Why Do Institutions Delay Reporting Their Shareholdings? Evidence from Form 13F

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Abstract

Institutional investors are allowed to delay their disclosures of quarter-end holdings via form 13F for up to 45 days. This forbearance may help protect the institutions from potentially damaging behavior by other traders, in particular from free-riding copycatters and from front-runners. It also may help the institutions hide their voting power, and this has prompted public corporations to request a much shorter maximum reporting lag. We look at 14 years of 13F filings to gauge the role of these three motives in the decision to delay disclosure, and the results indicate that front-running and voting, but not copycatting, motivate delays.

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Institutions with at least $100 million in U.S.-listed equities must disclose what they held at calendar quarter-ends. They do not, however, have to disclose these holdings right away because the relevant rule, section 13(f) of the 1934 Securities Exchange Act, allows for a lag of up to 45 days. Corporations, as represented by the Association of Corporate Secretaries, say that shorter lags would be both feasible and desirable. On February 1, 2013, this association presented the Securities and Exchange Commission (SEC) with their argument for a lag of just two days, which they say would be feasible given modern technology, and

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desirable because it would prevent new shareholders from concealing their ownership at key moments, in particular when important issues might be put to vote.[2] In response, the Investment Company Institute (ICI) argues that longer lags protect institutions by defending them from copycats and front-runners.[3] The Investment Adviser Association, IAA, expresses concerns similar to the ones outlined in the ICI's letter in its opposition to the proposed petition for shorter lags.[4] In this paper we evaluate the argument for reporting lags by analyzing the cross section and time series of the lags institutions choose. We focus on how these choices relate to the potential for copycatting and front-running, and also for the hiding of ownership around votes.

Copycatting and front-running are different in concept, though they can look similar in practice. Copycatting is free-riding on on another investor's portfolio choice, trying to deliver something close to the other investor's return at a much lower cost (see, e.g., Frank, Poterba, Shackelford, and Shoven, 2004). So a copycatter aims to replicate the other investor's portfolio weights. Frontrunning is trading in front of an expected trade by another investor, thereby making the same trade on the terms the other investor would otherwise have gotten, maybe with the goal of subsequently taking the other side of the other investor's trade. Both copycatting and front-running can be enabled by portfolio disclosures. In the case of copycatting, this is simple: a trader can simply adjust his own weights to match those of the disclosed portfolio. In the case of front-running it is not as simple, since it depends on what a trader can infer from an institution's disclosures about what it will do next, and this inference could take many forms. For clarity, we focus on the form characterized by the ICI, where at quarter-end an institution is midway through executing a big trade. The concern is that a trader senses this fact from the change from the previous quarter-end, and thus makes

[2] https://www.sec.gov/rules/petitions/2013/petn4-659.pdf
[3] https://www.ici.org/pdf/27217.pdf
[4] http://www.sec.gov/comments/4-659/4659-15.pdf

a trade in the same direction, buying after an increase and selling after a decrease, hoping that this precedes the institution's remaining trades. So while the motives are different, both would generally involve buying after disclosures show buys, and selling after they show sells.

An institution can thus combat both copycatting and front-running with a longer lag, and has the incentive to do so if such trading would be harmful. However, it may not be harmful: an institution expecting others to trade in the direction they see the institution traded would likely desire such a reaction if it in fact intends to trade in the opposite, rather than same, direction. An institution hoping to buy what it recently sold or sell what it recently bought would welcome any demand triggered by its disclosure. This is useful for our purposes because it means that an institution's incentive to delay its quarter t disclosure increases with the correlation between its quarter t trades and its quarter t+1 trades. Therefore, we can test for the combined role of copycatting and front-running in reporting delays by testing whether the delay increases with this correlation.

We distinguish the separate roles of frontrunning and copycatting by reference to fund flows. Copycatters are presumably interested in trades that reflect information, rather than just flows, whereas frontrunners are interested in any trades. So the trades by indexers would be of little interest to copycatters but still could be relevant to frontrunners. Also, if the flow is out rather than in, funds generally have less latitude in what they can sell than in what they can buy which makes the resulting trade more predictable and easier to front-run. This means we can test for the effect of copycatting concerns, separately from frontrunning concerns, on reporting delays by testing for the effect of net flows, particularly outflows, on the delay.

Regarding the concern of the corporate secretaries, i.e. that shorter lags help uncover hidden voting power in time for the corporation to react to it, we can test whether institutions lag more when they have hidden voting power. An institution's votes reflect its ownership on the vote's record date, and while we cannot see that exact quantity, we can see whether the institution's ownership increased from the quarter-end before the record date

to the quarter-end after. We use this increase to proxy for the hidden voting power, so that the lag in reporting the quarter-end-after holding measures how long the institution keeps these votes hidden. We focus on three groups of votes: mergers, shareholder proposals and management proposals.

For our empirical analysis we build a comprehensive database of the relevant filings and dates, and then using the cross section of filers and the lags they choose to gauge the significance of the various motives to delay. The starting point is the universe of 13F filings from 1999 through 2012 complied by Thomson Reuters. To these data we add the filing dates, as indicated by the Edgar database at the SEC website, and we also use the CIK identifier codes from the filings to add characteristics of the filers. Thus we have access to all 13f filings for 14 years, the lag at which each was filed, and filer-specific circumstances we can use to represent the cross section of incentives.

We first document that filing practices vary widely. The average lag is 37 days with a standard deviation of 10 days, and while five percent of filers report in less than two weeks, thirty percent wait the full 45 days or even longer. This wide range of disclosure practices supports the possibility of significant strategic behavior, and we first test for strategizing with respect to copycats and front-runners trading in the same direction the institution traded in quarter t. We test whether correlation between quarter t and quarter t+1 trading predicts longer lags, and we find no evidence of this for any type of institution.

Next we focus on front-running in particular by testing for the effect of quarter t flows. This effect is significant: both inflows and outflows strongly predicting delays in reporting, and consistent with the limited latitude to sell rather than buy, outflows predict more strongly than inflows. So the evidence indicates that institutions use the lag to make flow-driven trades before front-runners interfere. Looking more closely, we find that this use of reporting lags arises only amongst institutions that appear to be indexers or otherwise less active investors, consistent with their narrower range of trading opportunities.

To gauge the effect of hidden voting power on delays, we relate delays to the change in the holding of a stock in a quarter with a record date for a merger-related vote. We find that institutions – specifically, hedge funds and active managers – that accumulate shares in such quarters delay their end-of-quarter disclosures, consistent with aiming to hide the increase, and suggesting more interest in swaying the vote than in publicly pressuring management. Looking instead at quarters with management and shareholder proposals on regular annual proxies, we find that hedge funds and active managers, but not more passive institutions, delay more after a voting-power increase.

Thus, it appears that in general, strategic use of reporting lags delays the disclosure of voting-power increases to public corporations. A shorter maximum lag would shorten this delay, but at the expense of more exposure to the risk of front-running that also drives strategic use of reporting lags.

The remainder of the paper is divided into five sections. The first section reviews the appropriate literature and regulatory background. The second section outlines the hypotheses and the third section reviews the data. Section IV provides the empirical analysis and the last section concludes.

I. Literature and Regulatory Review

A. Regulation on ownership disclosure

Three laws in Section 13 of the Securities Exchange Act of 1934 guide the disclosure of ownership by institutions: Sections 13(d), 13(f), and 13(g). The focus of this study is on the 13F form which provides a comprehensive filing of portfolio ownership of all securities registered with the Securities and Exchange Commission (SEC). Under Section 13(f), any registered investment advisor with discretion over client accounts with an aggregate fair market value of more than $100 million in US-listed equities must file a 13F form. This form

reports the institutions' holdings of all SEC-registered equities as of the end of the quarter. This is just long positions, and to some extent, options but shorts are not included. The deadline for filing, and thereby publicizing, a 13f filing is the first business day 45 or more days after the last calendar day of the quarter-end, i.e. *Report Date*.[5] We refer to the date that a 13f is filed as *File Date*, and the elapsed time *File Date* – *Report Date* as *Delay*.

The regulators designing 13f may have intended the 45-day gap to greatly reduce or even preclude real-time usefulness to other market participants. As Lemke and Lind (1987) observe, the commentary accompanying the rule focuses on the retrospective value to regulators of a historical database of institutional disclosures, not the current value to other market participants planning their own trades, or to issuers tending to their governance. But as Lemke and Lind (1987) also observe, the private sector appears to find the filings useful anyhow.

The 45 day rule is not absolute; investors can ask for longer delays in specific cases. An institution can apply to the SEC for confidential treatment using the CT Application which, if granted, allows the institution to postpone reporting some or even all holdings in the 13F report.[6] Rule 24b-2 of the Exchange Act outlines the circumstances under which a CT Application can be filed and also the information that is required to make the filing. The rationale for a CT Application is to protect 'public interest' which can include protecting a managerial trading strategy and those investors benefiting from the strategy.[7] The CT Application requires institutional investment managers to detail the specific investment program that requires confidentiality and also to provide a timeline for the eventual disclosure in a 13F "add-new-holdings" of the temporarily hidden information. In the case that an institutional manager applies for confidentiality treatment, only those stocks

[5] See Rule 0-3 under the 1934 Act, 17 C. F. R. 240.0-3 (1986).

