contains 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. Direct effects of *HighDC* and *LowFundOverhang* on *OpposeManagement* are absorbed by fund-quarter fixed effects. The sample includes all observations in the merged mutual fund holding – Voting Analytics dataset, covering the period from 2003 to 2008, in which the ISS recommendation for a proposal does not equal the management recommendation (i.e., a sample of contentious votes). Finally, ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively, and *t*-statistics are listed in square brackets below the point estimates (*t*-statistics are based on standard errors clustered at the fund-quarter level).

	(1)	(2)	(3)
<i>CapitalGain</i>	0.003** [2.01]	0.011*** [3.77]	0.013*** [4.21]
<i>CapitalGain</i> × <i>HighDC</i>		-0.009*** [2.63]	-0.012*** [3.27]
<i>CapitalGain</i> × <i>LowFundOverhang</i>			-0.011* [1.84]
<i>CapitalGain</i> × <i>HighDC</i> × <i>LowFundOverhang</i>			0.017** [1.99]
Vote Fixed Effects?	Yes	Yes	Yes
Fund-Quarter Fixed Effects?	Yes	Yes	Yes
Length of Holding Period Fixed Effects?	Yes	Yes	Yes
Adjusted R ²	0.205	0.306	0.306
Number of Observations	366,644	107,377	107,377

Table III
Multinomial Logit Analyses of Exit/Voting Decisions

This table presents results of multinomial logit models that relate the dependent variable, a choice with 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 to the set of covariates used in Table II. 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. *CapitalGain* is the accrued capital gain or loss since purchase of the stock. *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. *LowFundOverhang* is an indicator variable set to one for funds with a below median level of total accrued capital gains across all of their holdings 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*; and Panel C displays estimates from a model with further interactions with *LowFundOverhang*. 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 observations in the merged mutual fund holding – Voting Analytics dataset, covering the period from 2003 to 2008, in which the ISS recommendation for a proposal does not equal the management recommendation (i.e., a sample of contentious votes). Finally, ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively, and *t*-statistics are listed in square brackets below the point estimates (*t*-statistics are based on standard errors clustered at the fund-quarter level).

	Panel A: No interaction with <i>HighDC</i>		Panel B: Interaction with <i>HighDC</i>		Panel C: Interaction with <i>HighDC</i> and <i>LowFundOverhang</i>	
	Sell Stock	Hold, Oppose Management	Sell Stock	Hold, Oppose Management	Sell Stock	Hold, Oppose Management
	(1)	(2)	(3)	(4)	(5)	(6)
<i>CapitalGain</i>	-0.265*** [6.21]	0.062*** [4.08]	-0.563*** [4.45]	0.296*** [7.03]	-0.638*** [7.01]	0.469*** [37.68]
<i>CapitalGain</i> × <i>HighDC</i>			0.154* [1.75]	-0.437*** [6.74]	0.397*** [4.18]	-0.587*** [38.09]
<i>CapitalGain</i> × <i>LowFundOverhang</i>					0.185 [0.34]	-0.428*** [16.12]
<i>CapitalGain</i> × <i>HighDC</i> × <i>LowFundOverhang</i>					-1.909*** [7.61]	0.431*** [10.69]
Vote, Fund-Quarter, & Holding Period Effects?	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations		391,040		112,027		112,027

Table IV
Management Loses a Contentious Vote (continued on next page)

This table presents results of linear probability 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 of contentious votes includes all proposals in the merged mutual fund holding – Voting Analytics dataset, covering the period from 2003 to 2008, in which the ISS recommendation for a proposal does not equal the management recommendation. The key independent variable is *MF Capital Gain % of Market Cap*, the aggregate dollar value of capital gains held by mutual funds in the firm’s stock normalized by the firm’s total market capitalization. *VW Average MF Holding Period* is the value-weighted holding period of mutual funds. *MF % of Firm Owned* is the share of the firm’s stock owned by mutual funds, and *VW MF Average Capital Gain* is the value-weighted average capital gain in a stock 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). Finally, ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively, and *t*-statistics are listed in square brackets below the point estimates (*t*-statistics are based on standard errors clustered at the fund-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 II.