[6] Securities and Exchange Commission, 1998, Section 13(f) Confidential Treatment Requests, June 17. https://www.sec.gov/divisions/investment/guidance/13fpt2.htm

[7] See Section 13(f)(4) and (5)

involved in the trading strategy are withheld from public disclosure in the initial 13F filing. A study by Aragon, Hertzel, and Shi (2013) investigates these hidden holdings and find they are particularly informative, implying significant abnormal returns.

Tardy filers expose themselves to potential enforcement action. If a 13F filing deadline is missed, the SEC instructs the institution to file quickly while ensuring the accuracy of the report.[8] There can be consequences for late filing, but explicit penalties are imposed only if the violation is considered 'willful' and with intent.[9] There are few instances of this; the most notable case was that of Quattro Global Capital which failed to file any 13F reports between 2002 and 2005 and was as a result fined $100,000.[10] In addition to the fine, the SEC under Section 203(e) of the Investment Advisors Act censured Quattro as a registered investment advisor and restricted its activities.[11]

Our data show 2% of 13F forms filed after 49 days and beyond the holiday and weekend grace period allowed under SEC guidelines. These delays can be quite long and in a few instances run into the next quarter. So filers have some flexibility to report after the 45 days, now and then. Brown and Schwarz (2013) find a similar dispersion and delinquency in reporting periods for a subsample of hedge funds. In 2010, the Office of Inspector General (OIG) released a detailed review of its procedures in enforcing the 13F reporting requirements and concluded that improvements were needed.[12]

The delays we observe do not generally reflect the amended filings pursuant to CT applications, because we use only the first 13F filed by an institution for a given quarter. Once

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[8] See Question 26 of http://www.sec.gov/divisions/investment/13ffaq.htm and also http://assets.tabbforum.com/13F%20White%20Paper%20Final.pdf for a discussion of penalties on late filers.

[9] See 15 U.S.C. § 78u-3.

[10] See White, Cory and Blake Brockway, "What the Institutional Investment Manager Needs to Know about SEC reporting under Section 13(f)", Working Paper, Hafalein White LLC. Also, see 15 U.S.C. § 78u2 for the ability to impose penalties.

[11] Quattro Global Capital, LLC, File No. 3-12725; 15 U.S.C. § 80b-3(e).

[12] Office of Inspector General, Review of the SEC's Section 13(f) Reporting Requirement, Report No. 480 (Securities and Exchange Commission, September 27, 2010).

in a long while, less than 2% of our sample, this first filing is an amended filing because we cannot identify an original 13F filing. One potential reason that an original 13F file is not available is that the entire original filing was treated as confidential.

The long delays allowed for 13(f) filings contrast with shorter delays allowed for 13(d). Under Section 13(d), any person or group of persons must disclose within 10 days if their beneficial ownership in any SEC-registered security exceeds 5%. Also, they must include toward this number, and in the disclosure, any options exercisable into the stock within the next 60 days, and they must also disclose the past 60 days of transactions. (see Collin-Dufresne and Fos, 2015). Filers opting for 13(g), which is for passive investors, meet a deadline more like that for 13(d): they file within 45 days of the calendar-year end when the institution has exceeded a 5% ownership stake, and then file amendments annually.

B. Recent regulatory debate

On February 1, 2013, senior representatives from NYSE Euronext, the Society of Corporate Secretaries and Governance Professionals, and the National Investor Relations Institute wrote a joint letter to the SEC asking that the delay in reporting a 13F form be reduced from 45 days to 2 days. A similar rulemaking petition from Wachtell, Lipton, Rosen, and Katz on March 7, 2011 argues that the 10-day delay of the 13D form should be reduced to 1 day and there should also be a "cooling-off period" preventing an institution from building its equity stake in a company after passing the 5% ownership stake barrier.[12]

Institutions have countered by raising concerns of copycatters and front-runners[13] who may try to anticipate trades that are revealed too soon after the quarter end. They have also expressed concerns whether early filing would provide sufficient time for the institution to sufficiently review the information to ensure it is accurate.

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[13] See, e.g., Vanguard's comment letter at https://institutional.vanguard.com/iam/pdf/SECLTR.pdf regarding front-running, and https://www.sec.gov/comments/4-659/4659-11.pdf from the Security Traders Association of New York regarding copycatting.

[12] http://www.wlrk.com/docs/Letter%20to%20the%20SEC%20re_%2013%28d%29%20%28final%20version%29.pdf

C. Literature

The question of copycat trading relates to a long literature on using holdings information, not just in 13D and 13F filings but also in N-30, N-Q, N-CSR, and N-SAR files. A common question is whether holdings help predict returns looking forward (Collin-Dufresne and Fos, 2015; Kacperczyk, Sialm, and Zheng, 2008). Generally the conclusion is that they do help.

Do disclosures help predict returns, even with the reporting lag? Findings are mixed. Phillips, Pukthuanthong, and Rau (2014) conclude that the lag makes trading on the disclosures unprofitable while Frank et al. (2004) and Verbeek and Wang (2013) show that such copycat trading can beat the disclosing fund net of the disclosing fund's fees. Regarding front-running, Shive and Yun (2013) and Chen, Hanson, Hong, and Stein (2008) argue that flows, particularly outflows, make trades easier to predict, so that flows might facilitate front-running, and Ge and Zheng (2006) associate more frequent disclosure with worse returns, implying a cost to disclosure that could be front-running.

The paper closest to ours is Brown and Schwarz (2013) who also look at 13F filings and copycat strategies. While others in the literature have focused on the negative aspects of disclosure, Brown and Schwarz (2013) make the novel observation that hedge funds can take advantage of copycat traders by trading into these trades near the disclosure date i.e. selling shares at the disclosure when they know that the copycats will buy. The key distinction between that paper and this one is that the focus here is on strategic delays.

The question of strategic reporting delays arises in other contexts. For instance, Aragon and Nanda (2014) find evidence that managers strategically delay monthly performance disclosures when performance is weaker.

The final component of the literature that this paper touches on is investor activism. The significance of strategic 13(f) delays hinges on the importance to issuers of who currently

holds how much of their shares. This importance presumably increases with the effect that large outside investors are expected to have. The existence and magnitude of the effect of activist investors on firms is the subject of several recent papers. Brav, Jiang, Partnoy, and Thomas (2008) find that activist hedge funds propose remedies which are successful 2/3 of the time. Similarly, Bebchuk, Brav, and Jiang (2014) argue that activist hedge fund proposals and involvement do not have detrimental long-term effects, and Becht, Franks, Grant, and Wagner (2015) find significant gains from governance changes implemented as a result of activism.

II. Hypotheses

In the tests in this paper, the dependent variable is the lag with which an institution reports a quarter-end portfolio. The explanatory variables are chosen to gauge the role of three motives to lag disclosure: to combat copycatting, to combat front-running, and to hide voting power. With regard to front-running, we limit the tests to the form of frontrunning proposed by the ICI, i.e. trading on the assumption that the institution is partway through changing a position, and therefore trading in the same direction as the change in the institution's portfolio from the end of the previous quarter.

While the traders' goals are different, copycatting and front-running (of this form) both involve trading in quarter t+1 in the same direction that the institution traded in quarter t. Thus, the potential harm to the reporting institution is likely higher if it is also trading those stocks in that direction in t+1. And as Brown and Schwartz (2013) observe, such trading is likely not harmful but instead beneficial if the institution is trading in the *other* direction in t+1. So, to the extent that lagging encourages copycatting and front-running, the institution's incentive is to delay disclosure *if* its quarter t+1 trading is in the same direction as its quarter t trading, but *not* to delay if its quarter t+1 trading is in the other direction.

Therefore, to test for the strategic effect of both copycatting and front-running on lagging, we first calculate, for each institution in each quarter *t*, the correlation between the institution's quarter *t* trades, as indicated by the change of the institution's portfolio from the end of *t*-1 to the end of *t*, and the institution's quarter *t*+1 trades, as indicated by the change from the end of *t* to the end of *t*+1. Then, we use this correlation to test Hypothesis 1, which tests for the combined effect of copycatting and front-running:

H1: The lag of the quarter t *disclosure increases with the correlation between quarter* t *and quarter* t+1 *trading by the institution.*

To distinguish between the roles of copycatting and front-running, we focus on situations where front-running but not copycatting is relevant, and we do this by exploiting the difference between the goals of these strategies. The goal of copycatting an institution is mimicking its portfolio weights, whereas the goal of front-running is to make a trade before the institution does. So if copycatters and front-runners both infer that an institution will make a trade, copycatters will make that trade too *only if* it helps mimic the institution's portfolio weights, whereas front-runners will make that trade too *no matter what*. This is a useful distinction because it means we can distinguish between the roles of the two strategies by focusing on the trading arising from net cash flows, and by contrasting the trading by institutions that do and do not tend to index. Since an institution's decision to reallocate between stocks is more relevant to its portfolio weights than is its need to move money in or out of the market, trading arising from net cash flows is likely to inspire less copycatting. This is more so if the institution indexes more or is otherwise a passive investor, since indexing and passive investing stabilize portfolio weights as money flows in and out. Front-runners, on the other hand, benefit from trading ahead of the institution, regardless of why the institution is trading. Thus, we have Hypothesis 2, which tests specifically for front-running:

H2. Institutions that have undergone significant inflows or outflows in quarter t will lag their quarter t disclosures more, and this effect should be more pronounced for passive, index investors.

We can refine Hypothesis 2 more by appealing to an important asymmetry. Buying institutions have more latitude than selling institutions. This is because institutions buying to put positive cash flows to work have many stocks to choose from, but institutions selling to fund negative cash flows can sell only what they already own. This makes the trades of the latter institutions more predictable, and therefore, exposes these institutions relatively more to front-running. Thus, we have another hypothesis with which to test for the effect of front-running on reporting lags:

H3. Large outflows cause larger lags than do large inflows.

The last set of hypotheses address the concern of the corporate secretaries that activist investors hide the votes they will cast. We address this concern by first identifying the quarters in which corporations have voting record dates, and then estimating the news content of an institution's portfolio at the end of that quarter as simply the change from the end of the previous quarter. That is, if an institution held x shares at the end of t-1 and $x+y$ at the end of t, then the news content of the institution's eventual portfolio disclosure is y. If activist investors strategize to hide increases in voting power, then their lags should increase with y. So Hypothesis 4 is

H4: Activist institutions delay more after acquiring more shares across the record date of an important vote.

We address separately the major categories of corporate votes – merger votes, shareholder proposals and management proposals – and we employ several indicators for vote importance.

In contrast to the activist investors boosting voting power to pressure management, and disillusioned investors who 'vote with their feet' by leaving (Parrino, Sias, and Starks, 2003; Edmans, 2009) are the relatively more satisfied investors who stay put. To the extent these

investors wish to communicate this satisfaction sooner rather than later to the market, they may prefer to delay relatively less, so we have our last hypothesis:

H5: Institutions maintaining their shareholdings across the record date delay relatively less.

III. Data

The 13F filings are publicly available through Electronic Data Gathering, Analysis, and Retrieval, (EDGAR) beginning the first quarter of 1999. SEC assigns each filing manager a unique Central Index Key, CIK, which can be used to identify different managers. Note that each CIK represents an institution rather than an individual portfolio of an institution. A mutual fund company may therefore have one CIK number and report all the holdings across many of its different funds in one report. Each 13F filing contains a header that includes the date at which the 13F holdings were filed, *File date*, along with the date the snapshot of holdings is captured, *Report date*. We extract these filing dates along with their corresponding CIKs from 13F filings from the first quarter of 1999 to the third quarter of 2012.

The contents of the 13F filings obtained from EDGAR do not follow a set format and therefore instances can arise where not all data can be read directly from these filings. To limit data error in reading the holdings information, we devise an algorithm to match CIK with the institutions identifier in Thomson-Reuters, MGRNO. The algorithm extracts as many holdings as possible directly from the SEC filings and then uses these holdings to match with holdings data on Thomson-Reuters Institutional Holdings (13F). A match between a CIK and MGRNO is declared if the correlation between the holdings data from EDGAR and Thomson-Reuters surpasses a certain threshold (40%). From this, we are able to determine the CIK for 116,902 (MGRNO, Quarters). We validate the matches by inspecting a random selection to see if names also match and find that the algorithm is very accurate in matching. With this match, we directly rely on the 13F holdings information of Thomson-Reuters to reduce

errors of reading this data from the 13F filings. The one important piece of information retained from the 13F form is the filing date.

We define $Delay_{i,t}$ as the number of days between the end of the calendar quarter *t* and filing date of the corresponding 13F file of institution *i* with the SEC. We also report summary statistics on a set of institutional characteristics constructed largely from the quarterly holdings.[14] *Size* is the market value of equity holdings of the institution at the end of the calendar quarter measured in $Millions. *Average Holding* is the average number of quarters that the institution holds each equity in its portfolio with the holding period defined as the time between the current quarter and the quarter when the stock first appeared in an institution's portfolio. *Turnover* is the inter-quarter portfolio turnover rate calculated by dividing total transactions by *Size* and is reported as a decimal. *Normalized Herfindahl Index* is a measure of concentration of the institutions' portfolio measured as a fraction between 0 and 1. It is the Herfindahl Index of the institution's portfolio, *H*, in quarter *t*, i.e. the squared weights of the assets in the portfolio, adjusted via the formula *(H-1/N)/(1-1/N)*, where *N* is the number of stocks in the portfolio. *Fund Age* is the number of quarters since the institution's first appearance on Thomson Reuters. The variable *Above 5%* is the number of holdings that are larger than 5% of the issuer's shares outstanding as a fraction of the total number of holdings. *Near 5%* is the fraction of the total number of holdings that are between 4% to 5% of the issuer's shares outstanding. *Flows* is change in *Size*, adjusted for returns, expressed as a fraction of beginning-of-quarter *Size*. *Returns* for the portfolio is the value weighted return of the stocks in the institution's portfolio over the quarter, where the return data for each stock over the quarter is obtained from CRSP. From *Flows*, we create two variables *Inflows* and *Outflows*, where *Inflows* = max(*Flows*, 0) and *Outflows*= |*min*(*Flows,*0)|.

[14] To prevent extreme values of *Delay* from contaminating our results we winsorize *Delay* as well as other non-binary variables at the top and bottom 1%.

For the hypothesis tests we need the correlation between an institution's trades one quarter and its trades the next quarter. Toward this end, we calculate for each institution *i* and holding *j* the $Percent\ Holding_{i,j,t}$ as the number of shares of the holding *j* as a percent of shares outstanding of the holding in quarter *t*, so that $Change\ Percent\ Holdings_{i,j,t}$ in quarter *t* is the change in $Percent\ Holdings_{i,j,t}$ between quarter *t-1* and quarter *t*. Finally, $Correlation\ Trades_{i,t}$ is the correlation between $Change\ Percent\ Holdings_{i,j,t}$ in quarter *t-1* and quarter *t* for institution *i* across all stocks. To separately estimate the effects of positive and negative correlation on reporting delays, we create $Correlation\ Trades^{+} = \max(Correlation\ Trades, 0)$ and $Correlation\ Trades^{-} = |min(Correlation\ Trades, 0)|$.

Table I reports the summary statistics for the sample of matched and unmatched institutions of the Thomson-Reuters database. The majority of institutions are matched using our algorithm with only 12% of the Thomson-Reuter database unmatched. As can be seen from Table I, the matched and unmatched institutions are comparable by most institutional characteristics such as size, turnover, and age. The unmatched funds tend to have few holdings, which could help explain why they weren't matched. The average quarterly inflows and outflows of 16% and 10%, respectively, correspond to measurements reported elsewhere in the literature. These average flows reflect only the non-zero values of *Inflows* and *Outflows*.

The Table reports a large variance in *Delay*. On average, institutions file 37 days after the quarter end, but the 5% left tail is just 13 days while the 5% right tail is 47 days. So some institutions are willing and able to report within two weeks, while some wait as long as they can.

To generate a list of activist investors with potential interest in hiding their voting power we refer to the investor-type identifiers on Brian Bushee's website. The data identifies financial institutions by investing style as quasi indexers and non-quasi indexers, and also by function

as bank trusts, insurance companies, investment companies, independent investment adviser, corporate (private) pension fund, public pension fund, university and foundation endowments, and miscellaneous. We also use the list of hedge funds in Griffin and Xu (2009), and augment it with the funds referenced on the InsiderMonkey website. From here on we refer to non-quasi-indexers as active managers. Table II provides a break-down of the sample by institutional type with 18% identified as hedge funds and 37% as active managers.

Information about shareholder meetings comes from Institutional Shareholder Services, i.e. ISS. The data include merger votes, shareholder proposal, and management proposals on compensation. We obtain the record date of each vote listed in ISS from the 14A filings available through EDGAR.

Finally we obtain shares outstanding information from CRSP monthly stock files.

IV. Results

A. Empirical Distributions of Reporting Delays

We start with the empirical distribution, across event time, of reporting delays. Taking the last day of quarter *t* as day 0, we calculate the fraction of 13F forms that are reported no later than day *n*, for *n* out to the rest of the quarter (i.e. about 91 days) and then plot this empirical cumulative distribution (ECD) against *n*. We do this for the whole sample, and then split the sample by time, with one ECD for the 13Fs from Q1 of 1999 (i.e. those reporting holdings as of 3/31/1999) through Q4 of 2006, and another for those from Q1 of 2007 through Q3 of 2012. The results are in Figure 1, which has a black line for the whole sample, a red line for the early sample, and a blue line for the late sample.[15]

[15] The figures reported in these graphs disregard any filings after the quarter subsequent to the report date, so *x*% for date *n* means *x*% percent of the filings made by the end of the quarter were made by *n* days into the quarter.

The ECDs show that filers like to wait. By 43 days, only half of 13Fs are in. Two days later, 83 percent are in. Almost all, over 99 percent, are in by 50 days. Could 45 or so days by coincidence be just how long it takes to get an accurate report out? The split sample is one way to gauge this idea. The task of reporting a portfolio is the same across the period, but technology improves, so if the delay reflects the demands of the task, then it should shrink over time. But it doesn't shrink, it grows. By day 43, 47 percent of 13Fs have been filed in the early years, but only 42 percent in the later years. For every day through 45, there are more 13Fs filed in the early years than in the later years. So not only is there no *a priori* reason (that we know of) why the time consumed by this task should be so close to the statutory limit, there is also a lengthening delay where technological progress would shorten the delay. The simple explanation is that the delay is a strategic choice.

To focus more closely on the strategic component of the delay, we can split the sample on along a different axis, not early versus late but instead hedge funds versus non-hedge funds. This is an important distinction because hedge funds are regarded as more strategic in general, in the market purely to enact strategies, rather than just gain exposure. Thus, we run the same exercise, but this time the red line represents disclosures by the institutions identified as hedge funds, and the blue line disclosures by all the other institutions. Results are in Figure 2.