Table IV
Management Loses a Contentious Vote (continued from prior page)

	(1)	(2)
<i>MF Capital Gain % of Market Cap</i>	0.290*** [2.64]	
<i>MF CG% of MktCap by HighDC</i>		0.050 [0.25]
<i>MF CG% of MktCap by LowDC</i>		2.040*** [3.14]
<i>p-value of difference</i>		0.008***
<i>VW Average MF Holding Period</i>	0.001** [2.46]	
<i>VW Avg Hold Period of HighDC</i>		0.0004* [1.72]
<i>VW Avg Hold Period of LowDC</i>		-0.0004 [1.59]
<i>MF % of Firm Owned</i>	-0.0005 [0.87]	
<i>MF% of Firm Owned of HighDC</i>		-0.001 [1.47]
<i>MF% of Firm Owned of LowDC</i>		-0.004* [1.68]
<i>VW MF Average Capital Gain</i>	-0.009 [1.05]	
<i>VW MF Avg CG by HighDC</i>		0.010 [1.55]
<i>VW MF Avg CG by LowDC</i>		-0.019*** [2.63]
Other Controls?	Yes	Yes
Quarter Fixed Effects?	Yes	Yes
Adjusted R ²	0.658	0.659
Number of Observations	10,192	10,192

Table V

Presence of a Contentious Proposal on the Meeting Agenda (continued on next page)

This table presents results of linear probability 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*, set to one if there are any contentious proposals to be voted on in a particular meeting and set to zero if none of the proposals are contentious (thus, this variable is measured at the firm-meeting level). Our sample of meeting agendas includes all proposals in the merged mutual fund holding – Voting Analytics dataset, covering the period from 2003 to 2008. A contentious proposal is one in which the ISS recommendation as to how to vote does not equal the management recommendation. We include the same aggregate mutual fund shareholder variables, as well as the same firm-level controls as in Table IV (since 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). Finally, ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively, and *t*-statistics are listed in square brackets below the point estimates (*t*-statistics are based on standard errors clustered at the fund-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 III.

Table V
Presence of a Contentious Proposal on the Meeting Agenda (continued from prior page)

	(1)	(2)
<i>MF Capital Gain % of Market Cap</i>	-0.726*** [3.23]	
<i>MF CG% of MktCap by HighDC</i>		-0.505 [1.30]
<i>MF CG% of MktCap by LowDC</i>		-2.869** [2.16]
<i>p-value of difference</i>		0.111
 <i>VW Average MF Holding Period</i>	 0.001 [1.24]	
<i>VW Avg Hold Period of HighDC</i>		-0.0002 [0.40]
<i>VW Avg Hold Period of LowDC</i>		0.00003 [0.08]
 <i>MF % of Firm Owned</i>	 -0.001 [1.05]	
<i>MF% of Firm Owned of HighDC</i>		0.001 [0.66]
<i>MF% of Firm Owned of LowDC</i>		-0.002 [0.44]
 <i>VW MF Average Capital Gain</i>	 0.020 [1.24]	
<i>VW MF Avg CG by HighDC</i>		0.021* [1.68]
<i>VW MF Avg CG by LowDC</i>		0.005 [0.35]
 <i>Other Controls?</i>	 Yes	Yes
<i>Quarter Fixed Effects?</i>	Yes	Yes
<i>Adjusted R²</i>	0.048	0.047
<i>Number of Observations</i>	11,062	11,062