Figure 2 shows a wide gap in delay. For the non-hedge funds, 50 percent of 13Fs are in by 40 days, whereas for hedge funds, it's only 24 percent. Hedge funds appear to have a strong urge to report as absolutely late as possible: 30 percent report on day 45 alone, versus just 16 percent for the others. So while hedge funds do not always choose to disclose as late as possible, the unconditional tendency is strongly in that direction.

Another way to isolate the more strategic investors is to split out the active managers, as they are also, from what we can tell, putting strategies to work. So in Figure 3, the blue line is active managers and the red line is everyone else. The graph looks a lot like Figure 2, though with not quite as much separation.

Portfolio size can also relate to reporting delays, though the net effect could go either way. Larger portfolios of equities likely reflect larger institutions, so sorting on portfolio size is to some extent sorting on institution size, which would intuitively relate to capacity to turn filings around efficiently and quickly. On the other hand, the holdings of large institutions could be more sensitive due to greater control rights or larger market impact of trades. And there are also simply more names in larger portfolios: portfolios in the largest quintile have an average of 762 different CUSIPs, whereas those in the smallest quintile have on average only 65. So there are reasons for shorter and for longer delay. The results are in Figure 4, where the red line is smallest quintile of portfolios and the blue line is the largest quintile. The large portfolios are reported more slowly, so any advantage in back-office capacity is overwhelmed by other considerations.

How do the cross sections of delays in Figures 2-4 relate to the time series changes documented in Figure 1? To address this question, we calculate the average delay each year, for each side of the sample splits in each graph, and track the averages across the years of the sample period. The results are in Figures 5 (hedge funds vs. others), 6 (active managers vs others) and 7 (bottom size quintile vs. top size quintile).

The figures all show growing separation over the years: hedge funds, active managers and large funds all delay more as the years pass, with the relative ranking the same as the levels in Figures 2-4. Hedge funds delay around 3 days more by the end, active managers around 2 days, and large funds around a day.

An extra reporting delay of one day or three might seem modest, but these are averages across some delays that are unaffected and others that are affected more. And Figures 1-4 illustrate, the especially strong effect on the delay is in a particular part of the distribution, right around the 45 day limit. To focus on this part of the distribution, and on the probability of a more substantial delay rather than on the average delay, we rerun the numbers from Figures 5 to 7, this time calculating not the average delay but the proportion of delays, for

that split of the sample in that year, that is 45 days or more. The results are in Figures 8 (hedge funds vs others), 9 (active managers vs others) and 10 (large funds vs small funds).

For hedge funds and active managers, the probability of an extreme delay increases significantly: both are around 30 percent in the early years, and active managers rise to around 50 percent while hedge funds are more like 60 percent by the end. The complementary funds remain at 25 percent or so. The large vs. small split does not show this pattern; large funds generally show a higher probability but the gap is small and does not grow.

B. Hypothesis Tests

In this section we address the questions raised by Figures 1 through 9, and we also test the hypotheses regarding copycatting, front-running and vote hiding, with multiple regressions. We start with a regression designed to gauge the statistical significance of the patterns observed in average reporting delays. In this regression, *Delay* is the dependent variable, and the independent variables include indicators for hedge funds, active managers, fund size, and the latter part of the sample period. They also include variables that capture the news content of the disclosure to the public, and the importance of the disclosure to the institution: the concentration of the portfolio in certain stocks, captured by *Herfindahl*, the length of the institution's history of disclosures, captured by *Age*, the change in its portfolios one quarter to the next, captured by *Log Turnover* and *Avg Holding*, and the fraction of holdings either above or near the 5 percent 13D threshold, captured by *Above 5%* and *Near 5%*. There are also time fixed effects, indicators for the day of the week the 45-day limit falls on, the lagged delay, and in the last regression, institution fixed effects.

$$\begin{aligned} Delay = {} & \alpha + \beta_1 \text{Lag } Delay + \beta_2 Hedge\ Fund + \beta_3 Active + \beta_4 Post\ 2006 \\ & + \beta_5 HedgeFund \times Post\ 2006 + \beta_6 Active \times Post\ 2006 \\ & + \beta_7 Herfindahl + \beta_8 LogSize + \beta_9 LogTurnover + \beta_{10} Age \\ & + \beta_{11} Above\ 5\% + \beta_{12} Near\ 5\% + \beta_{13} \text{Day-of-Week Dummies} \\ & + \beta_{14} \text{Quarter Dummies} + \beta_{15} \text{Institutional Fixed Effect} \end{aligned}$$

We run the regressions with the key variables entering separately, then together, then interacted. Results are in Table III.

The regressions associate significant delays with hedge funds, active managers, larger funds, and the later years. When they all enter at the same time, they are all still significant in the same direction, and the positive time trend of hedge funds and active managers is significant as well. The delay relates intuitively to the other explanatory variables as well: more delay when there are large and/or concentrated holdings, and more portfolio change between quarters, and less delay when the institution has a longer history of disclosures or longer average holding periods.

Regarding the magnitudes, we find that *Near 5%* enters with a much larger magnitude than *Above 5%*, which concurs with the other disclosure rules, since holdings above 5 percent must be disclosed much sooner than 45 days anyways. It is in this light odd that *Above 5%* enters at all, but potentially this variable picks up investors that have other sensitive holdings below 5 percent, besides those picked up by *Near 5%*. The coefficient on *Log(Size)* implies a large effect of portfolio size on delay: increasing the portfolio size from the median of $355 Million to the 5 percent cutoff of $14.046 Billion by this estimate would push of the 13F disclosure by 3 days.[16]

To address the probability of extreme delays in Figures 8-10, we fit multivariate logit models where the dependent variable is 1 for delays of at least 45 days, and 0 otherwise. The explanatory variables are the same as Table III, except that to allow the maximum likelihood to converge, the models leave out the institution and day-of-the-week indicators. The results bear out the impression from the figures, and are qualitatively similar to those of Table III. To help assess the quantitative implications, the last column reports the marginal effects implied by the full model in the adjacent column. So for example, we find that a hedge

[16] Log(14046) – Log(355) = 3.67 and given a coefficient on *Log(Size)* of approximately 0.8 this implies an additional delay of 0.8 × 3.67 = 3 days.

fund is 2.44% more likely to report at an extreme delay before 2006, and 8.96% more likely after that.[17] The marginal effect of an extreme delay in the previous quarter is also strong: the marginal effect of 0.408 means that the likelihood of an extreme delay increases by 40.8% if the previous delay was extreme.

To summarize, there appears to be a significant strategic component to 13f filings. This is apparent in the lengthening delay over time, and the extra delay by institutions with extra incentive to delay. This is apparent in both the expected delay and in the incidence of extreme delays. The next section addresses the separate roles of copycatting, front-running and vote-hiding in these strategic delays.

C. Effect of copycat traders and front-running on reporting

We first address copycatting and front-running, and then vote-hiding. For our purposes, we take copycatting to be making the same trade that an institution recently made, the goal being to free-ride on the institution's effort and skill. Since this free-riding might allow the copycatter to offer a better return distribution at a lower price (Frank et al, 2004, Verbeek and Wang, 2013, Phillips et al, 2014), the institution may prefer to defend against it through delay. On the other hand, the copycatting strategy could play into the institution's hands if it hopes to sell what it recently bought (Brown and Schwarz, 2013). So while an institution might have an unconditional policy toward delay, as Tables III and IV document, it could also have a highly conditional policy, depending on whether the copycatting triggered by a particular disclosure would be detrimental or beneficial, and this would hinge on whether it expected its next-quarter trades to be in the same or opposite direction as the trades indicated by the disclosure.

[17] We arrive at these estimates by adding the coefficients on *Hedge Fund* and *Hedge Fund* × *Post-2006* and similar adding the coefficients on *NQI* and *NQI* × *Post-2006*.

We build our test statistic for hypothesis *H1* on this logic. For each quarter and each institution, we calculate the correlation between its portfolio changes between its quarter *t-1* and *t* disclosures and its changes between *t* and *t*+1. These portfolio changes are changes in the institution's shareholdings as a fraction of the issuers' shares outstanding (thereby avoiding confusion from changes due to returns or to stock splits and similar corporate actions). We first calculate this correlation, *Correlation Trade*, and then break it into two pieces: *Correlation Trade*$^{+}$ and *Correlation Trade*$^{-}$, which are max{*Correlation Trade*, 0} and max{-*Correlation Trade*, 0}, respectively. A negative correlation implies a benefit from copycatting, whereas a positive correlation implies only the usual cost, so strategizing delays with an eye to copycatting means a negative relation of delay to *Correlation Trade*$^{-}$, and a positive relation to *Correlation Trade*$^{+}$.

A frontrunner aims to trade ahead of market-moving trades. A 13F filing exposes an institution to the risk of frontrunning if it allows detection of its market-moving trades in time to trade ahead of them. To some extent this would look like copycatting, because it can mean buying what you see the institution bought and selling what you see they sold, on the idea that the institution is likely to keep trading in the same direction. The strategies diverge, though, when flows are involved. An institution needs to trade in response to flows, but trades to adjust fund size would be of little interest to a copycatter, whose flows are presumably different. But they would be of considerable interest to a frontrunner, who is interested in the trades themselves, rather than the portfolios they serve. Thus we use the institutions' flows to gauge the role of frontrunning concerns in their delay strategies. Specifically, we test hypothesis *H2* by testing whether delay increases with either *Inflows* or *Outflows*, and we test hypothesis *H3*, which makes use of an institution's narrower choice of stocks to sell than to buy, by testing whether the relation is stronger to *Outflows* than to *Inflows*. The hypotheses are all addressed at the same time in Table V, which focuses the

identification on the time series variation in these various incentives to delay by including fixed effects for the institutions.

The regression results are not positive for the copycatting hypothesis. The correlation variables do not help explain the delay, so there is no evidence of delay adjustments in response to the direction of the fund's subsequent trades.

The results are much more supportive of the frontrunning hypothesis. The more the institution has to trade to resize the portfolio, the more it delays its 13F. It is telling that this holds specifically for the institutions that *aren't* hedge funds or active investors. These are the institutions that have less choice in what to buy or sell, and so would have more predictable flow-driven trades. The regressions also support the hypothesis that the effect of outflows is stronger, due to their higher predictability. So while institutions may have well-grounded fears of both copycatting and frontrunning, it's the latter they respond to when choosing when to disclose their portfolios.

D. Filing delay around important votes

Do institutions delay disclosure to hide their voting power? To assess this possibility, we relate delay to changes in ownership across the record dates of votes. The main question is whether institutions delay more after gaining ownership, consistent with hiding. We also ask whether institutions delay less after maintaining ownership, to send a vote of confidence to the rest of the market.

We start by assembling a universe of corporate votes from ISS. Our universe includes both votes from annual general meetings, with their mix of management and shareholder proposals, and also votes from special meetings regarding mergers. From 14A filings we identify the record date of each vote, and then we identify all the institutions that held the stock as of the quarter-end before the quarter of the vote, i.e. quarter t-1. If the institution

increased its ownership from *t*-1 to *t* then *Buy* = 1, and is otherwise 0. If it kept ownership the same then *No Change* = 1, rather than 0, and if it reduced its ownership then *Sell* = 1 rather than 0. We then divide the votes into groups by vote type, and run a set of regressions for each group. In each regression there is one observation for every vote/institution pair, where the vote is a vote of the specified type, and the institution is an institution that held the stock at the end of the quarter before the record date. The vote types are mergers (Table VI), shareholder proposals (Table VII), management proposals regarding compensation (Table VIII), and non-compensation management proposals (Table IX). For each vote type, there are four panels, corresponding to four sets of institutions: the full sample (Panel A), Hedge Funds only (Panel B), Active Investors only (Panel C), and institutions that are neither Hedge Funds nor Active (Panel D). For each of these panels there are four regressions, each of which has the same controls as the Table V regressions, except with the Correlation and flow variables removed, and in their place, *Buy*, *Sell*, and *No Change* first by themselves, and then *Buy* and *Sell* together.

Merger votes are the smallest sample, but Table VI does find a positive relation of *Delay* to *Buy* in some specifications. The strongest result is in the hedge-fund sample, which shows that the buying institutions delay longer than the others. This appears from the other regressions to be due to delaying longer than those that sell, as opposed to delaying longer than those that stay put. There is also some evidence that the less-active institutions delay less when they don't change. The other tables, which have far more observations, generally find a small but statistically significant positive relation of *Delay* to *Buy*, as well as a small but statistically significant negative relation to *Sell*.

To summarize, there is a relation of disclosure delay to accumulation of voting power, in line with the concern of the corporate secretaries. However, it isn't very far down that line. So while it is certainly true that corporations would know their shareholders sooner if the

13F deadline were a few days rather than half a quarter, it does not appear that hiding the accumulation of voting power is a big part of the strategic component of disclosure delays.

V. Conclusion

As Lemke and Lins (1987) observe, the primary goals of the 13(f) program were "to facilitate consideration of the influence and impact of institutional managers on the securities markets and the public policy implications of that influence." [18] These considerations do not appear to rely on *fast* disclosure, only *eventual* disclosure. However, as Lemke and Lins (1987) also observe, the disclosures have been put to many other uses, and these other uses can indeed rely on, or at least benefit from, fast disclosure. In this paper, we explore the role of three uses for the disclosures: facilitating copycat trading and front-running, and informing corporate governance actions. The question is whether institutions use their latitude to lag disclosure in response to these uses. The answer is that we find no evidence for an effect of copycatting on lags, but strong evidence for effects of the other two.

The evidence that institutions lag to combat front-running comes from the more exposed institutions, those whose next trades are more predictable due to their close tracking of an index. The response of their disclosure dates to cash flows, especially outflows, suggests that they give themselves time to make the necessary trades before the disclosures can encourage others to trade first. This does not necessarily mean that others would have front-run after earlier disclosure but it does suggest a concern that would be a trade-off when considering a shorter maximum lag.

The potential effects of lags on corporate governance actions were the original inspiration for the request for a shorter maximum lag. Our evidence supports the concern that votes figure in disclosure lags. Institutions, in particular hedge funds and similar investors, lag more after accumulating shares across a vote's record date, thus making it

[18] Lemke and Lins (1987), p. 94.

harder for the affected corporation to adapt its plans to its shifting constituency. The effect we find is small, though, so does not constitute much evidence that institutions are strongly motivated to hide their accumulation of voting power.

By assembling the universe of 13F filings and their filing dates, we demonstrate that disclosures are delayed strategically, both to defend against the costs of being front-run, and against the very different costs of corporations knowing sooner who wields their votes. These strategic delays tell us that a tighter constraint on delays, whether to two days or some other maximum, would not come at zero cost to the institutions. Whether these are costs to the corporations they trade or society at large is an interesting question for future research.

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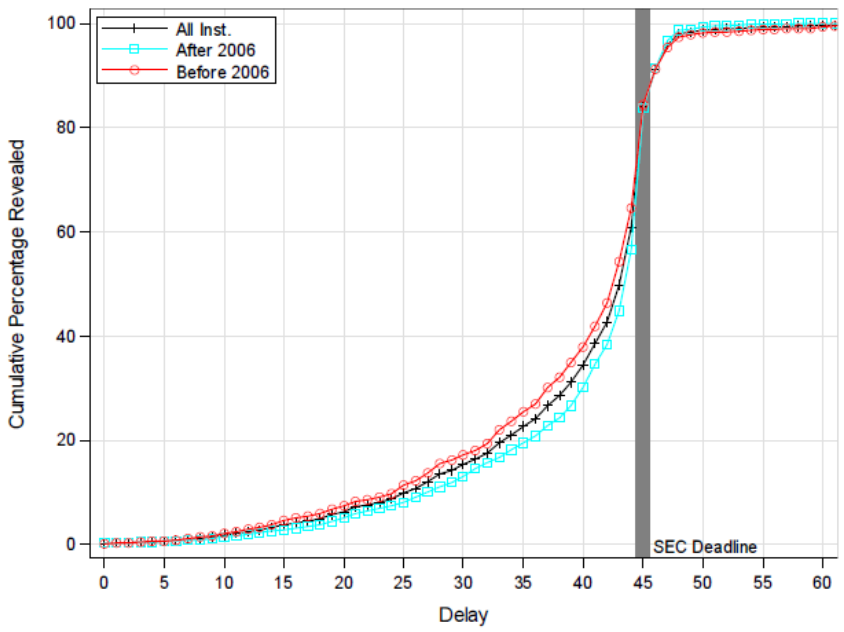

Figure 1. Percentage of shares revealed through subsamples: The figure compares the cumulative percentage of shares out of total shares eventually revealed by 13F filers for the subsamples of pre- and post-2006.

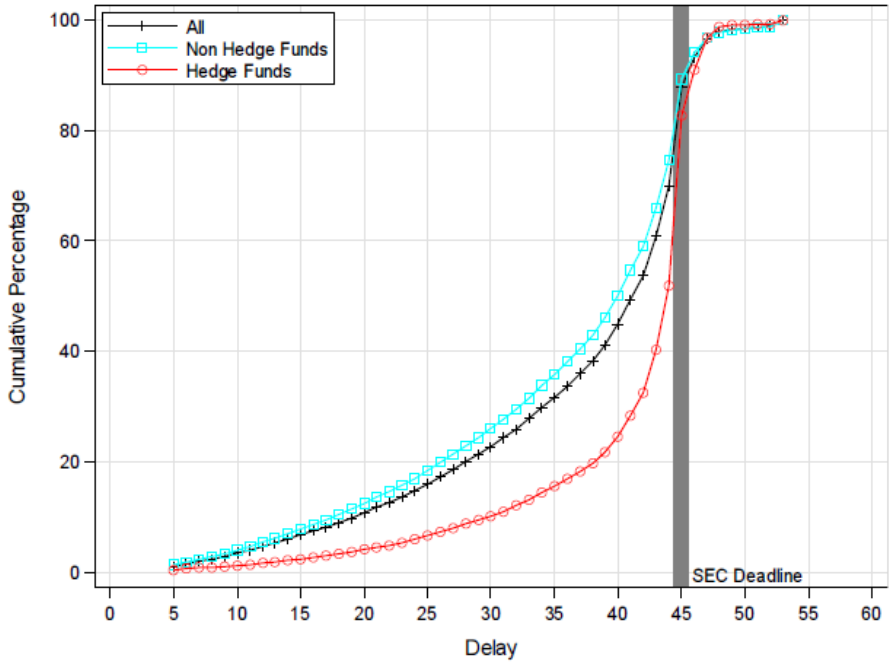

Figure 2. Delay distribution of hedge funds vs. non hedge funds: The figure compares the delay pattern of hedge funds to that that of non hedge funds.