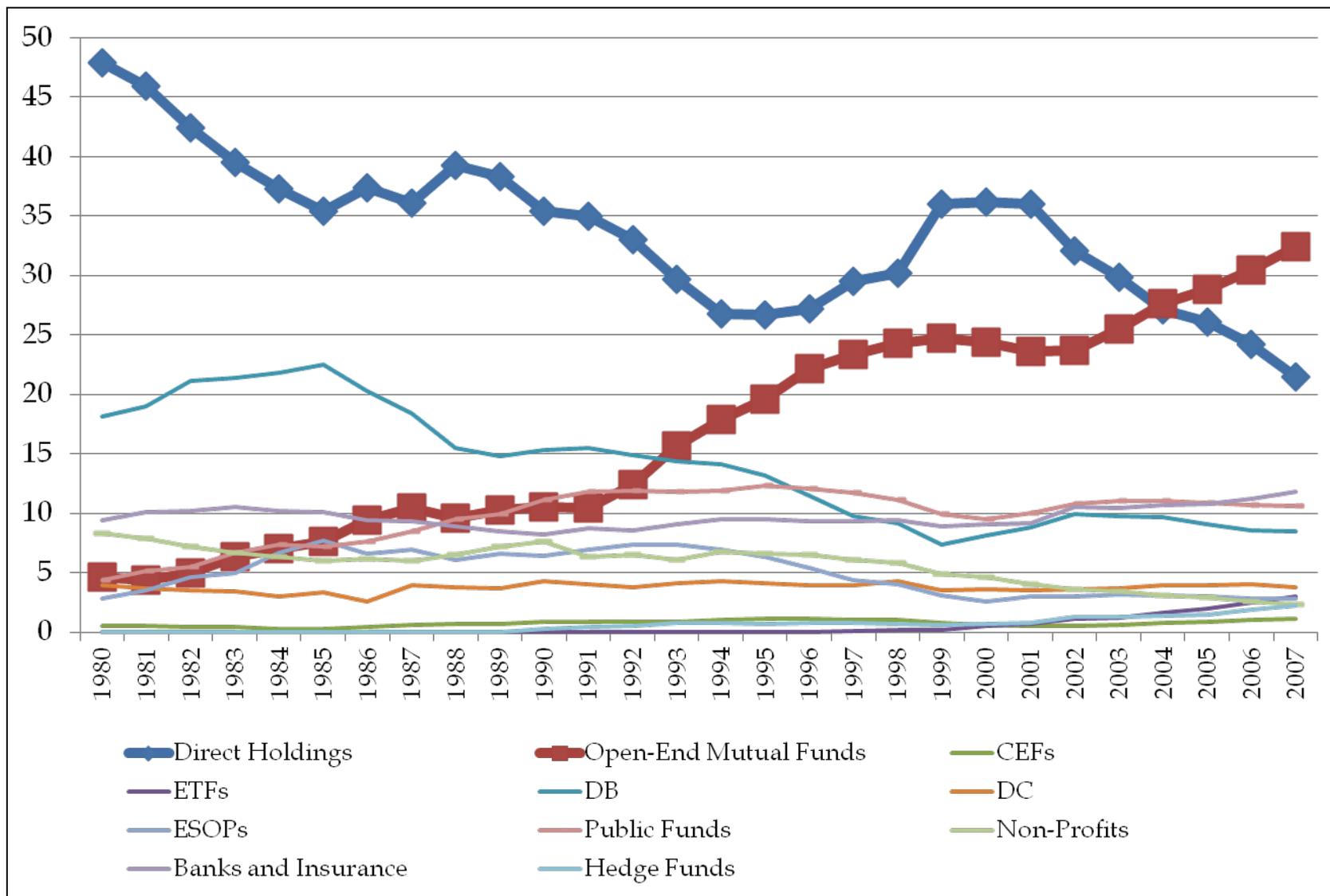


Figure 1: Rise in open-end mutual fund ownership in the U.S. (crimson line). Data come from French (2008), Table I.