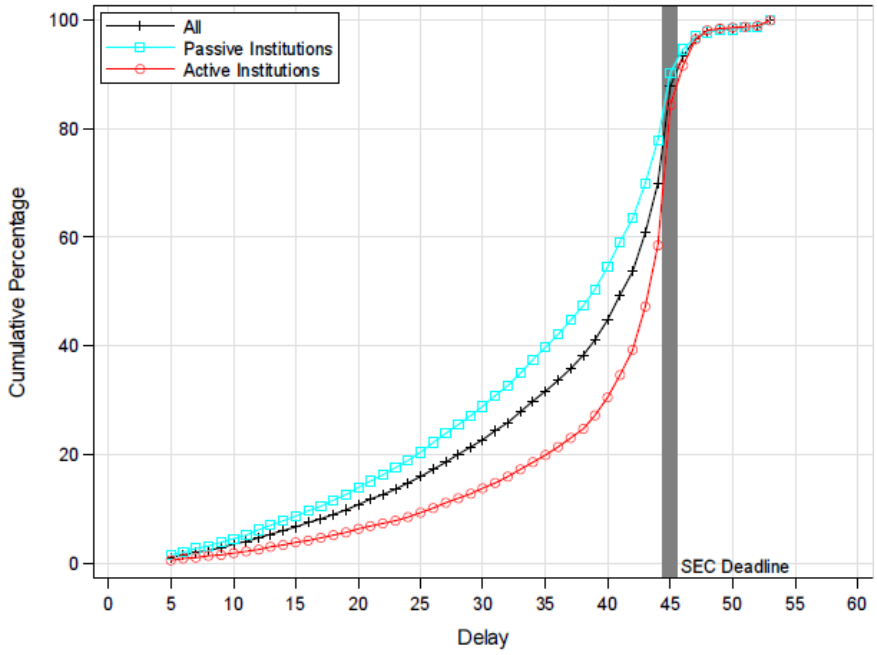

Figure 3. Delay distribution of passive and active institutions: This figures compares the delay patterns of passive institutions to that of active institutions.

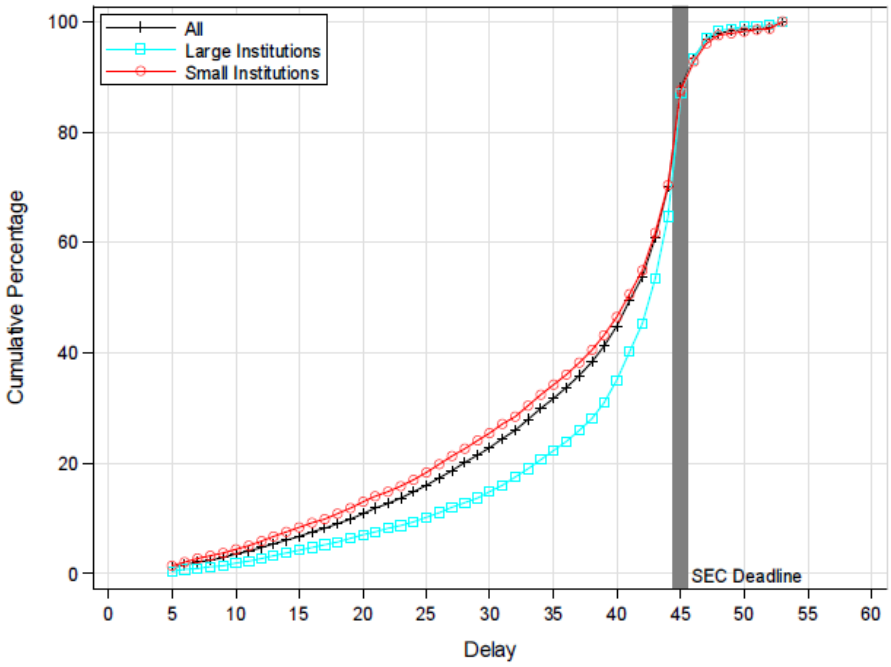

Figure 4. Delay distribution of large vs. small institutions: The figure compares the delay pattern of large institutions with that of small institutions. Large and small institutions are identified quarterly and based on their portfolio size quintile. The ones in the top and bottom quintiles are identified as large and small institutions respectively.

Figure 5. Comparison of time series of average delay between hedge fund and non hedge fund institutions: This figure compares the time series of average delay for hedge fund and non hedge fund institutions over the quarters in our sample.

Figure 6. Comparison of time series of average delay between passive and active institutions: This figure compares the time series of average delay for passive and active institutions over the quarters in our sample.

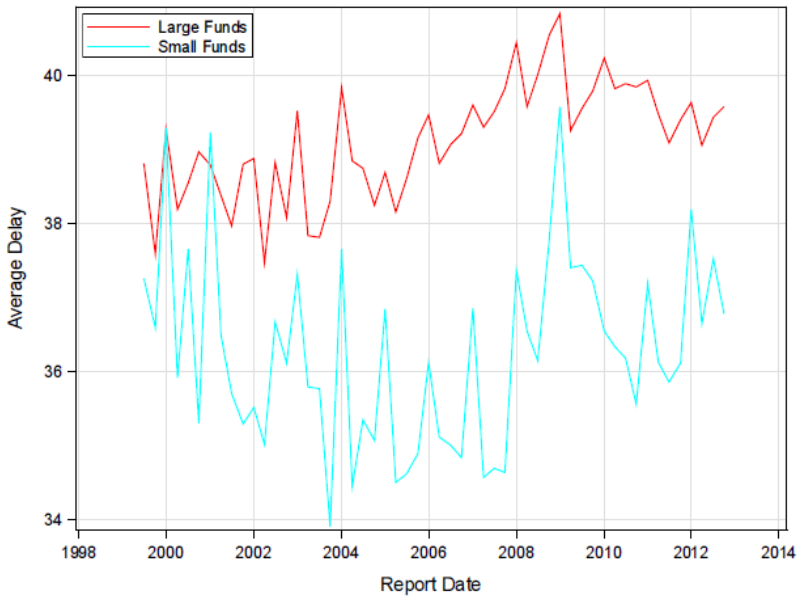

Figure 7. Comparison of time series of average delay between large and small institutions: This figure compares the time series of average delay for large and small institutions over the quarters in our sample. Large and small institutions are identified quarterly and based on their portfolio size quintile. The ones in the top and bottom quintiles are identified as large and small institutions respectively.

Figure 8. Comparison of time series of excess delay (delay $\geq$ 45) between hedge fund and non hedge fund institutions: This figure compares the time series of percentage of hedge fund vs. non hedge fund institutions that have delays equal to or greater than 45 days in each quarter.

Figure 9. Comparison of time series of excess delay (delay $\geq$ 45) between passive and active institutions: This figure compares the time series of percentage of passive vs. active institutions that have delays equal to or greater than 45 days in each quarter.

Figure 10. Comparison of time series of excess delay (delay $\geq$ 45) between large and small institutions: This figure compares the time series of percentage of large vs. small institutions that have delays equal to or greater than 45 days in each quarter. Large and small institutions are identified quarterly and based on their portfolio size quintile. The ones in the top and bottom quintiles are identified as large and small institutions respectively.

Table I. Summary Statistics and Matched Sample Analysis: This table reports the summary statistics of the variables used in our paper. The sample is between the first quarter of 1999 and the third quarter of 2012. Panel A shows the results for our matched sample and Panel B shows the results for the institution-quarters that exist in Thomson/Reuters 13F database but we were not able to find any corresponding match from the raw data obtained from the SEC Edgar website. *Delay* is defined as the difference between the end of quarter, *Report Date*, and the day the 13F form is filed by the institution, *File Date*. *Size* is the market value of equity holdings reported in the 13F form by the institution. *Turnover* is the inter-quarter turnover rate calculated by dividing total transactions by *Size*. *Normalized Herfindahl Index* is a measure of concentration of institution's portfolio and is calculated by finding the Herfindahl Index of the institution's portfolio and then normalizing it as described in text. *Average Holding* is a value weighted average of the age of the stocks held in the institution's portfolio. Each stock's age is defined as the number of quarters since the first time the stock was held by the institution. *Fund Age* is defined as the number of quarters since the first appearance of the institution on Thomson Reuters database. *Above 5%* is defined as the fraction of stocks in the portfolio of the institution for which the institution's ownership is greater than 5% of the shares outstanding. Similarly, *Near 5%* is defined as the fraction of stocks in the portfolio of the institution for which the institution's ownership falls between 4% and 5% of the shares outstanding. *Flows* is defined as the percentage change in *Size* over the the quarter adjusted for the returns. *Inflows* is set equal to *Flows* when *Flows* is greater than zero and zero otherwise. *Outflows* is defined in a similar fashion and is equal to the absolute value of *Flows* when *Flows* is less than zero and zero otherwise.

Panel A: Matched sample

			Percentiles					
	N	Mean	5^{th}	25^{th}	50^{th}	75^{th}	95^{th}	Std. Dev.
Delay	116,141	37.081	13.000	32.000	42.000	45.000	47.000	10.774
Size ($ Million)	116,902	3013.493	44.656	146.833	355.085	1372.345	14045.429	9573.667
Turnover	116,211	0.48	0.057	0.151	0.301	0.671	1.313	0.495
Normalized Herfindahl Index	116,898	0.044	0.003	0.008	0.014	0.030	0.171	0.114
Average Holding (Qtrs)	116,898	20.206	1.923	6.799	15.083	28.573	56.474	17.473
Fund Age (Qtrs)	116,902	38.629	2.000	12.000	28.000	59.000	104.000	32.567
Near 5%	116,902	0.009	0.000	0.000	0.000	0.003	0.057	0.023
Above 5%	116,902	0.032	0.000	0.000	0.000	0.013	0.184	0.093
Inflows	50,971	0.162	0.003	0.021	0.058	0.157	0.721	0.291
Outflows	59,341	0.106	0.004	0.019	0.049	0.124	0.439	0.145

Table I. Continued:

Panel B: Data available on Thomson/Reuters but not matched in our sample

			Percentiles					
	N	Mean	5^{th}	25^{th}	50^{th}	75^{th}	95^{th}	Std. Dev.
Size ($ Million)	16,812	3049.467	10.577	114.794	289.620	948.418	13283.464	10744.838
Turnover	16,106	0.509	0.046	0.135	0.282	0.817	1.391	0.565
Normalized Herfindahl Index	16,811	0.118	0.004	0.010	0.019	0.062	0.997	0.250
Average Holding (Qtrs)	16,801	21.254	1.000	6.142	15.039	31.087	61.999	19.635
Fund Age (Qtrs)	16,812	39.344	2.000	11.000	29.000	62.000	106.000	33.692
Near 5%	16,812	0.009	0.000	0.000	0.000	0.000	0.063	0.027
Above 5%	16,812	0.062	0.000	0.000	0.000	0.016	0.500	0.159
Inflows	6,192	0.178	0.001	0.019	0.055	0.165	0.949	0.329
Outflows	8,773	0.118	0.002	0.017	0.049	0.136	0.551	0.166

Table II. Sample composition by institution type: This table shows the composition of our sample in pre- and post-2006 subsamples. The institutions types are obtained from Brian Bushee's website. He also identifies financial institutions as quasi indexers and non quasi indexers, which we denote as passive and active institutions respectively. Hedge funds are identified using Griffin and Xu (2009) augmented by the list of hedge funds obtained from InsiderMonkey website.

Sample Composition	Pre 2006	Post 2006
Brian Bushee Institution Type		
Bank Trust	7.63%	6.10%
Insurance Company	1.87%	1.30%
Investment Company	74.81%	79.80%
Independent Investment Advisor	3.08%	1.88%
Corporate (Private) Pension Fund	3.00%	1.44%
Public Pension Fund	8.20%	8.23%
University and Foundation Endowments	0.76%	0.88%
Miscellaneous	0.64%	0.36%
Hedge Funds	17.23%	19.58%
Active Institutions	35.90%	38.63%

Table III. Determinants of filing delay: This table reports results on determinants of delay in filing 13F forms. All the regression use ordinary least squares method and include time fixed effect dummies. Column (6) includes institution fixed effect dummies as well. Reported are the coefficients and their t-statistics (in parentheses). The dependent variable in all the regressions is the number of days between the filing date and the end of quarter, *Delay*. Coefficient marked with **, and * are significant at the 1% and 5% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Hedge Fund	1.723**			1.634**	1.112**	0.298
	(21.86)			(20.28)	(8.31)	(0.19)
Active		1.055**		0.820**	0.383**	-1.846
		(13.66)		(10.51)	(3.37)	(-1.22)
Post 2006			1.511**	1.286**	0.891*	-0.462
			(4.29)	(3.62)	(2.49)	(-1.94)
Hedge Funds × Post 2006					0.800**	0.390**
					(4.88)	(2.61)
Active × Post 2006					0.710**	0.698**
					(5.39)	(5.63)
Lag(Delay)	0.239**	0.239**	0.241**	0.237**	0.237**	0.0720**
	(142.57)	(141.43)	(144.36)	(140.64)	(140.43)	(49.81)
Norm. Herfindahl Index	6.370**	6.111**	4.979**	6.134**	6.063**	-0.208
	(18.01)	(16.48)	(16.44)	(16.57)	(16.38)	(-0.47)
Log(Size)	0.838**	0.865**	0.856**	0.843**	0.841**	0.401**
	(42.90)	(43.54)	(44.12)	(42.44)	(42.37)	(10.29)
Avg. Holding (Qtrs)	-0.0232**	-0.0259**	-0.0302**	-0.0212**	-0.0213**	-0.00572
	(-6.83)	(-7.58)	(-9.00)	(-6.18)	(-6.21)	(-0.97)
Log(Turnover)	1.755**	1.626**	1.930**	1.519**	1.510**	0.552**
	(52.05)	(40.44)	(59.46)	(37.53)	(37.30)	(12.36)
Fund Age (Qtrs)	-0.0116**	-0.0102**	-0.00944**	-0.0116**	-0.0114**	0.0174*
	(-7.01)	(-6.10)	(-5.72)	(-6.94)	(-6.85)	(2.10)
Above 5%	7.011**	7.055**	7.354**	6.433**	6.389**	0.510
	(17.64)	(17.25)	(19.62)	(15.72)	(15.61)	(0.84)
Near 5%	18.37**	22.08**	22.50**	18.94**	18.93**	-0.940
	(12.71)	(15.02)	(16.02)	(12.83)	(12.83)	(-0.65)
Tuesday	1.043**	0.944**	1.077**	0.931**	0.924**	0.449*
	(4.03)	(3.58)	(4.17)	(3.54)	(3.52)	(2.52)
Wednesday	0.842**	0.787**	0.887**	0.764**	0.755**	0.246
	(3.22)	(2.94)	(3.40)	(2.86)	(2.83)	(1.01)
Thursday	-0.144	-0.217	-0.171	-0.206	-0.214	-0.403
	(-0.57)	(-0.85)	(-0.68)	(-0.80)	(-0.84)	(-1.62)
Friday	0.392	0.331	0.394	0.319	0.314	-0.112
	(1.54)	(1.29)	(1.55)	(1.24)	(1.22)	(-0.55)
Saturday	-0.926**	-0.917**	0.469	0.452	0.448	1.310**
	(-2.65)	(-2.59)	(1.86)	(1.77)	(1.75)	(4.34)
Sunday	0.0934	0.0563	0.0542	0.0455	0.0423	1.100**
	(0.37)	(0.22)	(0.22)	(0.18)	(0.17)	(3.80)
Constant	13.45**	12.70**	12.14**	11.55**	11.82**	26.60**
	(32.93)	(30.54)	(22.17)	(20.77)	(21.24)	(26.22)
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Inst. Fixed Effects	No	No	No	No	No	Yes
Observations	106055	104211	106910	104211	104211	104211
R^2	0.261	0.259	0.257	0.262	0.262	0.581

Table IV. Determinants of Delay $\geq$ 45: This table reports results for the logistic model that studies the determinants of delays equal to or in excess of 45 days. Columns (1)-(5) report the regression coefficients along with their t-statistics (in parentheses). Column (6) reports the marginal effects corresponding to the model in column (5). Coefficients marked with **, and * are significant at the 1%, and 5% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Hedge Fund	0.392**			0.370**	0.134**	0.0244**
	(18.90)			(17.51)	(3.74)	(3.74)
Active		0.265**		0.216**	0.103**	0.0186**
		(12.59)		(10.11)	(3.25)	(3.25)
Post 2006			1.313**	1.265**	1.118**	0.203**
			(12.16)	(11.53)	(10.13)	(10.13)
Hedge Funds × Post 2006					0.359**	0.0652**
					(8.23)	(8.22)
Active × Post 2006					0.184**	0.0333**
					(5.04)	(5.04)
Lag(Delay $\geq$ 45)	2.262**	2.276**	2.291**	2.256**	2.248**	0.408**
	(131.84)	(131.31)	(134.50)	(129.84)	(129.18)	(126.04)
Norm. Herfindahl Index	0.923**	0.848**	0.714**	0.860**	0.844**	0.153**
	(9.76)	(8.61)	(8.76)	(8.74)	(8.55)	(8.56)
Log(Size)	0.108**	0.112**	0.115**	0.106**	0.105**	0.0191**
	(19.61)	(20.06)	(21.24)	(18.96)	(18.89)	(18.95)
Avg. Holding (Qtrs)	-0.00186	-0.00260**	-0.00419**	-0.00119	-0.00122	-0.000221
	(-1.88)	(-2.62)	(-4.31)	(-1.20)	(-1.22)	(-1.22)
Log(Turnover)	0.312**	0.273**	0.350**	0.246**	0.244**	0.0443**
	(32.04)	(23.57)	(37.25)	(21.09)	(20.91)	(20.99)
Fund Age (Qtrs)	-0.00273**	-0.00237**	-0.00204**	-0.00278**	-0.00279**	-0.000506**
	(-5.78)	(-5.01)	(-4.39)	(-5.85)	(-5.87)	(-5.87)
Above 5%	1.706**	1.658**	1.757**	1.534**	1.526**	0.277**
	(16.41)	(15.59)	(18.05)	(14.34)	(14.24)	(14.22)
Near 5%	3.492**	4.422**	4.347**	3.758**	3.773**	0.684**
	(9.20)	(11.54)	(11.86)	(9.72)	(9.72)	(9.71)
Constant	-4.377**	-4.529**	-4.416**	-4.484**	-4.381**	
	(-30.52)	(-31.20)	(-30.96)	(-30.85)	(-30.14)	
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Inst. Fixed Effects	No	No	No	No	No	No
Observations	106055	104211	106910	104211	104211	104211
Pseudo R^2	0.255	0.253	0.252	0.255	0.256	

Table V. Delay and trade predictability: This table reports the results of regressions that test the hypothesis that filing delay is affected by an institution's concerns about copycats and predatory traders. The correlation variables in this table are calculated based on the changes in the number of shares out of total shares outstanding held by the institution as defined in the text. All the regressions use the ordinary least squares method and include time and institution fixed effect dummies as well as day-of-week dummies. Coefficients marked with **, and * are significant at 1%, and 5% level, respectively.