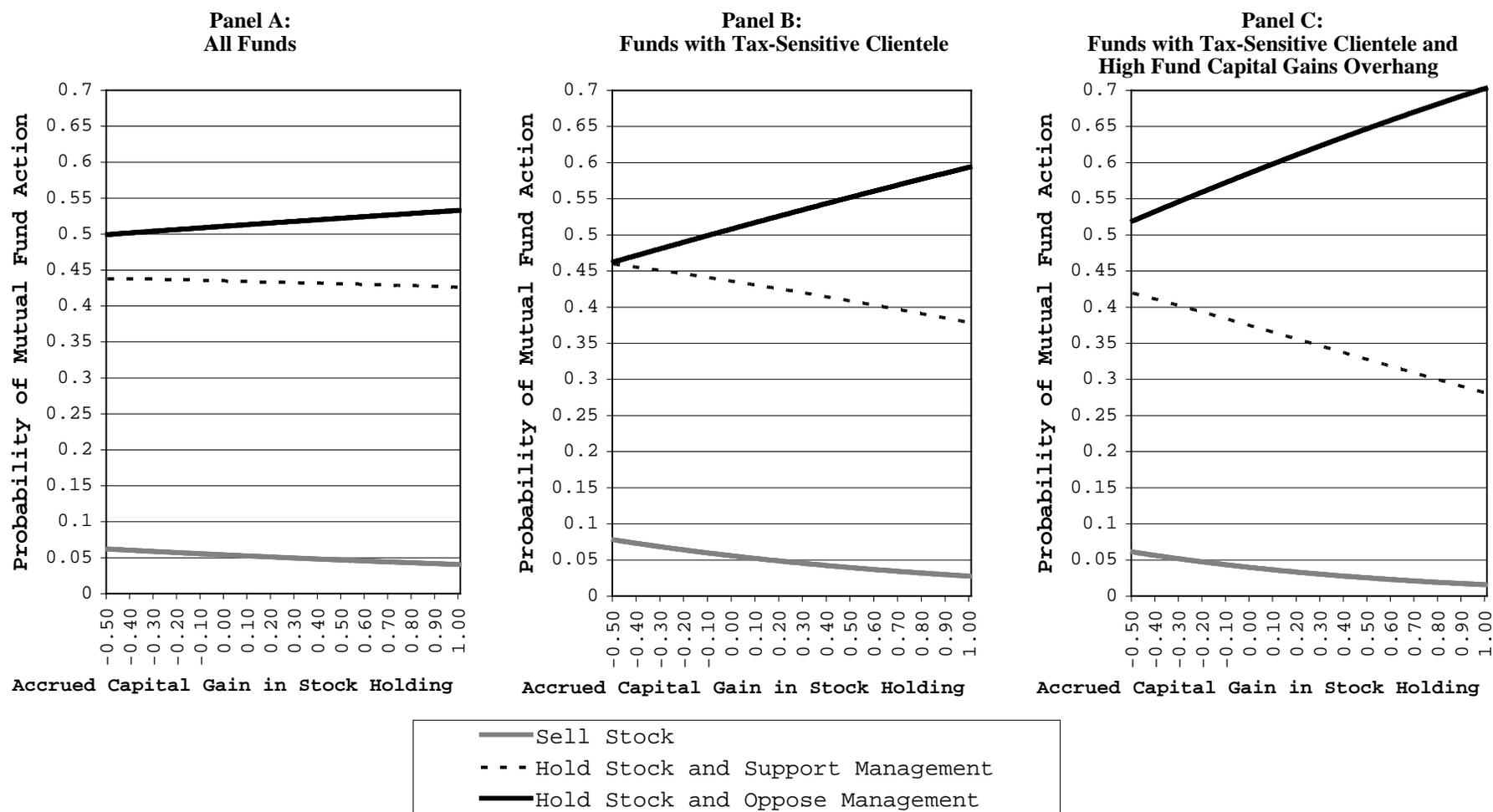


Figure 2: Relation between Exit/Voting Decisions of Mutual Fund and Accrued Capital Gains in Stock Holding. The sample includes all observations in the merged fund holding – Voting Analytics dataset, covering the period from 2003 to 2008, in which the ISS recommendation for a proposal does not equal the management recommendation (i.e., a sample of contentious votes). For a given proposal, the fund can sell the stock before the shareholder meeting, continue to hold the stock and support management, or continue to hold the stock and oppose management. Panel A shows results for all funds. Panel B shows results for funds with a tax-sensitive clientele (the fund’s share of assets in retirement accounts is below the sample median). Panel C shows results for funds with a tax-sensitive clientele and a high fund capital gains overhang (the fund’s portfolio-wide gains are above the sample median). We record the unconditional probabilities of the exit/support/oppose decision, as well as the unconditional average accrued capital gain in a stock holding. From that baseline, we extrapolate the probabilities of the exit/support/oppose decision for higher and lower accrued capital gains using the coefficients from panels of Table III for the corresponding panels of this figure.

APPENDIX Table I
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):

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

where $Sell_{f,i,t}(q)$ 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 , and X are covariates that shift the baseline rate: *CapitalGain*, accrued capital gains or losses since the purchase of the stock; *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. We lose observations as we move from Panel A to Panel B 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. Finally, ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively, and t -statistics are listed in square brackets below the point estimates (t -statistics are based on standard errors clustered at the fund level).

	Panel A:		Panel B:	
	All Observations		Observations with Data in Voting Analytics	
	(1)	(2)	(3)	(4)
<i>CapitalGain</i>	-0.482*** [26.13]	-0.500*** [14.80]	-0.525*** [24.79]	-0.511*** [14.08]
<i>CapitalGain</i> × <i>HighDC</i>		0.128*** [2.89]		0.107** [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 II
Management Loses a Contentious Vote (continued on next page)

This table presents results of the linear probability model that relates the vote outcome to a range of aggregate mutual fund shareholder variables as well as various firm and vote characteristics. It replicates Table IV and further provides all the regression coefficients associated with the controls that are suppressed from Table IV.

	(1)	(2)
<i>MF Capital Gain % of Market Cap</i>	0.290*** [2.64]	
<i>MF CG% of MktCap by HighDC</i>		0.050 [0.25]
<i>MF CG% of MktCap by LowDC</i>		2.040*** [3.14]
<i>p-value of difference</i>		0.008***
<i>VW Average MF Holding Period</i>	0.001** [2.46]	
<i>VW Avg Hold Period of HighDC</i>		0.0004* [1.72]
<i>VW Avg Hold Period of LowDC</i>		-0.0004 [1.59]
<i>MF % of Firm Owned</i>	-0.0005 [0.87]	
<i>MF% of Firm Owned of HighDC</i>		-0.001 [1.47]
<i>MF% of Firm Owned of LowDC</i>		-0.004* [1.68]
<i>VW MF Average Capital Gain</i>	-0.009 [1.05]	
<i>VW MF Avg CG by HighDC</i>		0.010 [1.55]
<i>VW MF Avg CG by LowDC</i>		-0.019*** [2.63]
<i>Lag 3-Month Stock Return</i>	-0.056*** [3.32]	-0.056*** [3.32]
<i>Lag 12-Month Stock Return</i>	0.007 [1.06]	0.004 [0.66]
<i>log(Market Cap)</i>	-0.015*** [5.09]	-0.014*** [4.90]
<i>Book-to-Market Ratio</i>	0.003 [0.43]	0.004 [0.62]
<i>Leverage Ratio</i>	0.002 [0.58]	0.003 [0.82]
<i>CF-to-Assets</i>	-0.033 [1.55]	-0.039* [1.82]
<i>Capex-to-Assets</i>	0.141*** [2.71]	0.142*** [2.72]
<i>S&P 500 Member</i>	-0.005 [0.47]	-0.005 [0.43]
<i>G-Index</i>	-0.0004 [0.30]	-0.0002 [0.20]
<i>Institutional Ownership %</i>	0.022* [1.70]	0.023* [1.84]
<i>Top 5 Executive Ownership %</i>	-0.151*** [4.14]	-0.148*** [4.08]
<i>Management Sponsored Proposal</i>	-0.666*** [69.91]	-0.668*** [70.13]
<i>Elect Director Vote</i>	-0.316*** [49.04]	-0.315*** [48.74]
Quarter Fixed Effects?	Yes	Yes
Adjusted R ²	0.658	0.659
Number of Observations	10,192	10,192

APPENDIX Table III

Presence of a Contentious Proposal on Meeting Agenda (continued on next page)

This table presents results of the linear probability model that relates the appearance 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 V and further provides all the regression coefficients associated with the controls that are suppressed from Table V.

	(1)	(2)
<i>MF Capital Gain % of Market Cap</i>	-0.726***	
	[3.23]	
<i>MF CG% of MktCap by HighDC</i>		-0.505
		[1.30]
<i>MF CG% of MktCap by LowDC</i>		-2.869**
		[2.16]
<i>p-value of difference</i>		0.111
<i>VW Average MF Holding Period</i>	0.001	
	[1.24]	
<i>VW Avg Hold Period of HighDC</i>		-0.0002
		[0.40]
<i>VW Avg Hold Period of LowDC</i>		0.00003
		[0.08]
<i>MF % of Firm Owned</i>	-0.001	
	[1.05]	
<i>MF% of Firm Owned of HighDC</i>		0.001
		[0.66]
<i>MF% of Firm Owned of LowDC</i>		-0.002
		[0.44]
<i>VW MF Average Capital Gain</i>	0.020	
	[1.24]	
<i>VW MF Avg CG by HighDC</i>		0.021*
		[1.68]
<i>VW MF Avg CG by LowDC</i>		0.005
		[0.35]
<i>Lag 3-Month Stock Return</i>	0.034	0.029
	[1.02]	[0.87]
<i>Lag 12-Month Stock Return</i>	-0.009	-0.015
	[0.71]	[1.17]
<i>log(Market Cap)</i>	0.036***	0.036***
	[6.20]	[6.01]
<i>Book-to-Market Ratio</i>	0.030*	0.034**
	[1.84]	[2.10]
<i>Leverage Ratio</i>	0.022**	0.024**
	[2.35]	[2.54]
<i>CF-to-Assets</i>	-0.024	-0.026
	[0.56]	[0.61]
<i>Capex-to-Assets</i>	0.022	0.004
	[0.24]	[0.04]
<i>S&P 500 Member</i>	0.061***	0.072***
	[3.25]	[3.84]
<i>G-Index</i>	-0.024***	-0.023***
	[10.47]	[10.26]
<i>Institutional Ownership %</i>	-0.257***	-0.279***
	[10.29]	[11.69]
<i>Top 5 Executive Ownership %</i>	0.294***	0.295***
	[3.75]	[3.76]
Quarter Fixed Effects?	Yes	Yes
Adjusted R ²	0.048	0.047
Number of Observations	11,062	11,062