	(1) All	(2) Hedge Funds	(3) Active Institutions	(4) All except Hedge Funds and Active Institutions
Correlation Trade $^+$	-0.0522	0.00133	0.240	-0.136
	(-0.49)	(0.01)	(1.33)	(-0.95)
Correlation Trade $^-$	0.0684	0.393	0.228	-0.0280
	(0.57)	(1.77)	(1.31)	(-0.16)
Inflows	0.434**	0.170	0.183	1.186**
	(3.32)	(0.93)	(1.32)	(4.04)
Outflows	1.074**	0.487	0.737*	2.153**
	(3.86)	(1.19)	(2.33)	(3.84)
Norm. Herfindahl Index	-0.314	-0.678	0.276	-2.039*
	(-0.68)	(-0.85)	(0.51)	(-2.15)
Log(Size)	0.474**	0.320**	0.394**	0.552**
	(11.67)	(5.02)	(8.17)	(7.74)
Avg. Holding (Qtrs)	-0.0141*	-0.0153	0.0137	-0.0199*
	(-2.41)	(-1.42)	(1.62)	(-2.31)
Log(Turnover)	0.471**	0.296**	0.294**	0.478**
	(9.05)	(2.82)	(3.49)	(6.31)
Fund Age (Qtrs)	0.0174*	0.0285	-0.00231	-0.0292*
	(2.12)	(1.96)	(-0.19)	(-2.40)
Above 5%	0.612	1.550*	-0.491	2.019
	(1.01)	(2.16)	(-0.72)	(1.41)
Near 5%	-1.450	-1.419	-2.354	1.754
	(-1.01)	(-0.87)	(-1.42)	(0.57)
Post 2006	-0.0267	-0.350	0.0358	0.228
	(-0.11)	(-0.86)	(0.11)	(0.67)
Constant	27.33**	33.52**	31.75**	26.18**
	(31.59)	(25.05)	(30.94)	(17.80)
Inflows=Outflows (F-test)	6.41	0.74	3.78	3.32
p-value	0.011	0.390	0.052	0.069
Observations	106705	20177	39111	59699
R^2	0.571	0.544	0.547	0.542

Table VI. Delay and merger events: This table reports the results of regressions that test the hypothesis that extreme filing delay might be affected by the merger and acquisition events on the stocks held in the portfolio of the institution. We run regressions on the full sample, subsample of hedge funds, subsample of active institutions, and the subsample that excludes hedge funds and active institutions. All the regression include control variables. Coefficients marked with **, and * are significant at the 1%, and 5% level, respectively.

Panel A: Full Sample				
	(1) Delay $\geq$ 45	(2) Delay $\geq$ 45	(3) Delay $\geq$ 45	(4) Delay $\geq$ 45
Buy	0.148**			0.292**
	(5.45)			(7.17)
Sell		-0.0227		0.203**
		(-0.80)		(4.77)
No Change			-0.255**	
			(-6.58)	
Observations	27481	27481	27481	27481
Panel B: Hedge Fund Subsample				
Buy	0.139			0.285*
	(1.64)			(2.23)
Sell		-0.0171		0.212
		(-0.19)		(1.54)
No Change			-0.260*	
			(-2.10)	
Observations	3079	3079	3079	3079
Panel C: Active Institutions Subsample				
Buy	0.0956			0.249**
	(1.84)			(2.96)
Sell		0.0000892		0.208*
		(0.00)		(2.33)
No Change			-0.235**	
			(-2.87)	
Observations	7720	7720	7720	7720
R^2				
Panel D: The Rest Subsample				
Buy	0.138**			0.285**
	(4.13)			(5.84)
Sell		-0.00318		0.210**
		(-0.09)		(4.16)
No Change			-0.252**	
			(-5.47)	
Observations	18170	18170	18170	18170

Table VII. Delay and shareholder proposals events: This table reports the results of regressions that test the hypothesis that filing delay might be affected by the shareholder proposal events on the stocks held in the portfolio of the institution. We run regressions on the full sample, subsample of hedge funds, subsample of active institutions, and the subsample that excludes hedge funds and active institutions. All the regressions include control variables as well as fixed effects for institutions, quarters and day-of-week. Coefficients marked with **, and * are significant at the 1%, and 5% level, respectively.

Panel A: Full Sample				
	(1) Delay	(2) Delay	(3) Delay	(4) Delay
Buy	0.108**			0.123**
	(7.85)			(5.40)
Sell		-0.0804**		0.0195
		(-5.75)		(0.84)
No Change			-0.0751**	
			(-3.45)	
Observations	1293343	1293343	1293343	1293343
R^2	0.546	0.546	0.546	0.546
Panel B: Hedge Funds Subsample				
Buy	0.304**			0.135*
	(7.96)			(2.06)
Sell		-0.329**		-0.215**
		(-8.31)		(-3.16)
No Change			0.00646	
			(0.10)	
Observations	127646	127646	127646	127646
R^2	0.517	0.517	0.517	0.517
Panel C: Active Institutions Subsample				
Buy	0.270**			0.299**
	(11.81)			(6.80)
Sell		-0.228**		0.0353
		(-9.69)		(0.78)
No Change			-0.193**	
			(-4.50)	
Observations	365380	365380	365380	365380
R^2	0.508	0.508	0.508	0.508
Panel D: The Rest Subsample				
Buy	0.0138			0.0433
	(0.79)			(1.56)
Sell		0.00419		0.0381
		(0.24)		(1.36)
No Change			-0.0408	
			(-1.55)	
Observations	872336	872336	872336	872336
R^2	0.541	0.541	0.541	0.541

Table VIII. Delay and Management Proposals (Compensation): This table reports the results of regressions that test the hypothesis that filing delay might be affected by compensation related management proposal events on the stocks held in the portfolio of the institution. We run regressions on the full sample, subsample of hedge funds, subsample of active institutions, and the subsample that excludes hedge funds and active institutions. All the regression include control variables as well as fixed effects for institutions, quarters and day-of-week. Coefficients marked with **, and * are significant at the 1%, and 5% level, respectively.

Panel A: Full Sample				
	(1) Delay	(2) Delay	(3) Delay	(4) Delay
Buy	0.0947**			0.159**
	(7.31)			(7.57)
Sell		-0.0452**		0.0848**
		(-3.37)		(3.89)
No Change			-0.128**	
			(-6.33)	
Observations	1448567	1448567	1448567	1448567
R^2	0.537	0.537	0.537	0.537
Panel B: Hedge Fund Subsample				
Buy	0.207**			0.282**
	(5.58)			(4.59)
Sell		-0.138**		0.0994
		(-3.52)		(1.53)
No Change			-0.216**	
			(-3.62)	
Observations	156144	156144	156144	156144
R^2	0.494	0.494	0.494	0.494
Panel C: Active Institutions Subsample				
Buy	0.173**			0.235**
	(8.09)			(5.98)
Sell		-0.128**		0.0769
		(-5.76)		(1.88)
No Change			-0.175**	
			(-4.58)	
Observations	455265	455265	455265	455265
R^2	0.494	0.494	0.494	0.494
Panel D: The Rest Subsample				
Buy	0.0441**			0.121**
	(2.67)			(4.69)
Sell		0.00725		0.103**
		(0.43)		(3.88)
No Change			-0.114**	
			(-4.60)	
Observations	929363	929363	929363	929363
R^2	0.547	0.547	0.547	0.547

Table IX. Delay and Management Proposals (Non-Compensation): This table reports the results of regressions that test the hypothesis that filing delay might be affected by non-compensation related management proposal events on the stocks held in the portfolio of the institution. We run regressions on the full sample, subsample of hedge funds, subsample of active institutions, and the subsample that excludes hedge funds and active institutions. All the regression include control variables as well as fixed effects for institutions, quarters and day-of-week. Coefficients marked with **, and * are significant at the 1%, and 5% level, respectively.

Panel A: Full Sample				
	(1) Delay	(2) Delay	(3) Delay	(4) Delay
Buy	0.117**			0.162**
	(5.09)			(4.27)
Sell		-0.0752**		0.0588
		(-3.14)		(1.49)
No Change			-0.120**	
			(-3.28)	
Observations	483390	483390	483390	483390
R^2	0.530	0.530	0.530	0.530
Panel B: Hedge Fund Subsample				
Buy	0.374**			0.385**
	(5.66)			(3.47)
Sell		-0.312**		0.0143
		(-4.47)		(0.12)
No Change			-0.249*	
			(-2.31)	
Observations	51765	51765	51765	51765
R^2	0.491	0.491	0.491	0.491
Panel C: Active Institutions Subsample				
Buy	0.189**			0.242**
	(4.90)			(3.36)
Sell		-0.147**		0.0656
		(-3.68)		(0.88)
No Change			-0.178*	
			(-2.53)	
Observations	148808	148808	148808	148808
R^2	0.489	0.488	0.488	0.489
Panel D: The Rest Subsample				
Buy	0.0481			0.101*
	(1.65)			(2.17)
Sell		-0.0108		0.0704
		(-0.36)		(1.46)
No Change			-0.0881*	
			(-1.98)	
Observations	312892	312892	312892	312892
R^2	0.537	0.537	0.537	0.537